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Iain Robinson

Transience and durability in Japanese urban space

ABSTRACT

The thesis addresses the research question "*What is transient and what endures within Japanese urban space*" by taking the material constructed form of one Japanese city as a primary text and object of analysis. Chiba-*shi* is a port and administrative centre in southern Kanto, the largest city in the eastern part of the Tokyo Metropolitan Region and located about forty kilometres from downtown Tokyo.

The study privileges the role of process as a theoretical basis for exploring the dynamics of the production and transformation of urban space. Three aspects of temporal experience identified by Giddens – routine, biographical and institutional time – are adopted as a framework for considering how the dynamics of social reproduction are expressed in terms of transience and durability within urban form.

A methodology is developed to explore the changing interrelationship between six conceptual 'entities' – the individual, household, dwelling, establishment, premises and site. Metrics are identified for each to facilitate a consistent analysis over time of the changing relationship between these based on a formal diachronic longitudinal survey. An analysis of the spatial transformation of the material form of the city between 1870 and 2005 was completed based primarily on recording the changing use over time of about 4,500 sample points.

The outcome of the study is presented in five substantive chapters. The first considers characteristics of the layout of neighbourhoods and dwellings that have endured largely through their close association with processes of social reproduction. The following four chapters examine chronologically the evolution of the city, documenting transformations in urban form and their expression in terms of changing use of volumes of space, the characteristic infrastructure, premises and dwelling types, and how these relate to broader trends in Japanese history. The final chapter summarises the interrelationship of these transformations and draws some conclusions concerning what promotes transience and durability in an urban environment.

Transience and durability in Japanese urban space

Iain Robinson

Thesis submitted for the Degree of Doctor of Philosophy (Ph.D.)

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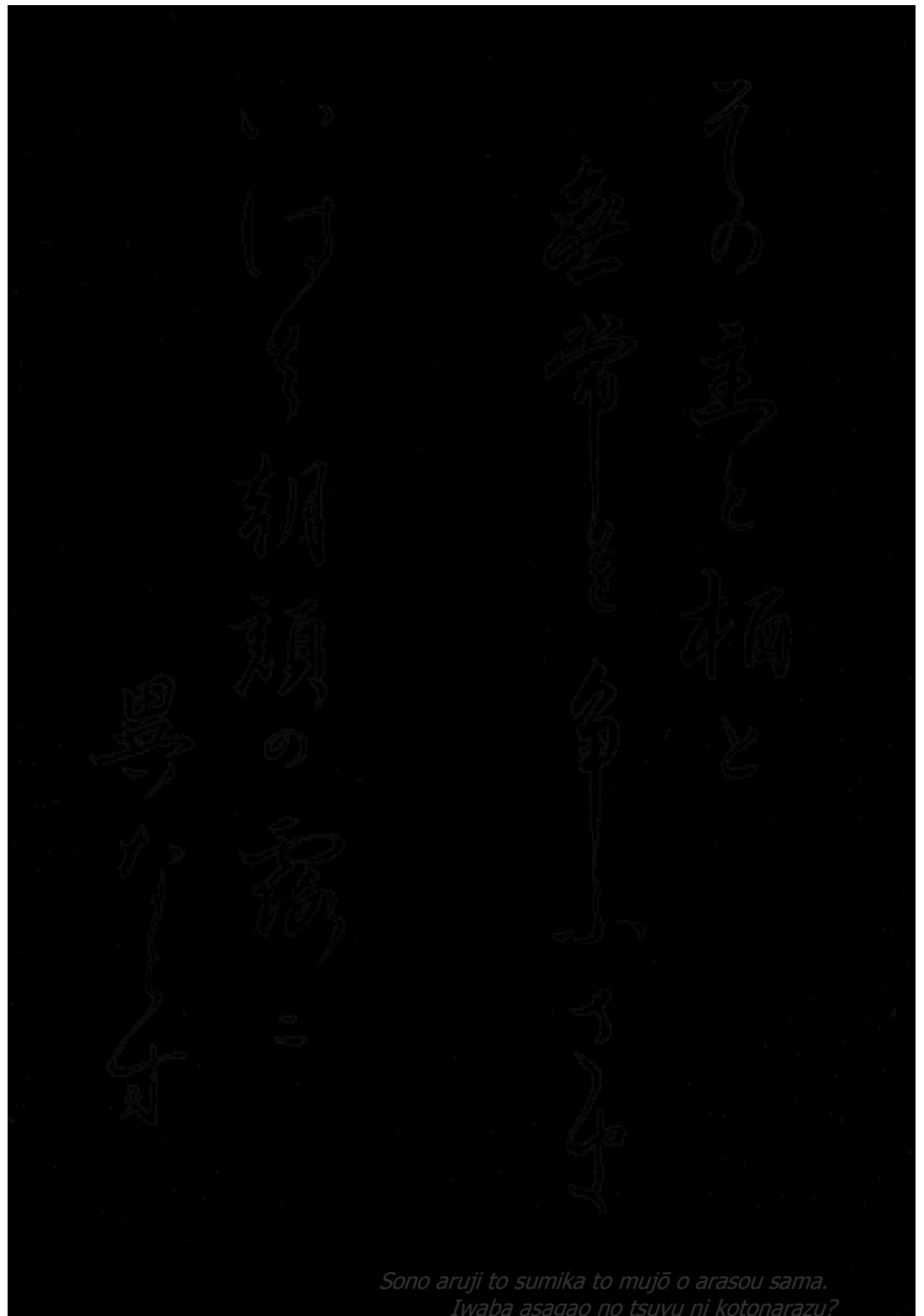
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2010

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Both men and their dwellings are as transient as the dew on 'Morning Glory' blossoms.

And who can tell which of them will endure the longer?

Kamo no Chōmei (c.1212)

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Preface

This study is concerned with patterns and mechanisms of change. It addresses three broad questions associated with the production and function of urban space: how and why are the processes that constitute the basis of routine urban life transformed over time, how are the consequences of this transformation reflected within the built environment, and what aspects of the production and use of urban space might be regarded as persistently enduring? These topics will be explored in the context of the city of Chiba in the Kanto region of Japan.

The context of this study is unconventional. Most theses are written at the outset of academic careers but this is a product, if not exactly of the author's 'old age', then at least of his mature years. In 2002 I retired from a market research and database management career in a United Kingdom company and made a new home in a rural area of Chiba Prefecture east of Tokyo. My aspiration in retirement was to undertake some original academic research into aspects of contemporary urban Japan, and this study was intended to serve as a preliminary 'road map' to enable me to acquire a broad understanding of the field. What interests me about Japanese cities is their sheer difference, the contrasts that have emerged in the production of modern urban spaces within another historical and social context. The scope of the research was deliberately broad, the intention always to produce an extensive piece of work. Several of the topics addressed in this text could have formed the basis for a substantial thesis in their own right, and I have often had to deal only briefly with issues that would warrant much more extensive treatment.

I also wanted to use the opportunity of this study to consider the value of process based categories in understanding the experience of transience. I have a strong personal sense of the restless dynamics of transformation in progress in my awareness of place and this has influenced the theoretical context of the work presented here.

Becoming a greying *flâneur* for the first time and starting to explore the *danchi*, *roji* and malls of Chiba-*shi*, I was in the unusual position for a postgraduate student of knowing almost nothing about the chosen object of my study. This made me focus

very directly on observation. I concentrated at the beginning on simply walking the city in detail and asking questions about everything I saw. This later evolved into a methodology in which formally sampling the changing use of space within the built environment was central. This too involved a lot of walking - around thirteen hundred kilometres in total. Because the character of this effort is not apparent from the 'dry bones' of the many tables it produced for the main text I have briefly sketched the essence of the daily routine involved in the short prologue on page xi.

So this is very much a study taken from engagement with and experience of the space of the city. It is also, I now realise looking at the result of six years part-time research, a study that reflects my love of numbers.

Iain Robinson

3 March 2010

Acknowledgements

When I embarked on this project I had no appreciation of the amount of effort it would encompass within the six years permitted for part time study, nor of the extent to which my personal life would concurrently be transformed through living in a completely different culture. I could never have brought the project to a conclusion without the help and support of many people.

Firstly I want to thank my supervisors at Durham, Dr. Gordon MacLeod and Professor Stuart Elden, and also for one year Dr. Kurt Iveson, for helping a 'mature student' from a different academic generation return to serious formal study. It is no exaggeration to say that, in best Rip Van Winkle tradition, I scarcely recognised the discipline of Geography after an absence of more than thirty years. Without their unstinting support, guidance and encouragement I would neither have managed to reorient myself in respect of appreciating some key current debates within geography, nor positioned my own research meaningfully within the context of urban studies. They have also greatly helped me by always being supportive within the kind of flexible supervision regime that pursuing part time study on the other side of the world entailed.

I would also like to acknowledge the encouragement and help I have received from many other academic staff both in the UK and in Japan. Professor Yamamura Junji of the Department of Geography within the University of Chiba School of Social Studies gave me some early help with orientation and early introductions, and towards the end of my studies Professor John Creighton Campbell, Professor Emeritus at the University of Michigan School of Political Science and Visiting Professor at the Department of Health Policy and Management at Keio University Medical School, gave me an opportunity to meet many American and European postgraduates working on Japanese topics, and to present my own work, through attending his impromptu monthly sessions at the University of Tokyo. I also had some very valuable initial technical guidance from Dr. Ian Evans at Durham which helped determine the sampling procedure I adopted for my sample point survey.

I received frequent help from staff in the Chiba Prefectural and City Library reference sections and the Chiba City Planning Department and Statistics Office documentation reference library. By far the most important institutional support in Japan was from the staff at the *Chiba-ken Bunshokan* (Chiba Prefectural Archive). They were unstintingly helpful and took a great interest in my project, offering me access to their superb collections of aerial photography and microfilm records of Meiji and Taisho-era statistical resources. Without their aid the methodology adopted here would not have been practicable.

I would also like to thank the staff at *Ōsato Sōgō Kanri* at Ōami-Shirasato who gave their time to help me understand the construction and terminology of contemporary timber framed housing, and Durham University Geographical Society for a small grant for purchasing some enumeration district data from the 2000 Population Census of Japan.

During the course of this project I was traced by an old Durham friend and 'Castleman' from the 1960's, David Gwillim. Despite poor health – he was suffering from leukaemia – he followed my progress with enthusiasm and looked forward to me visiting him in New York as soon as the study was complete, and I at last had some free time to make a trip. Sadly that never happened; he died in June 2007.

Finally I'd like to thank my family – Patrick and Julia, and in Japan Chihiro and Misato for their encouragement and patience over the last six years - but most especially of course my wife Edera. She tirelessly supported and mentored me at every stage of this project, helping me with access to and the translation of documents but most importantly by creating the time and space for me to focus and concentrate on the work I needed to do. Without her love, forbearance and encouragement this study could never have been completed.

List of Abbreviations

Cs-Shi	<i>Chiba-shi Zushi</i> . A two volume history of the city
JHC	Japan Housing and Urban Development Corporation
JNR	Japanese National Railways
IR	Denotes photographs in which the author asserts copyright
LDP	Liberal Democratic Party (<i>Jiyū-Minshutō</i>)
MITI	Ministry of International Trade and Industry
MMA	Major Metropolitan Area
NCR	National Capital Region
SCAP	Supreme Commander Allied Powers
TMG	Tokyo Metropolitan Government
TMR	Tokyo Metropolitan Region
TNC	Transnational Corporations

In the following text with the exception of bibliographical references Japanese personal names follow the conventional order of family name first followed by given name.

Statement of Copyright

The copyright of this thesis rests with the author. No quotation from it should be published without the prior written consent and information derived from it should be acknowledged.

Prologue

If I'm working anywhere in the northern part of the city I will catch the crowded but direct 9:07 train straight into Chiba-*shi*; for the three southern '*ku*' catching the 8:53 *kakuekiteisha* ('all stations') *via* Ōamishirasato to Honchiba or Soga is a more relaxed commute. Already thirty two degrees so early in the day and the humidity over eighty percent – a 'Turkish Bath' kind of a morning. In my shoulder bag are four photocopies of plans from my Zenrin 1:1500 atlases. Unlike Rodinsky's *London A-Z*¹ the cryptic symbols that I marked up on them yesterday evening have clear and precise meanings – they are the 'one metre' sample point co-ordinate references from my random sample database. Each sheet covers 750 by 500 square metres, and each includes around a dozen points that I will visit, record and photograph today.

No way to do this except to walk. Parking is just impossible; cycling with your mind on other things would be lethal. Even on foot connectivity between adjacent blocks in an urban area largely developed as hundreds of separate, small *minikaihatsu* is poor and involves many detours and much retracing of steps. To thread my way through the whole area these four maps represent will take around ten kilometres of walking –with another three or four kilometres involved in getting from a station or bus stop to and from today's sampled location. The study area is 116 km² located on 386 separate Zenrin Sheets, so 1300 km of walking taking about a hundred days of field study spread over more than a year are at the heart of this project. This is truly "reading a city with one's feet".

It is a big undertaking, formally sampling a large city. An investment for me in what I hope will be an enduring resource. Only a fraction of the detailed notes logged will ever be reflected in the 'Sample Point Survey' tables summarised in the substantive chapters of my thesis but the exertion lies in getting to these sample points, not in the level of detail recorded. This is a long excursion into absorbing the physical reality of the urban through all the senses. A subtle rhythm develops within the physical effort it takes and the place is experienced not just as an object of conscious thought but through the skin, like we might experience sunlight.

¹ See Sinclair (1999)

The interesting aspect of random sampling is that the experience really IS random. Even walking with the most accurate and detailed of well labelled maps you have no idea in advance what you will find when your eye falls on each sample point. A parked car? A child's bike? Plant pots? A baseball match in progress on a police training academy sports field? Sample points relate to the physical objects or structures located at those co-ordinates (it is a bamboo *plant*), to functions (the bamboo plant is in a shrubbery in an elementary *school site*) and often a process is observable (someone is *gardening*). But the specifics of process are not always directly evident; fragments of conversations overheard in the street, the smell of cooking through open windows, balconies of washing and airing *futons*, the open door of a delivery van, postmen, recycling collectors in white pick-up trucks with loudspeakers, old ladies with carts, meter readers on foot with sophisticated electronic devices over their shoulder, a cat lounging on a vacant lot. The reality of Japanese urban space is usually subtle, not overtly picturesque; no pavement café life nor street theatre to be seen but an ocean of apparent 'ordinariness' that needs to be understood, recorded, classified, catalogued. There is no single set of rules or categories here, formerly sterile debates on epistemology take on a startling new relevance and reality.

There is no 'dead time' on this progress through the city either – the spaces between the 4522 sample points to be visited also inform, are examined, photographed, noted. After months of this rhythm the city is under your fingernails. At night you dream about it and then as you wake you struggle to recall just where you saw THAT allotment, meeting of lanes, *ramen* noodle shop.

And then in the evenings and on wet days all this material needs to be reviewed and filtered. Records need to be categorised and entered into relational databases and then these same plans taken to the prefectural archives so that each site can be identified on aerial photograph collections from fifteen, thirty and forty five years ago and the contemporary function of each recorded place determined so that the character and pace of transformation can be understood and measured.

But this work will be described more formally in Chapter Three.

Chapter One

Introduction

Both men and their dwellings are as transient as the dew on 'Morning Glory' blossoms. And who can tell which of them will endure the longer?

'Hōjōki' attrib. Kamo no Chōmei

1.1 The Research Question.

In the classic thirteenth century essay 'Hōjōki'¹ the author reflects at length on the transience of urban forms, a theme then already popular in contemporary Japanese literature. "Ceaselessly the river flows and yet the water is never the same" he observes, echoing Heraclitus, and adding "... Even so is man and his habitation". The houses of Kyoto are "this year falling into decay and the next built up again" and their occupants "dead in the morning and born at night. And who knows why with so much labour he builds his house, or how such things can give him pleasure?"

As the text unfolds the author offers a graphic account of the transience and fragility of urban life that might serve as a paradigm for the hazards of city existence not only amongst the *roji* and *machiya* of the medieval Kyoto he dwelt in but also of life throughout the whole long history of Japanese cities from the abandonment of the first capital at Nara through to the charred debris of the napalm firestorms of 1945 and the wreckage of the 1995 Great Hanshin Earthquake. We learn of the fearsome danger of fire ... "everywhere the flames driven by the wind went leaping on ..." and the violence of typhoons when "boards and shingles filled the air like driven leaves". Then there was drought, famine, pestilence and wars and civil disturbance, people so hungry that they even "broke up their own cottages and took the pieces into the city to sell ... for food." "But for one terror following on another there was nothing to equal an earthquake" reflects the writer, moments when "the dust rose in clouds like smoke and the sound of falling buildings was like thunder. Those who were in them were crushed at once, while those who ran out did so to find the ground yawning before them." However he took some comfort from the observation that "of the four

¹ For an English translation of this work see A.L. Sadler (1972) pp.1-21



Fig.1.1. Even modern wooden framed dwellings are completely destroyed by fire within about twenty minutes. *House fire at Nishi-Tsuga 4-chome January 2007*

elements water fire and wind are always doing damage, but with the earth this is comparatively rare". (Sadler, 1972:1-10)

Writing nearly eight centuries later on the same topic Kurokawa Kisho² comments:

Throughout history, Japanese cities have been under attack almost yearly from such natural disasters as earthquakes, typhoons, and volcanic eruption. Great fires ... frequently reduced most of Kyoto and Edo to ashes and ... almost all of Japan's major cities were destroyed in World War II. This continuing experience of the loss of cities has produced doubts about reality, a lack of confidence in the visible and a suspicion of the eternal in the Japanese people.... the fact that Japan is a culture of wood has contributed to the sensitivity of Japanese culture to change (Kurokawa, 1998:7)

Kurokawa uses the Metabolist term 'provisionality' to characterise what he considers an inherently Japanese understanding, which he contrasts with a Western sense of solidity and permanence. He suggests that "five decades of growth and change have turned Tokyo into a city which the concept of the provisional suits very well." This provisional status:

² Kurokawa Kisho (1934 – 2007). Japanese architect and in 1959 a founder of the Metabolist Movement.

does not only refer to physical provisionality, such as being short lived or easy to build ... but also to the traditional, philosophical concept of provisionality. Life is defined as lacking stability, always growing and moving. Our theme of metabolism ... is the process of adaptation and change which expresses the constant dynamic changes in our life and in our [urban] environment. (ibid:9)

This transient quality of urban space can hardly be regarded as unique to Japan but it *is* strongly and perhaps peculiarly characteristic of the Japanese city environment. This thesis will examine some of the characteristics of the outcome of this 'provisionality' to which Kurokawa refers, and especially those ways in which it is reflected in the relationship between the production and use of material urban forms and those processes concerned with the reproduction of the quotidian within the city.

The research question that will be considered here is ***'What is transient and what endures within Japanese urban space?'*** and there are many possible directions from which it might be approached. For example if the characteristics of the *form of the built environment* were to be taken as the frame of reference then the primary object of inquiry could be the classification of the emerging morphology of the *shi*³ and the relative longevity of some types of structure and modes of use of space compared with others. What is the significance of patterns of change revealed by the erection and demolition of buildings and the emergence of new kinds of land use? If on the other hand the *functioning of the urban environment* was taken as the object of study – the operation of what Amin and Thrift (2002:78) refer to as the urban 'mechanosphere' - then the question might be approached in the context of the emergence and control of systems and networks represented by studies such as Graham and Marvin (2001), and Matthew Gandy's (2003) examination of the 'reworking of nature' by the development of the infrastructure of New York. Latham and McCormack et al (2009:62) suggest that "materiality has been relatively under-conceptualised within geographical approaches to urban space" but also caution that it should be viewed as dynamic and that it "is always in process" (p.69).

³ As far as practicable I have used the Japanese term '*shi*' in preference to the conventional English translation 'city' because the latter term, especially in a UK context, implies many elements of form and history that are absent in urban Japan. For the usage of this and similar terms in the text see Appendix Three.

The changing forms and functions of space in one Japanese *shi* are considered here from both these viewpoints amongst others. In this study I want as far as practicable to try and privilege process as a perspective, to focus on the transformations taking place within the underlying associations of processes involved in the production and use of social space. What do the changes taking place within both the material form of the city, and also in the rhythms associated with the function of urban networks, reveal about the transience or durability of some of the fundamental underlying processes associated with their reproduction?

'Process' is a rather subtle concept. It is an expression often employed in the context of contemporary discourses within urban studies but what is meant by the term is sometimes ambiguous. The many meanings of 'process' will be 'unpacked' in some detail in the next chapter but as a provisional definition here I offer one suggested by Nicholas Rescher. He describes a process as:

a coordinated group of changes in the complexion of reality, an organised family of occurrences that are systematically linked to one another either causally or functionally. (Rescher1996:38)

Processes mutate over time, they are 'dynamic' categories in the sense that even those apparently most closely regulated by simple homeostatic feedback will adapt and evolve. The ways in which the relatively small number of groups of processes that constitute the routines of personal, family and working life have either persisted, or mutated and so transformed the characteristic uses of space in the city, will be central to the perspective adopted in this study.

If an overly literal interpretation of the proposed research question were to be adopted the outcome could be a narrow focus on only those specific observable characteristics of the Japanese city which have either 'survived' over time or have 'disappeared'. This is not the intention here. Throughout the study account will also be taken of the causes and consequences of innovation and the impact of invention, and of the relevance of new ideas and technologies in terms of their influence on the transformation of urban space.

1.2 Scope of the study

In this study the evolving physical character of the constructed forms of urban space and the changing spatial relationship between its main components will be adopted as a primary object of study – an approach which Duncan (1990) has described as taking 'The City as Text'. Although the striking contrasts between English cities and the *shi* of southern Kanto first attracted me to study urban Japan, and reference is sometimes made to these differences, this is in no sense intended as a formal comparative study. Apart from a few exceptional works like Barrie Shelton's *Learning from the Japanese City* (1999) and Andre Sorensen's studies of urban planning based on his research in Saitama-ken, the *detail* of present day material Japanese urban forms and spaces has not been explored much by Anglo-American scholars. Western scholarship has more often been concerned with the processes of urban planning or those topics which also attract the interest of Japanese urbanists. Some recurring themes have been the historical trajectory of individual cities – see for example Fiévé and Waley (2003) on Kyoto and McClain (1982) on Kanazawa - or the changing role of the capital region and the emergence of Tokyo as a world city. What might an in-depth study of the evolution of the built environment of just one Japanese urban area over an extended period reveal about some of the changing dynamics of underlying socio-spatial processes, and of their relationship to some of the recent debates in Anglo-American critical urban geography?

This focus on the built environment as the basis of a diachronic study was a conscious and deliberate choice and alternative approaches to my research question might have been adopted to explore some of the themes examined here. For example the contemporary influence of migration on patterns of urban living could have been studied from a completely different angle, working with the texts of authors like Hayashi Fumiko to explore the increasingly tentative ties of migrants with the *furusato* – the 'roots' of one's home village discussed in Robertson (1988) and Schnell (2005). It would have been interesting to research in detail discourses about the relationship between the State and the individual revealed through an examination of planning documentation produced for one city since 1945. With the extraordinary range of social statistics published at prefectural level in Japan it would have been possible to use these resources to select a 'benchmark' group of processes – for example new household formation – and to explore this across a wide variety of different urban

areas along the lines of work done on migration by Gary Allinson in his 1979 study of suburban Tokyo based on election data.

There are several sources of published statistics relating to the constructed environment of Japanese cities and extensive use is made of them here, although as Gomm (2008:196) points out “administrative data have rarely been collected with the needs of academic researchers in mind.” For example, City Office statistics on the local tax base provide annual summaries of the area of taxable land by category of land use, building control regulations provide for the annual publication of summary statistics on the floor area of new buildings by type of structure and their proposed use, and the National Housing and Land Survey provides tabulations of information on dwellings by type, size, age and occupancy. But all these resources, useful as they are, are socially produced with particular administrative functions or bureaucratic objectives in mind. None of them provides any kind of comprehensive picture of the totality or quality of urban space at any particular moment, let alone any consistent measure of change over extended periods of time, although they *are* interesting from an ‘ethnostatistical’ perspective (Gephart 2006) because of what they reveal about contemporary public issues and State priorities. It is not possible to undertake a robust diachronic study of urban Japan relying solely on such resources both because of the limited time spans they cover and the ways in which parameters change. Even such an apparently straightforward metric such as ‘*total population*’ might refer to *de jure*, *de facto* or *honseki* registered population depending on the age and source of the data.

To take the built environment as a primary text and yet keep the scope of the research within reasonable bounds required the selection of one city as an object of study and a decision was made to adopt Chiba-*shi*. This choice was in part pragmatic but it proved to be a fortunate one. A less important city would have had a much more restricted range of published social statistics available, and Chiba-*shi* also proved to be very well provided with archive resources and especially maps and photographs documenting most stages of its modern history. Chiba will be introduced to the reader in the following section.

To measure changes taking place within the built environment requires a diachronic perspective and I have adopted a methodology based on a retrospective longitudinal

study. This is discussed in detail in Chapter Three and further documented in Appendix Two. The research involved recording the present day characteristics and function of 4,522 'sample points' within the urban area. Aerial photographs and older plans were then examined to identify the use of each of these sample points at earlier dates. A large sample was used not only to reduce sampling error but also to permit the separate analysis of data for component parts of the *shi* (for example only those districts which comprised the extent of the built up area forty years ago) and also with the intention of using the data collected as a basis for future research. This was one benefit of working within the longer time frame of a part-time study programme. A much simpler sampling exercise based only on large scale maps and plans provided some comparable outline data for 1882, 1906, 1936 and 1947. A particular advantage of using this formal approach to sampling the built environment was that it focused attention on the most prevalent uses of urban space – and especially of common forms of residential space – rather than only on the higher profile functions of the city which often occupy very limited volumes of space. In the particular context of the research question this was a strength; what endures in the city is commonly 'ordinary' in the dictionary sense of "having no special distinction".

In Chapter Four I will consider those aspects of the construction and use of the built environment that appear as the most persistently enduring features of urban space. Most of these are characterised as being associated with what Lefebvre refers to as the 'lower end' of a hierarchical stratified morphology of social space (2009:235-6) – aspects of the construction and use of rooms, buildings and to a lesser extent streets and neighbourhoods. I will argue that what persists about such spaces are often those characteristics that are associated either with social (and cultural) reproduction across generations, or patterns associated with the use of common family spaces and material components related to conventions in social discourse, such as the format and use of places where people meet and interact, and the distinction between 'front' and 'back' region identified by Erving Goffman (1959:112-140).

In my initial plan of study I did not intend to include any detailed consideration of the evolution of Chiba-*shi* prior to 1960 but it soon became evident that despite the scarcity of surviving buildings the present character of core urban areas is powerfully influenced by their earlier history both in terms of geometries of movement, title and land use and also in the biographies and family histories of many who continue to

reside there. Chapter Five was added to the study to explore the chronology of this earlier period and to review the changing character of Chiba-*shi* from its designation as a seat of prefectural government in 1873 until 1945.

The expansion and transformation of the urban area after 1945 is examined in Chapters Six through Nine which each deal with a fifteen year periods (1945-1960, 1960-1975, 1975-1990 and 1990-2005). This apparently 'tidy' temporal framework is not in fact an arbitrary choice but reflects some crucial dates in the recent development of Japanese cities. 1958-1961 were the years of the 'Iwato Boom' which heralded the beginning of high speed economic growth and the urban expansion of the 1960's, while 1975 was the year when the impact of the 1973 oil crisis and the demise of the post-war Bretton Woods consensus first seriously impacted public expenditure on infrastructure and housing. After 1975 there were much stricter environmental standards enforced in respect of problems such as industrial pollution, and rising incomes led to a better standard of living partly reflected in the consistently larger dwellings associated with the development of new habits of consumerism. During most of the neoliberal years of Nakasone administration during the nineteen eighties the urbanised area of Japan continued to expand but at a much slower pace and redevelopment became a more characteristic feature of much urban space. International pressure on Japan to invest in sectors other than manufacturing to address a soaring balance of payments surplus led to the massive share and land price bubble that finally collapsed from 1990-1992. The last fifteen years has seen a quite different dynamic emerging within Japanese cities, with large scale redevelopment of many central sites involving conversion of land use and high rise construction as corporate capital has moved into urban real estate development as a major source of profit. Although there are 'milestones' here which correspond approximately with chronologies employed in classic critical studies of cities elsewhere (see example Ed. Soja's analysis of the expansion of Los Angeles (2000:123-144)) there are also distinctive Japanese aspects which will be explored in detail later.

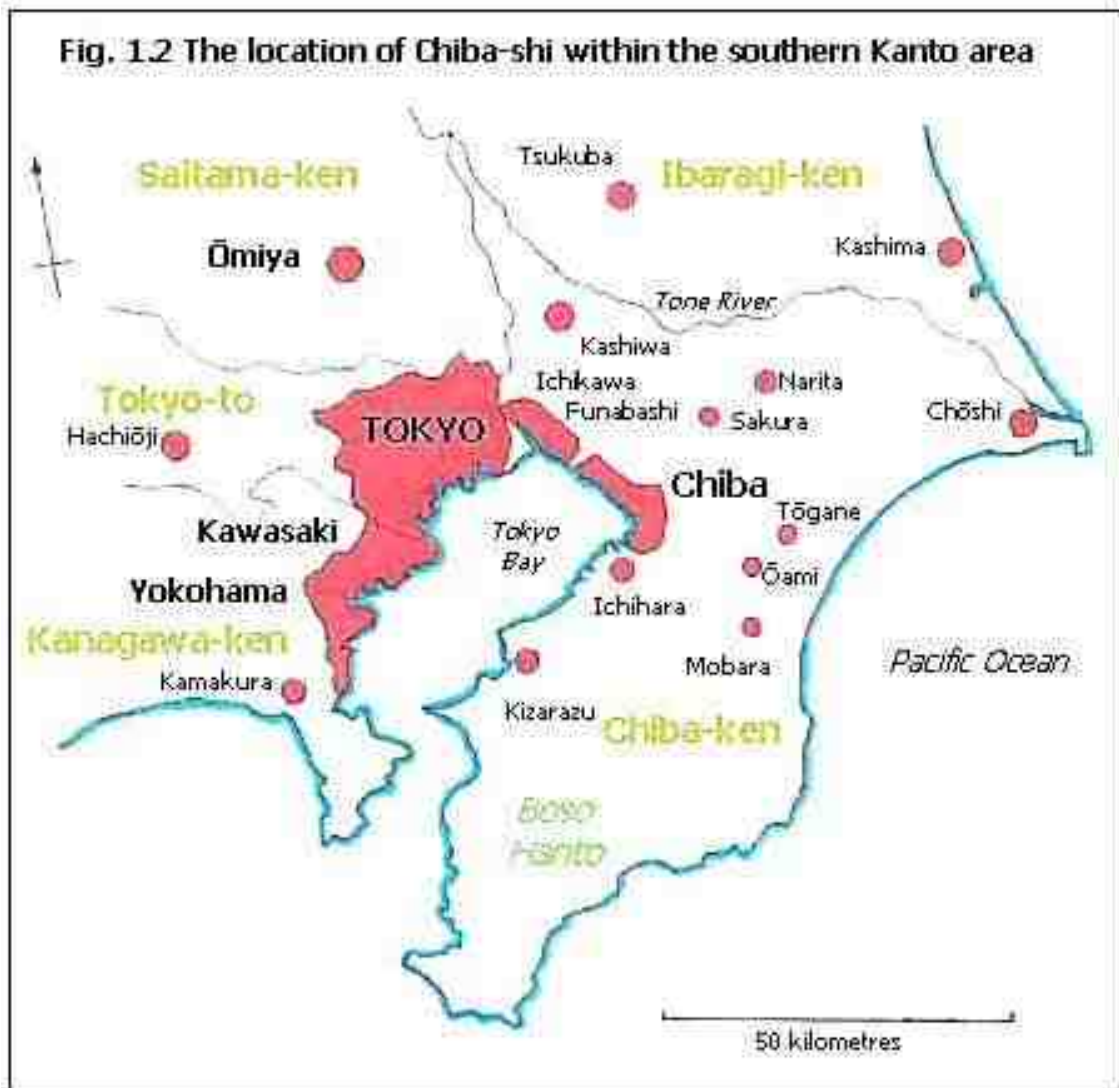
The processes which have emerged for me as being central in terms of addressing my research question are those concerned the relationship between households and dwellings, and individuals, enterprises and premises. The changing formats of households and how these transform the quality and routines of daily life and so modify the consequential balance between residential and other uses of urban space

is a fundamental influence on the way in which the city has changed and will be a central theme in each of the later substantive chapters. There is a correlation between changing patterns of urbanisation and the growing significance first of nuclear family households and then later of 'solitary' one person households. Some of the metrics available to measure these transformations, for example vital statistics and census data on household size, membership and formation and average life span run fairly consistently throughout the whole period of study. Other important metrics, such as the volume of migration and the relationship between natural population increase and the 'social growth' arising from migration are less stable. The relationship between individuals, enterprises and premises is often more difficult to trace, and the associations between occupation, employment and establishment size are more fragmentary in surviving statistical resources. They can be considered over extended periods but only through the imperfect lens of different measures. Some metrics employed, for example private motor vehicle ownership, commuting data, educational attainment and residential provision for the very elderly are only relevant to or available for particular stages of the development of the *shi*.

I have tried to avoid giving the substantive chapters too formulaic a structure but they do each broadly follow a plan of beginning with an overview of the main political, social and economic events of the period under consideration and then presenting a detailed analysis of changing household and employment trends for Chiba-*shi*. Each of the chronological chapters concludes by summarising the consequent physical expansion of the *shi* in terms of the volume and character of constructed space and the changing characteristics of residential property.

1.3 Introducing Chiba-*shi*

To conclude this chapter I want to sketch an outline of the city which has served as the object of and setting for the research presented here, and of its relationship with the wider Kanto region. The study area lies at the north east corner of Tokyo Bay, forty kilometres from 'downtown' central Tokyo. Chiba-*shi* is now the principal urban centre in the eastern part of the 'capital region', often referred to by Japanese politicians and policymakers as the Kantō (previously Keihin'yo) Major Metropolitan Area (MMA), one of the world's greatest urbanised spaces extending to 13,500 km² and with a population of 35 million.. The administrative *shi* currently comprises



272km² of which 118km² is designated as a 'densely inhabited'⁴ urban district. The resident population is just under one million.

Chiba-*shi* was a relative latecomer as a major urban centre in this wider 'capital region'. Yokohama began to expand as the main passenger and commercial port of southern Kanto soon after the completion of Japan's first railway between the town and the capital in 1872. Tokyo's first suburban expansion was westwards along the Tama Valley towards Hachioji, a trend which began in earnest during the decade following the destruction of Tokyo's *shitamachi* ('lower city') in the Great Kanto Earthquake of 1923. Before the war the capital region also began to extend northwards into Saitama-*ken* along the rail route towards northern Honshu. Only during the 1950's, and especially after the adoption of the first National Capital

⁴ The specific meaning of this term is explained in detail in Chapter Three



Fig. 1.3 Part of central Chiba near the main station. The layout is a product of postwar planning but all structures here are from the 1975-90 period. *Fujimi-cho 2-chome*.

Region Development Plan in 1958 (Sorensen 2000c) did the somewhat unfashionable eastern shore of Tokyo Bay across the Edo River begin to emerge as an important focus for new urbanisation. This plan designated Chiba-*shi*, until then primarily an administrative centre, as a 'satellite city' of Tokyo. In practice this expansion was driven by the construction of large '*kombinato*' – landfill sites for heavy industry – along the Tokyo Bay shore east of Chiba-*shi*, and the availability of developable land for commuter housing along the existing rail routes to the east.

Chiba-*shi* had passed through many distinct functional 'incarnations' before expanding rapidly during the 1960's as a dormitory area for Tokyo commuters and then in the 1970's as a major retailing and service centre. In 1873 it was still a small *shukuba-machi* – a 'post town' and a farming community - but following selection by the Meiji State as a seat of prefectural government it expanded as an administrative centre and then later as a important military town, the 'Aldershot' of southern Kanto. An estimated 86% of the original *shi* area was destroyed by incendiary bombing in June

1945. In 1951 the town was selected by Kawasaki Heavy Industries as the location for a new integrated steelworks built offshore on landfill sites.

There is no real near 'equivalent' of Chiba-*shi* in terms of UK cities because of the much greater scale and density of urbanisation which the Tokyo Metropolitan Region represents but to imagine a much larger – and cleaner – maritime version of Watford, Slough or Croydon would give some sense of the status of the *shi* within the capital region. For the average Tokyoite living in the central 23-*ku* the name 'Chiba' might conjure up a vision of a distant part of the metropolis, the terminus for the *Sobuhonsen* suburban trains, a landscape of seemingly endless public housing blocks and densely packed villas in which William Gibson famously set his 1984 cyber-punk novel *Neuromancer*⁵. For most who live there it is a place with a distinct, even strong sense of local identity evident in the support given to local institutions such as the J-League soccer team (*JEF United*) and National League baseball team (*Lotte Marines*). Perhaps Chiba, or parts of it, might now be regarded as a classic 'edge city' or 'edge urban formation', a discourse which will be referred to in Chapter Nine. But if so then it is a distinctively Japanese form which bears only partial comparison with either the American version identified by Garreau (1991) or the European counterparts considered for example by Phelps and Parsons (2003).

In addition to extensive areas of recent conventional 'new town' planned development built in outlying Midori-*ku* since 1990 there has been an important new regional development project constructed within Chiba-*shi* on landfill eight kilometres north west of the original primary urban centre. Bound to central Tokyo by new rail infrastructure 'Makuhari New City' has been promoted as an international centre for regional R&D employment in information technology and communications research. It is located adjacent to the Makuhari Messe Exhibition Centre and the site is intended to create 150,000 new jobs. The scale of this project and the level of commuting it generates underlines the extent to which Chiba-*shi* should now be considered as a functionally integrated part of 'Greater Tokyo' in addition to a city in its own right.

Based on the work of Friedmann and Wolff (1982), Friedmann (1986), Sassen (2001) and others it has been argued since the Nakasone Administration (1982-1987) that

⁵ New edition (1995) available in paperback from Voyager. Also available as a free pdf file at <http://www.pdf-search-engine.com/neuromancer-pdf.html>

Tokyo should be regarded as having the status a 'Global' City serving as a primary international financial command and control centre on a par with New York and London. However many East Asian urban specialists, whilst acknowledging Tokyo's status as a 'World' city have always challenged this opinion (see, for example, Hill and Kim, 2000:2157). Scholars such as White (1998), Hill and Fujita (2000), Saito (2003) and Newman and Thornley (2005) identify the central role of the Japanese 'Developmental State' rather than international markets in promoting the transformation of Tokyo through successive rounds of Zensō plans, and to the pivotal role of Tokyo as the capital and as a national command centre of the Japanese economy. They point to the quite different character of Japanese TNC client relationships and the continuing importance of manufacturing within the Kantō MMA. Although there was an inevitable hollowing out of some manufacturing in the late 1980s in the wake of the soaring land prices that followed the Plaza Accord (Kirwan 1987), many new industries developed on higher and specialist technology platforms have become an important element in the region's employment base in the last decade – for example multimedia and videogame clusters, nanotechnology and technical publishing. Kamo (2000: 2153) comments:

When the hollowing out of the manufacturing sector became inevitable, Tokyo was presumed to be undergoing the same transformation from a complete global city to a pure one⁶. The reality however was different; it soon became clear that not only the manufacturing sector, but also the finance industry, was being hollowed out.

The author illustrates his point by offering a substantial list of major financial institutions that "shifted all or part of their strategic Asian operations out of Tokyo in the early 1990's" – mainly to bases like Singapore and Hong Kong which had more to offer in terms of direct associations with the emerging Chinese market.

This rather less distinguished role within transnational financial markets compared with the opinions presented in Sassen's early (1991) work, is now more widely acknowledged. In recent research by the Globalization and World Cities Research Network, the 2008 list of leading world cities (GaWC Research Bulletin 300),⁷ Tokyo is

⁶ In other words from one which had a complete range of sectors represented in the employment base to one specialising in financial sector employment.

⁷ Measuring the World City Network: New Developments and results. Accessed online at <http://www.lboro.ac.uk/gawc/rb/rb300.html> on 11 November 2009

listed below 'the Alpha++' New York and London as one of seven 'Alpha+ cites' (of which all except Paris are in the Asia-Pacific region). The distinction here is not merely one of status or ranking, it is an indicator of the very distinctive economic base of the Kantō MMA, a topic for further review in later chapters in terms of the growth of commuting. It is also a factor in considering the 'nestedness' of municipalities like Chiba-*shi* within the Tokyo Metropolitan Region in terms of employment and investment, and in respect of 'edge communities', a topic which will also be considered later.

How 'typical' might Chiba-*shi* be considered now of Japanese urban space as a whole? Clearly no one city could ever be taken as 'representative' of all urban Japan. Chiba-*shi* certainly lacks the complexity and density of the high rise commercial and residential development characteristic of the more metropolitan sub-centres within Tokyo's inner 23-*ku*, and of Yokohama and Osaka. Nor does it contain the scale of industrial production incorporated into some urban space found in Chukyo MMA (Nagoya) and Keihanshin MMA (Osaka/Kobe). There are also still quite significant regional variations in the character of surviving vernacular buildings in different areas of urban Japan. Having made these qualifications there is much about the style, variety and mix of public and private residential, commercial and industrial buildings in Chiba-*shi* that would be utterly familiar to residents of most cities in Kanto. There are thousands of similar locations across Saitama-*ken* and Kanagawa-*ken* that might be mistaken for any *chome* in the public housing areas and residential *danchi* in Chiba's Inage and Hanamigawa-*ku*. To this limited degree at least Chiba-*shi* could be considered a very average, if not technically 'representative' sample of urban Japan containing many features that are rather typical of larger cities.

Chapter Two

Process as a Perspective

The elucidation of meaning involved in the phrase 'all things flow' is one chief task of metaphysics

A.N.Whitehead *Process and Reality*

2.1 Introduction

How are the expressions 'transience' and 'durability' to be construed in respect of the characteristics of urban space? There are several possible contexts in which they might be applied, but two especially are of interest here. Should these terms be regarded primarily as functional labels - attributes of particulars similar to 'colour' or 'size' - defined on the basis of some agreed if arbitrary measure of longevity by which concrete objects, structures and practices can be assigned to each category? Or might they be used to describe the relative persistence and stability or otherwise of the underlying processes which create these? Is it material objects, forms and relationships that are either transient or durable, or the forces and tendencies which reproduced them?

Specific instances of built structures and material objects seldom endure for long within Japanese urban space. If for the sake of discussion 'durability' is arbitrarily defined as 'lasting longer than the mean expected term of one human lifespan',¹ then only a few built structures would count as 'durable'. Perhaps recently built condominium dwellings will survive longer than earlier generations of their timber counterparts but the prognosis is not promising. In Chiba-*shi* thousands of apartments constructed during the nineteen sixties using contemporary ferroconcrete engineering techniques have already been demolished after 'working lives' of less than forty years. Household objects, clothing and modes of transport all incorporate fashions and technologies which ensure early obsolescence. A few of them – a good frying pan or stout walking shoes – may physically persist but as a general principle we might expect forms and functions to endure rather than instances and iterations. Physical decay and destruction – rust, mould, wear and impact - are important components in the taxonomy of change but in fact functional

¹ In the Japan Statistical Yearbook 2006 Abridged Life Table currently 79.0 years for males and 85.8 years for females. This measure will be discussed further in the next chapter.

redundancy and changing expectations more commonly drive urban transformation. Things are usually knocked down before they fall down.

This is a diachronic study and so concerned with both phenomena which are either in some respects spatiotemporally homeomerous² (Seibt 2003, 2004:128), or which alternatively may change over time - the degree to which things persist and the processes through which they are transformed. 'Change' may be observed in attributes of physical 'substance' - in the creation and destruction of substantial objects, buildings and other structures – but 'transformation' is spatiotemporal – it manifests in the context of, and as an outcome of, processes. The cumulative change we apprehend is a product of processual transformations we seldom observe. This has important implications not only for the practical design of retrospective diachronic studies but also for the theoretical framework within which processes of change are perceived and understood. The routine processes of urban living that recursively reproduce social and economic relationships both regulate and are regulated by the ongoing transformation of the constructed space of the city itself.

What are the important features of an ontology which sets out to adopt process as a perspective? David Harvey has frequently privileged process in his work. In his essay 'Capitalism: the factory of fragmentation' (reprinted in 2001:121) for example he writes:

Contemporary historical materialism attempts to isolate the fundamental processes of capital accumulation that generate social, economic and political change and, through a careful study of them, get some understanding of the 'whys' and 'hows' of those changes. The focus is on *processes*, rather than on things and events. It is a bit like watching a potter at work on a wheel: the processes may be simple to describe, but the outcomes can be infinitely varied in shape and size (original emphasis).

In this chapter I want to focus on three broad areas of theoretical importance to the following substantive aspects of this thesis – the context of employing process as a perspective, the relationship between process, some aspects of social reproduction and

² Homeomerity. When parts consist of the same kind of thing as the whole, the subject is homeomerous. All ongoing activities are homeomerous in time



Fig.2.1:Redundancy and processes of physical decay. In the humid Kanto climate unmaintained and vacant wooden structures deteriorate within three to five years. Naruto-machi, Sanmu-shi .

the production of material urban space, and finally some primarily methodological aspects of regulation theory. I want to begin by first considering the examples of two of Harvey's contributions in critical urban geography where process is strongly featured in the development of an understanding of the urban form - his texts 'Social Justice and the City' (1973) and especially 'The Urbanization of Capital' (1985) – in which he employs a Marxian perspective for exploring the meaning of 'process' in the context of cities. What are the key properties of processes and how do they mutate and change? In Section 2.3 I will consider the characteristics of the taxonomy of social processes, and in Section 2.4 the relationship of this to the ideas of 'change', 'transition' and 'durability'.

In the remaining sections of Chapter Two I want to briefly consider the relationship between process and some other discourses in social theory which are relevant to the substantive work in the remaining chapters. In Section 2.5 I will explore one particular

aspect of Giddens's work on structuration - the distinction he draws between the perspectives of routine, biographical and institutional time – which I will suggest provides a useful tool for distinguishing different dynamics at work within processes of social reproduction. In section 2.6 I will consider some aspects of the relationship between process and the Henri Lefebvre's ideas concerning the production of urban space. Finally in Section 2.7 I want to position current debates about the urban Japanese economy within the wider framework of regulation theory.

2.2 Process as a perspective

'Process' is a term very widely employed in human geography but which perhaps has only received limited formal attention as a theoretical perspective. It does not appear, for example, in the subject index of some standard texts on theory such as Cloke et al. (1991), nor as a research methodology topic in Hoggart et al. (2002). Derek Gregory (Johnston et. al 2000:639) suggests that geographers were "alerted to the complexity of process" by authors such as Blaut (1961) at a time when the term was primarily associated with the *formal language systems* of spatial science and location analysis (see Golledge and Amedeo 1968; Harvey 1969). This use of process in the context of quantitative models has been reviewed by Cliff and Ord (1981). Gregory also suggests that the "resurgence of geographies based on *ordinary language systems* [has] allowed much more *substantive* conceptions of process to be utilized" (original emphasis) and he points to the role of decision making processes in behavioural geography, labour processes in economic geography and processes of structuration in social geography as examples of this.

Gregory draws attention to a distinction made by Hay and Johnston (1983) between *processes as a sequence in space and or time*, which are often primarily descriptive (for example Darby's (1951) classic paper on the changing English landscape) and more explanatory accounts featuring *processes as mechanisms* in diachronic studies associated with systems analysis and the ideas expressed in Realism. He suggests that Hay and Johnston successfully integrate these two perspectives to create a form of process study which they claim identifies "the rules which govern spatiotemporal sequences, in such a

form that the rules are interpretable in terms of the results of the sequence, in terms of the exogenous variables which influence the sequence and in terms of mechanisms by which exogenous and endogenous influences give rise to the results which the sequence itself records." (Hay and Johnson (1983) quoted in Gregory, p.140).

Several influential texts in urban studies are concerned with the centrality of 'process.' For example, to take one key text in critical urban geography, in *Social Justice and the City* (1973) David Harvey repeatedly refers to the relationship between process and urban form in the context of planning. In the introductory chapter of the book he returns to the topic no less than six times ... "any general theory of the city must somehow relate the social processes in the city to the spatial forms which the city assumes" (p.23) ... "The distinction between social processes and spatial form is always regarded as artificial rather than real" (p.10) "Any successful [planning] strategy must appreciate that spatial form and social process are different ways of thinking about the same thing"(p.27) ... "without an adequate understanding of social processes in all their complexity, we cannot hope to understand social space in all its complexity"(p.36) ... "An understanding of space in all its complexity depends upon an appreciation of social processes ... [and] an understanding of the social process in all its complexity depends upon an appreciation of spatial form" (p.37). "...The urban system presumably develops some trajectory, and there is no guarantee that any real equilibrium can be reached in the social process because the spatial form is constantly changing." (p48). This last contention especially comes very close to the theoretical position adopted in this thesis although I am more interested to pose the reciprocal question - "what does the constantly changing urban spatial form reveal about the underlying trajectory of social processes?"

In *The Urbanization of Capital* (1985) Harvey devotes the first chapter analysing what he distinguishes as "The Urban Process under Capitalism". He suggests that "The understanding that I have to offer of the urban process under capitalism comes from seeing it in relation to the theory of accumulation" (p.13). He argues that "Whatever else it may entail, the urban process implies the creation of a material physical infrastructure for production, circulation, exchange and consumption". In this text he presents a Marxist analysis of the relationship between three 'circuits of capital'. The 'Primary Circuit' relates

to the production process associated with the creation of values and surplus values. The author then sketches the complex relationship between this primary circuit and a 'Secondary Circuit' which relates commodity production to the wider physical urban infrastructure he describes as the 'built environment for production' and a parallel structure associated with the "consumption process" (p.6) which he refers to as the 'built environment for consumption'. In addition Harvey describes a 'Tertiary Circuit' associated with investment in knowledge, innovation and skills to "contribute to the processes that continuously revolutionize the productive forces in society" and the importance of "a wide range of social expenditures that relate primarily to the processes of reproduction of labour power (p.8).

This emphasis on process is not restricted to an understanding of the relationship between capital and production, accumulation and consumption. Later for example, referring to urban politics, Harvey suggests (p.148) that:

Community is not defined as some autonomous entity but as a set of processes which produce a geographical product. The latter is real and tangible enough. For that reason it leads directly to the question, to what degree is the process set in motion through human agency then dominated by its own product.

Harvey also proposes that the State should be regarded as process (2001:280) when he writes that "The State should in fact be viewed, like capital, as a *relation* or as a *process*: in this case as a process of exercising power via certain institutional arrangements" (original emphasis).

In the following chapters I want to work towards an understanding of 'transience' and 'durability' in the Japanese urban environment from exactly this perspective of understanding change as inscribed in the constructed form of and dynamic processual relationships between the 'built environment for production' and the 'built environment for consumption' which, like Janus, the Roman God of processes, transition and change might be represented within the same material reality as facing in two contrary directions – the processes of dwelling associated with social production and those of material reproduction associated with establishments, enterprises, premises. In following sections

I want to unpack some of the theoretical issues important to this theme, beginning with a closer look at the nature and characteristics of 'process'.

2.3 Characteristics of 'process'.

What are the characteristics and properties of a process? As a noun in vernacular use, 'process' has three primary meanings³. The first resembles the definitions offered above from Hay and Johnston (1983). A 'process' can be state transformative, and refer to *a series of actions, changes or functions* bringing about a result – for example “the process of obtaining a passport.” This corresponds to Hay and Johnston’s “a sequence in space and or time”. Analytically this usage needs to be treated with care because it can shade away into a description of a specific series of events. In the sentence “I am reading a book about Thomas Tallis” for example the process referred to is “reading a book” which is referenced within a specific iteration (“about Thomas Tallis”).

A process can also be materially productive, referring to a *series of operations performed in the making or treatment of a product* as in “the process of brewing beer” corresponding to Hay and Johnston’s “process as mechanism”. 'Process' employed as a transitive verb corresponds to these two usages – for example “to process an application” and “to process iron ore in a furnace.” A third vernacular meaning as a noun which I will not pursue here is derived from legal usage as a synonym for *passage or progress* - “events now in process.”

The concept of 'process' is linked to vocabulary such as 'act', 'action' and 'activity' to articulate the dynamic aspect of the term. 'Process' is also closely associated with the noun 'system', here defined as *a functionally related group of elements;* a *network* or *an organised set of principles*. There is clearly some overlap between the two in daily usage but 'system' generally defines *means* and 'process' *activity*. For example a clerical system is in place to facilitate the process of issuing passports, and a fermentation system is installed to carry out the process of brewing beer. Processes 'occur' but in everyday

³ All 'dictionary definitions' used in this chapter are based on the online edition of the Oxford English Dictionary

speech not every 'occurrence' is a process, it could simply be an 'event' (e.g. an unidentifiable loud noise).

'Process' is a term which has acquired innumerable specific technical or domain dependent meanings. In the natural sciences physical and chemical processes may be classified by function or form (for example digestive, photosynthetic, combustive and isentropic). In manufacturing and technology processes are patented commodities. Sophisticated international procedural codes have been developed in manufacturing process engineering (e.g. EIA-632 and ISO 15288) defining standards for processes, and the documentation constituting system design). In the last two decades the integration of 'business processes engineering' with data management and information technology has become ubiquitous in administrative practice (see for example Willcocks and Smith 1994), and a key element in the technical and social organisation of the production of value and surplus value. Use in such contexts has resulted in 'process' increasingly developing a meaning not dissimilar to 'recipe' – a sequence to follow to bake a cake, distil hydrocarbons or carry out a town planning public consultation exercise. This is emphatically *not* how I want to employ the term here.

The deeper ontological status of process has preoccupied many philosophers in both Western and Eastern traditions beginning with Heraclitus (Geldard 2000), Plato and Nagarjuna (Westerhoff 2009). The American philosopher Nicholas Rescher argues in *Process Metaphysics* (1996) that there is a distinct tradition of 'process philosophy' drawing on the work of thinkers such as C.S. Peirce, William James, Henri Bergson, A.N. Whitehead and W.H. Sheldon. Fig 2.2 summarises some of the basic contentions which he maintains are shared by this group. He proposes that from the perspective of process philosophy, process should be considered as a principal category of ontological description. Processes are spatiotemporal, not simply 'spatial' and 'temporal'. Rescher (p.39) quotes Mead (1959) in support of this contention, who claimed that "a natural process is not a mere collection of sequential presents but inherently exhibits a structure of spatiotemporal continuity. A ... process by its very nature *passes on to the future a construction made from the materials of the past*" (my emphasis).

Several theoreticians of process suggest conceptual mechanisms for this. For example Whitehead in *'Process and Reality'* (1929) introduces the idea of 'actual occasions' which resemble Leibniz's 'monads' and, as the smallest unit or spatiotemporal experience, offer a mechanism whereby the subjective experience of the present resolves into the objective experience of the past.

Fig 2.2: Some basic contentions of process philosophy

- Time and transition are amongst the principal categories of metaphysical understanding.
- Process is a principal category of ontological description.
- Processes and the energy they make manifest are more fundamental (or at least no less fundamental) than things for the purposes of ontological theory
- Many of the major elements of the ontological repertoire - including substance - are often best understood in process terms.
- Contingency, emergence, novelty and creativity are among the fundamental categories of metaphysical understanding

Adapted from Rescher (1996:31)

One important point to emphasise here is that in adopting an approach which privileges process as an object of study there is no intention of presenting 'process' and 'substance' as two competing exclusive visions of reality. As the fourth contention in Figure 2.2 makes clear, there is no conflict between the perceived processual and substantial aspects of things. A thunderstorm is more readily experienced as more inherently processual than a brick, and the use of a building is better perceived as a process than is the building itself. To privilege process is often to focus on spatiotemporal transformation of function rather than form, neither is ultimately 'right' or 'wrong'.

Some contemporary process philosophers would take a more radical approach and would challenge what they consider to be the limited and 'particularist notion of process' represented by Figs. 2.2. and 2.3. Johanna Seibt (2004:117) for example questions whether we apprehend processes as instances or as structures instantiated:

Are they particulars (tokens, uniquely recurrent) or universals (types, multiply occurrent)? They are said to *be* both instances and to *have* instantiations, to both be a sort of sequence or dynamic structure and to have such structures – in short to be both tokens and types at once.

She proposes an ontology which requires a:

theory of "general processes", a mereological scheme with subjectless activities as basic entities ...General processes are ... non-countable (stuff like) concrete, general, dynamic individuals. This combination of category features requires a wholesale rejection of the substance paradigm.

Østergaard (2003:77) considers 'process' in terms of cognitive linguistics, pointing out that the human "attention network is attuned to existing patterns of singularities in space-time" and that consequently "our concepts do not necessarily reflect objective properties of space and time". He argues that the notion of agency is central to a clear understanding of process.

It is beyond my scope here to develop these ideas, but the key aspect that I wish to point to here is that from the perspective of a process ontology, urban space can be conceived as constituted not simply as a container *for* process but also *as* processes. Of course this proposition arguably links very strongly with some of Henri Lefebvre's ideas on the production of space that I will refer to further in Section 2.6 of this chapter. Lefebvre (1991:73) argues that "social space is not a thing amongst other things, not a product amongst other products ... it is the outcome of a sequence and a set of operations, and this cannot be reduced to the rank of a simple object" In *L'Espace et politique* (Lefebvre 1972:105 quoted in Elden 2004:184) he suggests that "we have passed from the production of things in space ... to the production of space itself."

What key properties of process are observable in the context of the production of urban space? Fig. 2.2 suggests some key properties of 'medium scale' social processes. These are not necessarily 'universal' properties of all processes; and they may not apply to some classes of natural process because processes in natural sciences may be characterised by properties not occurring in other contexts. Atmanspacher and Martin (2004:163) for example, point to theoretically fully reversible physical and chemical processes, to the existence of random (Markov) processes, and to the application of temporal holism (temporal nonlocality) in quantum systems.

Fig 2.3: Some characteristics of social processes

- Processes are spatiotemporal
- Are constituted as an integrated sequence of events
- Unfold in conjoint coordination
- Correspond to a pattern, structure or template
- Transform initial inputs into discrete outputs.
- Can be modified through amalgamation/regrouping of sub-processes
- Have a developmental forward looking aspect. The 'exfoliation of the real by successively actualizing possibilities that are cast aside as so many useless husks as the process unfolds'

Based partly on Rescher (1996) Chapter 2

The properties listed in Fig. 2.3 can be considered in three groups. The first four distinguish the manifestation of processes as an ontological category in which events are apprehended as unfolding in a structured manner conforming to a sequence or pattern. The following property confirms the centrality of inputs and outputs. Most processes also require some kind of energy or motivation although some 'un-owned' categories of process might not (e.g. "It is becoming more expensive.") The final two properties are concerned with mutation and suggest that processes can be transformed through the amalgamation or restructuring of sub-processes and also that as cause precedes effect and that as the "irreversibility of temporal evolution is a crucial feature of ...situations in everyday life" (Atmanspacher and Martin 2004:164) innovation and novelty can emerge by successively actualising possibilities.

"Driving a car" might be considered as a typical example of such a medium scale process, and one which in the context of 'automobility' is currently attracting interest in the context of the 'new mobilities' paradigm (see Gartman 2004; Merriman 2009; Sheller 2004). Sheller and Urry (2006) suggest that:

Automobility impacts not only on local public spaces and opportunities for coming together, but also on the formation of gendered subjectivities, familial and social networks, spatially segregated urban neighbourhoods, national images and aspirations to modernity.

The process of 'driving a car' is clearly spatiotemporal, taking place in space-time and consists of an integrated series of events – turning on the engine, checking the mirror, engaging gear, depressing the accelerator and brake which unfold in conjoint co-ordination in the sense that all play sequentially an essential role within a single perceived process. Inputs of fuel, coordinative attention and time are used to produce outputs of purposeful motion which achieve a progressive relocation of the vehicle and occupants. The process of driving a car can mutate by restructuring sub-processes (for example by excluding gear changes if an automatic transmission vehicle is involved, using the windscreen wipers in rain) while still remaining a recognisably a process of 'driving a car'. This change has a forward looking aspect – the element and forms of human co-ordination will change as the driver becomes more skilled, or older.

'Driving a car' is a good example of the scale and character of a process that we would recognise as both occurring within and constituting urban space and it conforms to a 'particularist notion of process'. We experience 'driving' subjectively as 'real' – as real as a 'house' - although on closer examination both concepts dissolve into a hierarchy of component elements. Like so many ubiquitous processes that will feature in the following substantive chapters such as 'business enterprise' and 'household', 'driving a car' is not only fundamentally characteristic of what constitutes the urban but also ultimately elusive, the 'perception of a singularity' has neither mass nor volume nor 'script'. There is typically no one measure of a process, only of component spatial or temporal moments, patterns of inputs and outputs. And at the same time we apprehend the process primarily in terms of the input-output relationship, we may actually watch someone driving if we are an instructor but typically what is relevant is the change of location, the journey achieved. This is almost universally true within the 'archaeological record' of published statistics where 'driving a car' becomes a trace reflected only in metrics counting items and events - such as 'registered vehicles' and 'recorded motor traffic accidents'. In a retrospective study instances of processes themselves are not available as an object of study; they are only accessible through the careful examination of evidence which record and summarise outcomes. Later in Chapter Three I will identify the key metrics which I believe offer at least some measure of the durability or otherwise of the key processes influencing the transformation of urban space explored in later chapters.

2. 4. Change, transition, durability

In everyday usage there is considerable overlap in the meaning of words associated with the transformation of things, and I want to attempt to be more disciplined in respect of my usage of some of this vocabulary here. In this text 'transition' will generally be used to refer to the processual aspect of the mutation taking place within the integrated series of events unfolding in conjoint coordination within a process, in other words *the actual spatiotemporal transformation between one state and another*. The term 'change' will be generally reserved for use in the specific sense of *the outcome or consequence of transition experienced as creation, destruction, substitution or modification*, in other words the perceived output or result of a process. Transitions follow the trajectory of Zeno's arrow. We can be directly aware of experiencing them - for example witnessing the dynamiting of a building or being present at the birth of a child – but commonly we notice, measure and record only the consequences of the transitions produced by process as 'change'. This distinction corresponds to the nature of the experience of time concerned. Transitions occur within what Bergson defines as 'duration' (1912:191-2, 2007:164) while change is determined by comparison of two sequential states at moments identified by clock (or calendar) time.

Almost all the social statistics presented in later chapters are measurements of change based on public administrative records from paper or computer systems recording summarised annual, quinquennial or decennial registration or census data. The Sample Point Survey data presented later as a method of measuring change in the use of urban space is similarly based on evidence of difference in the character of aerial photographic images. However during fieldwork note was also taken of all those sample points where a transition of use in progress was witnessed; this usually involved the active construction or demolition of buildings.

The last two process properties identified in Fig.2.3 are associated with the means by which processes can change their form and content. What mode might these transitions assume and which characteristics of a process would be involved? A provisional set of modes of transition is suggested in Fig. 2.4.

Fig 2.4: Modes of transition in the characteristics of a process

- Transition in function
 - The pattern, template or programme mutates
 - The mechanism and scope of the process alters
 - The format and characteristics of the input alter
- Transition in format of execution
 - The component sub-processes are altered
 - Different possibilities are actualised

An example of these modes of transition could be given using the process of migration from rural areas, which will feature frequently in the following chapters. The functional pattern of migration changes considerably in Japan between the 1890's - when it was usually associated with the short term contract relocation of young women to rural textile factory dormitories for wage labour to support their extended household in their home village - and the 1950's, by which time it was characteristically patterned around the permanent relocation of the eldest son and often all siblings into urban waged employment (leading to the dissolution of many extended households). The scope of the migration process changed radically both geographically and socially, and new inputs included features such as expanding demand for manufacturing manpower, military conscription and support available from family already relocated in the metropolis. This led in turn to a completely changed format of execution of the move, and to new possibilities of seeking paid employment.

What is the actual taxonomy of change observable as an outcome of social processes? Dodgshon (1998;45-47) writing in a slightly different context suggests six 'products of societal change' which offer a useful basis from which to consider this question and I have added a seventh category to cover those changes associated with the dissolution of processes and the dissociation and termination of relationships (see Fig.2.5). Brief examples of each category are also provided. Dodgshon points out that although many social changes appear to be identifiable as 'quantitative' in terms of consequence there is almost always some more fundamental qualitative component to consider because the nature of social change is seldom purely scalar. He comments that:

If seen strictly ... quantitative change ... can amount to a very simple, even trivial form of change. ... However in most cases, such change is merely a phase in the unfolding of qualitative change, with the growth of particular patterns and systems replacing others or creating conditions, via scalar stress, out of which a reordering into a qualitatively different system might arise (1988:45-46).

Fig 2.5: The taxonomy of social change

1. Quantitative change by simple addition or subtraction. ($a \rightarrow A, A \rightarrow a$)
Average time spent sleeping is now 7.2 hours compared with 7.8 hours in 1964
2. Qualitative change by substitution. ($a \rightarrow b$)
It was a car park and it is now a convenience store site
3. Qualitative change by integration ($a+a+a \rightarrow A$)
New enterprise formation involving a simple partnership
4. Qualitative change by incorporation ($a+a+a \rightarrow B$)
Three towns are merged into a single city which exercises more administrative power
5. Qualitative change by accretion ($a \rightarrow ab \rightarrow abc$)
A first child is born, then a second, the nature of the household changes
6. Qualitative change by involution or evolution ($a \rightarrow a^1, a^2, a^3$)
At fifty with the kids flown the nest our daily routines are different.
7. Qualitative change by dissociation ($abc \rightarrow (a), bc$)
Life is very different since the divorce, since mother died.

Based partly on Dodgshon 1998:45-47

Even in the example given here of 'average time spent sleeping' reality will inevitably be more nuanced; other formats of change will be influencing the outcome. What role might innovation in forms of home entertainment, change in household size (arrival of a baby) or the demands of commuting (new timetable introduced) have played for example?

2.5 Process, Time and Social Reproduction

The French sociologist Georges Gurvitch was an early proponent of the importance of:

arriving at a concrete idea of social time in order to study the different manifestations of social time which collide and combine in the involvement of different levels, at the very heart of the total social phenomenon (1964:30)

He defines Social Time as the “convergency and divergency of movements of the total social phenomena, giving birth to time and lapsing in time”, and proposes (pp. 31-4) a typology of eight classes of social time (for a summary see Harvey 1990:224).

In his introductory comments on encounters, co-presence and the expanding importance of time-space distancing in the modern world, Anthony Giddens offers an insight into the relationship between the experience of temporality and social reproduction (1984:34-36) that provides a similar yet simpler typology. I want to suggest that this has a greater importance in respect of deconstructing processes of urban transformation than may be immediately obvious from the original text. He proposes that there are three distinct perspectives at work in our experience of duration in social reproduction. The first of these is our sense of routine time – the perspective of the ‘*durée of day to day experience*’, which underlies the recursive behaviour and practices through which we maintain the processes we engage with in our everyday lives. Giddens suggests that we experience routine time as ‘reversible’ and cyclical, and that it functions for us, for example, in a way akin to the concept of Gurvitch’s ‘cyclical time, or the ‘reversible time’ documented in kinship relations by Lévi-Strauss (1963:294-295).

In contrast the biographical time represented by *the lifespan of the individual* is experienced as ‘both finite and irreversible’. This second perspective on duration is the “time of the body, a frontier of presence quite different from the evaporation of time-space inherent in the duration of day to day activity” says Giddens (p.35). Biographical time clearly plays a crucial function in determining the durability of social forms partly because socialisation at critical stages in infancy and childhood both influence patterns of behaviour across a whole lifetime and also because it sets an effective limit to the potential span and significance of face-to-face ‘social integration’ across generations. Sixty years ago it was more common to live with one’s grandparents but also much rarer to ever get to meet one’s great-grandparents than it is today.

The final perspective suggested by Giddens is that of institutional time - *the longue durée of institutions* whose ‘reversible time’:

is both the condition and the outcome of the practices organised in the continuity of daily life, the main substantive form of the duality of structure ... All social systems ... both express and are expressed in the routines of daily social life, mediating the physical and sensory properties of the human body (p.36).



Fig.2.6: Taxonomy of change: qualitative change by substitution. It takes two men about three days to demolish an early 1960's wooden dwelling and leave a new building plot. Sammu-shi

What is the relationship between these three 'perspectives' within which we register experience of duration? The diagram offered by Giddens (1984:35) suggests that he thinks that it may be hierarchical but I would argue that in terms of lived experience each is always inherently and intimately reflected within the others. Part of my daily routine is to study, a recurrent action which over a number of years will contribute to a period within my biography identified by myself and others as 'formal education'. My academic work is one small component of a set of processes and activities that determines the life course of a specific 'academic institution'.

I want to suggest that these three 'perspectives' significantly influence not only processes of social reproduction and but also the context in which urban space is produced. The dynamics of routine time and their importance in determining and structuring social behaviour has been explored by several social theorists, for example in the work of Pierre Bourdieu (1977) on *habitus* and of Henri Lefebvre (2000) in his texts related to the quotidian. Lefebvre's late work on rhythmanalysis (2004) is particularly relevant. He observes that the 'rhythms of daily life' are not necessarily 'daily rhythms'. Day to day experience is not only assembled from circadian sequences of events but also comprises a very complex inter-relationship of ultradian and infradian rhythmic processes (Brown and Graeber 1982). Twenty four hour cycles are key to the routine of urban existence but careful analysis suggests that the most basic and pervasive rhythms in our lives revolve around mealtimes, eating and the balance between work and rest. (Table 2.1).

Table 2.1: Some examples of common rhythms within urban space	
infradian	preparation, service and consumption of food. Relationship of activity and rest
circadian	place of work, institutional and retailing opening and closing times. Commuting routines. Travelling to and from school
ultradian	all weekly routines (5+2 or 6+1). Statutory holidays and annual calendars of festival and events

Late Meiji Era volumes of *Chiba-ken Tokei* feature detailed calendar tables which offer a reminder of the close attention paid to *annual* cycles in rural communities. In villages such as Makuhari and Samugawa where most residents earned their living from fishing or produce of the foreshore the community schedule was based on diurnal routines driven by tides. Longer cycles of modern routine behaviour, for example, the 'working week' are often cultural imports into Japan (Ikuko 1997) and their precise structure is frequently contested. For example the six day office working and school week common until the 1990's has moved towards a 'five plus two' cycle, but in retailing seven day opening with one day closure per month is now a common pattern of operation.

Giddens (1984; 7, 41-45) refers to the important role that 'practical consciousness' plays in the actions of the agent, which he links with the centrality of routines in 'carrying on' in everyday life. But this does not mean that the rhythms of routine time are immutable or even necessarily difficult to change. In fact most change within the urban environment is encountered in and accommodated by the straightforward modification or replacement

of one set of routine practices by another; a new journey to work, additional schooling on Saturdays, new club activities at school.

The dynamics of biographical time reflect the cumulative value of all those developmental steps within the lifespan of an individual from the acquisition of language and socialisation in infancy through to the processes of formal education, developing social networks over many years, practical skills, employment and occupation and the experience of life events such as marriage, the birth of children, divorce, retirement and bereavement. During the century and a half considered in this study biographical time has been completely restructured by both formal education and a 30% increase in average lifespan. This has involved a revaluation of almost all 'typical' components of biographies and in particular created a long post-retirement element which is now for many the most volatile and unpredictable of life stage in terms of patterns and content. Details of these changes will be presented in the substantive chapters to follow but there are two general aspects which should be dealt with here.

Firstly, Japanese society is very frequently characterised by observers as a 'group society' (see for example Nakane, 1970; Reischauer and Jansen 1995:128-139; Hendry 1995:48-54; Goodman 2005:58-72; Sugimoto 1997:3-4). This sense of membership of a cohort and also of the social importance of seniority (*'sempai-kohai'*) within the hierarchy of interpersonal relations implied by this is not only characteristic of school and college groups but also of larger companies where it has been linked with providing 'lifetime career paths' and even with relationships within voluntary groups and societies in civil society. Nakane argues that this pattern was originally a product of imitating familiar forms of parallel rural social structures when migrating to cities in the first half of the twentieth century. 'Biographical time' in this sense, is not simply a matter of one's personal *curriculum vitae* but is also apprehended in terms of who other people perceive you are.

The importance of 'biographical time' is also in Japan is also deeply influenced by the extent to which it consists of a strongly meritocratic society based primarily on educational achievement. Roberts (2005:105) suggests that to understand Japan it is

“useful to employ an approach that views the society through the lenses of social capital, after Bourdieu, and to recognise Japanese social classes as *'social fields'* rather than groups *'mobilized for struggle'*” (quoted in Clammer 1997). Many observers consider that the educational system, certainly in terms of elementary and secondary schooling, is a 'one shot' or 'tournament' process⁴ although Sugimoto (1997:116) argues that for university entrance at least there is the tradition of students having the possibility of a second (rarely a third) attempt at admission by adopting the status of *rōnin* (literally 'lord-less *samura'i*') with no formal attachment to any educational institution but attending intensive 'crammer' courses to retake examinations the following year. Any other options for further qualifications later in life outside of the workplace structure have marginal impact on subsequent life choices, there is no strong tradition of any 'return to school' to take a new qualification in mid-life.

'Biographical time' and 'routine time' together are also characteristic features of Hägerstrand's modelling of 'Time Geography' (Hägerstrand 1975, Pred 1977, Thrift 1983) , which might have provided a basis for an alternative theoretical approach to understanding some of the aspects of processual change discussed later and especially of course the importance of migration. But to have successfully followed this methodology would have required access to individual biographical data which might only have been possible to research using standard ethnographic techniques for the final wave of migration to the cities which took place in the 1960's and 1970's. This approach also does not readily provide a context for formal diachronic comparison (see Section 3.3).

One characteristic of the use of buildings in urban Japan is the distinction drawn between behaviour in what might be considered as 'Japanese-style' constructed space compared with other buildings with public open access. Why, for example, do people remove outdoor footwear in one place and not another? This topic will be considered in detail in Chapter Four but the connection here to bear in mind is the enduring link within biographical time of the importance of the early years of socialisation of children and the way in which inter-generational contact and the way it influences changes in the content

⁴ Admission procedures often reinforce this. For example, for public High School admission at 15 you must sit the examination at the school you wish to enter, but all examinations are held on the same day so that only one application is possible. If you fail to achieve the advertised pass mark for that institution you are unlikely to be accepted elsewhere.

of social reproduction. The link between a child and grandparents at what would be regarded as key stages in critical period hypothesis is an especially important mechanism in the transmission of what Pred (1984:284) refers to as “a previously sedimented array of cultural and social practices”. A number of Japanese sociologists point to the former involvement of grandparents in raising young children within the setting of the *ie* and more recently of the changing relevance of grandparents in child care (Iwao 1993:143,159). The importance of this in terms of social reproduction needs to be emphasised. Table 2.2 offers an illustrative example of how direct this personal link with cultural aspects of behavioural practice might be, based on anecdotal evidence taken

Table 2.2: The relationship between biographical time and the transmission of cultural values	
<i>grandparent's grandparents 1857 - 1920</i>	Born 1857 into a 'closed' Japanese society ruled by the shogunate into an extended farming household. Brought up in a very structured village community. Three years education in basic literacy at a local 'terakoya' village school. Apprenticed to a family-run tatami maker's shop in a nearby town. Three years military service included fighting in Korea. Married at 24.
<i>grandparents 1910 - 1980</i>	Born 1910 into an three generation household with one live-in servant in vernacular urban housing with both father's parents living in the house. Grandmother in charge of household affairs and actively involved in care of both children. Four years elementary schooling, grandfather called up for eight years military service in China and Burma and later employed as a skilled craft worker in a zaibatsu subsidiary retiring at 68 two years before his death. Married at 30.
<i>grandchild born 1960</i>	Born in 1960 into a nuclear family with grandparents living nearby. Grandmother was a significant adult during childhood following the birth of a younger brother. First family home was a utility house with collective sleeping, but by 1970 her had his own study-bedroom Eleven years school and three years at university. Career in a large Japanese multi-national. Married at 30 and has two children. Has travelled abroad on short holidays and on business

from the biographies of Japanese friends. In this hypothetical case a fifty year old born in 1960 at the start of the era of high speed growth has been raised in a nuclear family but with grandparents living in the neighbourhood who provided daily care during his childhood. He has spent all his adult life in a 'globalising world', has fourteen years of formal education, and travelled abroad both for holidays and on business. But the grandfather who exercised a strong influence on his developing values as a young child was born in 1910 into an extended family, had only four years formal education and a long working life as a skilled manual worker interrupted by several years of military service in the 1930's and 1940's. In turn, that grandparent was raised by a grandparent born into a wholly traditional rural *ie* extended household at a time when Japan was a closed country and all contact with foreigners was prohibited, receiving very basic formal

education in literacy in a temple-based '*terakoya*' school and growing up in a wholly native Japanese civilization.

The entire modern history of Japan is contained within the experiences associated with these three overlapping biographies, but in terms of the transmission of values of normative interpersonal behaviour, and standards related to home life such as the use of domestic space (see Chapter Four) there is actually only one intermediate 'face-to-face' generational link here:– the grandparents who contributed to "the pedagogic work which must last long enough to produce a durable training i.e. a *habitus*, the product of internalisation of the principles of a cultural arbitrary capable of perpetuating itself after pedagogic agency has ceased" (Bourdieu and Passeron 1977:31).

The dynamic of institutional time is made manifest through moments and stages in the collective biographies of many people. March and Olsen (2005:3) define institutions as being 'a relatively enduring collection of rules and organised practices, embedded in structures of meaning and resources and relatively resilient to the idiosyncratic expectations of individuals and changed factual circumstances.' Berger and Luckmann (1966:72) refer to the 'patterns and conventions of social order and cooperation governing the behaviour of a set of individuals' and they suggest that institutionalisation of relationships occurs whenever there is a 'reciprocal typification of habitualised actions by types of actors' and that 'any such typification is an institution'. So the very essence and definition of both informal and formal institutions is that they are amongst the most enduring features of social organisation. In theory any institution mutates only slowly, and 'an institutional world is experienced as an objective reality ... it has a history that antedates the individual's birth and is not accessible to his individual recollection'. But the authors also point out that 'however massive [the objectivity] of the institutional world may appear to the individual ... it requires legitimation' to establish a permanence transcending social life and enforce cooperative rules of human behaviour. (Berger and Luckmann, 1966:77-78).



Fig.2.7: Carrying the O-mikoshi (shrine box) in Chiba's streets is a recently invented 'tradition' but the form of the practice is transmitted from rural village via parents and grandparents

These two definitions, one taken from political science and one from sociology, are surely primarily what Giddens (1984:35) has in mind when he refers to the 'apparently reversible time' of the supra-individual '*longue durée* of institutions'. In this sense the practical relationship between 'institutional time' and 'biographical time' is clear. Institutional time is reflected in the biographical time of everyone to differing degrees.

In the context of the processes at work within Japanese urban space what is the relationship between institutions and culture, and institutions and organisations? This seems less explicitly addressed in social theory. Eisenstadt observes that "most Western scholars seem to have difficulty understanding the basic cultural and institutional features of modernity as it developed in Japan, especially its status as a highly controlled yet non-totalitarian, indeed formally and to some extent actually democratic society". David Pollack considers long term cultural and political influences on the emergence of Japanese institutions in his work *Fracture of Meaning* (1984); summarising his arguments Arnason (1993) suggests that 'his thesis is that the fusion of the Chinese cultural model with the Japanese tradition took the form of a:

“fracture of meaning” ... a dialectic, in the ongoing synthesis of whose terms – the fullness, implicitness and ineffability of native Japanese content on the one hand, the emptiness, the explicitness and the power to signify of alien Chinese form on the other – can be read ... the history of Japan itself’.

Examples of the role played by expanding urban space in the transformation of some characteristically Japanese institutions is considered later, but I want here to emphasise the extent to which the State has so comprehensively and directly been involved in a leadership role in the development of both Japan’s political economy and urban environment. The practical danger to Japanese autonomy represented by Western colonialism was perceived as being so extreme throughout the Meiji Emperor’s reign that by the 1880’s the principal national ‘project’ was being characterised by the term *fukoku kyōhei* – ‘wealthy nation and a strong army’ and there was already a transformation in progress of the institutions of governance of previous Tokugawa administration in a search for long term security in a global context (Gluck 1985:18). Sheldon Garon (1997) describes how the authority and influence of the institutions of state have been used subsequently by public officials and agencies to exercise moral suasion and define social orthodoxy and heterodoxy, and ensure public acceptance of a wide range of policies and ideas. The role of the State is still absolutely central in directing economic strategy. Fujita Kuniko for example suggests that “those who argue that the power and technological advantage of multinational corporations are producing a borderless economy are only partially correct” and that “financial architecture modelled after that of the US clashes with east Asia’s financial systems” (2000:2198). In her view the crucial institution in Japan’s State-centred Financial System is the Ministry of Finance, and not the stock market.

The massive expansion and significance of organisations as a category, and the ways in which they are themselves reproduced, is not considered in any depth by Giddens (1984:199-200). He does make a useful distinction between ‘associations’, ‘organisations’ and ‘social movements’ suggesting that what distinguishes the former is the role of tradition in legitimation and the latter two the more pervasive ‘reflexive regulation of the conditions of system reproduction’. Japan is often characterised as having apparently

powerful public organisations but a rather weak 'civil society' (Garon 2003, Barshay 2003). Pekkanen (2000:77) suggests that in terms of formal registration of NGOs "Japan has managed its civil society organisations with one of the most severe regulatory environments in the developed world [where] ... such groups can acquire legal status only through the explicit permission of the competent bureaucratic authority". But other writers such as Yukata (2003:87) also point to the relative vigour of the much larger number of smaller 'voluntary associations' which enjoy limited legal status and protection but increasing influence within the community. Although in the past civil society was undoubtedly weak as a consequence of the pervasive power and vigilance of the state, today issues such as the demands of employers for overtime and a weak tradition of any male involvement in community issues before retirement are the limiting factors.

On the other hand the scale of influence of industrial and commercial organisations of all kinds within urban space has grown massively over the last sixty years. The state bureaucracy initially either directly facilitated much of this change (for example through provision of *kombinato* sites) or indirectly influenced the evolution of industrial organisation through MITI's classic era of 'administrative guidance' and control of investment. Since the deregulation of the 1980's this relationship has become more complex and most of the longstanding links between political and corporate power have been considerably transformed to reflect the changed context of the Japan's emergence as an economic superpower and the world-league status of major Japanese corporate interests. However practices such as *amakudari* – the tradition of senior government officials 'parachuted' on retirement to senior roles in business to cement relationships between state and other institutions (Tabb 1995:37) remain commonplace. The format of hybrid organisations usually reflects these relationships, with ministries playing a more direct role for example in university management and social housing strategy than in the United Kingdom.

To conclude this section I want to point to the way in which the three different dynamics of routine, biographical and institutional time discussed here frequently react on each other in processes of social reproduction to create often unpredictable and contradictory outcomes. Instances of this will be discussed in the substantive chapters to follow but

building on the process of 'driving a car' referred to earlier the history of trends in road safety offers a good example of this relationship. The main explosion in urban private car ownership in Japan, documented in Chapter Seven, came in the later years of the 'High Speed Growth' era. In 1961 only 1% of households owned a private car but by 1980 more than half had purchased one. The processes facilitating and regulating this change were institutional and included state involvement in 'grooming' manufacturers to meet market demand, revised fiscal and legislative strategies, highway building programmes and the promotion of licensing and safety. All these processes were taking place within the framework of 'institutional time'.

From a safety perspective however the fundamental problem was a lack of mature driving skills within the population, which can only develop within biographical time and be acquired through lived experience. To aggravate matters the first wave of new car owners were often older men with sufficient life savings to purchase cars but no longer at the optimum age to develop new practical 'motor' skills and reflexes. The predictable outcome of this was a sudden and massive increase in the number of road traffic accident injuries and fatalities, rising from 301 thousand in 1960 to 998 thousand in 1970. But by 1977 the number had been reduced to 602 thousand despite a further doubling in private car ownership. The reason for this dynamic is not hard to see. By the late 1970's a much larger proportion of (surviving!) drivers had developed those essential driving skills earlier in their biographies and had also built on and consolidated those skills by incorporating them into the rhythms of the 'routine time' of their daily lives over some years. The overall outcome – Japan as a society of mature road users - was a function of these three separate dynamics.

2.6 Process and the production of urban space

Many Western commentators on the processes of urban transformation emphasise the importance of capital sunk into the material environment as a form of spatial constraint and as a source of both continuity and inertia. Harvey for example observes that "Urbanization means the creation of relatively permanent resource systems ... Human effort is, as it were, incorporated into the land as fixed and immobile capital assets that

may last hundreds of years" (1985:64). Saussure proposed that "what predominates in all change is the persistence of the old substance; disregard for the past is only relative. That is why the principle of change is based on the principle of continuity" (1959:54 quoted in Sahlins 1985:153). Dodgshon in his recent text *Society in Time and Space: a Geographical Perspective on Change* argues that:

"The recurrent crises of capitalism ... occur precisely because investments in the built environment, once made, are irrecoverable. The whole debate about uneven development, Harvey's 'spatial fix' and issues like flexible accumulation can be seen as part of a debate to conceptualise the problem of constraint insofar as it concerns capital ... Of course to say that such structures are non-recursive is simply another way of saying that they have inertial properties, a tendency to resist easy change. In other words, any understanding of change must begin (with) a clearer understanding of the circumstances under which society does not change, either because it finds change difficult or positively resists it. (1998:15).

From a perspective of constraint an investment in any project and especially in the construction of fixed structures always involves risk; once assets are committed to the secondary circuit of capital they can seldom be recovered and there is never a guarantee of return. In a chapter examining *The Built Environment as a Source of Inertia*, Dodgshon considers what he later refers to as the "largely irreversible expenditure of choice" (1998:180). He points to the historical forms and processes which have emerged to minimise the risk of committing capital to fixed investments, including mechanisms such as ownership through negotiable shares in a joint stock companies, and capital accounting practices to write off the notional value of assets.

In his theorisation of the urban and the social construction of space Henri Lefebvre develops a vision from a rather different perspective of a socio-spatial dialectic in which social and economic relationships are constituted or mediated by space, an understanding of the nature of space as being simultaneously both process and product. Urban space is not simply a container for process but also comprises the processes of social reproduction.

Social relations of production have a social existence to the extent that they have a spatial existence; they project themselves into space, becoming inscribed there, and in the process producing that space itself (1991:129).

Edward Soja draws attention to this dimension to Lefebvre's thinking when he observes:

The key notion introduced by Lefebvre ... suggests the fundamental premise of the socio-spatial dialectic: that social and spatial relationships are dialectically inter-reactive, inter-dependent; that social relations of production are both space-forming and space-contingent (insofar as we maintain a view of organized space as socially constructed (1980:211).

It might be argued that the relationship between investment in produced space as constraint, and constitutive or mediating space is in itself dialectical. Lefebvre refers to an essential aspect of this in his 1979 essay *Space: Social Product and Use Value*:

The past has left its marks, its inscriptions, ***but space is always a present space, a current totality, with its links and connections to action.*** In fact the production and product are inseparable sides of one process. (Lefebvre 2009:186, *my emphasis*).

Space is always a 'present space' and the product of spatiotemporal process of production acting here and now, and within the dynamics of routine, biographical and institutional time considered in the previous section. Value is manifested only through use; there is no option, within any present mode of production, within which investment in either means of production or the secondary circuit of capital is avoided. Past investment in the material environment may or may not create present value but decisions determining new investment and new forms and further cycles of spatial 'sedimentation' are always in process. This is evident in the emergence of urban space. Most of the examples of new investment in the built environment recorded in this study first took place on vacant or recycled sites located within or adjacent to matrices of existing development - spaces which offered an opening and opportunity for yet another new paradigm, an alternative that was an occasion for incorporating new forms. Contemporary social space is profoundly processual and endures only to the extent that its purpose persists, and at the same time incorporates what has gone before.

There are sometimes striking contrasts between processes of production of built forms of urban space at work in Japanese and European cities. A consequence of this can be that some of the familiar discourses of Anglo-American critical urban studies, and the underlying assumptions made relating to the material environment, appear to have limited relevance to urban renewal in Japan. One good example of this is the process of 'gentrification'. Gentrification is not a common phenomenon in Japanese urban space; it does sometimes occur, the *roji* of Sendagi-*cho* north of Tokyo University are a good example, (and also see Jonas 2007) but it is unusual. Older European inner urban areas contain many buildings that can be refurbished to get further use from the capital and aesthetic value represented by brick and masonry structures, but in Japan incendiary bombing erased most earlier generations of inner city dwellings (Chapter Six), and redundant life-expired timber dwellings and commercial buildings are usually perceived as a liability because they are often of poor quality and will incur site clearance costs. There is little evidence across Kanto of the 'emancipatory city thesis' pointed to by Loretta Lees, no space being produced and reproduced as a "site of social, political and economic struggle" (2000:393). In Japan's cities (see Chapter Eight) there is also little evidence of Neil Smith's (1986) vision of a revanchist process of gentrification resulting in "spatialised revenge against the poor and minorities who 'stole' the inner city from the 'respectable classes'" (Lees 2000:296). Although there are localities associated historically with both Korean communities (Ryang 2005) and Burakumin (Neary 2009) conflicts between race and gentrification (Schaffer and Smith 1986) are also not a part of common experience in Japanese urban space, which is only exceptionally differentiated on racial or class lines.

However the limited relevance of 'gentrification' as a discourse concerned with 'improvement' of property for professional households through recycling and refurbishing historical structures does not imply that comparable urban redevelopment processes are not at work. It could be argued that the equivalent underlying processes at work in Kanto are those promoting the recycling central urban space to provide quality accommodation for higher income households by other means. In Japan city centre dwelling is a very popular lifestyle but demand is met not by individual property developers upgrading existing structures but by large consortia assembling sites in inner city neighbourhoods

and redeveloping them with condominium projects (see for example Cybriwsky (2005) for a description of this process at work in the Shioiri area of Tokyo).

During the fieldwork involved in completing the Sample Point Survey 76 sampled locations (1.7% of the total sample) were recorded as 'construction sites' - as spaces in transition either from one mode of use to another or under redevelopment for the same use (typically new retailing or housing). While there is a vast literature on construction site practice from the practical perspective of architectural and civil engineering project management (see for example Langford and Murray 2004, Sears 2008, there is much less theorisation of the spatiotemporal relationship between the physical processes of construction and urban space. This apparent lacuna will not be pursued in detail, although a space of construction might be considered both heterotropic and heterochronic (Foucault 1986:26, Soja 1996:160). The actual transition from one mode of use to another - the 'qualitative change by substitution' identified in Fig. 2.4 - is in itself a unique and delimited process, a unique class of spatiotemporal practice in which a transformation is taking place hidden from view. The contractual arrangement is also



Fig.2.8: Watch this space for "Be-Land" – but not yet! Qualitative change by substitution usually takes place in heavily screened and guarded spaces. Condominium project in Hanamigawa-ku.

seldom directly made between the eventual users of the proposed space and the construction teams, and exceptional forms of control of and restriction of access to space are exercised beyond evident need for physical safety. In Japan this appears to have a strong cultural component to it. Special arrangements are even made to visually screen work in progress on large projects, and structures even several storeys high will be covered by green cloth to avoid offence and 'minimise visual intrusion'.

Another topic which is an apparent lacuna in research dealing with the social production of space is the spatiotemporal relationship between newly produced urban space and the recirculation or abandonment of existing spatial formations elsewhere. For example new dwellings in Chiba-*shi* have often been constructed to provide homes for migrants into the area, but the relationship between a new public housing apartment in Mihama-*ku* or and the abandonment of a cottage in Tohoku, or the demolition of *nagaya* slums to develop office space in Setagaya-*ku* in Tokyo, is never traced in detail. This link may still be partly identifiable from instances recoverable within public records. Viewed from the perspective of process the construction and recirculation as aspects of a single spatiotemporal process the relocation of one household.. This is a topic that might deserve more theoretical attention as it must have been as much a feature of 1970's Paris as it was of contemporary southern Kanto.

To what degree is it possible to point to parallels between the history of the emergence of European and Japanese urban space? I have not attempted to draw any detailed formal comparisons within the substantive chapters but to offer one example it is interesting to consider how the evolution of Japanese cities compares with the stages in the history of the emergence of Western urban space sketched by Henri Lefebvre in 'Production of Space'. Smith (1978) points to an early recognition in Japanese civilisation of the city as sacred space, initially in the form of the *city as mediation* based on paradigms borrowed from Tang China and later in the form of the *city as process* based on two interrelated ideas, the affirming Shinto concept of cyclical renewal and the negating Buddhist idea of impermanence (*mujō*) (see also Nelson 1996). However the actual structural forms and plan layouts associated with both of these are in complete contrast to their European counterparts, most especially as in Japan key public buildings

and sacred spaces are not located at the centre of urban plans. Temples and shrines are not typically a feature of the urban core but of the margins. The concrete forms of what might be debatably correlated to Lefebvre's city as historical space are also dissimilar. Eisenstadt (1995:175-83) suggests that the key differences are a consequence of the very different role exercised by political power. With the accession of the Tokugawa shogunate in 1603 one administrative 'castle town' or *jōkamachi* within each feudal domain became the primary focus for the development of new urbanisation and the status of merchants and the role played by commercial activity was quite different compared with both Europe and China. This was reflected in the detail of the built form (for example there is no equivalent of the central market place or town walls).



Fig.2.9: Contemporary abstract urban environment conceived as a 'space of representation'. Technology research and development centre built on marine landfill at Keihan-Makuhari.

Because of the much later industrialisation and development of manufacturing the emergence of the city as abstract space in Japan also followed a quite distinctive trajectory and many cities have never expanded to accommodate factory production on the kind of scale that became familiar in Europe and North America in the nineteenth century. In the suburbs of cities such as Tokyo and Osaka residential forms based on 'Western-style' formats of owner occupation such as small detached villas emerged in the

early twentieth century, with dense but low-rise rented tenements in the form of *nagaya* serving as the equivalent of Victorian terraced working class housing. However in smaller towns such as Chiba-*machi* former rural landlords continued to sub-divide parcels of former farm land and gardens to provide rented dwellings down '*roji*' alleys.

One very characteristic aspect of Japanese urban development in coastal areas has been the literal 'production' of space which took place by infill of tidal flats and shallow sea areas. Around the coasts of Japan at least 800km² of new urban space was created in this way (see Chapter Seven). These areas were conceived by bureaucrats and planners entirely as 'representations of space' in which title would initially rest solely with the state. They constitute a kind of 'colonisation' of the natural spaces of the sea created to provide a unique kind of spatial fix for corporate Japan by offering locations for subsidised industrial sites and social housing and also for prestige urban projects such as Keihin-Makuhari. In a sense these projects provided a kind of substitution for vanished colonial opportunity and especially Manchukuo. Many of the key players involved in the detailed economic and urban planning of these schemes within MITI⁵, the Ministry of Construction and JHC⁶ were the very same people who had been previously employed in similar roles on New Town projects in northern China in the 1930's.

2.7 The context of Regulation Theory

In later chapters I want to introduce aspects of Regulation Theory (RT) as one context for considering transformations in the material form of the built environment of Chiba-*shi*. This will primarily be in the context of comparing the framework of periodisation commonly employed in discourses which explore contrasts between European and North American regimes of accumulation with studies of Japan's political economy. Here I want to introduce some broader aspects of Regulation Theory with this purpose in mind.

Harvey suggests that:

⁵ Ministry of International Trade and Industry

⁶ Japan Housing Corporation - *Nihon Jūtaku Kodan*

The virtue of Regulation School thinking is that it insists we look at the total package of arrangements and relations that contribute to the stabilization of output growth and aggregate distribution of income and consumption in a particular historical period and place (1990:123).

Lipietz (1987) explains that the 'Regulation Approach' began to emerge in the mid 1970s in the aftermath of the crisis of Fordism, when Michel Aglietta began to question not just the simply causes of crisis but rather what had prevented such a crisis occurring before. This led to the concept of a *regime of accumulation* which Lipietz defined as an period of stability or growth which represents:

... a way of dividing and systematically reallocating the social product. Over an extended period of time there is a certain convergence between the transformations of production (amount of capital invested, distribution among the branches, norms of production) and transformations in the conditions of final consumption (habits of consumption of wage earners and other social groups, collective expenditure (1988:31).

According to Regulation Theory a regime of accumulation can emerge and persist in a binary association with a *mode of regulation* which MacLeod (1997:532) describes as:

Materializing as social norms, habits, conventions, customs laws, governing networks, state policies, consumption norms and so on, the mode of regulation ensures the unity, regularization and normalization of the accumulation process: in other words the "approximate consistency of individual behaviour with the schema of reproduction" (final quotation from Lipietz 1986:19).

Although the relationship between a particular regime of accumulation and mode of regulation may stabilise for some time is ultimately transient and will end in crisis in which the mode of regulation is no longer effective. Goodwin and Painter (1997:639) argue that it can't be assumed that one mode of regulation will quickly replace another, and that periods of limited regulation or regulatory failure may be as common as periods during which an effective mode of regulation exists.

Initially within regulation theory the nation state was presented as a key level of governance at which the mode of regulation is determined, and some of the most

significant work to create an analytical interface between the state and regulation theory was written by Jessop (1990, 1997). In comparative terms Tickell and Peck (1992:202, Table 3) for example present an analysis by nation state for Europe and North America of characteristic binary relationships between accumulation systems and modes of social regulation under Fordism. However the importance of spatial regulatory forms operating at levels other than the nation state has become increasingly emphasised (Peck and Tickell, 1995; Jones, 1997).

Painter and Goodwin (1995:340) point out that the concept of a 'mode' of regulation is "often understood as implying a completed system rather than one in the process of formation" and that the concept "overemphasizes the functionality, stability and coherence of regulatory relations and underemphasises change, conflict and development during their period of operation". They argue that:

We view regulation as a process, rather than as a series of different 'modes' ... A regulation theory that treats regulation as process is able to deal rather more subtly with temporal and spatial variability. Since regulatory processes are the product of social practices, they must be understood in relation to the concrete contexts of practice. As concrete phenomena with specific histories and geographies, practices must be understood as intrinsically unevenly developed. In other words the geography of regulation is not an optional extra or final complicating factor. On the contrary, the process of regulation is *constituted* geographically (1995:342, original emphasis).

My primary main object of study later chapters is the evolution of the material urban environment, and so my interest here is not to engage with a regulationist approach in detail but to consider the periodisation developed in European and North American scholarship in the context of Japanese experience.

Table 2.3 reproduces an overview of periodisation presented in Tickell and Peck (1992). Until 1914 an extensive accumulation system based expansion of capitalist relations into new industrial sectors and new countries. However from 1918 rapidly increasing productivity increasing real wages and growing consumer spending created mass

	<i>to 1914</i>	<i>1918-1939</i>	<i>1945-1973</i>	<i>1974-present</i>
<i>Accumulation System</i>	Extensive	Emerging Intensive	Intensive (Fordist)	Emerging Flexible? Protracted crisis
<i>Mode of Social regulation</i>	Competitive	Crisis of competitive	Monopolistic (Fordist- Keynesian mode)	Crisis of monopolistic Emerging neo-competitive? Neo-conservative? Neo-corporatist?
<i>Source: Adapted from Tickell and Peck (199:194)</i>				

markets for consumer goods. Japan in both of these periods still had an economy in which agricultural production dominated, initially supplemented by a textile industry crucial to achieving sufficient foreign earnings to purchase technology and military equipment. As Japan began to expand into steel and heavy engineering after 1910 the economy began to move towards an increasingly 'intensive' mode of regulation' based on Taylorist principles of production, with manufacturing dominated by *zaibatsu* combines. However the correspondence with the experience of 'Western' economies was only partial and the mode of regulation was increasingly determined by the expanding militarised state that emerged after 1930. There was little focus on development of consumer markets; the regime became wholly concerned with military and infrastructure investments.

Japan's immediate post war economy was overseen by the United States but from 1948 a growth regime began to emerge based on state centred developmental capitalism. It relied on a mode of regulation characterised by the strong and direct involvement of the state exercised through bureaucratic controls and especially through access to development capital and foreign currency reserves to purchase access to new technologies. The evolution of the institutions that emerged at this time has been extensively and graphically described by the American scholar Chalmers Johnson (1982, 1994). Although a product of the Bretton Woods System and in some respects comparable with Fordism, the Japanese regime, which functioned from 1950 until the financial crises of 1990, is often referred to as the 'Toyotaist' (or 'Toyotist') Regime of Accumulation. The functioning of this regime influences many of the transformations

within the Japanese urban environment described here in Chapters Six through Eight. Fujita (2003:251-252) describes it in the following terms:

Japan's economy had no liberal tradition to speak of. State bureaucrats initiated Japanese capitalism by establishing manufacturing industries to achieve state goals of national development. Manufacturing corporations functioned to help the State reach its goals. Whereas Fordism regulated market competition for sustainable economic growth and social stability, Toyotism regulated economic growth for national development and social cohesion. Whereas Fordism balanced political interests between capital and labour through legislative support for trade unionism and the establishment of the welfare state, Toyotism balanced political interests between labour and capital by relying on welfare corporatism and a social capital investment state.

One key characteristic of Toyotism was the importance of the early emergence of the *keiretsu* – the extensive 'interlocking' corporate groups that so clearly and closely resembled the pre-war *zaibatsu* that the Americans had tried so hard to abolish. Perhaps the most important distinction between the two is that in *zaibatsu* integration was 'vertical' and associated with holding companies⁷ whilst in *keiretsu* the integration is 'horizontal' and associated with one central bank⁸ (Aoki and Patrick, 1994; Miyashita and Russell 1995). Whether they are 'horizontal' or 'vertical' structures, Gerlach (1997) accurately refers to such groupings as representing 'Alliance Capitalism'. The relationship with a single bank for capital requirements and the complex cross-holdings of share capital make member companies invulnerable to takeovers, and leaves priorities and strategies in the hands of senior management and not shareholders. Dividends are low and profit is typically taken in terms of growing asset values. Historically this has resulted in high investment in plant, training and R&D, long term product development and business planning and the evolution of sophisticated quality management and of 'just-in-time' manufacturing with low inventories and lean production planning. The role of the state has been not only to direct national priorities and strategies but to move investment into the 'second circle of capital', initially through public investment in infrastructure but increasingly through urban and regional development and encouraging private

⁷ Toyota group is in this respect at least still a *'zaibatsu'*

⁸ As an example the Mizuho Group based around Mizuho Bank which comprises Canon, Hitachi, Marubeni, Matsuya, Nissan, Ricoh, the Tobu Railway and Yamaha

participation in public projects through legislation such as the 1986 *Minkatsu* Law (Saito 2003a, 2003b).

Sakakibara (1998) suggests that the regulatory crisis that occurred between 1992 and 1995 after the collapse of urban land and stock market prices was triggered by the eventual politicisation of the government bureaucracy, and its links with the Liberal Democratic Party, which were so pervasive that public officials could no longer coordinate any independent policy. The globalisation of neoliberal values accelerated this structural crisis and debatably progression towards a Post-Toyotaist regime of accumulation. However while international pressure for liberalisation had some impact on legislation and began to unravel parts of the developmental state policy network, Fujita (2003:253) suggests that "old LDP policy makers, some state agencies and the corporate sector prevented policy implementation".

After a brief interlude in 1993 when the LDP lost overall political control in the Japanese Diet, a political and bureaucratic reform restructured ministries and gave more power to the Prime Minister's office to act as arbiter of strategy and broker of power. In the Neo-Toyotaist regime of accumulation that appears to have begun to emerge by 1995 there is much more focus on investment in advanced scientific research and the development of new manufacturing technologies, rather than primarily on production process engineering. This has led to a corresponding shift in both mass volume and high value production to sites in China and elsewhere in East Asia. Corporate welfare systems still play an important part in this new regulatory system but often now associated with new and smaller companies. Public investment has also been increasingly concerned with high technology projects and partnerships (for example optical fibres and advanced transit manufacture). In addition to *keiretsu* banking, business capital is now partly sourced from bond and equity markets (for a detailed summary of changes between Toyotaist and Neo-Toyotaist regulatory systems see Fujita, (2003:256, Table 1).

Chapter Three

Methodology

Reading a city with one's feet

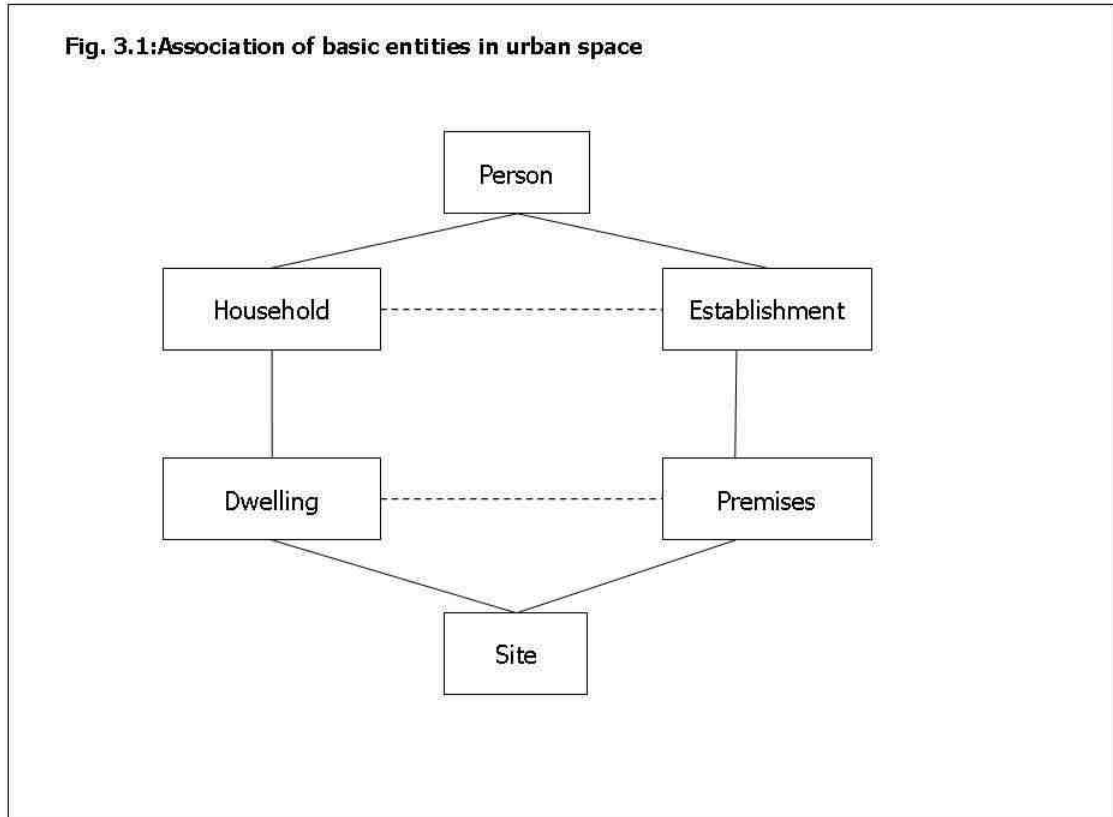
Richard Bender¹

3.1 Introduction

In Chapter One I wrote that I intended to approach my research question “what is transient and what endures within Japanese urban space” by adopting the evolving physical characteristics of the built environment and the changing relationships between its component parts as a primary object of study. I also intend as far as practicable to focus on process, to use the research question as a tool to examine what changing material urban forms reveal about the underlying trajectory of social transformations. In this chapter I want to build on these two propositions and outline the research strategy, methodology and plan of study that has been used to structure and implement the substantive research that will be presented in subsequent chapters.

What kind of conceptual context or model is required to approach this topic, and what kind of outcome can be anticipated? The way in which the question is expressed – “*what is transient and what endures ...*” might already suggest that a formal answer is likely to primarily involve classification rather than an attempt to identify predictive or causal mechanisms. Perhaps the first step is to determine what aspects of the form and use of urban space fall into each of these two opposing categories, ‘transient’ and ‘enduring’, and the second is then to try and identify what items within each of the categories might share in common. What finally might the evidence of this review then reveal about the underlying processes of social change? In the concluding chapter of the thesis I will return to this latter question, and suggest a range of possible causal factors that may lead to at least some characteristics of urban space enduring more than others.

¹ Quoted from the Foreword to Jinnai 1995. vii



3.2 An entity model of urban space.

Figure 3.1 introduces six entities which I plan to adopt as conceptual building blocks to articulate some fundamental relationships between physical urban space and its occupation and function. I employ the term entity to describe these, using it in the sense in which it might be defined in conceptual data modeling as ***'bundles of objects or processes distinguished by shared attributes that are functionally associated as a particular and discrete set'***². The diagram represents a simplified data model, as it includes only those entities directly concerned with associating residential occupancy and economic and institutional functions with volumes of built space. Others equally important in maintaining overall urban form and function, such as infrastructure, are omitted, as are spaces without structures such as vacant lots and parks. In later chapters I will consider all forms urban space; here I want to initially focus on these six as a starting point for adopting a methodology and research design because these most basic

² My definition, but based on Simson (2007)

and durable aspects of the function and content of urban space are those likely to be most directly implicated in the ways in which such space is reproduced and occupied.

The outline of this model is straightforward, and most of the terms employed are familiar and take their natural everyday meaning. The left hand side of the diagram is concerned with residential occupancy – what Blunt and Dowling (2006:88) refer to as ‘house-as-home’ – how the “normative notion, or ideal of home, is materialized in the form of dwelling structures”. One or more people comprise membership of a household, which in official Japanese published statistics is defined as *a number of people living together and sharing living expenses*. ‘Household’ has emerged as a central term in this text. The formal definition of ‘household’ employed within the Population Census of Japan is presented in Table 3.1 and some of the key processes and functions associated with households are presented in Table 3.2.

Table 3.1: Definition of households in the Japanese Census of Population

A private household comprises

1. A group of people (might include live-in employees or servants) living together sharing a dwelling and living expenses
2. A person living by themselves in a dwelling
3. A person occupying space in a boarding house or in the same dwelling as another household but keeping a separate budget
4. A person living in accommodation for single employees

An institutional household comprises

5. Students in halls of residence (in Japan primarily overseas students)
6. Long term hospital patients (3+ months)
7. Residential homes for the elderly
8. Self Defence Force camps
9. Prisons and reformatories
10. A person with no identifiable dwelling

Before the 1985 Population Census 1 and 2 were counted as ‘Ordinary Households and 3 to 10 as ‘Quasi-households’. This is a significant shift in definition as single employees living in company provided hostel accommodation are now difficult to independently assess

A household often, but not necessarily, comprises one or more generations of members of a biologically related family. In fact the *modal* category of household in Chiba-*shi* for the past ten years has been a *one* person or ‘solitary’ household. Individual households are spatiotemporal and dynamic processual sets definable in terms of the bundle of processes that they relate to. A characteristic set is presented in Fig. 3.2 They also have

a changing membership and attributes (Laslett 1972). The categorisation of household types by membership currently employed in the Population Census of Japan is summarised in Table 3.3. An individual household will migrate between categories over time. For example if a single man marries, the couple then has children and subsequently his widowed mother comes to live in their home then that household will have moved from category III → I.A.1 → I.A.2 → I.B.2. The cumulative aggregated impact of such changes is continually transforming the requirement for residential space in cities.

Table 3.2: Processes and characteristics associated with households

1. Acquiring food and preparing meals
2. Providing of a secure sleeping place for household members
3. Maintaining personal hygiene and doing laundry
4. Maintaining a common budget to cover expenses
5. Collective use of chattels and common possessions and resources
6. Maintaining a setting offering privacy and front and back space
7. Maintaining a secure context for biological reproduction
8. Providing an environment to enable child nurture and socialisation
9. Providing the security of a mediating group as a bridge to a wider social world

Table 3.3: Household membership categories used in the 2005 Population Census

I. Relatives Households

A) Nuclear Families

1. Married couple
2. Married couple and their child(ren)
3. Father and his children
4. Mother and her children

B) Extended and Multiple Family Households

1. Married couple with their parent(s)
2. Couple with their child(ren) and parent(s)
3. Couple with relatives other than children and parents
4. Couple with child(ren) and relative(s) other than parents
5. Couple with parent(s) and relative(s) other than children
6. Couple with child(ren), parent(s) and other relative(s)
7. Other relatives households not described elsewhere

II. Households not consisting of relatives

III. Single Person Households

For an extended historical perspective on categories see Haslett (1972:31)

A household is associated with a dwelling which is a typically a building being *used as a place to live in*. In this context 'dwelling' must also be considered as process – it is not

just a structure but spatiotemporal - a 'structure-functioning-as-home'. Dwellings give household processes spatial location and expression and so they will reflect changes in household form and function. Commonly one household is associated with a single dwelling which in the modern city is a house or apartment. However it could be linked with multiple dwellings (second home ownership), or might (for example in the decade after World War Two) involve households sharing one dwelling or using temporary or alternative structures as a dwelling). A building used as a dwelling must be located on a physical site which I define as *a delimited area of land available for the erection of a structure*. The relationship between site and dwelling may also be 'one to many', for example the site of a condominium block with several storeys.

The right hand side of Fig. 3.1 is concerned with economic and institutional relationships. There is no one single term that really satisfactorily describes all economic and social organisations and institutions but I have used establishment here which is the word employed in the Japanese Establishment and Enterprise Census and which I define in the context of this study as *an operational unit of social organisation existing to pursue an economic, institutional or social function*. That purpose might be to operate as an enterprise involved in manufacturing or commerce or to provide services, or as an institution serving an educational or medical purpose, or functioning as an agency of government. The definition of establishment used in official published statistics in Japan is presented in Table 3.4.

Table 3.4: Japanese Establishment and Enterprise Survey

Definition of Establishment

An establishment is defined as a single physical location where an economic activity is conducted and, as a general rule, the following prerequisites are satisfied:

- ① An economic activity is carried out under a single entity of management, at a certain fixed place, occupying a demarcated area
- ② The production or supply of goods and services is done on a continuing basis with the help of people and equipment

Establishment with dispatched or subcontracted employees only

This is an establishment with agency or subcontracted employees from other organizations but without any "persons engaged" by the establishment. Since the 2001 Census such businesses have been defined as "establishments"

Is it reasonable to refer to such a general category as 'establishments' as a single entity? Insofar as they share essentially similar forms of incorporation and functionality I think it is. Whatever their perceived goal or purpose may be, to make a profit by manufacturing tofu or repairing motorbikes, to educate teenagers or run a police agency, they share many common institutional and processual features such as status in law, relationships of ownership, and compliance with employment, accounting and taxation legislation. Organisations are structured with similar sets of routine processes. Relationships with establishments are also enumerated by the State within the same formal sets of industrial and employment classifications. Like households, establishments are also defined by the complex bundles of processes they comprise, sets with constantly transforming criteria, inputs and outputs, and membership.

In practice it is more difficult to quantify long term transformations within the establishment base of Japanese cities than it is within the household base. Consistent reporting of numbers and turnover by size and primary industrial group only began with the first Establishment Census in 1948 but published data below *ken* level is patchy and inconsistent until the 1960's. The Census does not include some public institutions (e.g. state run schools) which need to be integrated back into the data (insofar as they can be) from other sources. Information about ownership of enterprises and the relationship of local branches to larger incorporated enterprises is not explicit in *shi* level data. The basic problem here is not only confidentiality but also the relative complexity and instability of many enterprises in terms of ownership and function. They can be truly transient. Establishments are also elusive in field study; you can't assess from the factory gate the degree to which the place may be concerned with assembly line activity, the secondary warehousing of products produced elsewhere or simply sales and servicing. But perhaps the single biggest difficulty in talking about establishments collectively and also diachronically is that the only output metrics they have in common are the number, gender and employment status of employees in relationship with the site. There is no common measure of output between a timber import yard, an integrated circuit factory and an elementary school. All that the many forms of establishment share in common as processes are requirements for people and a location.

The relationship between individual and enterprise may be one of several kinds – proprietor, employee, student, patient, full-time or part-time. An enterprise is normally carried on within premises which I define as any *building or group of buildings or site used by an establishment to carry out its functions*. As with dwellings premises are also processual – ‘buildings functioning as a business location’. If the enterprise fails, the building is no longer business premises, it is a vacant building shell available for purchase or leasing for further use as premises. Premises must of course be located on, or correspond to, a site, even if it is only a chair and a desk. Some enterprise sites (e.g. contract parking, horticulture) do not require built premises.

The dotted line linkages shown in Fig. 3.1 between household and enterprise and dwelling and premises are a reminder that the widespread physical separation of sites of economic activity from sites used for dwelling is a relatively recent transformation associated with intensive and subsequent modes of production. The trend appeared later in Japan than in many European societies and is a transformation arguably less complete. The role of the small merchant, craftsman and subcontractor is still important in the economy. Certainly the process and timing of the separation of household and enterprise, dwelling and business premises will be important to identify in the following chapters.

Some aspects of the wider relationship between household and enterprise appear to be a lacuna in respect of recent research into within regulation theory. So for example although issues like the relationship between mode of regulation and gender (McDowell, 1991) and ‘missing links’ in terms of mode of regulation and consumption (Tickell and Peck, 1992) have attracted interest, there appears to be little written on the relationship between household size, size of dwelling and mode of regulation although clearly changes in either of the former must deeply influence patterns of consumption.

3.3 Outline of research methodology and design

So far the entity relationships presented in Fig. 3.1 have been considered from the perspective of comparing the content of the left and right hand sides of the diagram, contrasting residential function with economic and institutional function, two sides of a single coin in terms of the ongoing production, occupancy and use of urban space. But I

now want to turn to the vertical dimension in this diagram, which relates human agency to site. I have already argued that although they involve possession of assets and resources, or the occupation of a structure, households, dwellings, enterprises and premises are in themselves dynamic processual entities. Their nature is spatiotemporal. They involve human and economic relationships and practices which are constantly reproduced and subject to transformation. Dwellings and premises generally require physical structures which serve as the 'built environment for production and consumption' (Harvey 1985:6) – the product of capital invested with long but finite life cycles, countable physical objects. These two – dwellings and premises – constitute in part the reality which I have noted Lefebvre referring to earlier when he comments that "social relations of production have a social existence to the extent that they have a spatial existence; they project themselves into space, becoming inscribed there, and in the process producing that space itself" (1991:129).

To develop a methodology to answer the research question "what is transient and what endures in Japanese urban space?" taking the material constructed form of the city as text this is the crucial relationship to pursue. Direct observation of transformation – a building being knocked down – is interesting but reveals little. What needs to be understood is how are transformations in household and economic functions being reflected in the record of change in the built environment at exactly this interface. And the requirement is for a methodology focused on identifying the important diachronic changes in urban space. The perspective of the study is phenomenological and it is primarily concerned with identifying empirical regularities (or changes) amongst phenomena over time, so the methodology adopted here will be concerned with the development of a retrospective longitudinal study to identify the nature, scale and taxonomy of change in the relationships between and within the principal entities identified in Fig. 3.1

Longitudinal studies are correlational research studies involving repeated observations of the same items over periods of time, and the process typically involves working with a formal random sample that can be considered representative of the whole object of study. In the Social Sciences the format often involves re-interviewing human subjects at

extended intervals, and may be based on revisiting a core set of questions. In the UK the British Household Panel Survey is a well known longitudinal study. In Japan the Keio Household Panel Survey is a similar exercise, but it has only been operational since 2004. Some of the key longitudinal data used to quantify change in metrics representing the six entities under consideration here must be selected from available published sources of summarised demographic and economic trends but transformations in the character of three of the key entities over time (dwellings, premises and sites) which are key to developing a processual and *spatio-temporal* perspective cannot be consistently quantified in this way. Much of the longitudinal data used here to evaluate transformations associated with these three entities has been obtained from a 'Sample Point Survey' designed to identify changes of function at each of a large number of spatial 'sample points' in Chiba-*shi* over time using field study and the examination of archive photographic images and maps and records. This work is explained in detail below in Sections 3.6 through 3.9.

As I have already briefly suggested in Chapter Two the research question also needs to be addressed on the basis of taxonomy; in other words it demands an answer which will be determined by classification. Which of two broad classes, two categories of processes and objects – the enduring and the transient – do elements influencing the social and physical reproduction of the urban environment fall into? This is not a logical "either/or", there is no absolute boundary between the two terms. As a general rule of thumb here an 'enduring form' will be considered here as one which at a minimum persists for longer than either a single human lifespan or sometimes alternatively for at least two familial generations.³ Although in the substantive chapters and in the conclusions in Chapter Ten I have pointed to several possible causes either for the tendency of practices and forms to prove durable or to be susceptible to transformation I have not adopted a methodology intended to attempt to formally establish causal inference or to determine direct causal relationships. In taking the whole urban form as a text there are clearly going to be an almost infinite range of interrelated causal factors at work in determining the probability of particular patterns of change happening.

³ Length of familial generation will be here defined as the average time which elapses between the birth a woman's first child and her daughter's first child. In Japan this is currently 28.5 years. A century ago it was 23 years.

There were several possible ways in which the research question could have been expressed as a formal hypothesis and one which I seriously considered was to take the 'left-right' contrast in Fig 3.1 and express it as a proposition along the lines of *Processes which determine the properties and use of dwelling space in Chiba-shi are more durable than those determining the production of other elements of the urban environment*. This proposition is certainly likely to have held true from around 1900 until the emergence of condominium housing in the late 1970's but now may be more debatable. In the end I did not adopt this approach because it wasn't consistent with the way in which I have chosen to structure Chapters Five to Nine, nor did I feel that it facilitated any deeper understanding of the topic.

The structure of the retrospective longitudinal study developed uses the three primary logical dimensions outlined in Table 3.5. The evolution of Chiba-*shi* is presented here mainly in terms of the changes which took place within seven time periods that will be described in Section 3.4. The area to be considered is delimited in three ways – the area contained within contemporary administrative boundaries, re-aggregated data for the administrative areas at the end of each period (for example 1920 data vs. 1891 data aggregated to later 1920 boundaries) and the changing area of 'Densely Inhabited Districts' defined on the basis of population density. These are reviewed in Section 3.5. The final analytical dimension consists of the six entities discussed earlier. The principal metrics used to identify the transformation of these over time are identified in Table 3.15, following an outline of the design of the Sample Point Survey which is intended as the vehicle to provide a number of these measures. This methodology is presented here as a formal framework of enquiry but, as sketched in the 'Prologue', immersion in the quality of the experience of walking the city is also at the heart of this study.

3.4 Periodisation of study

My first intention in planning this study was to focus only the period between 1960 and 2005 based on the assumption that almost all the present surviving built environment

Table 3.5: Main logical dimensions of research design and primary resources

A. Time periodisation

1. Consideration of changes occurring within seven defined periods

B. Area examined

1. Evolving administrative area of the city
2. Direct comparisons within periods by re-aggregating data where possible
3. Field studies focus on expanding area of the Densely Inhabited District

C. Entities examined

1. Population Characteristics (census, yearbooks, residence registers)
2. Household Characteristics (census, yearbooks)
3. Establishment/Employment Characteristics (Establishment and Population Census)
4. Dwellings (Housing Survey, Sample Point Survey)
5. Premises (Establishment Census, Sample Point Survey)
6. Sites (Sample Point Survey)

was the product of these years. Not only was this assumption wrong, but it also became apparent as the study progressed that the layout and character of the modern *shi* had been strongly influenced by earlier phases and patterns of urbanisation dating back into the nineteenth century. The scope was amended to examine the main trends and developments of this earlier period albeit using different documentary resources (the first Population Census of Japan was not taken until October 1920) and different methods for assessing the size and character of the constructed area.

Table 3.6 sets out the seven periods adopted to evaluate change in progress within the urban environment and serve as a basis for structuring the following chapters. These are mainly defined by geopolitical events and economic trends. Although the boundaries

Table 3.6: Periodisation adopted in this research		
<i>Period</i>		<i>Key characteristics</i>
1	1868-1890	Import of 'Western' institutions and technologies. New centralised administrative structures.
2	1891-1920	Modernised state and colonial and industrial power still heavily dependent on imported technology and with a large and labour intensive agricultural sector
3	1920-1945	Increasingly isolated and militarised state with an economy on a war footing focused on colonial expansion and progressively drawn into direct military conflict
4	1945-1960	Post-war recovery. A developing role as a crucial – but demilitarised - US ally in the Cold War fosters a special relationship between the state and corporate enterprise.
5	1960-1975	High-speed industrial expansion and urban growth. Japan excels as a major beneficiary of the Bretton Woods system but at the expense of the environment
6	1975-1990	Emergence as a commercial giant and international economic superpower. A period of ever larger construction and engineering projects
7	1990-2005	Japan as a key player in globalizing institutions and markets. Urban development and real estate development become major areas of investment for corporate consortia.

of the periodisation may appear arbitrary, especially since World War II when each consists of a neat 15 year 'slot', they were in fact chosen with some care to correspond with significant changes in the course of Japanese economic history. In the early 1890's Chiba-*machi* was linked to the expanding national rail network and in 1920 the worst effects of the post 1914-18 War slump were experienced in Japan. In 1945 the centre of Chiba-*shi* was destroyed by bombing. 1960 was the first year in which double digit GNP growth was achieved in Japan, marking the beginning of the explosive decade of 'high speed growth'. 1974/5 was the fiscal year in which the impact of the global oil price shock led to a second massive restructuring of the post World War II period. 1990 was the year in which both Japanese stocks collapsed in value and the land speculation bubble burst, leading to a decade of stagnation. There is quinquennial population census data available for 1920, 1960, 1975, 1990 and 2005 and also limited data for 1947. The nearest available post-war Housing and Land Survey and Enterprise and Establishment Census Data used in association with this framework may differ by a year or two; the detail relevant to each chapter is made clear in the tables and text.

3.5 Delimitations of the area of Chiba-*shi*

In this text two independent delimitations of area are used to refer to Chiba-*shi* as an urban unit. To summarise and report trends in published data the administrative area of Chiba-*shi* and its predecessor administrative components are widely used. To collect and analyse information on urban form within the field the defined densely inhabited area is used as a basis for data collection. What is the distinction between these two and how have both changed within the timeframe used in this study?

The ***administrative area*** used is that delimited for functions of local government. The boundaries of this area have been frequently amended in three ways. The most significant has been through amalgamation; between 1873 and 1970 the *shi* has absorbed several surrounding rural administrative units. Details of these changes are summarised in Table 3.7. Also important has been the incorporation of new land created by dredge landfill projects which have added 20km² to the area of the city. Finally there have been some minor amendments to rationalise boundaries, often a consequence of

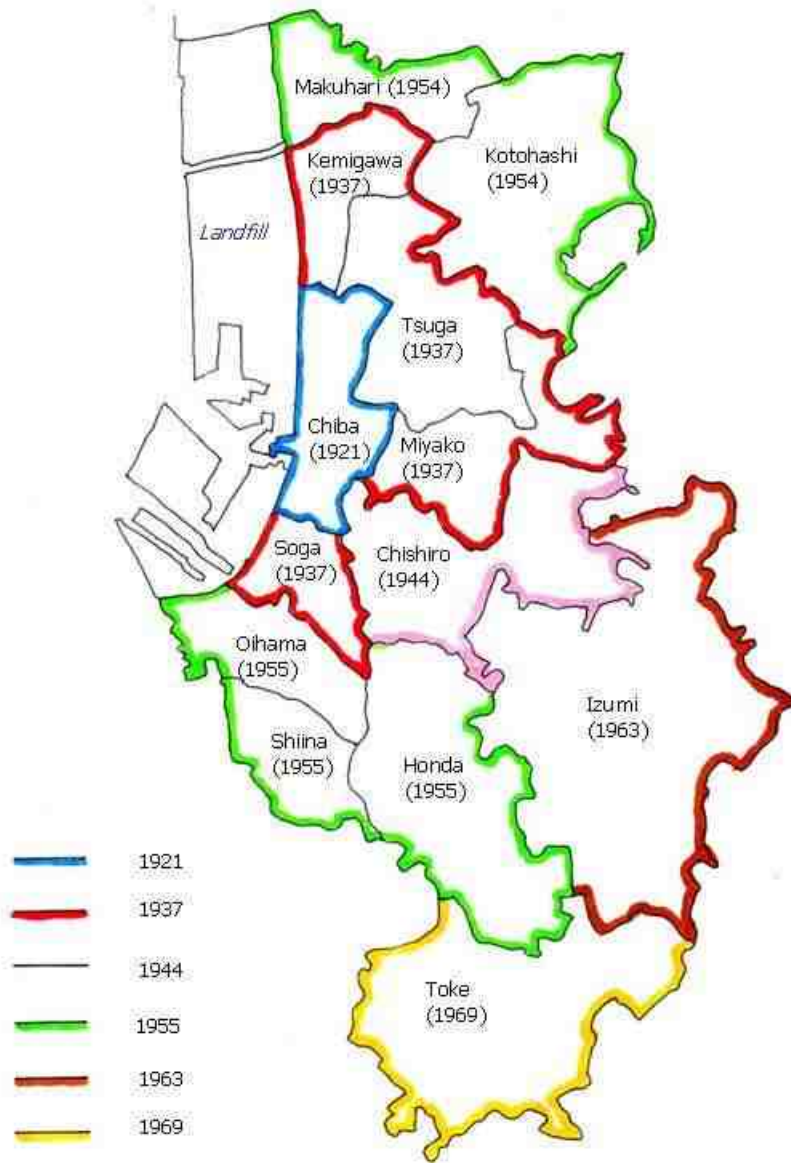
Area label	Definition	Area km ²
Chiba- <i>ken</i>	No major boundary adjustments to the Prefecture part from landfill additions took place after 1873	5079
Chiba- <i>gun</i>	The rural 'County' created in 1884 originally approximating to the extent of the modern city. After 1921 it was progressively absorbed into the city until it ceased to exist in 1963	270.1
Chiba- <i>machi</i>	The 1884 urbanised area consists of five former <i>machi</i> and <i>mura</i>	15.9
<i>Chiba-shi</i>	<i>used to refer to the contemporary urban area at the time being described in the text where this is clear from the context</i>	
Chiba- <i>shi</i> ^[1921]	The area is same as preceding Chiba- <i>machi</i>	15.9
Chiba- <i>shi</i> ^[1937]	Addition of five surrounding <i>machi</i> and <i>mura</i>	66.9
Chiba- <i>shi</i> ^[1944]	Addition of Chishirodai- <i>mura</i>	86.3
Chiba- <i>shi</i> ^[1955]	Addition of landfill and five more <i>machi</i> and <i>mura</i> (3 late in 1954)	158.8
Chiba- <i>shi</i> ^[1963]	Addition of Izumo- <i>mura</i> and further landfill	210.9
Chiba- <i>shi</i> ^[modern]	Addition of Toke- <i>machi</i> in 1970 and further landfill.	272.1

civil engineering projects such as land drainage and highway construction. An urban district of Chiba-*machi* was designated before 1873 but in 1884 this was enlarged during a general reform of local administration to demarcate an urban area of 15.9km² which remained unchanged until 1937. In 1921 this *machi* was designated as a *shi* reflecting its increasingly urbanised status, and in 1937 at a time when military and security planning strongly influenced boundary reforms the administrative area of the *shi* was enlarged to four times its previous area. Similar considerations promoted a further enlargement in 1944. The need for larger scale urban and infrastructure planning and increasing budgets for social provision led to three further enlargements of the city through amalgamation, in 1954/55 following the 1953 'Town and Village Merger Acceleration Law' and again in 1963 and 1970 since when the city has only expanded through the incorporation of further landfill along the shore of Tokyo Bay⁴. The process through which the area of Chiba-*shi*^[modern] has been consolidated is illustrated in Figure 3.2.

For simplicity and readability where the context is self-evident I have used the basic undifferentiated term 'Chiba-*shi*' in the text (or 'Chiba-*machi*' when writing about the pre-1921 city) as a label for the *contemporary* administrative area. But where necessary, and especially in tables, I have taken care to label clearly the exact area for which data is being presented. It is possible for consistency to aggregate data as far back as 1884 to

⁴ There was a proposal in 2004 to merge Chiba-*shi* with Narashino and Ichihara to create a city of nearly two million resident population but this was strongly opposed by local political interests.

Fig. 3.2: Expansion of the administrative area of Chiba-shi



closely conform to Chiba-*shi*^[modern] with only minor anomalies⁵ but the value of doing so in practice when considering change in the urban environment is limited because all that is achieved is to add large areas of a formerly wholly rural environment into the object of analysis. Wherever possible comparisons made in later chapters between data at the start and end of the periods defined in Table 3.6 compare the administrative area at the end of the period with the equivalent area at the start of the period (that is in 1920 as Chiba-*machi*, 1945 as Chiba-*shi*^[1944], 1960 as Chiba-*shi*^[1955] and for 1975, 1990 and 2005 as Chiba-*shi*^[modern]) – although of course the actual surface area may have incrementally expanded by the addition of new landfill within Tokyo Bay.

Data in *Chiba-ken tokei* [Chiba Prefecture Statistical Yearbook] editions published prior to 1897 is often only available on a Chiba-*ken* or Chiba-*gun* basis and use is made in Chapter Five of longitudinal comparisons involving this latter administrative unit (for the meanings of all these terms see Appendix Three). Until about 1910 trends and values for Chiba-*gun* would offer a close and reasonable approximation of contemporary trends in the area of Chiba-*shi*^[modern] which excludes five of the former Chiba-*gun machi* and *mura* but includes the large and very similar area of Toke-*machi* formerly in Sanbu-*gun*. After that date urbanisation and the location of large new military bases in Narashino and Tsudanuma invalidate this comparison. Other areas used are defined as required in the text.

The second type of delimited area central to the design of this study is the Densely Inhabited District (DID) – in Japanese *jinkō shūchū chiku*. Until the 1955 Census of Population the aggregation and presentation of census statistics for urban areas throughout Japan had been achieved by subtotalling report tables into “all *shi*” (all cities) and “all *gun*” (i.e. all *machi* and *mura* – the smaller towns and villages), but following the 1953 law referred to above many largely rural areas were appended to nearby cities and the *shi/gun* distinction lost most of the value it previously had. To overcome this reporting difficulty the concept of DID was introduced from the Ninth Population Census in 1960. The definition of a DID is given in Table 3.8.

⁵Exclusion of some *hatake* and *tanbo* make the actual modern area about 0.8 km² smaller than the sum of its historical constituents but this only omitted about 120 households in 1969

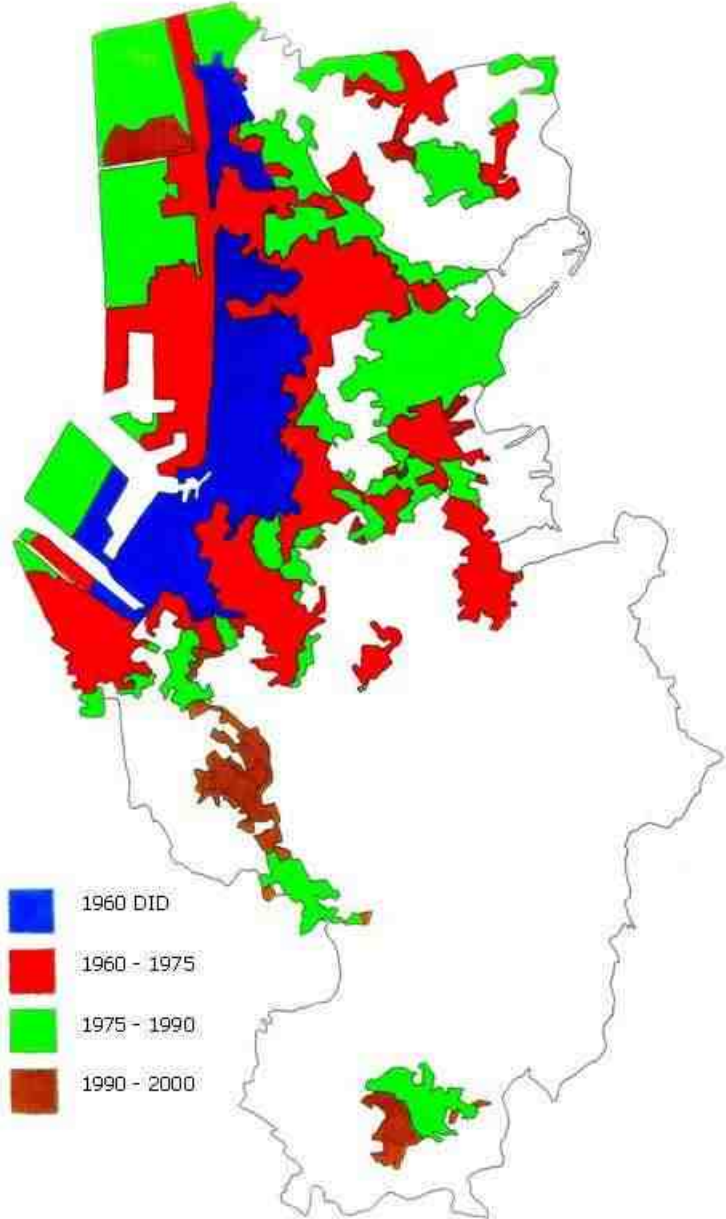
Table 3.8 Definition of Densely Inhabited District

1. A DID consists of contiguous Basic Unit Blocks - the equivalent of Enumeration Districts in the UK Census and typically around 500 households. *N.B. 'contiguous' in this context can include touching at a point -e.g. a crossroads – as well as along a boundary line*
2. Each Basic Unit Block must have a population density of 4000 inhabitants per km² OR include public, industrial, educational or recreational facilities.
3. The DID must have a total population of not less than 5000 inhabitants

How effective is DID as an indicator of actual 'urbanisation'? The second component of the definition criteria is clearly open to 'interpretation' by those bureaucrats in City Halls responsible for the local execution of the Census process. What exactly is a 'public facility' in this context and how big does it have to be to qualify the Block for inclusion? Large industrial sites will dilute any area/population ratios – the population density of Chiba-*shi* DID is around 30% lower than Yokohama-*shi* DID simply because the whole of the vast JFE (former Kawasaki Steel) site falls within the Chiba-*shi* DID area. My personal experience in surveying the entire 2000 DID area in minute detail is that the DID definition as applied in Chiba-*shi* does reflect the perceived boundary of urban space well and that arriving at the boundary generally corresponds with walking out of the substantially built up area. The main exception to this was that occasionally large new school campuses located on the edges of built up areas have not been wholly included with the housing areas they serve.

The most important thing about the definition of a DID is that it is sensitive to change over time. Until a census is complete and a first analysis of Basic Unit Block populations is made the applicability of the first and third criteria will not be known. Also, defined DID areas can not only expand but also contract, quite a common feature at censuses during the period after 1990 as declining household sizes have sometimes led to areas being removed from a DID even though the number of households – and of dwelling structures – has actually increased. DID boundaries can also change when revisions to the underlying basic unit block areas dilute population densities. This was the case in the Miyako area of Chiba-*shi* where a large parcel of *tanbo* and woodland was reallocated differently between blocks leading to an area of 1.8km² of the 1990 DID being excluded from the revised DID at the subsequent quinquennial census.

Fig. 3.3. Expansion of the Densely Inhabited District of Chiba-shi



When the concept of DID was introduced in 1960 several metrics included in the Population Census (for example employment by industry) were reported separately for the DID area but subsequently the published census reports have limited DID area reporting to basic population and household data. Since 1995 DID level data by Basic Unit Block has been available as database files⁶

Census	area km ²	growth km ²	population		households	
			'000	annual % change	'000	annual % change
1960	20.8		167.4		41.2	
1965	26.1	5.3	228.7	7.3%	61.2	9.7%
1970	48.6	22.5	365.4	12.0%	107.3	15.1%
1975	67.3	18.7	528.2	8.9%	162.2	10.2%
1980	92.9	25.6	634.7	4.0%	193.1	3.8%
1985	97.9	5.0	672.5	1.2%	220.2	2.8%
1990	111.0	13.1	728.3	1.7%	250.3	2.7%
1995	112.6	1.6	754.5	0.7%	283.1	2.6%
2000	116.8	4.2	790.6	1.0%	313.3	2.1%
2005	118.2	1.5	850.4	1.5%	337.4	1.5%

Source: Population Census of Japan. Prefectural volumes.

Table 3.9 summarises the expansion of the DID within Chiba-*shi* at each census from 1960 to 2005 in terms of area, population and households. The extent of the DID area in 1960, 1975, 1990 and 2000 is illustrated in Figure 3.3 The 2000 DID⁷ was adopted as the study area for the Sample Point Survey and the four moments of urban expansion illustrated on this map are absolutely fundamental to understanding the way in which I have measured and documented urban growth since 1960 and described it in later chapters.

3.6 Overview of the design of the Sample Point Survey

The purpose of the Sample Point Survey was to understand the current characteristics, spatial structure and function of the built urban environment as clearly as possible and also to identify and quantify the degree to which it has expanded and changed since

⁶ In completing this study I was able to purchase and use the 2000 Census Data at *chome* level for Chiba-*shi* thanks to a grant from the Durham University Geographical Society.

⁷ The date of the sample records however is 2005. As the 2005 DID boundaries weren't published until early 2007 it wasn't possible to use them for the field survey but the DID area only expanded by 1.8 km² between 2000 and 2005.

1960. It was intended to establish consistent metrics over time that would record the extent of different modes of use of space and the character of any buildings constructed at sample points. This was a large undertaking. The main investment in the process was the time and effort it took to visit each sampled site so the project was somewhat 'over-designed' in terms of database structure with the possibility in mind of further and more detailed use of the material collected. In practical terms it involved one hundred days of fieldwork during which I walked about 1300 kilometres and visited 4,522 sample points covering the whole of the area of 2000 Densely Inhabited District of the *shi* open to public access. This was literally as exercise in – to quote the architect and planner Richard Bender in the epigraph at the head of this chapter - "reading a city with one's feet". A great part of the value was simply the daily routine of looking carefully and in detail at the whole the city in a structured manner.

Formally sampling the urban environment is conceptually quite complex. The relational data model employed here is illustrated in Fig. 3.4 It consists of three entities, 'sample point', 'sampled site' and 'primary sampled site'. Every field observation made relates to the surface encountered at a single **sample point** which is defined as *a physical point whose location is specified by coordinates*. This might be visualised as a 'chalk cross' pinpointing an exact physical location that might fall on a road surface, a gravel area, the roof of a building, or vegetation for example. Sample points have two main attributes, the physical character of the surface and the specific function associated with that point in space. Sample points also have a 'location set' of derived attributes determined by the co-ordinates, such as which administrative area they are located in.

A **sampled site** is defined as an *instance of a mode of use of a site represented at one or more sampled points*. A sampled site represents a delimited area. For example two adjacent sample points each with a tarmac surface type might share a sampled site mode of use as coordinates on the surface of the same car park. In turn one or more sampled sites can exist within the same curtilage in which case one must be designated as representing the primary sampled site mode of use. For example in the curtilage of Chiba University there are 12 sample points of which five comprise sports and recreation areas and the remainder a mix of educational and administrative buildings and car parks. However the primary sampled site against which all other records are logically keyed has

a mode of use of 'higher education'. Primary sample site mode of use is the main entity used for reporting. Important characteristics of these three entities in terms of developing reporting structures are considered in some detail in Section 3.8 They are documented in some detail in the tables in Appendix 1.

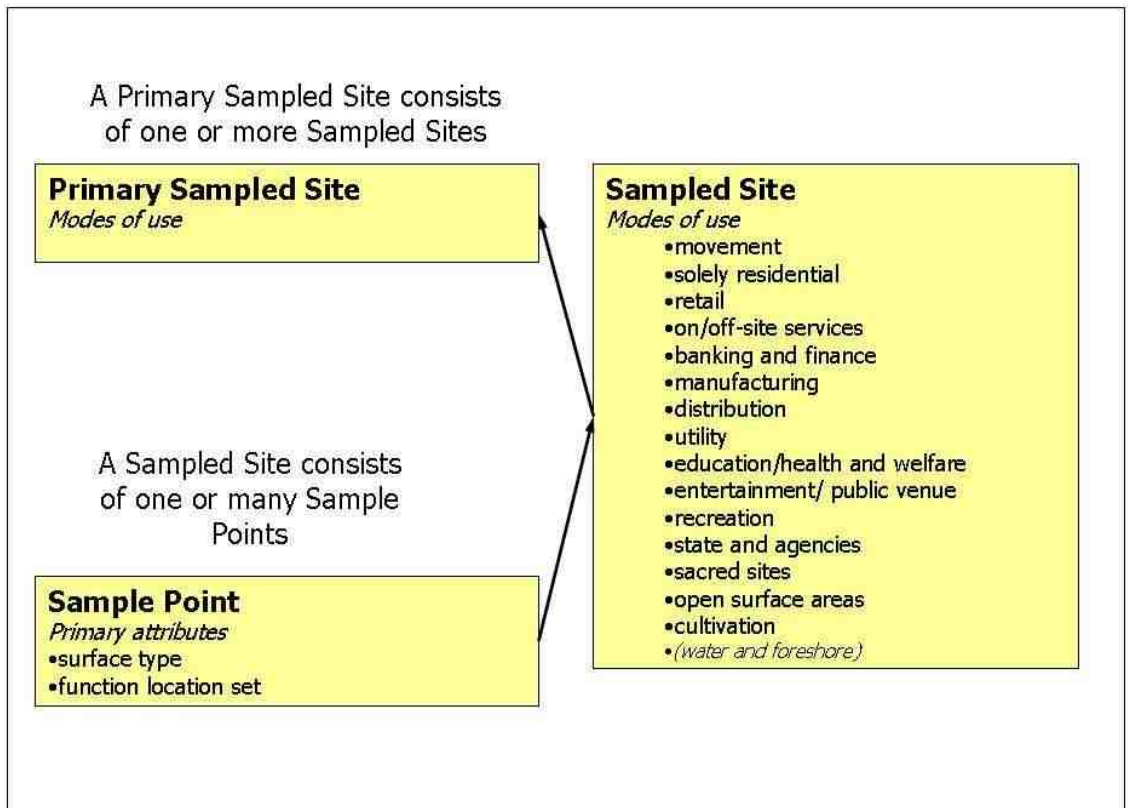


Fig. 3.4: Data model used in the Sample Point Survey.

Sixty three sample points visited during field research involved buildings where multiple modes of use occurred in the same structure. The commonest example of this is where there are retail or service units on the first⁸ storey of a building and apartments or offices on upper storeys. But many other combinations occur - for example a doctor's office and retail pharmacy sharing the same building is common. Strictly this should be resolved in database terms by creating a 'one to many' relationship between a 'structure shell' and sampled site mode of use but as my main objective was to count instances of change and not measure the use of space volume I adopted the compromise of logging two (occasionally more) sampled site modes of use against the primary (or only) sample point and then double counting the

⁸ Storeys throughout this text are labelled in the Japanese style so the first storey is equivalent to the ground floor in UK nomenclature.

record as necessary in analysis. This was a satisfactory compromise in Chiba which has a relatively low presence of such buildings but would not work well in a complex and dynamic three dimensional urban environment like central Tokyo.

This data model is designed for data collection for the specific objective of recording and counting instances of mode of use and instances of changes of use by category. It does not directly return data on frequencies, nor measure areas, nor enable calculation of any arithmetic means for example. There are many correlations and relationships that can potentially be explored (for example the % of records related to residential property compared with published records for the area of taxable residential land), but the only hard comparisons inherent in this design relate to proportions of sub-sets of the data and to the count of records. In this study almost all the data presented is based on the frequency of primary use mode of the sampled site as recorded in the field or identified from aerial photographs or city plans in 1990, 1975 and 1960. So for example a sample point might be a tree, but what will be recorded here will be its existence on a sampled site with a primary mode of use as a school in 1975 and a condominium site in 2005, etc.

Areas based on the Survey presented in tables in later chapters and expressed in square kilometres are estimated on the basis of the number of random sample points in any count. So for example for the whole 2000 DID area the 4522 random point sample covers 116.8 km² of urban space and so each point nominally 'represents' 2.58ha. (for sampling errors see below) I took the decision to publish results from the Sample Point Survey in most of the tables included here expressed as "*would represent an area of N km²*" rather than as a simple frequency count but only from the perspective of aiding general readability. I stress here that the values so presented are only estimated on the basis explained in the previous paragraph and that this is a convention adopted to make the data easier to grasp. The alternative would have been to simply present the basic count of records in the sample, which is not so easy to absorb.

3.7 Sampling Process

The technical approach to sampling and the decision on the sample size employed were determined based on guidelines suggested both in Dixon and Leach (1978) and Harnett

and Soni (1991)⁹. A method using a simple random sample was chosen partly because the concentrated zoning of public housing in Chiba and especially the geometrical *danchi* layout of areas of Mihama-ku does not favour systematic or stratified samples but also because I wanted to explore in detail on the ground every part of the study area. The opportunity provided by undertaking this study as part-time student working within a longer time frame also encouraged me to attempt to examine and record a large sample.

The initial sample size was determined using a conventional approach employing the measure of variability v defined as $v = \sqrt{p(100-p)}$ where p is the anticipated percentage of the population with a given characteristic. The sample to be attempted was then assessed using the formula $n = \left\{ \frac{z \cdot v}{c} \right\}^2$ where n is the sample size to be determined, z is the standard error unit measure for the desired confidence level, v is the measure of variability being used to calculating the standard error of a proportion and c is the confidence limit.

Some of the important values taken into account in determining sample size are presented in Table 3.10. The whole 2000 DID area of Chiba-*shi* was known to be 116.8 km² but excluding the closed area of the port and steel works only about 104 km² were open to examination. The smallest areas expected to be considered separately in analysis

Confidence Level	99%		95%	
Confidence Limit	± 2.0%	± 3.3%	± 2.0%	± 3.3%
Minimum sample	4147	1523	2401	882

were Inage-ku (21.25 km²) and the original 1960 DID area (20.8 km²). Taking these largest and smallest areas into account the nominal sample was set at 4500 to be achieved for the accessible 2000 DID area which gave estimated samples of around 880 for the smallest areas and would permit separate analysis and comparisons to be made for these albeit at lower levels and limits of confidence. In fact the smallest area turned out to be the incremental growth of DID between 1990 and 2005 (7.3km²) which

⁹ I also gratefully acknowledge some initial guidance provided by Dr. Ian S. Evans of the University of Durham Department of Geography

considered in isolation would have a confidence interval of $\pm 5.5\%$ at 95% confidence level. Data for this area is only reported at a summary level in Chapter Nine.

The sample point set was generated using the Excel RAND() function. The whole administrative area of Chiba-*shi* can be contained within a square with 27 km sides. Thirty thousand pairs of co-ordinates were generated for this area to provide a set of 'grid references' that could be plotted on large scale maps of to locate sample points to the nearest metre within the Tokyo local datum.¹⁰ This was equivalent to an average of 41.15 points per km² or one per 2.43 ha. When all points were mapped a total of 4923 fell within the 2000 DID area and 4522 within the 104 km² open to examination There were A total of 897 sample points fell within the 1960 DID, the smallest zone to be examined individually in detail. Sample confidence levels are set out for selected proportions for these two values in Table 3.11. There were no duplicates in the sampling and with a potential universe of 729⁸ points re-sampling was not used.

This method of sampling could only be adopted if sufficiently high quality large scale plans were available, and fortunately for Chiba-*shi* (as for most of urban Japan) they are. Local planning offices (and not a national agency) continuously maintain local 1:2,500

Table 3.11: Sample confidence intervals at selected proportions of sample

		2000 Chiba-shi DID		1960 Chiba-shi DID	
		<i>4522 sample points</i>		<i>897 sample points</i>	
proportion of sample	confidence level	95%	99%	95%	99%
	5%	$\pm 0.64\%$	$\pm 0.84\%$	$\pm 1.43\%$	$\pm 1.88\%$
	10%	$\pm 0.88\%$	$\pm 1.15\%$	$\pm 1.96\%$	$\pm 2.58\%$
	15%	$\pm 1.04\%$	$\pm 1.37\%$	$\pm 2.34\%$	$\pm 3.07\%$
	20%	$\pm 1.17\%$	$\pm 1.54\%$	$\pm 2.62\%$	$\pm 3.44\%$
	25%	$\pm 1.26\%$	$\pm 1.66\%$	$\pm 2.83\%$	$\pm 3.73\%$
	30%	$\pm 1.34\%$	$\pm 1.76\%$	$\pm 3.00\%$	$\pm 3.95\%$
	35%	$\pm 1.39\%$	$\pm 1.83\%$	$\pm 3.12\%$	$\pm 4.11\%$
	40%	$\pm 1.43\%$	$\pm 1.88\%$	$\pm 3.20\%$	$\pm 4.22\%$
	45%	$\pm 1.45\%$	$\pm 1.91\%$	$\pm 3.25\%$	$\pm 4.28\%$
	50%	$\pm 1.46\%$	$\pm 1.92\%$	$\pm 3.27\%$	$\pm 4.28\%$

plans and these form the basis of local urban atlases published annually by Zenrin containing plans at 1:1,500. These use the topographic plans as a starting point, which

¹⁰ There is no 'National Grid' in Japan. 'Tokyo Datum' used on Chiba 1:10,000 and larger scale maps and plans is based on UTM Datum Zone 54 with an origin north west of Chiba at Lat. 56°0' Long. 153°50' (personal communication N. Kobori, Japan Map Center, Ikebukuro, Tokyo 153-8522)

are then photo-enlarged, redrawn and over-printed with details of occupants of each property. In Japan's dense urban environment complex *banchi* (block) and plot addresses are often numbered not in physical sequence but based on the date of their first use for building so these detailed atlases are indispensable to agencies, services and marketeers.

Six Zenrin atlases – one per *ku* – cover the area of Chiba-shi. A two page spread covers 500 by 750 metres with corner points representing known Tokyo Datum intersections. The remaining 100 metre gridlines were drawn onto these sheets and the sample points then plotted – in theory to the nearest metre which corresponds to 0.67mm at this scale. Of course there will inevitably be some errors in positioning due to distortion in photocopying etc. but these would not involve systematic errors and so not distort the basic sampling process. I was however concerned to check for possible systematic errors from simplifications of building outlines adopted by Zenrin cartographers (who are, after all, creating a gazetteer publication and not a topographic atlas). Nine city plans were compared with their Zenrin counterparts. Of 183 sample points only three fell on different properties of which two were adjacent *jūtaku danchi* residential sites. In the main text I have not relied on Zenrin to distinguish between houses and their usually very small

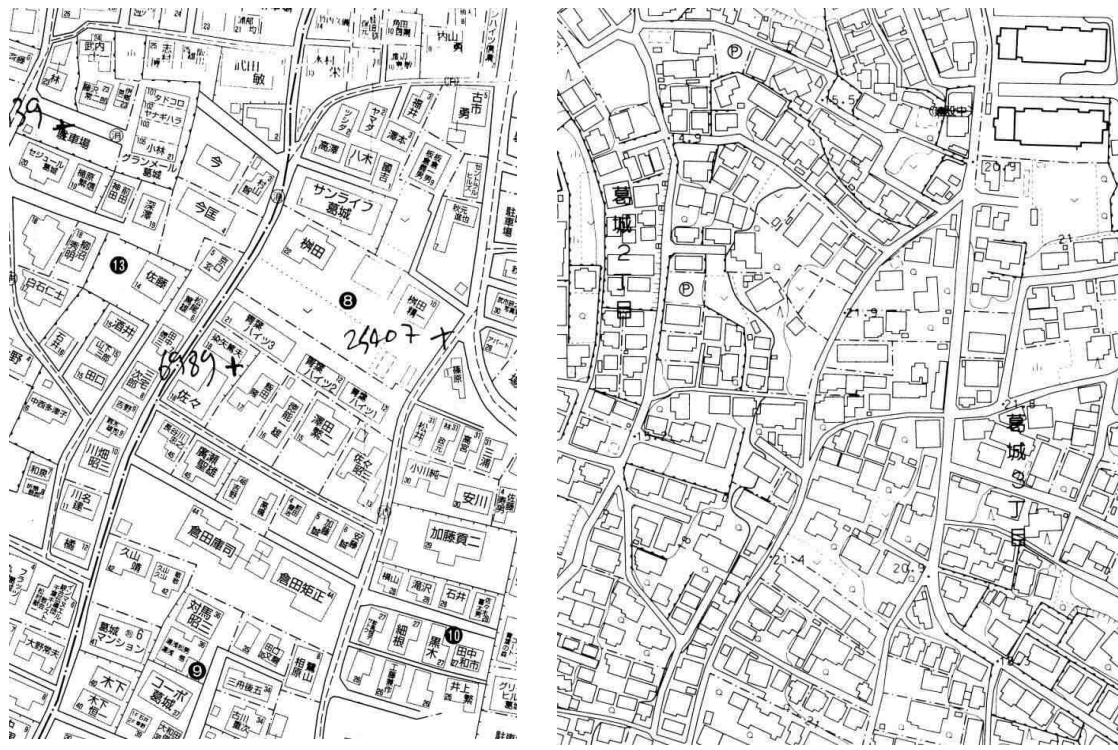


Fig. 3.5: Zenrin and Chiba-shi plans compared. Part of *Katsuragi 2-chome*

surrounding gardens because sample point surface type has not been used in this study. In plotting points a technique of allocating in turn N-S-E-W was used to deal with those points that fell exactly on property boundary lines.

Sample points within the Chiba-*shi* 2000 DID boundaries are identified either as being located within an open *shi* zone or within the closed port and heavy industry zone. Only those sample points within the open *shi* zone could be examined in detail. There was no possibility of access to the port zone and so that area is wholly logged as “private quays and primary industrial plant”. Where points in the *shi* zone were not visible from public access (around sixty cases usually involving concealment by woodland, factory sites, military installations, and some *hatake* farmland) recent aerial photographs were used to complete entries.

Almost all *shi* sample points visible from public access were actually seen and more than 90% were recorded with one or more digital photographs. Planned exceptions were cases such as multiple points in the same homogenous curtilage (a large car park or public open space), or the same length of visible road of the same width. Unplanned exceptions included potentially sensitive situations (occasionally being directly observed by owners or police) or camera malfunctions.

3.8 Sample Point, Sampled Site Mode of Use and Reporting Categories.

In outlining the data model employed in Section 3.6 I have already outlined the important distinction between ‘sample point’ – a specific location – and ‘sampled site’ which refers to the bounded area, and how these are related in the context of sample and database design. However they now need to be considered in more depth from the perspective of analysing and describing the use of urban space and especially in terms of defining reporting categories.

A sample point is a relatively clear concept and has two important primary attributes - a physical ***surface type***, categories of which are listed in Appendix 1 Table A1.1 and ***function***, categories of which are listed in Table A1.2. ‘Sample point’ is an essential element in sampling but in this thesis it is not used at all as a basis for summarising

outputs. All the reporting tables contained in this text are based on counts of the frequency of sample points but summarised by the primary sampled site mode of use. Two further examples should make the relationship clear. A sample point falling on 'tarmac' might have the sample point function 'car park', but the primary sampled site mode of use of the whole curtilage might be 'hospital' and so *all* sample points falling within that area will be counted as 'part of a hospital site'. Or a sample point may fall on a 'structure surface' and that structure might be an 'office structure' but the primary mode of use of the site might be a 'police training academy'. Within this study *sample site mode of use relates to the primary function of the whole sampled site* and not to the function of the individual sampled site or sample point (although of course in the case of around 70% of sample points there only is a single sampled site to consider). Tables A1.4 to A1.11 in Appendix 1 summarise the detailed classification created within the database of the mode use of sampled sites. In fieldwork and the analysis of aerial photographs 135 recording categories were evolved on the basis of field observation. However some objects and infrastructure were discounted from the analysis. Most notably the attribute 'surface type' includes a category 'structure surface' which in addition to all buildings also includes outdoor equipment such as oil tanks, transformers and filtration tanks. However both the ubiquitous dense overhead network of electrical and phone supply cables characteristic of Japanese streets and any evidence of underground infrastructure have been ignored in recording this category.

Sampled sites are a rather complex object of analysis. In recording data I have considered them in three distinct formats. The commonest, which includes individual detached dwellings and detached retail units, schools, public parks and factories, are considered ***bounded locations***. These sites comprise an obvious curtilage with clear and often fenced boundaries. They are both bounded and countable.

The second group of sites, the best examples of which are public multiple occupancy housing areas, comprises of ***unbounded locations***. These are spaces which are usually physically 'open' but might be imagined as being surrounded by a 'dotted line'. In the comparable case of a small bounded detached individual dwelling in a *jūtaku danchi* of private housing a 'sampled site' would include the house itself and also the car port and

garden or house surround. Although the sample point may fall in the garden, the sampled site will still be residential. To achieve consistent analytical treatment what would be the 'equivalent' of this example for 'unbounded' public multiple occupancy housing?

In this study the main multiple residential structure together with grounds, paths or building surrounds associated with it *up to a mid-point line* between the structure and its neighbour is treated as an *unbounded location* with an unmarked boundary – in other words the multiple occupancy building and its 'share' of adjacent space. So the 'sampled site' will still be considered to have a primary function of housing even though a sample point falling near it may be a shrubbery or pathway. But note that estate roads in these areas are treated as separate highways, as they would be as access roads in *jūtaku danchi* areas, and parking places which may be remote from multiple dwellings are classed as separate 'residential parking'.

The third category, ***network locations*** are sampled sites containing all sample points within a network boundary (such as the 'highway system', 'JR East Japan', 'Keisei Railway' etc. where the 'location' comprises the area of the whole of the network (for example 'all highways on mainland Honshu'). So the "JR East rail network" in Chiba-*shi* consists of 17 sample point records and the network is the primary sampled site..

A sampled site can involve structures with either single or multiple modes of use. Common examples of multiple modes of use in Chiba-*shi* are buildings with [*retailing; custom units*] leased on the first two storeys and either [*multiple occupancy residential; interior stairwell apartments*] or [*commercial; leased space*] on floors above. In an area comprising many large built structures the data model and methods of data collection used in Chiba would need to be supplemented by more detailed investigation of tenancy and ownership, and certainly the data would need to be held in formally relational structures. In fact it simply may not be possible to carry out this kind of research in Tokyo due to the difficulty of entering spaces with multiple modes of use and the lack of public records available on renting and leasing

Japanese materially constructed space usually has a short life span but also generally a fixed purpose. The most characteristic format of change is substitution - to demolish and rebuild. This is radically different from forms of change characteristic of cities built in brick, such as the conversion of detached homes to 'bed sitters' or warehouses to gentrified residences, and the refurbishment of interiors generally. This does not happen in Japanese wooden buildings, so there is very little movement of structures between categories and into another primary mode of use. There is some modest flexibility and especially in newer steel framed buildings – for example the use of a former leased retail unit for on-site services- but functional changes in structure use are uncommon due of the short lives of the structures themselves.

Although there is a clear conceptual distinction between 'manufacture' and 'distribution' in categorising the mode of use of structures this distinction is often not at all obvious in the 'real world' of the built environment, especially where large sites are involved. The specialist Nittobo building component manufacture site in Sanno-*cho* for example uses nearby satellite sites only for outdoor storage and a Mitsubishi site in the Chuo-*ku* port area undertakes some fabrication and assembly but is now mainly concerned with primary distribution. This kind of functional drift due to organisational integration within transnational organisations is characteristic of changes associated with 'globalisation'.

Most sampled site mode of use categories have secondary attributes recorded in the database, of which the commonest are the 'number of storeys' in a structure and 'number of parking places'. These will not be considered in detail here as values are only occasionally reported in the main text.

The full category analysis available for logging primary modes of use is too complex for the level of analysis required in this text and a two level **reporting structure** has been added to the main database to provide a summary level of analysis for most of the data used in the following chapters. This consists of the ten summary mode of use categories and twenty six primary mode of use categories as documented in Table 3.12.

Table 3.12. Sample Point Survey reporting structure categories	
<i>Summary Mode of Use Category</i>	<i>Primary Mode of Use Category</i>
A. Movement	Highway circulation
	Transit systems
B. Residential	Multiple Dwellings
	Group residences
	Individual Dwellings
C. Retail and Services	Banking and Finance
	Offices
	Off-site Services
	On-site Services
	Retailing
D. Manufacture Distribution Utilities	Utilities
	Distribution
	Manufacturing
E. Education and Health	Education
	Health and Welfare
F. Entertainment Venues Recreation	Recreation and Sport
	Entertainment
	Venues
G. State and Security Functions	State Functions
H. Other Urban Uses	Sacred Spaces
	Vehicle Parking
	Vacant Plots
I. Cultivated land	Cultivation
J. Other	Sea
	Landfill
	Fresh Water

3.9 Use of Aerial Photography

Aerial photographs were used to help determine as specifically as possible what the primary mode of use of sampled sites was in 1960, 1975 and 1990. A 2004 series of images was also consulted to determine the function of about sixty sample points not visible from roads or public access areas.

Table 3.13 provides details of the main photograph sets used in the Chiba Prefectural Archive. In some cases other adjacent sets were also used for marginal areas, especially for coverage of Honda and Toke. These sets comprise 35 or 45 cm square photos and the resolution is excellent but what can be achieved with the images depends on their age. The 1990 and 2004 sets are so crisp that details of most built structures are clearly seen and it is usually possible to confirm if they correspond with the existing building.

TABLE 3.13 SUMMARY OF AERIAL RECONNAISSANCE USED				
<i>Census data year</i>	<i>date of aerial survey</i>	<i>approx. scale</i>	<i>Chiba Archive accession number</i>	<i>Comments</i>
2005	11/02/2004	1:10,000	84091	both very sharp colour sets, easy resolution under a hand lens to car sized objects and smaller. 2004 photos only used to resolve issues relating to hidden sample points
1990	15/01/1991	1:10,000	63115	
1975	17/02/1975	1:20,000	48608	Sharp monochrome set. Resolution to about 4-5 metres with a hand lens.
1960	28/11/1960	1:20,000	71265	Good set but obviously earlier camera technology. Usually resolution to about 5 metres depending on contrast (small prefab houses easily distinguished because they normally occur in blocks). Some haze over Soga due to pollution from Kawasaki Steel Co.
			71267	

Under an x8 or x10 hand lens the outlines of all 1975 structures can also be checked with some confidence. In 1960 small structures are indistinct but it is possible to distinguish between prefabricated and larger houses, an important distinction used in Chapters Six and Seven.

Leaf canopy can obscure buildings but in practice this is not a serious problem. Mature broadleaf trees commonly occur around *ie* farmhouse clusters – but these are buildings which we already know have been in continuous use since long before 1960. They also occur in the grounds or larger buildings where use can be confirmed from other sources, and in public housing *danchi*. In these cases the hidden detail is inconsequential.

Aerial photographs are a valuable record of change but they have other limitations in 'longitudinal studies' apart from the clarity of the image. To use them in this way is always to scrutinise images of the past in the context of a knowledge of the present, and assumptions need to be carefully checked. In the previous section I suggested that significant change of use of structures is quite unusual but even if a building can be observed clearly there is no guarantee that it had the same category and mode of use as today. Equally, there are many long vanished structures visible for which there are no surviving public records concerning mode of use. This is a limitation which underlines the importance of using images as only one of a range of resources. Another issue is the

TABLE 3.14: STRATEGY USED FOR ASSIGNING SAMPLED POINTS TO MODE OF USE CATEGORIES AT EARLIER DATES			
	<i>mode</i>	<i>examining 1990 images</i>	<i>examining 1975 and 1960 images</i>
1	Individual movement	sampled site categories used	sampled site road categories used. Paths and cycle ways only in public housing
2	Group movement	sampled site categories used	sampled site categories used but not noriba or taxi facilities
3	Individual occupancy	sampled site categories used	three categories used - prefab dwellings, ie clusters and all other dwellings
4	Multiple Occupancy and shared amenity	sampled site categories used. Demolished multiple dwellings assessed on image shape and size	sampled site categories used. Demolished multiple dwellings assessed on image shape and size
5	All Commercial	sampled site categories used for surviving buildings. Leased space disregarded. Dwelling and domestic extension into group 3	All smaller buildings into group 3. All others treated as 'detached units'
6	Material Production	sampled site categories used	Specialist sites and special utility sites identifiable. All others treated as detached units, workshops or outdoor sites.
7	Social Provision	sampled site categories used	Sample site categories used for education and hospital sites with identity checked against a 1960 town plan. Smaller buildings into Group 3
8	Leisure	sampled site categories used but leased units and space disregarded	sampled site categories used but leased units and space disregarded
9	Government	sample site categories used and leased space disregarded.	sample site categories used and leased space disregarded. <i>Koban</i> not identifiable
10	Other modes	sampled site categories used	bicycle parking and religious organisation group offices and not identifiable otherwise sampled site categories used

difficulty of pinpointing sites on earlier photographs when an area of the present built environment is likely to have been empty *tanbo* or *hatake* farmland. Without a degree of precision not practicable sitting at an archive desk it isn't possible to be sure. This was primarily an issue in the northern part of the *shi* where industrial sites were developed on *hatake* previously farmed as smallholdings with homesteads scattered across the area. Did industry replace cultivation or farm dwellings at specific sampled sites? In this case, unless I could pinpoint the relationship by reference to the lane network, I assumed *hatake* as the most probable choice.

In working with these aerial photographs a general strategy was adopted for assigning sampled points to categories and this is summarised in Table 3.14. It is a simple matter

to identify on photographs sampled sites where the expansion of the *shi* has resulted in a new built environment on cultivated land or reclaimed land, and it is also normally easy to follow the progress of institutions which tend to have fixed boundaries even if the structures inside them are replaced as sites are exploited and built out. In contrast it is not possible to pursue some minor categories back consistently before 1990 because of their lack of visual impact. The important data issues reflected in Table 3.14 fall into three areas. Firstly it is not possible to subdivide the detailed mode of use of dwelling sites before 1990 from aerial photography. 'Small buildings' that are not prefabs form one indivisible category. We do know that old surviving combined retail or home workshop residential sites almost certainly functioned as such back in 1960 and 1975 too, but we can't identify sampled sites where such buildings have been demolished which now probably function as car parking or a new residential plot or could have been consolidated or subdivided into some completely new site. In tabulations all these sites across different modes of use are therefore simply summarised as 'undifferentiated dwellings, including owner-occupied businesses'.

Secondly there are many *old multiple occupancy structures* visible in 1960 and especially 1975 photographs which are built to formats no longer surviving in Chiba. These have been allocated to detailed categories on the basis of shape and size with the rule of thumb that small multiple buildings almost always have external staircases, larger long multiple buildings have external stairwells and 'squarer' buildings have internal stairwells. Only a very few of the latter have been so far demolished.

Thirdly there is no possibility of systematically separating out *larger commercial buildings* in 1960 and 1975. In 1960 most shop and office structures were anonymous wooden framed buildings of which hardly any survive. By 1975 they were typically equally anonymous steel framed buildings many of which survive but which now form a very small proportion of the present stock of commercial buildings. A lot of the sites involved became car parking or were consolidated into later condominium sites. All these are therefore counted simply as 'commercial detached units'. There are similar problems in assessing a few sites that might have been either small workshops or part of the distribution chain. In discussions on all these areas in the main text I have relied on the

published 'Establishment Census' for the relevant years to give some alternative measure of change.

3.10 Quantifying the modes of use of urban space prior to 1960.

Once a decision had been taken to extend the scope of this study to examine the development of Chiba-shi between 1868 and 1960 a method had to be devised to provide some measure of primary modes of use of urban space for earlier periods. Although some late World War Two aerial reconnaissance is available covering parts of the *shi* it is rather poor quality, and only a few pre-war oblique images were traced.

<i>Year</i>	<i>Map used</i>	<i>Scale</i>	<i>Sample points</i>	<i>confidence interval at 50% of sample[1]</i>
1882	photo enlarged Meiji topographic survey	1:15000	604	±3.99%
1906	Jissoku Chiba Shigaizu	1:8000	619	±3.94%
1936	Chiba-shi zenzu	1:10000	637	±3.88%
1947/48	photo enlarged topographic survey	1:25000	610	±3.97%

[1] at 95% confidence level

To provide an approximate comparison of modes of use in earlier years I have used a sampling approach similar to the one employed for the main Sample Point Survey but generating much smaller samples based on using the best quality maps available. These are listed in Table 3.15 together with the size of sample employed and confidence limits at 50% of the sample at a 95% confidence level. The results of this work by primary mode of use are incorporated in Chapters Five and Six. At a summary level the technique returns some useful and consistent results for earlier dates but I have had to make corrections for systematic errors created by the over-representation in the sample of the highway network resulting from the engraved line thickness on the cartographic plates.

3.11 Key metrics used to quantify change by entity

All the six entities presented in Section 3.2 consist of complex associations and two in particular – household and establishment – are synthetic 'bundles' of related processes. Their transformation over time needs to be traced by the changing values of a consistent set of metrics reflecting component attributes. In this respect available aggregated

historical social and economic statistics often fail to report many of the component relationships which it would have been helpful to understand. For example when considering the transformation of households we can examine (although only for the last 30 years) their changing relative frequency summarised by the attribute of relationship of component members to the head of household. However no equivalent data is available to analyse the age and occupational status of children still living in the parental home, and so it is not possible to quantify from census reports one of the most important recent social changes within urban households – the growing tendency for those adult children often referred to by Japanese sociologists as ‘parasite singles’ to remain in the parental home either unemployed or making little contribution to expenses. (Yamada, 2001).

Table 3.15: Overview of key metrics employed for each entity to identify change.	
1. Person	Life expectancy, lifespan, age, gender, marital status, final level of education, place of birth, migration (origin and timing) , employment status, place of work, occupation
2. Household	Type, size, membership, income, vehicle ownership
3. Establishment	Type, size, relations of ownership, legal status, industrial sector, gender and occupation of employees.
4. Dwelling	Format, age, floor area, rooms, relations of ownership, parking, structural form, area, volume and location of construction
5. Premises	Format, size, parking, structural format, volume and location of construction
6. Site	Area, access, primary sampled site mode of use, location

Table 3.15 provides a summary by entity of the principal metrics that will be used in the following chapters to identify long term transformations within the urban space of Chiba-shi. How do these relate back to the theoretical consideration of processes presented in the last chapter and the entity model introduced in Section 3.2? In Section 2.4 I attempted to draw a careful distinction between the two terms ‘transition’ and ‘change’ with this question in mind. ‘Transition’ was reserved for the direct spatiotemporal aspect

of experience, or observation of process. The process 'travelling to work' is a transition experienced in the transformation of inputs into discrete outputs, the fifth characteristic of social processes defined in Table 2.3. Inputs include location of dwelling and employment, contractual hours and transport infrastructure, and the output is arrival at the office. 'Change' is the static outcome or consequence of transition. – I travelled 24 kilometres and my journey took 95 minutes (and compared with 80 minutes yesterday).

This point is stressed to clarify why an "approach which privileges process" does not imply that processes in themselves serve as the immediate and direct object of study. Process can only be 'privileged' as an object of study in this context by establishing a framework to enable consistent observation of consecutive 'changes' over an extended period of time. In diachronic study at the level of abstraction employed in the following chapters the transformation of the processes at work in the evolution of urban space can only be approximated by establishing the best available measures of change. The framework of values adopted here is the framework I have summarised in Table 3.15

An important although secondary reason for employing a diachronic approach for substantive chapters rather than adopting an alternative thematic approach is that only some of the metrics in Table 3.15 have true long term stability within available published statistical resources. Even categories as basic as 'age' (used to be calculated from date of registration of birth and is now calculated from date of birth) and 'dwelling floor area' (used to be tatami living area, now in square metres and includes kitchens and bathrooms) have been modified over time, let alone complex and context dependent measures such as 'years in formal education'. Several metrics such as vehicle ownership, availability of parking and journey to work are only relevant to part of the period studied while others, such as volume of construction and migration have only been recorded in detail for a relatively short time. Similarly many metrics not listed in this table, such as status of agricultural tenure or families involved in fishing, are only relevant in one chapter.

Chapter Four

Continuity in urban space

Once owned, they say, by men of long ago,
this lovely vase – and now it's mine!

Ryōkan

4.1 Introduction.

If a resident of one of Chiba's central *chōme* during the Taisho¹ era could return today to the site of their former home there would not be a single structure or feature within the modern city centre that would offer any clue that they were revisiting a district they once knew. Although 1920 is still within living memory for a few not one building has survived intact from that time, and even the underlying geometry has been redrawn. Roads, railways, the course of the Miyako River and even the shoreline of Tokyo Bay are no longer where they once were. And although the spoken Japanese around them might be easily intelligible nobody would be wearing kimono nor the Imperial Army uniforms so prevalent in local city streets during the two decades prior to the *Dai Tō A Sensō*².

And yet, of course, for them so much about modern Chiba would still remain utterly familiar; it would not be 'foreign' in the same way that an English 'county town' might be foreign. But what is it that, like Ryōkan's old vase, has been handed down intact across four generations to remain 'familiar'? In Chapter Two I defined 'durability' as 'the capacity to resist wear, decay and obsolescence and to continue to function' and here I want to tentatively suggest here that there are at least three dimensions to this 'capacity to resist wear and decay' in respect of our interaction with the urban environment.

Firstly the ways in which we perceive and possess the spaces we use constitutes a fundamental aspect of every part of 'going on' in our daily lives. Shared understandings of what boundaries are drawn between public and private space, of how spaces of circulation are used and of the relationship between space and power are usually learned early in life and in the context of family. They strongly structure the ways in which we later deal with concepts of ownership, spatial demarcation and what is appropriate

¹ 1912-1925

² 'Greater East Asian War' 1934-1945. For the Japanese the description includes fighting in both China and the Pacific.

behaviour in respect of different kinds of space. This is an aspect of spatial awareness explored for example by Erving Goffman in his observation of the importance of 'front' and 'back' regions (1959:107-140). Secondly, this perception of space is expressed in the routines and processes associated with our everyday use of space – all those recursive practices associated with the rhythms of daily life through which biological and social reproduction is maintained - from where we slice our bread to the location of our choice of dwelling. Finally, the possession and use of space can only be actualised through a commitment to built forms which although they may quickly adapt to and incorporate new technologies also physically replicate what we expect built forms to be based on our recursive experience of a lifetime of using them³.

In this chapter I want to consider some of these enduring aspects of use of urban space and particularly how they are expressed in constructed forms. Most of the later text is focused strongly on the left hand side of the entity relationship diagram presented in Fig.3. 1, and deals with some of the enduring associations between processes of biological and social reproduction at work within households and their relationship to the distinctive characteristics replicated within dwelling spaces. I will argue that it is in the context of core household processes that durable conventions governing the construction and use of space most commonly survive. Apart from some small workshop based craft industries – 'quality' producers of *tatami* and *shoji*, and products like *shinobue* and lacquer ware for example – there are few relationships of production between establishments and premises that embody enduring spatial practices. The relationship between retailing space and family living space in some merchant enterprises might also occasionally follow traditional spatial conventions, but the main focus of this chapter will be on enduring aspects of dwelling space, which as it covers 30% of the actual ground area of Chiba's 2005 DID and comprises about 63% of the city's floor area, is by far the largest component within the constructed environment. How dwelling spaces have changed will be considered in future chapters.

However I want to begin with some reference to the wider urban context and the 'cultural' dimension of durability, and in the following section I want to deal with the

³ The ways in which expectations of dwellings have changed is an important theme in the following chapters.

assembling, labelling and possession of urban space. Section 4.3 considers the preparation, layout and boundaries of residential sites, and Section 4.4 the aspect and orientation of buildings. Section 4.5 will explore the importance of the ideas of *uchi* and *soto*, Section 4.6 the relevance of purity and hygiene in the use of buildings, and Section 4.7 the forms of subdivision within living spaces. The Chapter concludes with some consideration of contrasts between Japanese and 'Western' spaces within the city.

4.2 Extending and labelling urban space

Most students of the historical development of Japanese cities agree that the ways in which they have emerged is quite distinctive and that they differ fundamentally from, for example, their European counterparts. Yamazaki (1963:44) points to an underlying reasons for this when he argues that "the emergence and expansion of the city in Japan did not depend on the natural growth of the market place" and that the crucial influence on evolving cities was what he describes as the "integrating activity rooted in the political and military power of the feudal regime and the state on the basis of tribute and taxes." In other words political control was the main determinant of urban form, not commerce. Jinnai Hidenobu, a scholar who has specialised in revealing the relationship between the townscape of historical Edo and modern Tokyo also points to the different role played by Japan's distinctive political institutions and in addition refers to the importance of the site rather than the façade:

In Europe cities grew by repeatedly breaking through and expanding beyond the hard shell of the city walls. In Edo, by contrast, the locations of the temples and shrines and their use of the land around them meant that the city's life solidified inside a series of soft shells (1995:15)

... In European cities where buildings facing the street share a common wall, there is a tendency for lots to equal architecture and for lots to be built up as whole entities. In contrast, in Japan great meaning is invested in external space ... the forms produced by the tension between external space and architecture are crucial to understanding the structure of everyday life and culture (ibid: 22)



Fig. 4.1. Classic 'castle town' urban environment from the Edo Period. Broadly rectangular primary layout with intricate internal subdivision of banchi blocks. [Matsumoto City Office]

This 'centre-less' plan is also very characteristic of modern Japanese *shi*, although (with the notable exception of Kyoto which was originally laid out based on the design of the Tang Era Chinese capital Xi'an) the form adopted differs markedly from (say) the geometry of North American cities due to the lack of any large scale formal master grid and the presence of often intricate configurations within the interior of lots and blocks. Layouts privileging only one defined central place such as a market square or a key public building are unusual apart from in those areas which are consciously modeled on Western ideas or functions. Apart from defensive areas near the castle, the *jōkamachi* of the Edo period were often usually set out in square or rectangular blocks (see Yamori 1970:19) with intricate and piecemeal internal subdivision. These characteristic patterns, which can be seen in colorful reproductions of Tokugawa city atlases, are often reflected in the formats of older suburban *danchi*.

Another characteristic of Tokugawa towns and cities - the straggling lines of *machiya* merchant's properties scattered along busy highways that can be seen in many Hokusai

engravings – also have their modern equivalents in present day local commercial districts. 'Façade' is not an important element in this kind of urban space. Their defining characteristic is complex division and subdivision of plots by *roji* – the narrow lanes and pedestrian alleys that carve up and create access deep into the interior of urban blocks. The plot or site, rather than the street or road, is the primary currency of urban space; area takes precedence over line.

Henry Smith (1978:50) in his essay "*Tokyo as an Idea*" relates this distinctive pattern of Japanese urbanization to the processes of administrative control that emerged in Japanese cities:

The 'commoner' districts of Tokugawa political cities were governed not as a homogenous entity, but as an assemblage of disparate administrative blocks, the *chō*. To each *chō* were assigned specific functions of local government to be carried out autonomously but according to standard procedures, particularly the use of mutual surveillance and mutual responsibility. 'Autonomy' was thus granted on sufferance, and it was considered a delegated duty rather than a right. The city was conceived as a varying number of independent *chō* and had no corporate identity. Its governance was thus essentially no different from that of rural villages.

Even by the early seventeenth century early Tokugawa interpretations of Neo-Confucian political values was already predicated on extensive State intervention in processes of urbanisation. Nobunaga (1534-1582) had used military force in 1569 to destroy the economic base of the emerging independent merchant city of Sakai and deliberately reimpose a feudal-style economy (Eisenstadt, 1996:179). Smith points to fundamental inconsistencies in *samurai* bureaucratic perceptions of the urban. On the one hand the shogunate demanded that *daimyo* and their followers should spend part of their time in residence in Edo subject to close surveillance, yet on the other hand contemporary bureaucrats promoted views such as those of the scholar and ideologue Ogyū Sorai (1666-1728) who scornfully described urban dwelling as the equivalent of "living in an inn" where residents were "dependent on money for survival 'down to a single chopstick'" (quoted in Smith, 1978:51).



Fig 4.2. Mihama-ku, Isobe 8-chōme Banchi 16.

The emphasis on the enduring importance of the 'lot' and subdivision of space referred to by Professor Jinnai above is crystallised in the way that places are defined and named. New addresses are allocated using conventions that first emerged during the Tokugawa era and are now codified in the *jūkyo hyōji hō* (Residence Description Regulations). Rural addresses comprise the *chō/chōme* name followed by a branch number *eda-ban* and land plot number *chi-ban* (e.g. Mori 1448-3). But in urban areas the form of designation is different. A *chō* or *chōme* is subdivided into perhaps 10 – 30 *banchi*, which is now often the physical equivalent of a suburban 'block' and comprises of perhaps 30 house plots.(e.g. Matsugaoka-chō 3-22) – *banchi 3 plot 22*. The access road or street has no designated label - it is simply anonymous

public circulation space. When former rural areas become urbanised in a piecemeal way eventually a complete re-addressing of existing properties often takes place, recognising their 'change of status' and converting them into an urban format. This process took place in many districts of Chiba-*shi* during the 1970's and 1980's.

Where a substantial new residential district is being created using a form of land assembly such as land readjustment (see Chapter Seven) then that new *danchi* is often perceived to "overlay" and submerge the existing landscape as if it had been pasted onto the map and new *chō* or *chōme* areas are defined with no reference to former boundaries. Detached parcels of old *chō* containing just a few properties can then linger on the margins as part of the redrawn administrative map for decades. This was a common feature of the evolution of both Inage-*ku* and Hanamigawa-*ku* within Chiba-*shi*.



Fig. 4.3: Levelled building plots with concrete retaining walls from 1975. The slope here allows for garages under the garden, wooden houses above have living space facing south. Houses to left are similar but north facing kitchens and bathrooms face the lane access. *Ō-mori chō* [IR]

4.3 Site preparation and boundaries⁴

Until the Nakasone era during the 1980's there was very limited speculative construction of detached family dwellings for sale in Chiba-*shi*. New properties would be commissioned directly from builders by prospective owners who would purchase a site and choose a dwelling design from a catalogue or plans. Apart from a few architect designed concrete (very rarely steel framed) buildings detached houses are exclusively timber framed structures with plywood skins; wood remains the material of choice for nearly all smaller buildings in Japanese cities. In urban areas a site would usually be purchased as a prepared building plot conforming to standards that were already conventions in the nineteenth century (Morse 1886:15-16) and the perceived long term investment value would reside in the site itself rather than the structure to be erected on it. Even today a dwelling structure more than forty years old may have little re-use value and the site might be more valuable and saleable cleared of existing buildings. Rebuilding

⁴ The material here and in the following two sections is based primarily on field observations made during the completion of the Sample Point Survey and also partly on interviews with staff in the property management section in the Ōsato Sōgō Kanri Real Estate Company conducted in 2006.

the *ie* family dwelling on the same site was the norm in rural Japan, and today in towns families experiencing more affluence later in life also might demolish a house that they (or more often their parents) built in the 1960's or 1970's and rebuild on the same site. This pattern of piecemeal development almost guarantees that all 'villa' style housing must be detached. Until more speculative building began to appear in the 1990's, the small amount of recent 'terrace' housing constructed (actually functionally a modern version of *nagaya* tenements) had been for rent. The few privately owned 'semi's' revealed in the Sample Point Survey nearly all involved extended families in adjacent occupancy.

In suburban developments of detached housing involving new build on farmland, either the original landowner or a group participating in a land readjustment project (see Chapter Seven) will invest in creating building plots to produce sites ready to receive shallow (today usually cast concrete) foundations to raise the main part of the structure about 30 cm. above soil level to keep timber components away from humidity. If the plot is former *tanbo* the irrigation basins will be filled in and stabilised but these plots are not popular with buyers and in older, poorer parts of town cheaply constructed



Fig. 4.4: House under construction decorated for a *muneage-shiki* ceremony. *Sanmu-shi* [IR]

wooden buildings might lean 2° to 4° after a few decades of settlement. People are reluctant to buy 'buried rice field land for this reason and former *tanbo* was often switched directly to public housing use as a result. All plots will be carefully levelled and any necessary retaining walls constructed – Sometimes in reinforced concrete and to considerable heights. Unlevelled sites are very rare, as is the use of cellars, but if a site is on a sufficiently steep slope garage space is often provided underneath the dwelling or garden (see Fig. 4.3)

Since the nineteen-fifties the usual process of building a house on a vacant lot would begin with consulting books of house designs and negotiating with a builder. Prior to this the specification would commonly be determined simply from the size of the required residential space in terms of number of *jō* ('tatami mats') and then the craftsmen would complete a structure based on local vernacular constructional practice. The primary detached house builder in Japan is the carpenter, who will subcontract other construction tasks; masonry is not involved in most Japanese dwellings.

Traditional timber structures were built on foundation stones (*dodai-ishi*) but the norm now is a cast reinforced concrete foundation to which the wooden superstructure is tethered on shock pads to absorb earthquake tremors. The site will be prepared with screens and the concrete poured and then allowed to harden off for some weeks. The main timber structure is cut and prepared offsite, and a construction gang will erect this with a crane and add the roof within a few days. The new structure will then be weatherproofed with plastic sheeting and the house will be finished over perhaps four to six weeks by two or three craftsman carpenters. They will add the interior and exterior plywood wall skins, floor coverings, storage cupboards etc. and specialists will complete electrical and plumbing work. At the height of the 1960's buildings boom suburban properties might occupy 75% of the plot area, now typically 60%⁵ is the permitted maximum. In villages vernacular housing is screened by bamboo fences and larger properties are set back behind a formal wooden gateway which is closed at night.

⁵ In Japanese planning terminology this relationship is known as the FAR ('Floor Area Ratio'). In a typical suburban area might be 150/60 (i.e. a maximum floor area of 150% of the area of the plot constructed on not more than 60% of the ground area)

At the beginning of a construction project the property owners often request a Shinto priest to perform short ceremonies at the site. While the foundations are being laid a ceremony known as *jichin-sai* – ('calming down the earth') is performed to ask the permission of local *kami* to open up the ground for the new home, and at the equivalent of 'topping out' when the structure is complete and ready for fitting out, a ceremony known as *muneage-shiki* or *jōtō-shiki* is performed to express gratitude for achieving a sound structure (Nelson, 1994, 2000). It is still quite a common tradition to leave one crossbeam supporting the rafters roughly hewn with some bark left in place.

Access to external views is given a much lower priority in the design of Japanese housing, as windows are generally screened or netted against heat and insects in summer and shuttered at night. There is no tradition of positioning dwellings to enjoy extensive views, although visual access to miniature gardens is a common feature of vernacular housing designs. These views are usually contained within property boundaries, in the past by a shingle or bamboo fence but now often a composition or breeze block wall about 1.3 metres high.

4.4. Aspect and Orientation

Aspect and orientation are crucial criteria in the construction of Japanese housing although they are seldom dealt with explicitly by Western authors (but see Jeremy and Robinson 1988:125-184). In many rural areas this is still strongly linked to the ancient principles of geomancy known as *kasō* (Bognar, 1985:33) but in modern urban dwellings orientation remains important simply very much as a matter of practical daily routine. The summer climate between June and September is subtropical, characterised by both high day and nighttime temperatures and extremely high levels of humidity⁶ and access to direct sunlight is regarded as essential to air futons and bedding and to dry clothes. In vernacular single storey housing in villages this is usually achieved by having an *engawa* - a verandah enclosed with shutters that can be drawn back to open the area to sunshine and ventilation while protecting bedding and laundry against sudden showers. This will face south or if a south aspect is unavailable then east or west. On very hot days the

⁶ Average August temperature for Chiba-*shi* is 28°C and humidity 80%

interior of the house will be protected from direct sunlight by unrolling reed or bamboo blinds known as *sudare*. In modern properties where there is a second storey the former function of an *engawa* is usually performed by balconies outside second storey bedroom windows with washing hung on laundry poles and futons or over the balustrade. Although occasionally now prohibited under the terms of purchase this commonly happens, even in large condominium and public housing blocks. Washing is not usually hung outside at ground floor level in towns although sometimes where a whole plot



Fig. 4.5: Orientation of dwellings is crucial for household routines. 30 of the 32 apartments in this public housing block are airing futons or drying washing. Inage-ku, Sonno-chō [IR]

is shaded from direct sun there is ingenuity in getting bedding into the sunshine (airing futons over bicycles on the sunny side of a lane for example).

'Airing' is an important aspect of the use of space and incorporated into household routines. If a futon or bedding is allowed to lie on *tatami* flooring for a week during the summer both bedding and floor will become mouldy and at very humid times even new *tatami* flooring will be infected with mould if the room is not aired. Ann Waswo (2002:71-2) comments on the problems of trying to achieve cross-ventilation in public housing

units in 1950's before electric fans, let alone the heaven of air conditioning, became widely available.

The orientation of the living and sleeping spaces in a dwelling (and in many Japanese homes these still comprise the same space) directly influences the location of other functions within residential buildings. The north side of the dwelling will nearly always include the kitchen, toilet and bath/utility area, even where that side of the property is adjacent to the highway, so there is no convention for residences to have a façade to 'face the street' or the site entrance. Typically in detached housing north facing walls will also be followed by the route of services including all plumbing and drains. Gas supplies are often delivered in propane cylinders rather than by mains and these too will be stored outside in the shade against a north wall. One consequence of this is that the alignment of residential properties in streets running approximately east/west is very distinctive. Dwellings on the north side of the street will display a south aspect to the road with balconies and living rooms facing public circulation space while, those on the south side of the street will display their north-facing "service" faces (see Fig. 4.3).

4.5. Uchi and Soto

In Japanese dwellings there is a powerful cultural as well as practical distinction made between 'inside' and 'outside' – in Japanese '*uchi*' and '*soto*'. Japanese has many homophones and the sound 'uchi' is can be represented by two different *kanji* (ideograms). The first of these refers to 'the inside' and is also used in phrases expressing, 'time within' and 'included membership'. The second and quite distinct '*uchi*' has the meaning of 'house, home, family'; in some local dialects women refer to themselves as '*uchi*' – the 'inside person'. '*Uchi*' determines not only a distinct enclosed physical and private space but also a 'back region', a family space quite separate from the external world. This distinction is strong because the area of the house is not simply regarded as a floor but also a 'living platform', always raised above external surfaces. The architect Ashihara Yoshinobu (1983:67) referred to vernacular Japanese dwellings as consisting of an 'architecture of the floor' in contrast to a Western 'architecture of the wall'. This 'living platform' comprised *tatami* mats of tightly woven rice straw of standardised dimensions (typically 182cm * 92cm by 5cm thick but this varied

geographically). Barrie Shelton refers to the 'God-like respect' shown to floors in dwellings "No earth-soiled shoe ascends from outside to contaminate the floor which, for centuries, has been the surface for sitting, sleeping and other 'clean' activities normally raised in the West from floor to chair, table or bed height" (1999: 30). The floor plan of a Japanese house is called the *madori* – 'ma' (a space) 'toru' (to take hold of) – a space taken from and set apart from a larger whole.

General access to the dwelling is usually only by a single entrance, inside which is a tiled floor area of about one to two square metres very slightly above the level of the exterior pavement. All outdoor footwear is left within this area, either neatly on the floor with the toes pointing outwards ready for the owner to step into when he or she steps outdoors again or in the *kutsubako* or *getabako* – the shoebox, a cupboard immediately inside the entrance with shelves to store footwear. This entry area is known as the *genkan* and it acts as an intermediate zone. In suburban and rural neighbourhoods it is still common practice for visitors to open the front door and step into the *genkan* calling out politely for the attention of the household members. Tradesmen and visiting salesmen etc. are formally received here, often displaying what they have to show on the step up onto the main wooden floor of the property. This step is about 30 cm in modern houses, 60 cm or more in older vernacular properties where there is often an *agari-kamachi*, an intermediate stone or box to act as a step. This is the perceived barrier which people who are not members of the household do not cross without invitation. Even in modern condominium apartments where the step may only be two or three centimetres this line is very distinct. Formally visitors are invited to *o-agari kudasai* (step up please) and even friends will be asked to *haitte* – enter inside.

This practice of removing outdoor footwear is very strictly applied. Even at times when the property is not in use as a dwelling – for example when a household is moving in or moving out – removal company employees will very skilfully remove shoes at the *genkan* every time they enter even as they step up with heavy pieces of furniture. Where dwellings have alternative access to outdoor areas – for example a rear door to the kitchen to take out garbage or French windows giving access to the garden or



Fig. 4.6: A typical *genkan* step in a modern dwelling. Outdoor shoes are removed and left on the tiled area or put away in the shoebox behind. Indoor slippers are laid out for guest use [IR]

balconies – a pair of plastic slippers or outdoor shoes is provided outside the exit so that indoor footwear need never be used elsewhere.

On some special occasions the strict observance of the structure of *uchi* and *soto* breaks down. Traditionally when a household member dies for example interior spaces of the house that would be considered *uchi* might be taken over by neighbours and neighbourhood women would come and use the kitchen to prepare the *shōjin ryōri* – the vegetable food served to Buddhist clergy and guests at the funeral. In the more rural area of Chiba-ken where I live some households still have life-time ‘*chigiri*’ relations with others involving responsibility for such intimate tasks as washing the deceased person.

The relationship between ‘*uchi*’ and ‘*soto*’ as categories defining Japanese perceptions of built space and discourses such as Habermas’s (1987, 1989) theorisation of public and private spheres might be noted. Both Howell (1993) and Gregory (1994) commenting on this work refer to a lack of awareness of both geographical context and scale and also the essentially Eurocentric perspective associated with his vision of a bourgeois public

sphere. This criticism might be considered especially valid in the Japanese context where the State played such a large part in defining the 'Sphere of Public Authority'. Eisenstadt for example suggests that terms of Japanese experience:

the mode of structuring public and private life that developed in Meiji Japan was closely related to ... distrust of politics and to the construction of civil society and its relations to the state. Activity within the public space was almost entirely monopolized by the government and the bureaucracy, in conjunction with or oriented to the elites. This activity was seen, not only by "interested" elites but by wide sectors of society, as defining the proper arenas of public discourse (1996:37)

4.6. Purity and hygiene

Many writers have written about the very distinctive perceptions of the relationship between hygiene and purity in Japanese culture. Nelson (2000:179) commenting on the origin of this suggests that many scholars believe that the religious purification practices of Shinto thought originally to be specific to *kami* worship "were eventually dispersed enough in society to heighten even the common person's awareness about aspects of health, disease, food preparation and bodily cleanliness". The anthropologist Emiko Ohnuki-Tierney argues that Japanese hygienic practices are based on a "symbolic correlation between two sets of spatial categories: inside: outside: and above: below, whose meaning is purity: impurity" (1984:31). In a later work she expands this argument by suggesting that

The basically dualistic Japanese universe is a universe that constantly ebbs and flows between two opposite principles: purity and impurity – or according to a different interpretation a state full of vital energy and a wanting thereof; good and evil; order and its inversion. With opposing forces simultaneously present, it is a universe in which the negative elements are as integral as positive elements (1987:130)

The concept of purity is very strongly associated with perceptions of *uchi* and *soto* discussed above, and clearly behaviour like the removal of outdoor footwear plays an important part in the observation of conventions of cleanliness. Dirt and pollution, now articulated as the imported Western concept of 'germs', is to be found everywhere

outside, and perhaps especially in *hitogomi* – places crowded with people. In addition to removing shoes on return the house people may wash their shoes or wipe them with special moist duster known as an *ashifuki zōkin*, wash their hands, gargle, remove outdoor clothing worn in the city and wipe the paws of pets. In shrines, temples and other traditional public places are signs advising *Dosoku Genkin* – outdoor footwear strictly forbidden. It is common for people to wear gauze face masks in the street to avoid inhaling germs from others and also if they are sick to avoid spreading infection. Parts of the interior of dwellings also have specific rules applied. Indoor slippers are left outside the door to the lavatory and special slippers, set apart in design and colour, are worn inside to make certain that ‘germs’ will not be spread on the soles of the feet to other parts of the house. Indoor slippers are never worn on *tatami* mats; only stocking feet or bare feet are permitted. In the kitchen organic vegetable waste and sometimes meal leftovers are dealt with as ‘wet matter’ with the sink design incorporating a large trap in the waste pipe to retain the material.

4.7. Subdivision within living spaces

Until the 1950’s most dwellings consisted of one to three living ‘rooms’ separated by *fusuma* –the removable sliding doors which could be taken out to create a larger internal space when required. *Tatami* flooring would cover this whole area, and the size of a property would be reckoned in *jō* or ‘mats’ – a measure of area or capacity still used to purchase domestic items from carpeting to paraffin heaters and air conditioners, and the only one used to define domestic property size in Census reports until 1980. The larger room, perhaps six, eight or ten *jō*, would be known as the *kyakuma* (guest room) or *ō-setsuma* (parlour) and would serve as a reception room for visitors with direct access from the *genkan* while space towards the back of the house was *uchi* – family areas. Between these a strong ‘front of house and ‘back of house’ relationship might be maintained. However all rooms might be used for often communal sleeping, futons being packed away into deep cupboards before breakfast and set out again on the floor after the evening meal. Many families still use most interior space in exactly this traditional way. These rooms are very lightly furnished and without chairs. The reception room would probably contain a *tokonoma* – an alcove containing a calligraphy scroll or a flower

arrangement, and a more private area within the house would house the freestanding family *butsudan* (Buddhist altar) and a Shinto shrine shelf.



Fig. 4.7: Classic tatami room in a replica of a bushi house. Japanese rooms in modern homes replicate these same features. [IR]

Smaller dwellings might not have a separate tiled *ofuro* (bathing area) in which case the household would use the district bath house – probably daily through the worst of the summer. District bath houses are very rare now but communal bathing is still common in spas and hotels involving an etiquette which begins with washing and rinsing outside the bath before soaking together in a hot tub. This routine is followed even in a domestic *ofuro*, soap is never used in the bath. The washing machine will be located in the *ofuro* annex, never in the kitchen where food is prepared, and bath and toilet are always in separate rooms.

The detail of how the subdivision of dwelling space has changed over time will be dealt with in Chapters Five Through Nine but I want to outline here the general context within which certain features have endured over the last century. With the addition of more rooms to dwellings, and especially the addition of a second storey, communal use of space has declined. Family members sleep in separate rooms more often and there has been an increase in the use of ‘Western’ furniture (about a half of all Japanese now sleep in a bed⁷). Use of ‘Western’ dining furniture for daily use is now very common, and the orientation of the kitchen has changed to integrate it more into the living or dining areas

⁷ This figure is a only personal estimate based on asking many friends and students. I have searched so far unsuccessfully for any survey data or recent material in published sources.

so that this is no longer the separate 'back of house' location it once was. These new combined dining and living room and circulation areas will have a wooden floor, perhaps with rugs, but the use of fitted carpet is uncommon.

At least one downstairs room and one bedroom is still likely to be a *washitsu* (Japanese style room with a *tatami* floor and the necessary deep cupboards for bedding closed off with *fusume* sliding doors. In these rooms even if there is no balcony the windows will be fitted internally with *shoji* paper screens which visually completely isolate the interior from external views. These 'Japanese-style' rooms will be the ones in which guests are received and in which families might also relax together sitting or lying on the floor, in winter around a quilted *kotatsu*, the successor to the traditional *hibachi* stove (Hall, 1966) In this respect they are the key spaces of socialisation.

In effect what has happened here is that as the size of dwellings and the number of rooms has increased over three generations the nature of the additional space has acquired a completely different 'modern' quality and function. However a part of the dwelling space continues to reflect the transmission of more durable cultural values. Tracking the increase in size of dwellings at each stage of the evolution and expansion of the urban fabric not only reflects and increasing affluence but more importantly a changing cultural context reflected in people's biographies, the changing quality of space and also the retention of some important cultural norms.

4.8 Contrasting Japanese and Western Space

In the preceding sections I have sketched an outline of what might be considered as the characteristics of conventional Japanese built space as it applies primarily to dwellings. I have suggested that some 'Japanese space' persists in almost every dwelling, at least to the extent that shoes are removed in the *genkan* and some *tatami* area is available for sitting and sleeping on. I want to conclude this chapter by pointing out some of the ways in which this 'Japanese space' exists in non-residential contexts and how distinctions are drawn between 'Japanese' and 'non-Japanese' interior spaces.

Wholly 'authentic' cultural spaces can be found in those restricted groups of public buildings that have either survived from a pre-modern period or been constructed recently in an older style (and such modern copies are common in Japan). The obvious examples are Shinto shrines and especially Buddhist temple complexes where often covered raised walkways with beautifully polished wooden floors connect halls constructed in post and beam architecture and invariably floored with *tatami* mats. Although the layout of temples is influenced by wider East Asian practice the architecture, certainly after the ninth century, is generally and distinctively Japanese. Castles and historic residences sometimes offer the same kind of environment. Unlike for example European Christian churches, all these spaces are effectively private spaces to which a visitor may be admitted on similar terms to a private house. Sometimes they may be permitted to carry their outdoor footwear in plastic bags provided and 'front of house' spaces for permitted public access will be carefully defined⁸.

Japanese-style interior space is very common in premises which provide an environment in which people meet socially, and especially in restaurants. This might be as simple as providing a *genkan* in the lobby where shoes can be exchanged for slippers, or it may extend to all or part of the eating area comprising *tatami* with low tables at which guests can sit on cushions. Sometimes a well space is provided under the table to cater for people who find it difficult to sit in *seiza* or on floor cushions to eat. Interestingly function spaces for groups are more likely to involve *tatami* sitting than accommodation for single or couples dining, emphasizing the social aspect of sitting together on the floor. These private function rooms in eating establishments often are used as an alternative for entertaining at home. Japan Railways even operate special *ozashiki densha* excursion trains where the carriage is constructed with a long low function table down the centre and *tatami* flooring is provided throughout the length of the train to provide a moving traditional-style eating space for company outings and other parties.

Japanese-style interiors are also often common in shops associated with traditional crafts and products such as *kimono*, and in these structures the internal layout still often

⁸ In a large temple for example visitors may be told that they can only walk on wooden surfaces, which effectively limits access to corridors. Admission may only be in the company of a guide.



Fig. 4.8: Internal and external use combined. The raised highly polished wooden floor is for monks wearing slippers, the concrete for visitors in outdoor shoes. Sōjiji Temple, Tsurumi [IR]

follows exactly the format of Edo-period *machiya* – with customers received first in a small circulation area in front of a step up onto an internal *tatami* platform. Where *kimono* are sold in department stores the sales area often imitates this traditional configuration and it might even be contrived temporarily in a conventional area of sales floor using portable *tatami* carpeting to cater for an ‘end of season’ sales event.

Local community halls have *tatami* flooring, and *tatami* function and meeting rooms within a wider ‘non-Japanese’ environment are usually provided in larger community centres and sports centres. Usually toilets in these buildings also involve the toilet slipper etiquette outlined above.

Almost all spaces which are associated with perceived ‘Western’⁹ types of activity – supermarkets, book stores, banks, libraries and offices of all kinds – will have no

⁹ The Japanese use the terms *yōfū* or *seiyōfū* meaning ‘Western-style’ or ‘Western-manner’ to make this distinction

'Japanese-style' features. Institutions like schools provide an intermediate environment, with composition flooring and 'Western-style' desks and chairs but enforcing a change from outdoor to indoor footwear at the entrance which contains large shoe racks. Schools heavily reinforce conceptions about the use of space by holding children responsible and accountable for the cleaning of their own institution. Compared with British schools Japanese schools are spotlessly clean.

Sometimes the distinction between what consists of 'Japanese space' and 'non-Japanese' space can be a very subtle one. For example a doctor's or dentist's surgery, being associated with 'germs', must be regarded as a particularly impure environment and this kind of space will have composition flooring for easy cleaning. Where a surgery is located in a purpose built 'Western-style' building outdoor footwear will be worn. However where a surgery with such flooring is attached to the doctor's home, a common occurrence of 'having the family business on the premises' in Japanese cities, then shoes will be removed in the *genkan* and slippers will be worn in the same way that they would be in a school classroom.

Having sketched some of the elements that have proved to be enduring in the context of the design and use of buildings and wider urban space, in succeeding chapters I will explore some of the forms of physical change that have taken place associated with social transformation.

Urban Space in a Modernising State: 1868 to 1945

Now is the age of the cities. From those who have learning and seek honour to those who want to make money or to sell their labour – everyone and his brother is setting out for the cities, as if gripped by a kind of fever¹

Yokoi Tokiyoshi

5.1 Introduction.

In this chapter I want to explore the evolution of Chiba-*shi* during the years between the Meiji Restoration in 1868 and Japan's defeat in World War II in August 1945, in terms of transformation of the relationship between the material form of the town and processes of urban life. How did the State and its institutions influence the volume and form of urban space produced during these decades? To what extent did the emergence of a strong '*kokutai*' during the Meiji era – a new, clear and compelling vision of a national polity – instigate new forms of political economy and affect the rhythms of daily life? How did the emergence of new *loci* of financial and commercial power alter the use of urban space? How did institutional change commonly affect individual biographies and how were all these transformations reflected in the nature of the built environment?

To consider these questions in respect of a specific nineteenth century Japanese provincial town means making the best use of the surviving materials available. A good selection of descriptive statistics has survived for Chiba but these are not always consistent, nor are they easily combined into a longitudinal view. From 1877 Chiba-*ken* bureaucrats published *Chiba-ken tōkēi-sho*, a substantial annual statistical yearbook (by 1913 already 900 pages) but the contents of which unsurprisingly reflect the changing preoccupations of the compilers. It often offers detailed quantitative 'snapshots' of contemporary issues but over time priorities and methodologies change. To give one example, it is not possible to get a single clear view of the emergence of what would now be classified as 'manufacturing employment' before 1913, partly because of the privileged status of farming but primarily because at this time 'manufacturing' comprised two components which were viewed as quite separate objects by officialdom – traditional

¹ "*Tokainetsu no kekka*", *Kyōikukai* 6, no. 5 (March 1907). Quoted in English in Gluck (1985:159)

family craft businesses and the introduction of alien Western-style factory sites operating with waged labour. After the first national population census in 1920 regional comparisons across Japan become easier but longitudinal studies are still hampered by unstable definitions, even about such basic criteria as to whether *de jure* or *de facto* population is to be counted.

Very few aerial photographs survive of Chiba-*shi* before 1946 and so use has been made in writing this chapter of postcards of street views, and also of contemporary large scale maps to estimate the extent and character of change in the built environment. Almost all of the actual urban area under review, and also some of the documentation that once recorded it, was destroyed in air raids in June 1945.

The core of this chapter is divided into three sections. The first, covering the years from the Meiji Restoration in 1868 to 1890 considers the impact of changes that took place during the early Meiji era following the designation of Chiba-*machi* as the new centre of *ken* administration, and the effect – or lack of one - of the appearance of new industries using imported technologies. The second, dealing with the years from 1890 to 1920 documents urban growth following Japan's acquisition of colonies, the emergence of a strong military presence in the town and the beginnings of a manufacturing sector based on a more intensive mode of regulation and Taylorist style management. The final section deals with the years 1920 to 1945 during which Japan emerged as the the east Asian economic power despite severe economic depression, military adventurism and the emergence of a 'national defence state' mentality. This led ultimately to a society and economy based on a 'total war' footing and the eventual destruction of much of Japan's urban space by incendiary bombing. In each section, and in the following chapters, I have provided a table summarising the main contemporary historical events and legislation affecting local government or promoting change in the urban environment.

There are many institutional threads that run consistently through all these three early periods. At every stage there was firm and increasingly centralised State governance and a powerful executive focused on strategic security and economic goals rather than either political ideology or electoral opinion. The government single-mindedly pursued an

objective of developing institutions capable of defending the national interest (Gluck 1985: 17-41), often using local administration simply as an agency. Because the development of both an industrial economy and overseas empire came late – later even than for Germany or Italy – technology was usually imported and deployed in a mature format leaving little evidence of ‘industrial archaeology’ in industrial areas. Japan, through most of these years, was a country of low household incomes and often severe rural poverty. After a brief period in the 1870’s characterised by ineffective public enterprise the government acted in close partnership with increasingly powerful private economic interests within the framework of a ‘developmental state’ which was to remain an enduring feature of modern Japanese society (Johnson, 1982:305, 1994).

There are also many aspects of continuity in the routines of everyday life that run consistently through the whole pre-1945 period. In rural civilian life and in provincial cities the majority continued to wear *kimono*, *jinbei*, *hakama* and other traditional garments. Diet continued to be based on rice, noodles, soybean products and fish with little meat. Despite the introduction of European medicine and some extension of medical care, the average Japanese lifespan changed very little between the 1880’s and 1945, and compared with today a life was brief, frequently just long enough to see grandchildren through early childhood. Rural poverty in the 1920’s actually reduced average life expectancy compared with the late 1890’s, and although it had risen again

Table 5.1: Average expectation of life by age based on national life table data

	1st Life Table		4th Life Table		6th Life Table	
	1891-1898		1921-1925		1935	
	<i>male</i>	<i>female</i>	<i>male</i>	<i>female</i>	<i>male</i>	<i>female</i>
<i>0 years old</i>	42.80	44.30	42.06	43.20	46.92	49.63
<i>5 years old</i>	50.70	51.50	50.35	50.71	52.22	54.40

Source: Statistical Handbook of Japan 2005 Table 2-27

by 1935 because of improvements in perinatal care mortality the average increase in expectation of life at age 5 was only two to three years (see Table 5.1). So all three periods considered in this chapter were times when lives were short. Only a minority lived into what we would now consider ‘old age’, and most who survived infancy worked hard at manual work until their health collapsed at around sixty years old and they died.

5.2 The early Meiji era 1868 to 1890

The 'Meiji Restoration'² which followed the *coup d'état* of 3 January 1868, was both a singular moment of political change in Japan and a consequence of longer term structural changes in Japanese society. Two centuries of deliberate 'seclusion' from Western cultural influence under Tokugawa rule had come to a dramatic end fifteen years previously with the arrival of an American naval force bearing demands that Japan open up to "foreign trade", an event that had quickly led to an increasing destabilisation of government as men in authority struggled to adjust to an unaccustomed sense of impotence and loss of sovereignty. The impact of new commercial treaties which imposed new and adverse trading relationships on an economy already struggling to overcome the straightjacket of existing and essentially feudal social relations quickly became evident (for an overview of the political impact of the 'unequal treaties' see Auslin (2004) and for a discussion of their economic consequences see Sugiyama (1988)).

1853	Arrival of Commodore Perry's 'Black Ships'. Japan forced to open to Western trade
1868	Overthrow of the Tokugawa shōgunate. Meiji Restoration. Boshin Civil War
1869	Edo designated as 'Tokyo' - the new capital. Traditional feudal status groups abolished
1871	New Currency Regulation - Yen established as national currency
	<i>Abolition of han and designation of 302 interim prefectures</i>
	Ministry of Education established
1872	<i>Fundamental Code of Education (Gakusei) establishes local school districts and four years compulsory education.</i>
	National Bank Ordinance promotes restructuring of banking and financial institutions.
1873	Adoption of Gregorian calendar. <i>Military Service Conscription Ordinance</i>
	Home Ministry established. Land Tax Reform
	<i>Beginning of 'Normal Schools' (shihan gakkō) for teacher training</i>
	<i>Chiba Prefecture designated, based on Chiba-machi</i>
1875	Publication of first residence register population statistics for Chiba-ken
1878	<i>Three New Laws (Sanshimpō) eliminate variations in local administration</i>
1879	<i>Education Order (kyōikurei) decreased central control.</i>
1880	<i>Revised Education Order (Kaisei Kyōiku Rei) strengthens central control again</i>
1881	Ministry of Agriculture and Commerce established. First topographic map of Chiba published
1886	<i>Education Orders of Mori Arinori. State control of curriculum and text books</i>
1888	<i>New Local Autonomy System (Chihō Jichi Seido) established</i>
1889	Meiji Constitution promulgated. Local administrative boundary reforms from 1 April.
	<i>Sōbu Railway Company (Sōbu Tetsudō Kabushiki Kaisha) incorporated</i>
1890	First Japanese general election. Imperial Rescript on Education
	<i>Prefectural Code (Fukensei) and District Code (Gunsei) adopted</i>
<i>* Entries in blue refer to events directly influencing the development of Chiba-machi</i>	

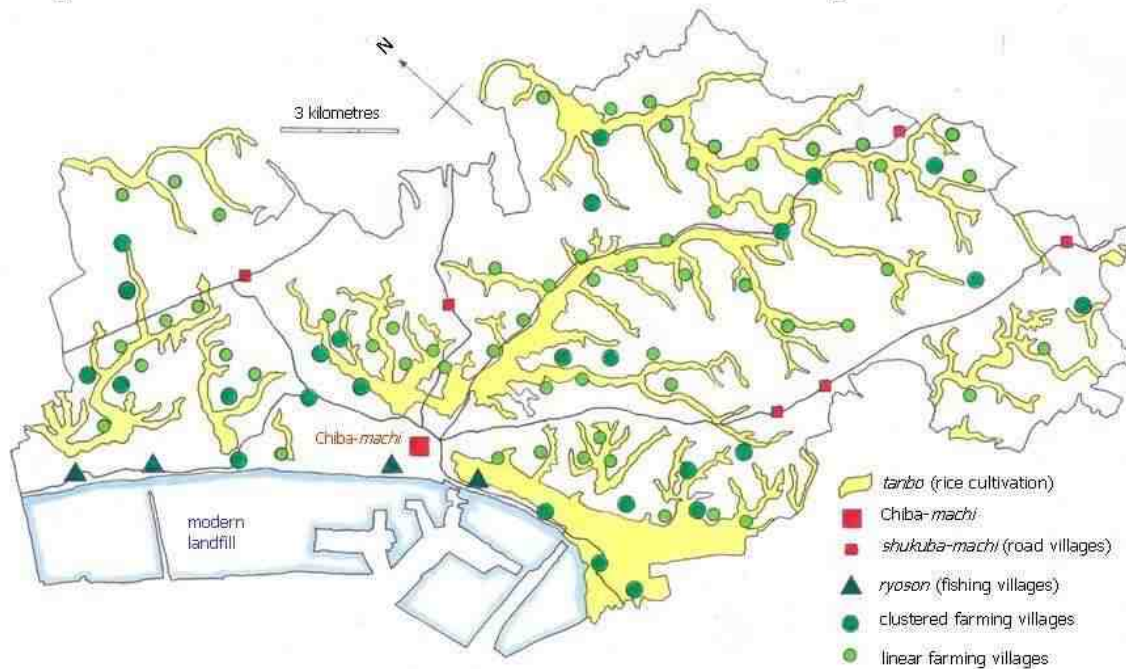
² 'Meiji Renewal' is a better translation of the Japanese term 'Meiji Ishin'.

Establishing a new hegemony as a foundation on which to build a strong nation-state capable of maintaining its independence from Western political, economic and cultural colonialism was the immediate priority for the incoming young, conservative *samurai* leadership from Satsuma and Chōshū. The wider dimensions of what proved to be a thirty year 'project' to achieve the goal of *fukoku-kyōhei* ('rich country-strong military') have been documented by several writers - for example Beasley (1972), Gluck (1985), Umagaki (1988) and Wilson (1992). Here I want to explore the impact of political and social change at this time on the development of Chiba-*machi* as the designated new administrative centre for the Meiji regime east of Tokyo. Key events in the chronology of this period are summarised in Table 5.2

The immediate consequence of the coup in Kyoto was the brief Boshin Civil War between imperial and shōgunate forces which led to instability and sporadic violence in the capital Edo (Steele, 1990) and across surrounding southern Kanto, most of which was administered either by the shōgunate directly as family lands or by *fudai* (Tokogawa related families) (Collcutt et al. p.170). The *kuni* of Shimōsa, Kazusa and Awa which were later to comprise Chiba-*ken* were all on the 'losing side' in the violent events of 1868.

A complete restructuring of the loose quasi-federal structure of *han* governance was an absolute priority for the new administration. Not only were the existing institutions incapable of delivering the kind political, economic and institutional modernisations that the government had in mind but persisting former personal loyalties were a source of potential (and actual) rebellion. The contemporary French model of centrally directed *prefects* was adopted as a guideline, and the first new structure of 302 *ken* introduced in July 1871 reflected the *de facto* distribution of authority within existing *han*. These were administered on behalf of the government by the existing *daimyo*. However within a year most had been replaced by Tokyo-appointed governors and the number of *ken* reduced to 72. The present national structure of 47 *ken* has been stable since 1888.

Fig. 5.1: Settlements within the area of modern Chiba-shi existing in 1882



In the 1871 reforms the *kuni* east of Tokyo were divided into three new prefectures and consolidated into a larger new prefecture based on the settlement of Chiba-*machi* on 15 June 1873 (Cs-Shi(2):104-106) . Unlike most of the new 'seats' of prefectural government Chiba-*machi* had not previously been a significant administrative centre – the former *jōkamachi* (castle towns) in the area were Sakura and Kisarazu. Chiba was a *shukuba-machi* – a 'post' or 'stage' town in Shimōsa, centrally placed within the new *ken* area and on the main highway network around the head of Tokyo Bay.

In contrast to the dizzy pace of political change on a national stage the physical transformation from the Tokugawa to early Meiji eras at a local level was a very gradual process - and especially in backward and poorer regions like Shimōsa with rural economies almost wholly dependent on farming and fishing and with limited apparent potential for new cash crops or rural industries. Figure 5.1 provides a simplified sketch map of Chiba-*shi* [modern] as it appears on the 1881/2 topographic sheets. At that time there were 96 clustered settlements in the area of which 86 were agricultural *son* and



Fig. 5.2: The first building in Chiba-*machi* to be constructed in a non-vernacular style was the *ken* Assembly Hall built in 1880. Replica at Chiba-*ken* Building Museum at Boso no Mura

mura. Nearly all these farming villages are located alongside the *tanbo* – the rice cultivation pans which occupy the narrow sinuous valley floors of the *yato*. Rice – which until recently had been the primary ‘currency’ by which taxes were paid ‘in kind’ - was being grown during the humid summers on almost every possible irrigatable area, a characteristic climax form of a pattern of farming that had evolved across lowland Japan over more than 1500 years.

Sixty of these agricultural settlements were linear³ with houses strung in a characteristic format on each side of a lane, located in 80% of cases along the foot of slopes on the north sides of *yato* to provide south facing aspects for dwellings. As grain and straw were dried *in situ* on bamboo frames in the *tanbo*, this focus on dwelling alignment is characteristic of dwelling occupation and not cultivation practice, and is related to the enduring values associated with access to sunlight discussed in Chapter Four.

³ Here defined as dwelling clusters at least 2.5 times as long as they are broad



Fig. 5.3: Merchant's *machiya* houses in designs typical of the 1880's. Displaying goods outside is still typical of Japanese retailing. Chiba-ken Building Museum Boso no Mura.

In the early Meiji Era these village communities were still the *loci* of effective day-to-day government (Ooms, 1996; Dunn, 1972) and much of the evolution of local administration at this time concerns the relationship between new structures of sub-national governance, the appointment (later election) of *ken* representatives and the institution of new methods of control and taxation at village level (for an excellent analysis of this process in work in Ishikawa-*ken* see Baxter (1994)).

Those settlements that were not farming villages fall into two groups. There are four *gyoson* (fishing villages⁴) a class of community which formed part of a distinctive group throughout Japan at this time (Kalland, 1995) and six *shukuba-machi* or other 'road villages' which have a characteristic '*strassendorf*' form (Kornhauser 1976:67).

What was the built environment of the *shukuba* of Chiba-*machi* like at the time of the Meiji Restoration? It consisted of around 500 dwellings and a dozen temples strung along the main road on a spur of slightly elevated ground leading to a crossing of the

⁴ Makuhari, Kemigawa, Nobuto and Samugawa

Miyako River. Extensive areas of *tanbo* farmed by villagers lay to east and west, and there was heath land with some *hatake* farming to the north. A kilometre to the east were the two coastal fishing villages of Nobuto and Samugawa.

The construction, layout and use of types of vernacular buildings used as dwellings and workshops in Kanto around 1880 was described and illustrated by Edward Morse (1886). A very few wet plate collodion images survive of buildings around Chiba-*gun* taken in the 1880's, and several larger, modernised and sometimes 'gentrified' agricultural dwellings (*ie*) also survive from this period usually in rural areas. Nishi (1967) provides an overview of the general layout and structure of the local *minka* (farmhouses) and there are facsimiles of Shimōsa farmhouses, a *buke-yashiki* village headman's home and a street of prosperous *machiya* town houses from this period in the Chiba Building Museum at Boso no Mura (Fig.4.3). All of these structures are 'post and beam' timber framed buildings of around 70–100 m² floor area, usually with cedar structural members and shingles. Village roofs were commonly thatched in *yosemune*⁵ hipped style or *irimoya* hipped-and-gable style. Within Chiba-*machi kirizuma* gabled style roofs would be common on *machiya* street houses (a pattern common even in Tokyo, see Morse (1886) Figs 1 and 2). Apart from *machiya* where the household lived above the business or shop, single storey houses were universal, comprising perhaps 90% of the total. There is less evidence for the dwellings of poorer families both in town and village but simple rented one or two room structures with a living area of around 30–40 m² seems to have been a common format.

Population change. Chiba-*machi's* designation as an administrative centre was no part of any deliberate strategy to promote urban growth, even if this later became an outcome. There is no data published for the *machi* until the 1890's but *Chiba no kenchiku Tanbō* reproduces some early Basic Residence Register statistics for 1874 and 1880 which suggest that the designation as the centre of *ken* administration led to an expansion of around 500 new dwellings and an associated population increase of around 2,700 during the first decade (Table 5.3). *Gun* level statistics were, however, published

⁵ All of these Japanese building terms can be referenced with illustrations at the JAANUS website.

during the 1880's and so it is possible to compare several *gun* metrics with whole-*ken* data for this period. Some basic population metrics are presented in Table 5.4. Even

	1874¹	1880¹	1886	1895
Population ('000)	3.11	5.82	18.2	25.4
Size ranking within Chiba- <i>ken</i>	9th	4th	2nd	1st
* <i>Chōshi</i> population ('000) ²	17.69	15.85	25.77	23.73

¹ Values before 1886 exclude Nobuto, Samugawa and Chibadera consisting in total approximately 500 dwellings and 3000 population
² Chiba-*machi* replaced Chōshi as the largest town in the Prefecture in 1894
Source: summarised from *Chiba no kenchiku Tanbō* p.156.

though it is not possible to focus on Chiba-*machi*, the data does show that even at this early stage the *gun* population is expanding more rapidly than the population of the *ken* as a whole with an annual increase of 1.22% in registered *honseki* population. It is also clear that the real rate of growth within Chiba-*gun* is probably around double this as by 1887 the actually resident (*de facto*) population was 8.72% more than the registered (*de*

	Chiba-<i>gun</i>		Chiba-<i>ken</i>	
	1881	1887	1881	1887
registered honseki population ('000)	64.96	69.71	1108.68	1169.84
<i>% annual increase</i>		1.22%		0.92%
<i>% of prefecture</i>	5.86%	5.96%		
actually resident population ('000)	<i>n/a</i>	75.79	<i>n/a</i>	1161.63
<i>actually resident excess (shortfall)</i>		8.72%		-0.70%
honseki households ('000)	11.17	12.49	206.40	217.98
<i>average household size</i>	5.81	5.58	5.37	5.37
<i>shizoku (gentry)</i>	4.46	3.83	4.51	4.5
<i>heimin (commoners)</i>	5.85	5.63	5.39	5.38
<i>shizoku as a % of total households</i>	2.58%	2.81%	1.98%	1.93%
married resident population		30.15		509.71
		39.78%		43.87%
live births ('000) population	23.1	34.4	22.0	31.2
deaths ('000) population	15.5	17.7	16.8	18.9
natural increase ('000) population	8.7	16.7	5.7	12.3
population aged 0-19			40.11%	39.21%
population aged 20-49	n/a	n/a	40.27%	41.32%
population aged 50 and over			19.62%	19.47%

Source: Chiba-*ken* *tōkēi-sho* 1881 and 1887 volumes. Data as at 1 January.

jure) population, an anomaly which remained characteristic of the whole Meiji era.

This disparity is likely to be primarily a consequence of younger, single people taking up waged employment in Chiba-*machi* but there are also other factors at work here. Part of the overall increase must be merchants and craftsmen moving into the area to take advantage of the growing local market for goods – the larger average *honseki* household size within Chiba-*gun* suggests that this first wave of migrants moved with their parents and were also likely to have more children than the *ken* average. There is a modest concentration of smaller *shizoku* ('gentry') families in the area – almost certainly here former *samurai* families continuing to be involved in civil administration. Chiba-*gun* also has higher birth and lower death rates leading to a higher rate of natural increase. No separate age profile is available for Chiba-*gun* but the age profile ratios for Chiba-*ken* in 1887 remain very similar for the next half century.

Employment and built environment. There is no regular reporting of employment in early editions of *Chiba-ken tōkēi-sho* but the 1881 volume has a unique table (pp. 67-69) enumerating occupations for the whole *ken*. This information is re-presented in Table 5.5

Table 5.5: Chiba-ken occupations in 1881			
	TOTAL persons '000	% of TOTAL	females per '000 males
Agriculture	589.44	76.79%	1039
Fishing	42.50	5.54%	197
TOTAL PRIMARY OCCUPATIONS	631.94	82.33%	947
Manufacture of goods	32.81	4.27%	15990
Commerce and Distribution	44.25	5.76%	407
TOTAL SECONDARY OCCUPATIONS	77.05	10.04%	1309
Public Officials	1.87	0.24%	0
Shrines and temples	3.07	0.40%	0
Military	1.23	0.16%	0
Teachers	1.08	0.14%	22
Medicine	0.98	0.13%	7
TOTAL SERVICE OCCUPATIONS	8.23	1.07%	4
Day wage labour	22.75	2.96%	941
Other activities	27.63	3.60%	885
POPULATION IN OCCUPATIONS	767.60	100.00%	956
	69.24%		
children in education	65.54	5.91%	314
children under 7 years old	172.48	15.56%	994
not working/ retired	103.06	9.30%	2089
TOTAL POPULATION	1108.68	100.00%	972

Source: 1881 edition of Chiba-ken tōkēi-sho pp.67-69

and it clearly shows a society in transition. The structure is still primarily a traditional one reflecting a society which has not changed radically since the Edo era. All the key features of Edo society are still in evidence, with farming and fishing still accounting for 82% of all household livelihoods. Public service - including government officials, police and teachers – remains a tiny sector. 'Commerce' is important and still is focused on the wholesale and retail distribution of basic commodities, at this time still managed by general merchant family enterprises, operated as establishments within combined dwellings and business premises. There is a pool of 'day labour' being sold within the community. All this still resembles the kind of life patterns experienced during the days of the four *shinōkōshō* ('estates') described in detail in Dunn (1972). But the most interesting sector here is 'manufacture of goods' which has two quite distinct components. The smaller element includes craft workshops and an almost exclusively male workforce but the larger and very significant group comprise younger women working as contract labour in new textile manufactories in emerging sectors crucial to Japan's developing position within world markets - spinning cotton (as import substitution) and silk (for export) (Sugiyama, 1988). However at this time this new factory employment was all rural based, and did not influence the development of Chiba-*machi* as urban space.

Finally Table 5.6 provides an overview of the types of built structure in both *gun* and *ken* in 1887. In Chiba-*gun* dwellings account for more than 98% of all buildings; a very large but unknown proportion of these are either farms or will be accommodating merchant livelihoods or craft manufacture under the same roof. Schools and public offices and buildings are an important part of the non-residential mix. Urban warehousing and distribution storage involved traditional – and expensive - two storey buildings known as '*kura*' with tiled roofs and thick plastered walls to protect against fire. The majority were concentrated in the port town of Chōshi-*machi* on the Tone River, still the largest urban area in Chiba-*ken*. There are already more than 400 industrial structures in the *ken* but only 13 are located in Chiba-*gun*.

Patterns of daily life. How might we characterise patterns of daily life in Chiba-*machi* in the early Meiji? Here certainly is a society still largely engaged with a traditional and pre-modern economy. The vast majority are making livelihoods from farming and fishing.

	Chiba-gun		Chiba-ken	
<i>actually resident households ('000)</i>		13.12		211.94
<i>average family size</i>		5.67		5.39
TOTAL BUILDINGS	13881	100.00%	223601	100.00%
buildings used as dwellings	13641	98.27%	212323	94.96%
temples	131	0.94%	3242	1.45%
public offices	37	0.27%	491	0.22%
schools	50	0.36%	822	0.37%
hospitals	2	0.01%	24	0.01%
warehouses	7	0.05%	6272	2.80%
mills and industrial structures	13	0.09%	427	0.19%

Source: 1887 *Chiba-ken tōkēi-sho* Table 21 p.37. In this count agricultural outbuildings were not included.

This is of course a cash economy, but not yet wholly a cash economy; most consume or barter a part of what they produce. Most of those who are not growing crops or fishing are involved in the manufacture and distribution of food-based products, clothing and a range of household articles and the family – usually a ‘three generation’ family - is still the main source of any security or capital in the context of a village or craft community. Patterns of living are still largely based on rhythms associated with daylight, seasons and tides. The form and use of dwelling spaces will reflect this.

But there is also a widespread awareness of Japan’s new position in a global order and some penetration of Western knowledge, ideas and fashions into provincial life. If early Meiji Chiba-*machi* still largely reflects a traditional pre-modern economy, contract and day wage labour and clock time are now becoming a part of most peoples people’s lives. Certainly the imposition of compulsory (in theory) elementary education in 1872 and two years military service for men at age 20 in 1873 has introduced foreign concepts into every family’s day life and defined new life stages for everyone.

5.3 Japan as a Colonial Power 1890 to 1920

Between 1890 and 1920 the Japanese state established a position as the only non-Western major power. The military had already intervened in Taiwan in 1874 and Korea in 1876, and the belief that colonies were an essential prerequisite to develop a strong economy was encouraged by the contemporary rivalry for overseas possessions between

European states. In 1890 Prime Minister Yamagata outlined foreign policy objectives which suggested a need to defend both a "*line of sovereignty*" which included Hokkaido, Tsushima and Okinawa and a "*line of advantage*" which included the Korean peninsula as a buffer with Russia and China (Hackett, 1971:138). During the thirty year period considered here the Japanese pursued that "line of advantage" by fighting two major wars (China 1894 and Russia 1904), annexing Korea outright in 1910 and leveraging their position by fighting in the Allied camp in 1914-1918 War.

Table 5.7: Key dates 1890 to 1920	
1892	Railway Construction Law
1894	Sobu Railway opened from Ichikawa through Chiba- <i>machi</i> to Sakura
	Sino-Japanese War begins (<i>railways used in mobilisation</i>)
1896	Sotobō Line opened from Soga to Ōami
1897	Narita Line opened to Narita
	Sotobō Line opened from Chiba to Soga
	Sobu Line opened from Sakura to Chōshi
1901	modern mass production of steel in Japan begins at Yawata (Kyūshū)
1903	Ministry of Education stipulates all elementary school textbooks must be compiled and distributed by the ministry
1904	Japan declares war on Russia.
1905	Battle of Tsushima. Treaty of Portsmouth. Korea becomes a Japanese 'protectorate'.
1906	Railway Nationalisation Law. 17 companies nationalised in 1906-1907 including Sōbu Railway Company
1907	Chiba Penitentiary opens. Japan takes direct control of Korean domestic affairs.
1908	Military Railway Regiment stores and depot open in Chiba- <i>machi</i>
	Chiba Aiju Byoin opened. Became the Land Army hospital in 1936 and later a civilian hospital in 1945 (site still used for this)
	1st. Railway Regiment moved out to Chiba from Tokyo Nakano-ku. 2nd Regiment base moved to Narashino north of Chiba
1910	Korea annexed
1911	New enlarged <i>ken</i> Office opened. High Treason Affair trial in Tokyo
1912	Uchibō Line opens south from Chiba (Soga) to Anegasaki and Kisarazu
	Meiji Emperor dies. Reign of Taishō Emperor
	Chiba Infantry Training School opened
1914	Japan declares war on Germany.
1918	summer of rice riots
1919	First national Urban Planning Law implemented.
1920	Uchibō Line open through to Tateyama
	Decline in silk and rice prices marks beginning of post-war recession
	Japan a charter member of the League of Nations
	Keisei Electric Railway inter-urban line opens to Chiba
<i>* Entries in blue refer to events directly influencing the development of Chiba-<i>machi</i></i>	

During the 1890's the Japanese economy still relied on the export of raw materials and products such as silk to fund technologically advanced imports and armaments (Sugiyama, 1988; Baba and Tatemoto, 1968). But after the 1894-95 Sino-Japanese War the government moved to invest in a national iron and steel plant at Yawata in Kyūshū which began production in 1906. By 1922 Japan was producing more than 900,000 tons of steel annually (Erselcuk, 1947) and had an expanding engineering sector – very little of which was located in Chiba-ken.



Fig. 5.4: Chiba-*machi* main street in Honmachi 3-chome in 1911. All commercial and residential buildings are vernacular carpenter-constructed dwellings and apart from the surviving *machiya* built in the 1880's as the town expanded most are still single storey structures.

A few weeks before the opening of the first Japanese Diet in 1890 the last section of the Tōkaido trunk railway between Tokyo, Nagoya, Osaka and Kyoto opened, giving Japan a basic and mainly state owned network along central Honshu between Kobe and Sendai. This encouraged two periods of private 'railway mania' construction, first in 1890 and then later in 1893, fostered by the 1892 Railway Construction Law (Aoki et al, 2000). A limited stock company was formed in 1889 by merchant investors to build a railway

around the north side of Tokyo Bay to Chiba-*machi*, and on to Chōshi on the Tone River via Sakura - the *Sōbu Tetsudō Kabushiki Kaisha*. The new line used imported British materials, locomotives and rolling stock imported from Nasmyth Wilson of Patricroft, and was opened from Tokyo through to Chiba and Sakura on 20 July 1894. The whole route was completed in 1897 together with a branch to Narita and a new Boso Railway eastwards from Chiba to Ōami via Soga. Within three years Chiba-*machi* had become an important railway junction. After the 1904-5 Russo-Japanese War both companies were nationalised as part of a wider programme of bringing strategic transport back under state control.

	<i>Chiba-gun</i>			<i>Chiba-ken</i>		
	1890	1898	1913	1890	1898	1913
reg. honseki population ('000)	72.86	79.60	97.81	1201.38	1273.27	1448.02
<i>% of whole ken</i>	6.07%	6.25%	6.75%			
actually resident population ('000)	80.15	87.5	109.66	1194.80	1269.75	1390.27
<i>actually resident excess (shortfall)</i>	10.01%	9.92%	12.12%	-0.55%	-0.28%	-3.99%
<i>resident population annual increase %</i>		1.02%	1.69%		0.70%	0.63%
resident households ('000)		13.46	17.66	211.36	213.21	231.23
average household size (resident)		6.50	6.21		5.96	6.01
honseki households ('000)	12.84	13.30	15.65	220.22		239.69
<i>average household size (koseki)</i>	5.68		5.25	5.46		5.04
<i>shizoku (gentry)</i>	4.06		5.21	4.43		4.27
<i>heimin (commoners)</i>	5.72		5.25	5.48		5.05
<i>shizoku / total households</i>	2.74%		1.70%	1.91%		1.42%
married			35.09			548.61
			35.78%			37.89%
<i>live births ('000) population</i>	42.2	30.4	35.5	34.4	25.9	29.4
<i>deaths ('000) population</i>	25.5	20.6	18.7	21.5	20.8	21.6
<i>natural increase ('000) population</i>	16.6	9.8	16.8	12.8	5.1	7.8
inward migration	9.89	13.30	25.32	39.88	67.48	120.2
outward migration	2.84	4.87	13.47	39.72	65.72	178
net migration increase (decrease)	7.05	8.43	11.85	0.16	1.56	-57.8
<i>net increase (decrease) %</i>	9.64%	9.63%	10.81%	0.01%	0.12%	-4.16%
<i>population aged 0-19</i>				40.54%		42.24%
<i>population aged 20-49</i>	n/a	n/a	n/a	40.25%	n/a	38.96%
<i>population aged 50 and over</i>				19.21%		18.80%

Source: *Relevant annual editions of Chiba-ken tōkai-sho*

There are three aspects related to the development of state institutions in the late Meiji and Taisho eras which involved significant demands for additional urban land in Chiba-*machi*. In the early Meiji the development of education had often involved the use of earlier *terakoya* school sites associated with Buddhist temples but increasing state regulation of elementary schools following the Imperial Rescript on Education in 1890, and a small expansion of secondary and technical education, led new and larger school sites. Immediately after the Russo-Japanese War the headquarters and workshops of the Second Railway Regiment were moved from Tokyo to an area north of Chiba town centre in what proved to be the first of several 'takes' of land for military use. Finally two major building projects – the construction of a new Chiba-*ken* headquarters modelled on the recent Diet Building in Tokyo and the construction of Chiba Penitentiary on the outskirts of town were solid evidence of the increasing substance of the state.

Population change. Table 5.8 summarises the key population metrics available for this period. The actually resident population of Chiba-*gun* continued to increase at rates well in excess of the whole *ken*, and after the arrival of the railway this growth accelerated to nearly 1.7% p.a. during a decade when net annual growth in the whole *ken* fell to only 0.63%. Actually resident population in Chiba-*gun* is consistently around 10% higher than the registered *honseki* population, extending to 12.2% by 1913.

Looking at the vital statistics for 1913 helps to evaluate what is probably happening here. Chiba-*gun* is experiencing both higher birth rates and lower death rates than the *ken* as a whole - almost certainly evidence of factors such as a younger population, significantly better standard of living and possibly access to better (and at this date especially perinatal) healthcare. There is a strong net inward migration of population into the *gun* while for the *ken* as a whole there is a significant net outward migration in progress. This pre-census *honseki* migration data needs to be treated with caution because it sums the net inward and outward movements which include inter-*gun* migration but there is strong evidence here of movement from rural areas either to towns like Chiba-*machi* or to other *ken*, and especially of course to Tokyo.

Unfortunately no *gun* data is available but between 1898 and 1913 the net outcome of migration of adults and a higher birth rate is for a greater proportion of the *ken* population to fall into the 0-20 years of age category. For the same reason average household size in Chiba-*gun* is larger than for the whole *ken*, but the reduction between 1898 and 1913 suggests that growth around Chiba-*machi* may have become more

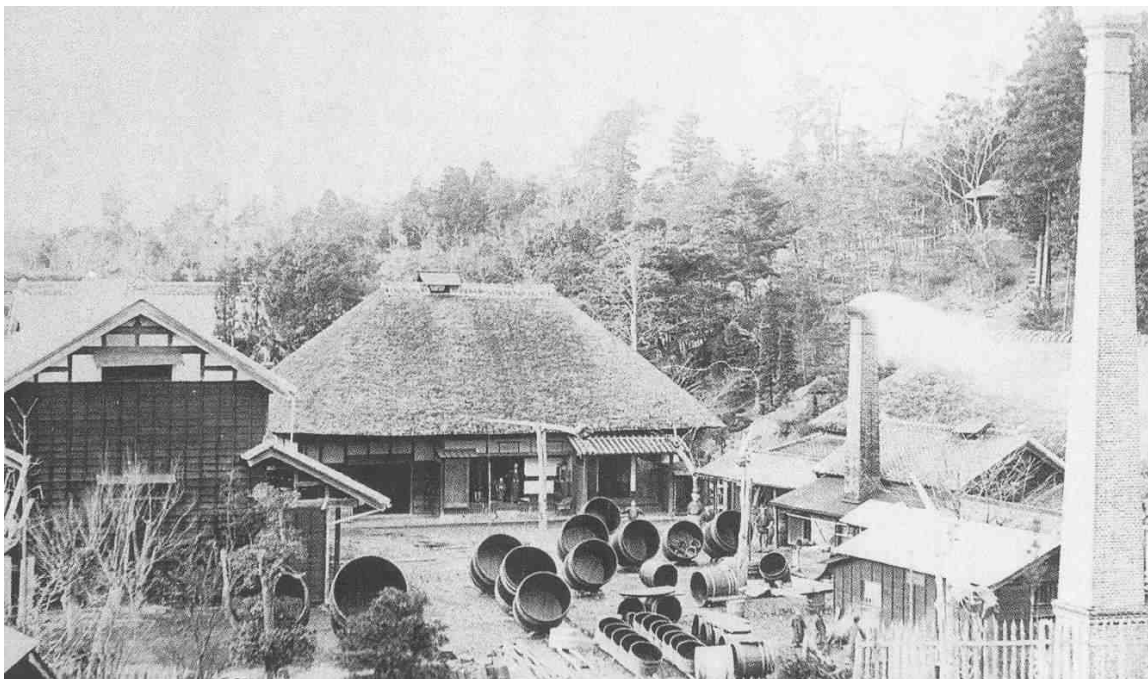


Fig.5-5: Sake brewery in Takachiho about 1910. The plant uses a traditional fermentation environment and buildings but also incorporates a modern coal furnace and steam power.

focused on movement of whole families into town rather than individuals being accommodated in existing households as lodgers. 1904-5 War casualties might also be an element.

Employment. There is no one comprehensive summary of local employment available for this period but it is possible to get some understanding of trends from information separately published about the number of families making livings from agriculture and fishing and the production outputs of key industries. Table 5.9 confirms that at the turn of the century agriculture still dominates the local economy and fishing remains an important primary industry but the quality and positioning of these has changed. Around 80% of the economically active population are still making part of their living from farming but around a third of this work is now part time – and probably mainly seasonal – as some family members, usually the oldest daughter, make the transition to either

paid seasonal employment in textiles, or an elder son into commercial fishing. In Chiba-gun greater mobility of employment has had the consequence of much higher rates of tenancy of farmland, a situation which would eventually have serious economic and social consequences during the 1920's. Where foreign technology has appeared in ports like Choshi and Kujukuri deep sea fishing has developed, but methods along the

	<i>Chiba-gun</i>			<i>Chiba-ken</i>		
	house-holds	persons engaged	per household	house-holds	persons engaged	per household
farming households	9709	43047	4.43	155649	675244	4.34
<i>full time</i>	7133	32615	75.77%	105930	503217	74.52%
<i>part time</i>	2756	10432	24.23%	49719	172027	25.48%
<i>average holding (ha)</i>	3.57		<i>tenure vs. 1887</i>	3.68		<i>tenure vs. 1887</i>
enterprises	10272			170705		
<i>wholly own land</i>	1955	19.03%	-7.99%	50185	29.40%	1.01%
<i>own and rent land</i>	4161	40.51%	6.41%	77617	45.47%	-6.10%
<i>rent land only</i>	4156	40.46%	1.58%	42903	25.13%	5.09%
<i>% resident working population engaged in farming¹</i>	<i>full time</i>	57.32%		60.97%		
	<i>part time</i>	18.33%		20.84%		
	<i>TOTAL</i>	75.65%		81.82%		
fishing households	771	4951	6.42	23677	92213	3.89
<i>full time</i>		2990	60.39%	92213	48038	52.09%
<i>part time</i>		1590	32.11%	48038	44695	48.47%
<i>% resident working population engaged in fishing¹</i>	<i>full time</i>	5.25%		5.82%		
	<i>part time</i>	2.79%		5.42%		
	<i>TOTAL</i>	8.70%		11.17%		

¹ assumes that 65% of total population was economically active in 1898.
Source: 1898 edition of Chiba-ken tōkēi-sho Tables 42 p.109 and 73 p.151

Chiba-gun shoreline of Tokyo Bay remain much more traditional, still supporting larger full time family crews but using traditional fishing technologies.

Table 5.10 summarises information from the 1898 edition of *Chiba-ken Tokei* relating to 'manufacturing' which still includes only three primary categories all based on processing sake, soybeans and textiles. Although the latter provides an important source of wage income for households, it is a relatively small sector largely focused on cotton spinning

(and supporting by this time local cultivation of cotton as a market crop) and has only a limited presence within Chiba-*gun*. Within the *ken* traditional 'family concern' sake brewing (see Fig.5.5) and the manufacture of various *daizu* (soy bean) products account in more or less equal measure for sales value created but in Chiba-*gun* it is the relatively less skilled fermenting of *shoyu* and *miso* paste, which create sales value. Most *gun daizu* production activity – the equivalent of dairy products in a contemporary British context – must have been farm based.



Fig.5.6: Miyako River in Chiba-*machi* about 1920 showing the Samugawa fishing fleet. Within Tokyo Bay there was little incentive to modernise. The industry vanished in the 1960s

With such a small manufacturing base the conclusion must be that at the turn of the century the economy of Chiba-*gun*, and especially of Chiba-*machi* was being fuelled by incomes and turnover from administration, distribution and especially services of all kinds – education, medical, banking, merchants, movement of goods and people and inns, *geisha* houses and brothels. Additionally there was probably a significant number of families living in 'town' on income from rural rents. Unfortunately the data is not there to confirm this but for the position in 1920, see Table 5.18 below.

Table 5.10: Quantity and value of manufactured goods 1898

	<i>Chiba-gun</i>			<i>Chiba-ken</i>			gun share of value
	quantity (kg)	value (yen)	% sales value	quantity (kg)	value (yen)	% sales value	
TEXTILES	7912	13620	4.82%	207761	345831	6.30%	3.94%
<i>Silk</i>	250	1910	0.68%	5631	43775	0.80%	4.36%
<i>Cotton</i>	7662	11710	4.15%	193806	276537	5.04%	4.23%
<i>all other</i>				8328	2861	0.05%	
	(hl)			(hl)			
SAKE	4555	64721	22.92%	183792	2586659	47.15%	2.50%
SOY PRODUCTS		204089	72.26%		2553397	46.54%	
<i>soy vinegar</i>				9526	34178	0.62%	
<i>shoyū</i>	11675	116496	41.25%	332946	1524594	27.79%	7.64%
<i>miso paste</i>	570743	69607	24.65%	5200397	704089	12.83%	9.89%
<i>soy bean oil</i>	1420	17896	6.34%	17720	290536	5.30%	6.16%
TOTAL VALUE		282430	100.00%		5485887		5.15%

Source: 1898 edition of Chiba-ken tōkēi-sho Tables 50-52 pp 163-165

Table 5.11: Chiba-ken manufacturing in factories 1913

	TOTAL FACTORIES	% with machine power	TOTAL workers	male %	sales value (yen)	% of sales value
<i>silk production</i>	14	100%	1260	1.6%	1155218	13.30%
<i>knitted garments</i>	18		277	5.1%	74892	0.86%
<i>weaving and dyeing</i>	11	27%	208	18.8%	155623	1.79%
<i>other garments</i>	2	50%	80	31.3%	103577	1.19%
TOTAL TEXTILES	45	40%	1825	5.4%	1489310	17.15%
<i>Sake</i>	16	75%	318	99.1%	1497641	17.24%
<i>soybean</i>	36	78%	1497	98.3%	4869419	56.06%
<i>salt</i>	7	0%	94	73.4%	22000	0.25%
<i>other food and drink</i>	7	57%	196	29.6%	175750	2.02%
TOTAL FOOD PRODS	66	67%	2105	90.9%	6564810	75.58%
<i>paper manufacture</i>	2	100%	40	85.0%	81000	0.93%
<i>paper items</i>	6	50%	42	100.0%	84859	0.98%
CHEMICAL PROCESS	8	63%	82	92.7%	165859	1.91%
<i>yarn manufacture</i>	13	92%	515	6.0%	315396	3.63%
<i>typography</i>	2	100%	45	100.0%	17940	0.21%
<i>others</i>	7	40%	184	80.4%	132648	1.52%
ALL OTHER	22	73%	744	26.5%	465984	5.36%
GRAND TOTAL	141	59%	4756	48.0%	8685963	100.00%

Source: 1913 edition of Chiba-ken tōkēi-sho Table 262 p.479

From around 1905 more modern and also often town based factories began to appear within Chiba-ken, no doubt built with *zaibatsu* bank capital. A summary of the position by 1913 is presented in Table 5.11 which describes a very interesting stage in the 'modernisation' of work practice. Inherent in the specification of the information is the contemporary distinction being made between domestic and family based production sites based in dwellings and the foreign concept – in Chiba - of 'factories' as establishments based in premises. Even within this 'factory sector' which in 1913 employed about 0.6% of the workforce, although machinery even in textile work was of modern design and based on Western practice to ensure product quality, most of it was still moved by human muscle power and located in rural production sheds. There's no data equivalent to Table 5.9 available for 1913 but one might guess that by this date almost all commercial textile production had been transferred to factory units but that much food processing – and especially manufacture of lower grade *miso* – was still done on farms or in town by small family concerns.

Table 5.12 lists those factories opened in Chiba-*machi* by 1913. There are two older typography businesses (probably making a living from the volume of official government printing required). But the really interesting thing here is the introduction of electric power to the town since 1904. That in turn has led to the opening of ten modern yarn factories, all of which are using electrically driven yarn machines. Chiba-*machi* also has a gas plant using coal and a paper factory using steam engines. In other words almost the whole of a new industrial structure supporting 265 jobs relies on supplies of coal delivered by the Sobu Railway. These are resources not available to weaving sheds in rural areas. At this point in the emergence of utility networks the initial achievement of any 'integrated ideal' (Graham and Marvin, 2001) lay several years in the future.

Transformation of the built environment. In Section 3.10 I described how, to provide comparable measurements of changes in the use of space, smaller Sample Point Surveys were carried out along similar lines to the main field and aerial exercise used in the following chapters but using random points identified on the three best available early map representations of the *machi* drawn in 1882, 1906 and 1936. Details of

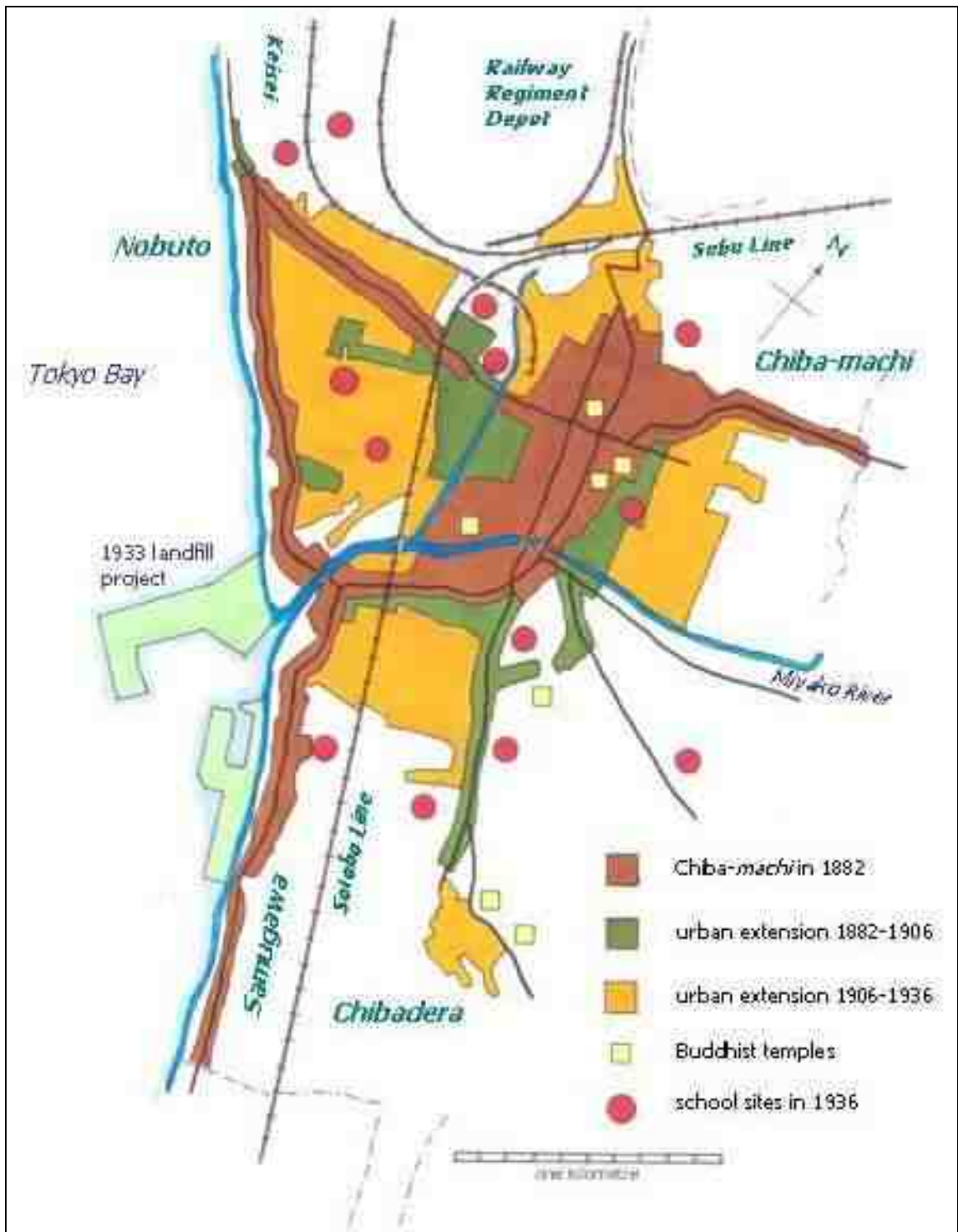
<i>business</i>	<i>formed</i>	<i>primary power</i>	<i>working day/hr</i>	<i>full time workers</i>	<i>work force</i>	<i>sales value (yen)</i>
Koizumi Paper Factory	1910	Steam	200/10	10	male	2700
Chiba Electric Lighting	1904	Steam	365/12	18	male	52362
Yōshitsu Gas Factory	1912	Steam	365/12	12	male	18197
Saitō Yarn Factory	1911	Elect	300/10	35	female	10400
Hasegawa Yarn Factory	1902	Elect	300/10	32	female	10000
Yoshiwara Yarn Factory	1910	Elect	300/10	38	female	18240
Sano Yarn Factory	1908	Elect	260/10	20	female	5280
Suzuki Yarn Factory	1908	Elect	250/10	25	female	6000
Tanabe Yarn Factory	1912	Elect	250/10	30	female	6800
Chiba Typography	1904	Elect	350/10	23	male	8937
Sekiseisha Typography	1874	Elect	335/10	22	male	8803
TOTAL				265		147719

Source: 1913 edition of *Chiba-ken tōkēi-sho Table 263 p.481*

changes within the town between the Meiji topographic survey of 1882 and the *Jissoku Chiba Shigazu 1:8000 map of 1906* are presented in Table 5.13 and illustrated in Fig. 5.7.

Over this 24 year period the number of households in Chiba-machi more than doubled to around 5,500 and the additional dwellings required were accommodated partly by expansion of the 'built area' envelope at the margins and within the triangle of *hatake* farm land bounded by old Chiba, Nobuto and Samugawa, and also partly by an increase in the density of housing within the 1882 existing built area through the subdivision of formerly large village garden and farm sites. This appears to have been achieved through demolition and redevelopment of plots and adding properties to the rear of existing (often two storey *machiya*) frontages and creating new *roji* for access. Nearly all of this new residential redevelopment was one storey with little private garden or yard space attached, and the majority of new dwellings were probably rented. By 1906 the average dwelling plot was less than half the 1882 size and the residential density of 130 per hectare was probably similar to most larger Japanese urban areas. The general process at work here appears to have been for density to rise first and then for the urban 'envelope' to expand onto neighbouring farm land at higher ultimate densities, although as has always been the case in Japan individual plots were developed piecemeal. Apart from questions of exchange value the fact that most land surrounding land was *tanbo* which would need landfill before conversion to building use is probably a consideration.

Fig. 5.7: The expansion of Chiba-machi 1882-1936



The original settlement layout in 1882 involved extensive ribbon development along highways which gave easy access to adjacent farmland or to fishing equipment stored along the high water mark. But the 1906 *Jissoku Chiba Shigazu 1:8000 map* shows a more developed and compact urban layout with about 200 commercial sites including four banks located along two axes. Apart from the spread of housing since 1881 there are other striking changes. Firstly the arrival of the railway has significantly changed the geometry of the town but also formed a barrier to expansion northwards – a barrier reinforced by the large ‘take’ of land across the tracks by the military for the Second Railway Regiment Depot. There are now fourteen school sites and the area required for

Table 5.13: Changes in use of space within Chiba-<i>machi</i> 1882-1906						
	area in km²			% of <i>machi</i> area		
	1882	1906	change	1882	1906	change in share
residential and commercial buildings	1.5	1.9	0.40	9.6%	12.2%	2.6%
educational sites	0.1	0.4	0.30	0.6%	2.6%	1.9%
roads	0.7	0.80	0.10	4.5%	5.1%	0.6%
railways		0.35	0.35		2.2%	2.2%
recreational sites		0.2	0.20		1.3%	1.3%
unidentifiable urban margin use		0.1	0.10	0.0%	0.6%	0.6%
reclaimed port area						
military sites		1.2	1.20		7.7%	7.7%
non-farming use	2.30	4.95	2.65	14.7%	31.7%	17.0%
hatake/sanrin	8.30	6.00	-2.30	53.2%	38.5%	-14.7%
tanbo	4.35	4.00	-0.35	27.9%	25.6%	-2.2%
past	0.50	0.50	0.00	3.2%	3.2%	0.0%
water	0.15	0.15	0.00	1.0%	1.0%	0.0%
farming use	13.30	10.65	-2.65	85.3%	68.3%	17.0%
TOTAL AREA	15.6	15.6	0.00	100.0%	100.0%	0.0%
actually resident population ('000)	13	30	17			
residential density - persons hect	85	155	70			
households ('000)	2	5.5	3.5			
mean dwelling site size assuming 60% of built land allocated to housing (in m ²)	460	205	-255			

Source: *Based on the Meiji 1882 topographic survey and the Jissoku Chiba Shigazu 1:8000 map of 1906*

these is such that most are located on the margins of the residential area – a pattern of change that will recur several times in the future as the town enlarges. Smaller land ‘takes’ for service use are accommodated within town – for example six of the eight

medical facilities. The *ken* and *machi* offices are located on the southern margin of town on two sites still in public use near the Miyako River and the four banks now based in Chiba-*machi* are located on the two main through streets used by merchants. Only two factory sites can be identified on the plan, both near the mouth of the river.

Early public outdoor spaces were linked to shrines and temples. There are eleven Buddhist temples and seven Shinto shrines marked on the 1906 sheet, and the key temples are shown in Fig. 5.7. It is characteristic of older Japanese urban spaces for temples to be concentrated in the north east to protect the community from what was seen as an inauspicious quarter, and that was the case in Chiba-*machi*. In the early Meiji era Buddhism did not play the kind of role that Christianity played in Victorian Britain and was even persecuted by the State as a foreign religion (see Ketelaar, 1990). Most of the relatively few new temples built since 1900 are associated with providing funerals, sites for family graves or new sects. Most of the Shinto shrines were found near the shore and related to rites and *matsuri* associated with fishing.

5.4 Urban expansion in a militarised State: 1921 to 1945

The First World War provided a massive economic boost for Japan, but the subsequent slump led to increasing economic and political instability. Soaring food prices during the summer of 1918 led to widespread urban 'rice riots' and migrations from Korea led to the appearance of poor and for the first time ethnically distinct groups in some major cities – especially Osaka. After 1920 a general collapse of silk and rice prices led to severe poverty in many country areas.

The 1920's – a period labelled by Japanese historians as the 'Taisho Democracy' - became a time of increasing and powerful contrasts between urban and rural life. Especially in bigger cities Western fashions and ideas and a cosmopolitan vision of Japan's place in the world strongly influenced politics, art, and consumer fashions. Within the limits tolerated by the State both left and right wing political activism flourished in an increasingly industrialised society. In contrast the benefits of Western culture and lifestyles and the institutions of capitalism became increasingly questioned in

conservative rural areas gripped by serious agricultural recession, often by young leaders who now had a confidence and knowledge of the world gained through their experience of military service.

By 1920 Japan had developed a very distinctive form of 'industrial dualism' (Seymour, 1966:8-27) which can still be traced in the modern 'dual economy'. The long and close relationship between the government bureaucracy, politicians and *zaibatsu* business groups had led to the emergence of a small number of powerful industrial, trading and

1921	<i>Chiba-machi</i> is designated <i>Chiba-shi</i>
1923	Chiba Arsenal opened. Great Kanto Earthquake
1925	Universal male suffrage bill passed in Diet
	Peace Preservation Law. Ministry of Commerce and Industry formed.
1926	Air Balloon Unit moves to Sakusabe-cho
	Keisei Narita Line opens to Shisui
1929	New York Stock Exchange crash
1930	Metrication of Japanese industry. London Naval Conference
1931	Chiba Rentai Army Command HQ. moves to Tsubaki-mori
	Manchurian Incident. Japan leaves Gold Standard
1932	Manchukuo established as a separate country. Shanghai incident
1933	Japan withdraws from the League of Nations
1936	Two Twenty-Six Incident. Attempted coup d'etat.
	Artillery Tank School moved to Chiba.
1937	Marco Polo Bridge Incident. <i>De facto</i> war with China
	Fighting spreads to Shanghai. Nanjing Massacre
	Chiba designated a <i>gunto</i> (military city)
1940	Greater East Asian Co-prosperity Sphere promoted
	USA prohibits sale of aviation gasoline and lubricating oil to Japan
	Imperial Rule Assistance Association established
1941	Roosevelt freezes all Japanese assets in the USA
	Japan attacks Pearl Harbour
1942	Battles of Midway and Guadalcanal
1943	Community councils (<i>chōnaikai</i>) and Neighbourhood Associations (<i>tonarigumi</i>) established for surveillance and welfare
	Chiba Bank (Chiba Ginkō) incorporated
1943	Women may replace men in seventeen industrial sectors
	Prime Minister Tojo creates Munitions Ministry (later MITI)
1944	Americans take Saipan. Schoolchildren evacuated from cities.
1945	Americans land at Iwo Jima. Firebombing of 60 Japanese cities
	Invasion of Okinawa. Bombing of Hiroshima and Nagasaki.
* Entries in blue refer to events directly influencing the development of Chiba-shi	

financial vertically integrated combines that were responsible for major investment in most heavy and technologically sophisticated industry, and which operated related banking services. Some of these *zaibatsu*, such as Mitsui and Mitsubishi were the heirs of Tokugawa merchant businesses while others such as Nissan were relative newcomers. Quite distinct from the *zaibatsu*, and in the 1920's still the source of most of Japan's GNP and export income, were a large number of small and medium size businesses. These often traded in traditional or consumer sectors - for example domestic and paper goods and food processing – and were frequently older family concerns. Improving the organisation and efficiency of this sector was one of the main priorities of the new Ministry of Commerce and Industry (later MITI) when it was first formed in 1925 (see Johnson, 1982; Chapter 3). Wages in this smaller business sector were typically much lower than in *zaibatsu* and increasingly smaller firms developed a client relationship with combines to survive. Nearly all businesses developing in Chiba-*shi* until the mid-1930's were in this second, small business sector. This is a very distinctive aspect of the contemporary Japanese regime of accumulation.

In July 1920 a new private railway – an 'inter-urban' electric modelled on contemporary American practice - opened into a Chiba-*machi* terminus. One of the business objectives of the new *Keisei Dentetsu Kabushiki Gaisha* was the development of commuting business along their routes through suburban property development projects to the east of Tokyo. During the 1920's suburban villa expansion was wholly within Tokyo-*to*. In the 1930's it extended across the Edo River to Ichikawa in Chiba-*ken*, and eventually to Chiba-*shi* in the 1950's. In 1926 a second *Keisei* link towards Narita opened to Shisui-*machi* opening the northern part of Chiba-*gun* to development and completing the pre-1945 railway network.

As a consequence of its increasing size and status Chiba-*machi* was re-designated a '*shi*' in January 1921, conferring additional powers to the local authority such as those designated under the provisions of the new 1919 Urban Planning Law (Sorensen, 2002). A significant incidental benefit from the perspective of researchers is that in subsequent population census data and other public records Chiba-*shi* data is now always reported separately from *gun* totals and published individually. During the 1920's Chiba continued

to be a focus for the development of new military installations. In 1923 – the year in which the Great Kanto Earthquake devastated Tokyo and Yokohama and caused some serious damage and around 20 deaths in Chiba-*shi* – a large new arsenal and weapons dump began operations just north of the railway station near the Railway Regiment workshops. In 1926 the army's Air Balloon Unit moved to Sakusabe-*cho*.

The Wall Street Crash in October 1929 had a devastating effect on the Japanese economy; within two years the value of exports was halved and the GDP fell by 18% (Smith, 2001:72). In September 1931 the Manchurian Incident and subsequent military adventurism by the Japanese *Kwantung Army* led to increasing – and to begin with politically unintended - involvement in northern China. The consequence was Japan's withdrawal from the League of Nations, the promotion of the puppet state of Manchukuo which became a focus for the development of *zaibatsu*, and a secure supply of some raw materials to mainland Japan.

In 1931 the Chiba Rentai Command Headquarters was moved to the Tsubaki-mori site from Sakura where it had been based since 1888. In 1937 part of the Artillery Regiment Tank School based in Narashino was moved to Chiba-*shi*. Together with training and barracks sites at Tsuga and in adjacent Yotsukaido in Imba-*gun* this amounted to a concentration by 1935 of about 9000 troops on active service around the urban area. Troops from Chiba-*shi* were involved in securing Tokyo after the abortive "Two Twenty-six" coup in 1936. In 1937 the Marco Polo Bridge incident near Beijing led to an all-out war between Japan and the Chinese Kuomintang forces that would last eight years. Over the next three years Japan increasingly became a 'national defence state' with the whole economy on a war footing, with both active state intervention in, and central planning and control of, strategic industries. There was surveillance at every level. Chiba-*shi* was already an important military centre but this role was extended later in 1937 when it became designated as a '*gunto*' (military city) and the administrative area of the *shi* was enlarged to 66.9 km² (in 1944 to 86.3 km²).

These military concentrations were supported by a dispersal of munitions manufacture with plants being set up and operated by *zaibatsu* to production plans drawn up by the

Ministry of Munitions. In Chiba-*shi* these new engineering plants were based at Inage and Soga, and later a Hitachi plant for making Zero fighter engines was built on the first major landfill of Tokyo Bay at Soga. In 1942 The Tokyo University Second Engineering Department was built on a site in Yayoi-*cho* near the Chiba Arsenal to train weapons manufacturing technicians, on what is now the campus of Chiba University. This focus on military spending at the expense of any consumer led expansion is very characteristic of the contemporary regime of accumulation and mode of regulation in Japan, which might be considered quite distinct from the contemporary Anglo-American model.

Population trends: Table 5.15 presents a summary of key population metrics between 1920 and 1940. The increase in population within the whole *ken* is sluggish in both decades and in fact at this time many parts of the southern Boso Hanto peninsula experienced a progressive net decline as the rural recession drove migration to other parts of Chiba-*ken* or directly into Tokyo. There are no census migration tables for either

Table 5.15: Summary of population metrics 1920 – 1940					
	1920	1930	annual % change	1940	annual % change
<u>Chiba-ken</u>					
total population ('000)	1336.16	1470.12	1.00%	1588.43	0.80%
household population ('000)	1311.94	1443.12	1.00%	1569.41	0.88%
households ('000)	257.59	279.75	0.86%	300.72	0.75%
avge. household (persons)	5.09	5.16		5.22	
% living in institutions *	1.81%	1.84%		1.20%	
<u>chiba-shi [1921]</u>					
total population ('000)	33.18	49.09	4.80%	n/a	
household population ('000)	30.18	46.33	5.35%	n/a	
households ('000)	6.79	10.25	5.10%	n/a	
avge. household (persons)	4.55	4.52		n/a	
% living in institutions *	8.49%	9.02%			
<u>chiba-shi [1937]</u>					
total population ('000)	61.45	80.05	3.03%	92.06	1.50%
household population ('000)	55.4	76.38	3.79%	86.68	1.35%
households ('000)	12.26	15.71	2.81%	17.88	1.38%
avge. household (persons)	4.92	4.86		4.85	
% living in institutions *	9.85%	4.58%		5.84%	
<i>Source: Population Census of Japan 1920 - 1940. Chiba volumes, multiple tables.</i>					

	<i>one person</i>		<i>two to five people</i>		<i>six or more people</i>	
	<i>1920</i>	<i>1930</i>	<i>1920</i>	<i>1930</i>	<i>1920</i>	<i>1930</i>
<u>Chiba-ken</u>						
000 households	14.66	15.47	136.22	145.61	106.71	118.67
<i>% of total</i>	<i>5.69%</i>	<i>5.53%</i>	<i>52.88%</i>	<i>52.05%</i>	<i>41.43%</i>	<i>42.42%</i>
000 persons	14.66	15.47	490.71	525.51	806.58	902.14
<i>% of total</i>	<i>1.12%</i>	<i>1.07%</i>	<i>37.40%</i>	<i>36.42%</i>	<i>61.48%</i>	<i>62.51%</i>
females/1000 males	1073	1046	1078	1062	1050	1028
<u>Chiba-shi [1921]</u>						
000 households		0.62		6.63		3.00
<i>% of total</i>		<i>6.18%</i>		<i>64.69%</i>		<i>29.25%</i>
000 persons	n/a	0.62	n/a	22.95	n/a	22.75
<i>% of total</i>		<i>0.80%</i>		<i>49.55%</i>		<i>49.11%</i>
females/1000 males		923		1078		999

Source: Population Census of Japan 1920 and 1930. Chiba volumes, multiple tables.

1930 or 1940 but the detail for 1920 is presented and shows the extent to which the region was now attracting labour. The data for Chiba-*shi* is presented for the 1921 and 1937 boundaries (the 1940 data cannot be recreated for the 1921 area) and shows that the urban area was holding up relatively well through the recession although separate figures for the surrounding rice growing villages at this time point to rural depopulation. There is a significant overall decline in the size of rural households as younger family members move away for employment but they are still significantly larger than urban households, and the reason for this is clear from Table 5.16, where for the first time a completely clear view of processes of change in household size emerges in the new national census data. Single person household formation is still unusual in both town and country although commoner in town – the rather higher proportion of single females living alone in rural areas suggests that these figures are mainly widows. But the big difference is that in town the smaller size of households suggests that nuclear two generation families are becoming a common format of household while in rural areas larger three generation families remain the norm but with missing second generation males, a picture consistent with that presented for example in Smith (2001) and Taeuber (1958). In other words the long term consequence of the spread of paid employment since the 1870's and increasing migration has in two generations led to contrasting patterns of household life between urban and rural areas.

Resident in Tokyo-to born in ...	1920		1930		1920	
		Total	Total	male	female	
Tokyo-shi	2173.20	100.00%				
Tokyo-to	1010.39	46.49%			43.07%	50.49%
same ku	922.73	42.46%			39.49%	45.93%
different ku	87.66	4.03%			3.59%	4.56%
Another Prefecture	1152.22	53.02%			56.30%	49.19%
Chiba-ken	127.84	5.88%			5.42%	6.42%
Colonies	4.81	0.22%			0.29%	0.14%
Foreign	5.49	0.25%			0.33%	0.16%
Resident in Chiba-ken and born in ...						
Chiba-ken	1336.16	100.00%	100.00%		100.00%	100.00%
Chiba-ken	1243.42	93.06%	90.35%		92.61%	93.49%
same machi mura	941.56	70.47%	69.01%		75.52%	65.58%
different machi mura	301.85	22.59%	21.35%		17.09%	27.92%
Another Prefecture	92.06	6.89%	9.43%		7.33%	6.46%
Tokyo-to	26.39	1.98%			1.87%	2.08%
Colonies	0.35	0.03%	0.22%		0.03%	0.02%
Foreign	0.30	0.02%			0.03%	0.02%
Resident in Chiba-shi[1921] and born in ...						
Chiba-ken			74.31%			
Chiba-shi[1921]			41.39%			
different machi mura			32.92%			
Another Prefecture			25.09%			
Foreign			0.59%			

Source: 1920 Population Census of Japan. Chiba-ken Table III. 1930 Chiba-ken Table 16

The 1920 census also provides the only pre-war census information⁶ on migration, in this case by reporting 'place of birth'. Table 5.17 presents the data for Chiba-ken and contrasts this with neighbouring Tokyo-to. The data for Chiba-ken is rather typical of most of Kanto outside of Tokyo. Around 93% of those resident in the ken were born in the area. 70% are still living in the machi or mura of their birth, but the percentage is still significantly higher for men in a period when women still typically moved to live in their husband's 'ie' (household) (Hendry, 1995:Chapter 2). Only 6.89% were born in another ken, and most of this inward movement is of people from the neighbouring ken of Saitama and Ibaraki and Tokyo-to moving into communities near boundaries. Numbers of non-Japanese are small although interesting – the bulk are a small enclave of Koreans resident in Sakae-cho in Chiba-machi.

⁶ Additional evidence on migration is available from the Basic Residence Registers for this period but is not presented for reasons of space. This sources is later used extensively to examine the years 1960-2005

Tokyo by comparison in 1920 was already primarily a city of migrants – and especially male migrants, with less than half the population born within Tokyo-*to*. Of the 53% coming from other ken 6.88% are from Chiba and contrary to the general trend there are more female than male migrants arrived from Chiba. An element of this will be cross-boundary marriages along the Edo River but the majority is clearly women in search of factory, shop or domestic service work. The overall difference in flows is 127,840 from Chiba-*ken* into Tokyo-*shi* and 26390 from Tokyo-*to* into Chiba-*ken*, a ratio of nearly 5:1 in favour of migration to the capital.

No equivalent detailed data is available for 1940 but 1930 summary results for Chiba-*ken* are presented alongside the 1920 data and illustrate the increasing importance of long distance migration movements. Summary information is also available in 1930 for Chiba-*shi* which shows the increasing contrast between an urban way of living and the surrounding rural economy. In 1920 only 41% of residents had been born within the *shi* and migration from other *ken* already accounted for a quarter of the population.

Employment. Table 5.18 provides a summary of employment for 1920 and 1930. The two sets of data are not strictly comparable because the 1920 data was tabulated on the basis of a curious and 'ie' based family method of counting by household whereas the 1930 Census provides a conventional and very detailed count by individual – by far the best of all the pre-1950 views available. However the lines identified in bold type do offer a reasonable comparison between the two years.

Within Chiba-*shi* there is an absolute decline in both farming and fishing and a modest increase in 'manufacturing' which now includes a burgeoning construction sector. Most of the 1930 manufacturing, part from 540 jobs in engineering, is still in traditional industries. There is also growth in the 'public servants' category which is led by an expansion of bureaucracy but the really significant switch is into service related employment which is the product of a combination of an expanding distribution and wholesaling network and retailing. There are new jobs in transportation as a consequence of extensions to the rail network and some development of road transport.

Table 5.18 Employment in Chiba-shi and Chiba-ken 1920 and 1930						
	<i>Chiba-shi</i>			<i>Chiba-ken</i>		
	<i>1920</i>	<i>1930</i>		<i>1920</i>	<i>1930</i>	
	% of econ. active population	females '000 males		% of econ. active population	females '000 males	
<i>Farming</i>	15.84%	9.96%	992	65.43%	62.54%	1092
<i>Fishing</i>	7.54%	2.15%	12	4.29%	3.15%	62
<i>All Other Primary</i>	0.01%	0.18%	29	0.11%	0.17%	175
PRIMARY INDUSTRY	23.39%	12.29%	684	69.83%	65.86%	995
CONSTRUCTION		4.61%	0		2.50%	6
<i>Engineering</i>		2.68%	30		0.85%	48
<i>Textiles / Clothing</i>		3.51%	297		1.78%	827
<i>paper and printing</i>		1.50%	98		0.24%	92
<i>Food and Drink</i>		2.17%	196		1.98%	386
<i>Other manufacture</i>		3.05%	51		2.38%	106
MANUFACTURING (1920 'manufacture and construction)	16.82%	17.53%		9.82%	9.73%	
WHOLESALE RETAIL		22.29%	392		9.90%	588
BANKING INSURANCE SERVICES		0.69%	78		0.10%	161
		9.29%	1610		2.77%	1781
<i>Transportation</i>		6.15%	14		2.06%	41
<i>Communication</i>		0.86%	549		0.31%	240
TRANSPORT COMMS (1920 commerical')	23.85%	7.01%	59	9.90%	2.37%	63
UTILITIES		0.68%	0		0.16%	0
<i>Public Officials</i>		5.15%	22		0.93%	9
<i>Active Military Service</i>		2.34%	0		1.89%	0
<i>Judiciary</i>		0.17%	0		0.01%	0
STATE		7.66%	14		2.84%	3
EDUCATION		3.05%	527		0.93%	537
MEDICAL		4.50%	2897		0.64%	921
CLERICAL (1920 Public Servants)	14.39%	2.72%	95	4.90%	0.57%	43
OTHER PROFESSIONS		2.03%	181		0.72%	161
DOMESTIC SERVICE		6.36%	17414		2.10%	11740
UNCLASS		2.28%	226		0.85%	271
INVESTMENTS		1.62%	495		0.46%	528
NO EMPLOYMENT			1818			1384

Source: 1920 and 1930 Population Census of Japan. Chiba-ken volumes

On the other hand change within employment patterns in Chiba-ken as a whole is much more limited. The key features are a continuing decline in agriculture which accounts for 4% fewer jobs and there is a slight overall decline in manufacturing with textile employment shrinking following the collapse in textile and especially silk markets abroad. 'Textiles' has now become a male dominated employment sector with the progression

into factory manufacture. Losses are partly made up by some marginal increase in the service sector and transportation and of course by migration.

Table 5.19 summarises changes between 1930 and 1940. The 'total' and 'government and professions' categories in this comparison are distorted by the removal of troops on active service from the data (about two million at the date of the 1940 census) but comparison in other categories is valid and the underlying trends are clear. There had been a further significant increase in employment in both manufacturing and transport and communications, and in all sectors as men have been removed from the labour force at the end of the 1930's for military service women have been substituted.

Table 5.19: Employment changes 1930 to 1940 by key category							
	1930			1940			% change
	TOTAL ('000)	% of econ. Active	female '000 males	TOTAL ('000)	% of econ. Active	female '000 males	
<u>TOTAL Chiba-shi [1937]</u>	38.40	100.00	476	34.90	100.00	551	-9.1%
agriculture	10.82	28.19%	1084	7.07	20.27%	1338	-34.7%
fishing	0.80	2.08%	57	0.82	2.35%	150	2.9%
industry	6.05	15.76%	95	7.10	20.36%	144	17.4%
commerce	8.47	22.06%	645	8.41	24.11%	613	-0.7%
transport and communications	2.01	5.24%	60	3.04	8.71%	121	50.8%
government and professions *	7.85	20.44%	164	6.62	18.98%	508	-15.6%
domestic service	1.61	4.19%		1.51	4.33%		-6.2%
		100.00			100.00		
<u>TOTAL Chiba-ken</u>	752.84	%	760	736.52	%	826	-2.2%
agriculture	473.03	62.83%	1092	447.13	60.71%	1224	-5.5%
fishing	23.82	3.16%	62	24.29	3.30%	132	2.0%
industry	75.75	10.06%	202	87.16	11.83%	196	15.1%
commerce	96.59	12.83%	745	92.98	12.62%	732	-3.7%
transport and communications	17.92	2.38%	63	21.82	2.96%	114	21.8%
government and professions *	43.04	5.72%	155	42.72	5.80%	396	-0.7%
domestic service	15.85	2.11%		14.64	1.99%		-7.6%

* Active service military not included in 1940 so count base is different. 'Others' excluded from table
Source: Population Census of Japan 1930 and 1940 Chiba-ken volumes (multiple tables)

The 1920's and 30's were a time when almost the whole of rural Japan suffered from crises brought on by depression of agricultural prices and absentee landlordism (see Smith 2001) but these pressures did lead to a major restructuring of land use, the effects of which are still evident in the rural landscape. The result of these changes is presented in Table 5.20. Looking at Chiba-ken as a whole the really important change is that

previously unproductive *sanrin* has been converted on a large scale to *hatake* 'dry field' farming as more and more plateau land is opened up with the availability of new technology and reliable electrically pumped water supplies to produce horticultural crops for the Kanto's expanding metropolitan markets. There is also an increase in the area of *tanbo* as new civil engineering techniques are applied to the strategic objective of keeping Japan self-sufficient in rice and to feed an increasing population by extending cultivation on the margins and to bring difficult areas like the Imba and the Tone marshes into production. Chiba-*shi* [1921] is a small area of only 1500 hectares and includes 40% untaxed public land (roads and military installations). Here there is some conversion of *sanrin* to *hatake* but the most important change is the additional 'take' for urban land which involves the conversion of both *tanbo* and *hatake* to building plots (*takuchi*)

	1913		1930		% change
	hectares	% of total	Hectares	% of total	
<u>Chiba-shi [1921]</u>					
tanbo (rice paddy)	217.1	23.8%	170.0	19.2%	-21.7%
hatake (dry fields)	405.3	44.5%	394.1	44.6%	-2.8%
takuchi (built land)	158.4	17.4%	252.5	28.5%	59.5%
sanrin (forest/heath)	123.9	13.6%	63.6	7.2%	-48.7%
other	0.1	0.0%	0.4	0.0%	300.0%
Total Taxed Land	911.1		884.6		-2.9%
Untaxed land	610.9	40.1%	637.4	41.9%	4.3%
TOTAL AREA	1522.0		1522		
<u>Chiba-ken</u>					
tanbo (rice paddy)	104369.6	29.0%	107069.0	29.3%	2.6%
hatake (dry fields)	78151.9	21.7%	84855.7	23.2%	8.6%
takuchi (built land)	16092.7	4.5%	17011.4	4.6%	5.7%
sanrin (forest/heath)	135380.5	37.6%	130226.9	35.6%	-3.8%
other	3537.0	1.0%	3664.3	1.0%	3.6%
Total Taxed Land	360210.1		365975.4		1.6%
Untaxed land	147670.9	29.1%	141905.6	27.9%	-3.9%
TOTAL AREA	507881		507881.0		
Source: 1913 (Table 9 p.23) and 1930 (Table 10 p.21) editions of Chiba-ken tōkēi-sho.					

Transformation of the Built Environment. Changes to the use of space within Chiba-*shi* [1921] between 1906 and 1921 are presented in Table 5.21. During this period the built up area extended by about 155 hectares with an additional 'take' from agricultural land for new railways, roads and an additional six school sites adding up to a



Fig.5-8 A view of Honmachi 3-chome taken near Fig. 4.4 but around 1932. Redevelopment of retailing sites with second floor sales or office spaces. A few private motor vehicles visible .

Further 55 hectares. By 1936 there were also 70 further hectares of land the use of which is 'unidentifiable' from the map. These areas fall into three probable categories – land coming out of agricultural production and on the market for housing, land being used as allotments or as informal public open space, and possible small industrial sites of new light industry.

The census data for contemporary households and population suggests that as the physical size of the residential area increased the density of development continued to accommodate around 160 persons per hectare, and that the average housing plot remained around 200 sq. metres, perhaps slightly smaller. About a third of new urban expansion was accommodated on vacant land in the triangle between Chiba, Nobuto and Samugawa, a third by infilling tanbo to the east and south of town and the remainder as additional ribbon development along five highways leaving Chiba-shi (Fig.5.7). Most of this appears to have been in single storey vernacular housing. The additional school sites were again located around the extended residential envelope

	area in km ²			% of <i>machi</i> area		
	1906	1936	Change	1906	1936	change in share
residential and commercial buildings	1.9	3.45	1.55	12.2%	22.1%	9.9%
educational sites	0.4	0.60	0.20	2.6%	3.8%	1.3%
roads	0.80	1.00	0.20	5.1%	6.4%	1.3%
railways	0.35	0.50	0.15	2.2%	3.2%	1.0%
recreational sites	0.2	0.2	0.00	1.3%	1.3%	0.0%
unidentifiable urban margin use	0.1	0.70	0.60	0.6%	4.5%	3.8%
reclaimed port area		0.3	0.30		1.9%	1.9%
military sites	1.2	1.2	0.00	7.7%	7.7%	0.0%
non-farming use	4.95	7.95	3.00	31.7%	51.0%	19.2%
hatake/sanrin	6.00	4.80	-1.20	38.5%	30.8%	-7.7%
tanbo	4.00	2.50	-1.50	25.6%	16.0%	-9.6%
past	0.50	0.50	0.00	3.2%	3.2%	0.0%
water	0.15	0.15	0.00	1.0%	1.0%	0.0%
farming use	10.65	7.95	-2.70	68.3%	51.0%	-17.3%
TOTAL AREA	15.6	15.9	0.30	100.0%	101.9%	1.9%
actually resident population ('000)	30	58	28.00			
residential density - persons hect	155	168	13.00			
households ('000)	5.5	11	5.50			
mean dwelling site size assuming 60% of built land allocated to housing (in m ²)	205	190	-15.00			

Source: *Based on the Jissoku Chiba Shigazu 1:8000 map of 1906 and the Chiba-shi zenza map 1936*

There are several street photographs surviving from this period and an especially useful series of views taken from the roof of the Fuji Bank about 1932 (see Figs. 5.8 and 5.9). Taken as a group they suggest that most new commercial and service development within the town centre took place through the redevelopment of sites with main street frontage to two or three storeys with upper storeys being used for offices or retailing space. Most low density pre-1900 sites *within* the central *banchi* were rebuilt either as two storey housing, or as sites for small or medium manufacturing firms or for recreational or service buildings. Access was provided by '*roji*' – narrow dead end lanes two or three metres wide leading to rear plots. At this time there was no zoning of land use within most urban centres and nearly all buildings in this characteristic style of Japanese urban environment were wholly timber-built although new school and hospital sites were increasingly developed as two or three storey structures with steel frames in the 1930's. Chiba Medical School and hospital, which was located just south east of the town centre, was remarkable for its advanced four storey steel and concrete design

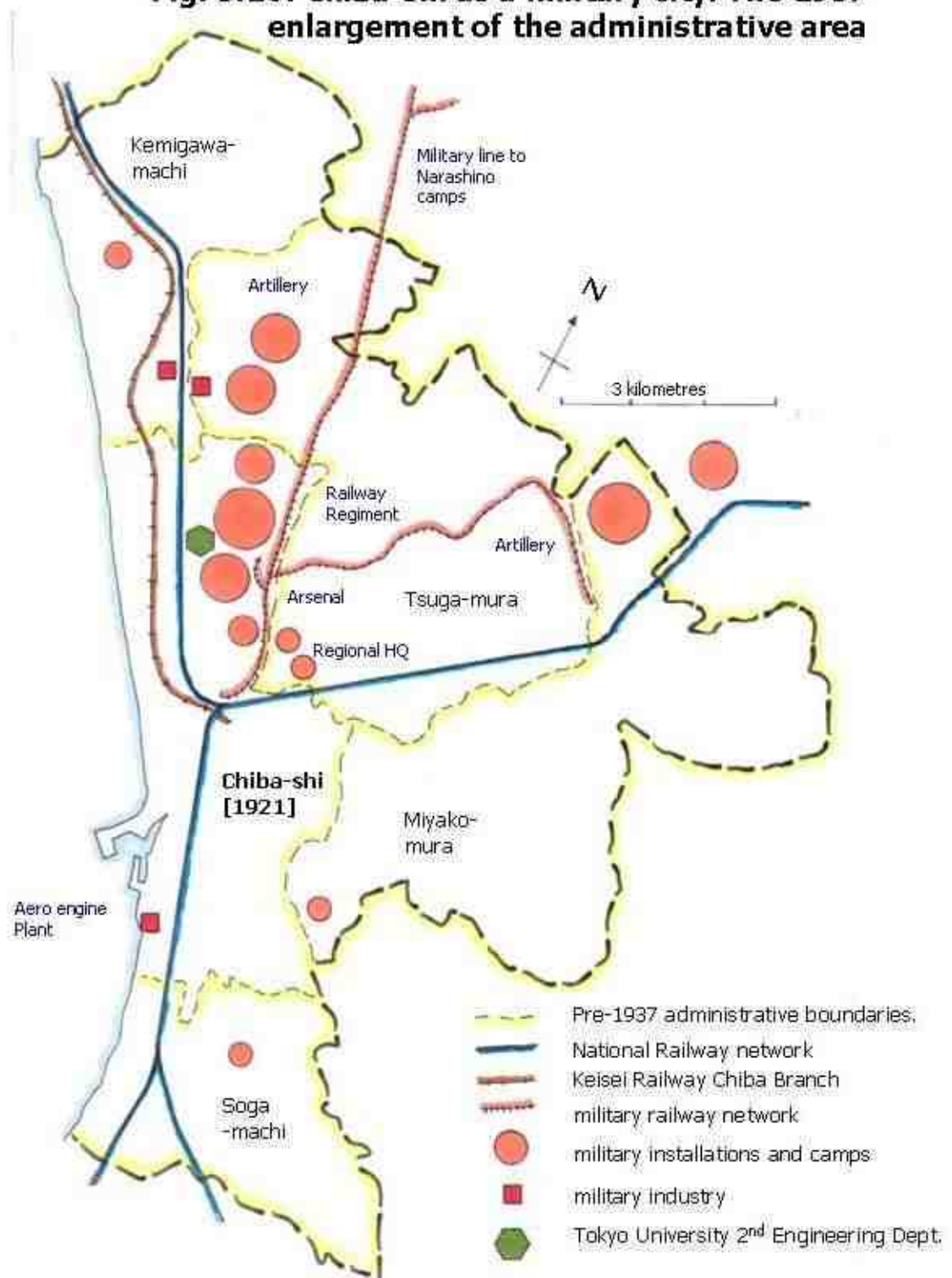


Fig. 5-9 Honmachi 2-chome from Fuji Bank. Interiors of central *banchi* redeveloped with two storey dwellings. Nearby large building is a hospital. Top right is Chiba-ken 1906 offices

One easily missed difference between street scenes around 1910 and 1930 is the number of bicycles coming into general use for both general travel to and from workplaces and also for deliveries of goods. This level of innovation was accommodated within the existing street access network but at some locations – especially the two railway stations – there were already designated cycle parking areas. There was also some landfill carried out as public works projects in the 1930's, to create a fishing port and a new wholesale market at the mouth of the Miyako River. This added around 40 hectares to the area of the *shi*.

Wider extension of the urban environment. Discussion of the built environment in this chapter has so far focused on the immediate environs of Chiba-*machi* as illustrated in Fig. 5.6 but almost all the new military installations developed in the area since 1906 were located outside this residential envelope. They were not formally integrated into the administrative area until Chiba's designation as a *gunto* in 1937 following the outbreak of war with the Chinese Kuomintang army. The location and function of these facilities in relation to the original town are illustrated in Fig. 5.10. The buildings constructed for the military planners were much larger and more complex than those in the original urban envelope – the army hospital and railway depot for example both involved large three

Fig. 5.10: Chiba-shi as a military city. The 1937 enlargement of the administrative area



storey brickwork structures and the Tokyo University extension in Yayoi-*cho* begun in 1943 was built to four storeys with steel-framed concrete teaching blocks. Munitions manufacturing sites developed in Inage and the Hitachi aero engine plant were also large prefabricated steel 'shed' structures. All the projects involved massive State acquisition of land which subsequently strongly influenced the post-1945 physical extension of Chiba-*shi* which will be explored in the next chapter, and they should be considered as a particular form of urban growth and institutional planning.

5.5. Summary of changing associations.

Although these strands will be drawn together thematically in Chapter Ten, I want to very briefly summarise here and at the end of each of the following four chapters what I believe to be the key changes within the association of those entities identified as representing key processes within urban space which were introduced at the beginning of Chapter Three.

I want to suggest that between 1868 and 1945 there were profound transformations taking place primarily within the establishment base of Chiba-*shi*. These changes were driven initially by the conscious and deliberate transformation of the State and its institutions, and later by the consequent transformation of the economic base as the forms of capitalism increasingly characteristic of Japan became absorbed and adopted as routine practice and the economy moved from an extensive towards an intensive mode of regulation. The separation of dwelling from employment for a minority led, especially through migration, to different forms of households beginning to emerge. However this transformation was only partially achieved before 1945.

The policies of the State introduced changes that transformed everybody's biographical time, especially through formal education and then for young men later through military service. At particular life stages these institutions profoundly affected the rhythms and imperatives of day to day living. But these transformations were also incomplete.

In a provincial town like Chiba, the social forms of use of dwelling spaces did not change much. The extension of the urban area was achieved firstly through increasing dwelling density and then later through enlargement of the urban area. New institutional and industrial premises were primarily incorporated on the fringe of the town during enlargement.

Reconstruction and Recovery: 1945 to 1960

“There seems to have been considerable damage here”

The Showa Emperor (Hirohito) ¹

6.1 Introduction

What was the impact of World War II and its aftermath on the built environment and economy of Chiba-*shi* and how was the city reconstructed during the years of austerity that accompanied Japan’s recovery from military defeat? What changes were characteristic of the post-war Japanese urban environment and what impact did the course of events have on the daily lives and routines of the residents of Chiba-*shi*? How were these trends reflected in the material forms of the city? This chapter will address these questions and outline the transformations that took place during the fifteen years between the surrender of Japan and the peak of the *Iwato keiki* – the long export and consumer-led boom beginning in 1959 which marked the beginning of the decade of ‘high speed’ economic growth.

An outline of some key events taking place during these years is presented in Table 6.1, and I want to consider this detailed chronology as comprising of three distinct stages. From 1945 until 1948 the emphasis was on the first steps towards basic physical recovery and the destruction of what the victors perceived to be the institutional machinery of war. General Douglas MacArthur’s team at SCAP occupation headquarters in Tokyo pursued a radical agenda of demilitarisation and democratisation of institutions and organisations which included the dismantling of those *zaibatsu* industrial combines considered to have played a part in Japan’s rise as a military power. This period will be considered in the section 6.2.

Then from around 1948 both American and Japanese politicians and business interests began to increasingly and effectively contest this agenda, and the victory of Mao Zedong in China in 1949 led to a ‘Reverse Course’ in United States’ policy towards Japan. A

¹ A comment he made during an official visit to Hiroshima in 1947. See Dower 1999:336

continuing American insistence that Japan achieve economic stability and balance its budget, a policy supervised by the banker Joseph Dodge, caused deflation and a brief period of immense economic hardship but led to the creation of new institutions and practices that were to promote Japan's economic recovery and ensured that Japanese industry was well placed to take advantage of the Korean War boom and membership of global financial institutions after 1951. Finally from about 1954 the emergence of growing domestic consumer demand led to a period of consistent Japanese industrial growth. These later two stages are considered in Section 6.3

In the remainder of the chapter I will then take a more local perspective on events, exploring the causes and consequences of changes in Chiba-*shi* during the 1950's and adopting a sequence and approach that will also be broadly adopted as a general pattern for subsequent chapters. Section 6.4 considers changes within the local economy and explains the national and local significance of the Kawasaki Steel Company investments in the company's new Chiba site. Section 6.5 explores the relationship between national planning strategy and local planning initiatives, Section 6.6 changes in local population and household trends and the impact of migration on these and Section 6.7 the changing

1945	Aug 15 Surrender of Japan. Dec. <i>Basic Policy for War Damaged Areas</i> drafted
1946	(May 1946 - May 47 Yoshida Shigeru first administration)
	Aug Economic Stabilisation Board appointed <i>Keidanren</i> formed (Federation of Economic Organisations) Sep Tokubetsu Toshi Keikaku Hō Special City Planning Law co-ordinates city reconstruction
1947	Oct Land Reform Bill passed in Diet. Nov. New Constitution promulgated by the Emperor Fukko Kin'yu Ginko - Reconstruction Finance Bank formed. First <i>zaibatsu</i> dissolved by SCAP
1948	(Oct 1948 - Dec 1954 four Yoshida Shigeru administrations)
1949	Joseph Dodge Mission. May MITI is established separately from former MCI
1950	June to 1951 Korean War generates industrial boom. Kawasaki Steel decide to proceed with Chiba plant
1951	Sep 8 San Francisco Peace Treaty. Japan joins Bretton Woods system. <i>Shōhi keiki</i> (consumption boom).
1952	Aug 13 Japan joins IMF and World Bank. <i>Jimmu keiki</i> boom
1953	First Kawasaki Steel blast furnace commissioned at Chiba
1954	(Dec 1954 - Dec 1956 Hatyama Ichiro administrations)
1955	Restructuring of political parties. Formation of LDP and JSP
	(Feb 1957 - Jul 1960 Kishi Nobusuke administrations)
1958	Iwato keiki (boom) begins. Second Kawasaki Steel blast furnace commissioned at Chiba
<i>* Entries in blue refer to events directly influencing the development of Chiba-machi</i>	

pattern of local employment markets. Finally in Section 6.9 the influence of all these on character of the expanding city is considered, and Section 6.10 examines the influence of social change on the character and quality of the expanding dwelling stock.

6.2 The immediate post-war years

By the time Japan surrendered on 15 August 1945 about a quarter of all Japanese urban space had been destroyed by incendiary bombing. Strategic raids had begun as early as 1942 but the vast majority of damage had been done in the last six months of the war since the United States had adopted firebombing of cities as a deliberate tactic in February. An estimated 2.32 million homes had been destroyed in 166 cities - an area of 631 km² laid waste with 331 thousand killed and 9.7 million rendered homeless. Because more than 90% of urban buildings had been constructed of wood the degree of destruction within affected areas was much greater than in Europe. Often nothing survived. The Japanese themselves referred to their cities as *yake-nohara* ('scorched fields') and 115 of them were sufficiently damaged to be included in a national reconstruction planning project (Ishida, 1987:210).

Chiba endured two major air raids, the first on the night of 10 June and then a much heavier raid five weeks before the end of the war on 7 July. These destroyed 8904 dwellings covering 231 hectares, killing 898 and making 41,212 homeless (CS-Shi,1993:(1)134). There is substantial unpublished archival material and some later published recollections describing these raids and the rebuilding of the burned out areas of the city available but few official statistics as *Chiba-ken Tokei* was not published between 1940 and April 1948. However the general trend is clear. In late 1944 the registered population of the city was 110,200 but the first post-war count gives a registered population in November 1945 of 95,900. The exodus of bombed out residents with family elsewhere able to offer emergency shelter had resulted in a net decline in the population of Chiba-*shi* of around 14,200. However, by the first post-war population census in October 1947 census, the *de facto* population of Chiba-*shi* had swollen to 122,000 as a result mainly of out-migration from devastated Tokyo and the local consequences of the repatriation of some six million soldiers and former colonial residents during 1946 and 1947. These people were not absorbed into the city centre but

often into shanty towns on the periphery or on former military land in areas like Tsuga and Sanno-chō (CS-Shi,1993:(2)137).

Nationally there was serious privation during these first two post-war years. 1945 and 1947 were both poor harvests, and during 1947 families were spending on average around 70% of their earnings on food. Dower (1999:45-64, 88-120) describes this period graphically, a time when cholera, dysentery, typhoid, epidemic meningitis and polio were rife in Japanese cities and TB was causing 100,000 deaths a year. Theft of materials and profiteering by gangsters became the norm as citizens attempted to get by on what they could purchase in the open air 'blue-sky' markets. However despite the severe damage to the centre of town the situation in Chiba was clearly nowhere near as bad as in larger cities due to the large proportion of the locally resident population still engaged in farming and fishing. Although there are no published vital statistics for the city, the records for the period between 1940 and 1947 were subsequently published for the total *ken* and they are presented in Table 6.2. Although there is a substantial jump in the death rate in 1945 by 1947 it is lower than during the war years when it was distorted by

<i>Calendar Year</i>	<i>births per '000</i>	<i>deaths per '000</i>	<i>natural increase per '000</i>	<i>Calendar Year</i>	<i>births per '000</i>	<i>deaths per '000</i>	<i>natural increase per '000</i>
1940	29.2	18.3	10.9	1946	27.5	19.6	7.9
1941	29.4	17.8	13.2	1947	35.0	14.6	20.4
1942	30.6	17.6	13.2	1948	31.5	12.2	19.2
1943	30.6	17.0	13.6	1949	31.1	11.9	19.2
1944	31.2	18.0	13.2	1950	27.2	12.3	14.9
1945	20.6	26.1	(5.5)	1951	25.3	11.2	14.1

Source: Chiba-ken tokei 1954 Table 13

the absence of young men and the abnormal proportion of older residents left in the locally resident population.

During the period 1945 to 1948 SCAP pursued with varying degrees of success a course of demilitarisation, democratisation and the decentralisation of power working through the Japanese state's administrative structure and local government. Liberal new labour and Trades Union legislation was adopted in 1945, and a new constitution was

introduced in November 1946 in which the concept of the *ie* as a legal entity established in the Meiji Civil Code was abolished potentially transforming patterns of inheritance.

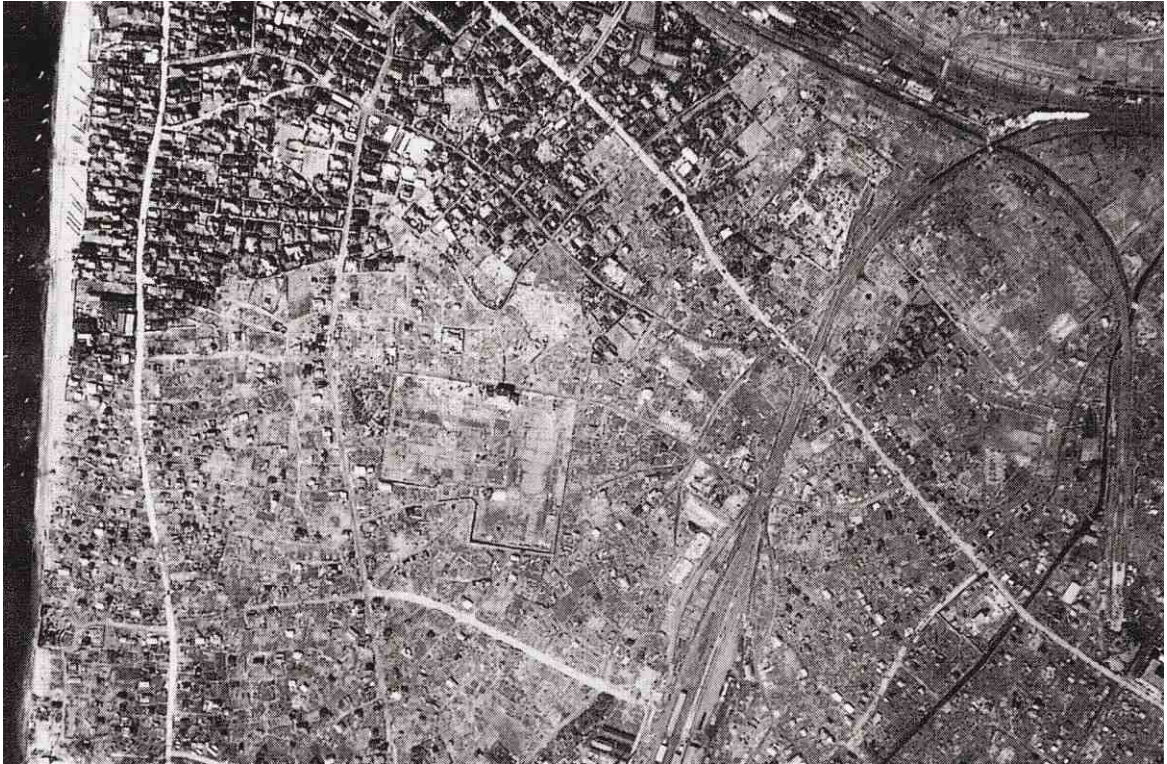


Fig.6.1: Central Chiba February 1946. In bombed areas no components of the wooden buildings survived. About 10% of plots already have some replacement structures. [USAF photograph]

During 1946 and 1947 the American administration also acted to begin to progressively dismantle the influence of *zaibatsu* groupings both through the dissolution of family holdings and purges of directors and senior management and increasingly through the use of anti-monopoly legislation to order the break up of industrial and commercial power concentrations. But perhaps more important from the perspective of promoting urban change was the Land Reform Bill passed in October 1946 to force a restructuring of Japanese agriculture. The state was authorized to compulsorily purchase land owned by absentee landlords and resident landlords could retain only what they and their families could directly cultivate themselves (an area assessed at 2.5 hectares in *Chiba-ken*). Sitting tenant farmers could then purchase the land at low prices. This huge redistribution of rural wealth had some profound consequences. Despite an opportunity being lost at this time to also consolidate holdings of parcels of land it nevertheless within a few years had revolutionised the productivity of farming and encouraged diversification into horticulture. This created an increasingly affluent farming community

which gave rise to higher levels of demand for new farm equipment and consumer goods throughout the 1950's. It also created a situation where land at the urban margins was held in many small parcels by small farmers which encouraged a pattern of micro-scale and uncontrolled conversion to residential use which has characterised the expansion of urban Japan ever since. The Act also created a natural constituency of small farmers which LDP politicians have courted assiduously ever since and which has in turn influenced the long term course of urban planning control.

From the perspective of this study an interesting question is how quickly the Chiba-*shi* itself began to be rebuilt. The planning implications of this are dealt with in section 6.5,

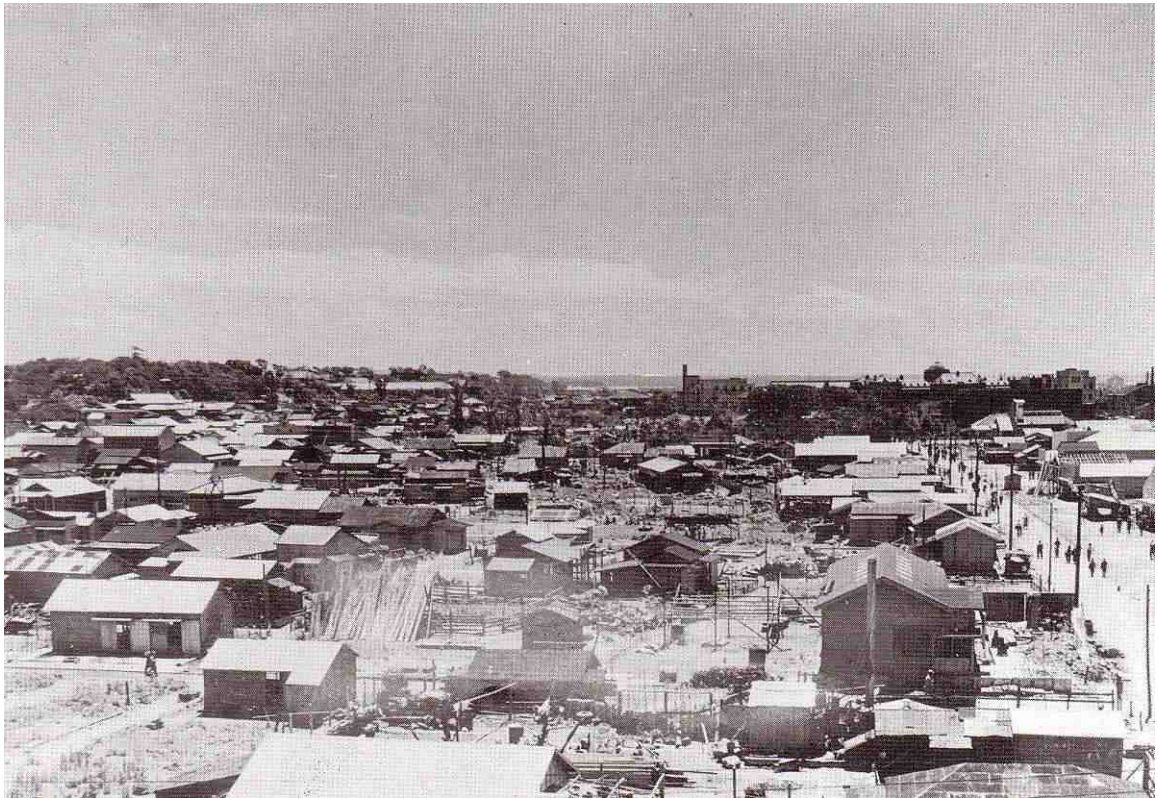


Fig 6.2: Azuma-chō August 1946. About half of the razed plots now have new structures. This part of the city had been largely rebuilt a second time by the early 1960's.

but in Chiba, where around 90% of inhabitants of the dwellings destroyed survived the air raids and were available to erect new structures on land to which they clearly had title, the majority of early rebuilding appears to have taken place without the intervention of public agencies. Fig 6.1 reproduces a United States Air Force photo taken in February

1946 [M58A 6-82].² It is clear that by this date most debris from the air raids of the previous summer had been cleared and that about 10% of plots have been reconstructed. A few areas (most clearly the site of what is now Shinjuku Elementary School) have been temporarily taken over for use as allotments growing vegetables, a feature observable in many contemporary images of bombed sites in larger cities.

A few street level photographs are available from 1946 from Chiba and one showing part of Azuma-*cho* taken in August is reproduced in Fig. 6.2. It confirms how quickly parts of the town centre were rebuilt during the year. Perhaps half of the area is now built over, mainly with small single storey residential units but also with at least six small industrial sheds. There is a large stack of cut lumber in a timber yard (centre left) and electrical power has been restored with temporary poles along the main street frontage. Most of these tin roofed structures would be demolished within twenty years, replaced in the 1960's with steel framed two and three storey commercial properties. There are no shanty structures visible – refugees living in the area eked out a living on the margins of the *shi* often on former military sites.

6.3 The longer term course of economic recovery

The priorities of the MacArthur occupation began to change from early 1948 as a consequence of global events and especially following the onset of the Cold War and the realisation that Mao Zedong was going to prevail in China. American politicians and businessmen in the growing 'Japan Lobby' began to argue for a 'reverse course' on the part of SCAP, pointing to the danger of 'promoting socialism' in Japan. They argued that the *zaibatsu* had been the tools rather than architects of military expansionism in the 1930's and that undermining the fabric of Japanese industry and commerce would serve no good purpose. This course was also skillfully argued by Japan's new conservative Prime Minister Yoshida Shigeru. A Deconcentration Law was passed at the insistence of SCAP in December 1947 to affect further large scale dismantling of *zaibatsu*, but by April of the following year General MacArthur agreed to create a Deconcentration Review Board which immediately proceeded to exclude the bulk of Japanese industry from the scope of the legislation passed only four months previously. Eventually only 9 of 325

² For a larger and clear reproduction see CS-Shi, 1993:(2)135

Japanese conglomerates scheduled for dismemberment were affected. With MacArthur's acquiescence Yoshida's second administration began to redraft labour legislation during 1948. In 1949 left wing influence was further curtailed with the passing of a Labour Relations Adjustment Law which required the certification of unions. The onset of the Korean War in 1950 led to the formation of the 'National Police Reserve' as a first attempt to square rearmament with the pacifist Article 9 of the Constitution which had been insisted upon by MacArthur only three years previously. However this latter proved to be a more enduring legacy of earlier American influence than the Americans themselves might have wished, with Yoshida cannily rejecting any ideas of larger scale rearmament despite pressure from the United States (McClain, 2002:543-561).

Chalmers Johnson (1982:196) makes some interesting observations on the emergence of a new Japanese 'corporatism' during this period. He argues that:

"The trend toward genuine public-private cooperation grew out of a combination of the effects of war destruction and the reforms of the occupation. The old *zaibatsu* were weakened ... by the physical depletion of their capital assets and by the occupation's goal of deconcentrating the economy...The economic bureaucrats might rule on the basis of their intrinsic talents, but they could never rule openly under Japan's new democratic system. Thus both government and industry realised the need for a political division of labour – one that would both advance the positive development programme and forestall disruptions of it by the newly enfranchised groups in society."

The period 1950-1955 saw the consolidation of the new Ministry of International Trade and Industry (MITI) as the executive arm of the State responsible for the architecture and implementation of Japanese industrial policy. The Ministry developed and exercised a whole range of statutory and informal powers, guiding investment strategy, controlling access by industry to capital and foreign currency for investment, and offering 'administrative guidance' to corporate Japan. It nominated growth sectors for development and protected these key sectors of the economy from foreign competition. With the aid of the bureaucratic mechanisms of the 'developmental state', corporate Japan was effectively managed and developed as part of a planned economy and positioned to take full advantage of the new mode of regulation that was emerging as a

result of the Bretton Woods Agreement. The outbreak of the Korean War in 1951 provided a major opportunity to promote sectors of Japanese industry ranging from machinery and automotive contracts to the manufacture of uniforms, and this created a modest balance of trade surplus. The developing relationship between America and Japan negotiated by Yoshida led to the negotiation of the peace and security treaties

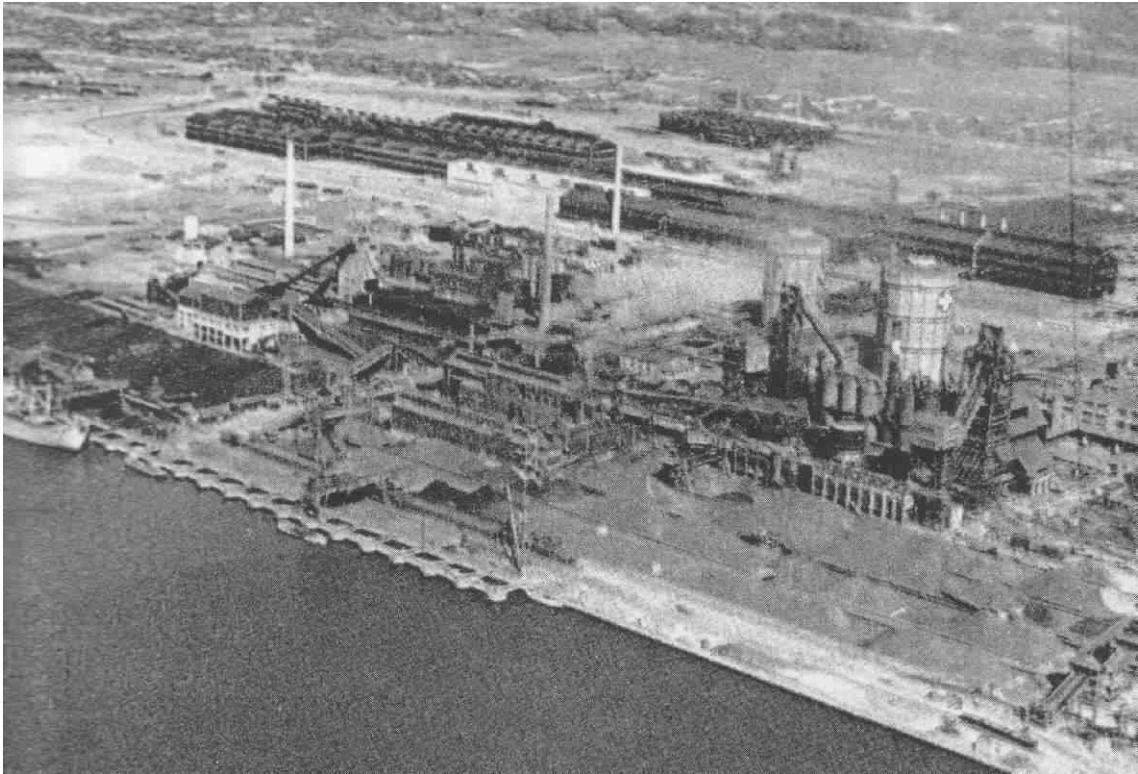


Fig.6.3: Classic *kombinato* development. The first stage of the Kawasaki Steel integrated plant commissioned in 1953 taken in 1956 with two furnaces and the first strip mill in operation

that came to be known as the 'San Francisco System' in 1951, within which Japan became a formal ally and junior partner of the United States with American troops having the right to use bases in Japan indefinitely. Japan became a part of the Bretton Woods system and a member of the IMF from 1952.

6.4 The Kawasaki Steel Company Integrated Plant

In the immediate aftermath of the war there seemed to be little future for a Japanese steel industry. Around 90% of capacity had been either destroyed or put out of action due to lack of coal and lack of foreign steel scrap and the Pauley Reparations Mission had recommended a future annual capacity of only half a million tons to support the demands of a simple domestic economy. The intervention of the Economic Stabilisation Board

during the winter of 1946-47 to avert the complete collapse of the economy improved supply of energy for steelmaking but by the end of 1947 thirteen iron and steel producing *zaibatsu*, including the Kawasaki Heavy Industries (KHI) group had already been 'slated' for 'deconcentration' and in 1949 the deflationary pressure created by Dodge's policies brought subsidies for steel production to an end. Very fortunately for the Japanese steel industry the implementation of the subsidy cut coincided exactly with the outbreak of the Korean War, although by this stage the former Japan Steel Company had already been split into two new business based on the Yawata and Fuji Steel group plants.

The visionary Director of the KHI Steel division, Nishiyama Yataro was convinced that increased steel production capacity free from dependence on imports of foreign scrap was essential for the development of the Japanese economy. He believed that the future lay in cost reductions achievable by a site designed for integrated processes and using the best available international technology. Kawasaki Steel was separated from the 'parent' shipbuilding division and focused on the development of a new fully integrated steel plant based on the landfill foreshore site at Chiba created seven years previously for a Hitachi fighter engine plant. This became one of the first components of the Keihin *kombinato* plan which will be considered in the next chapter. The initial project called for two 500 ton-per-charge blast furnaces, six open hearth furnaces and matching slab and strip mills with an annual production capacity of 350,000



Fig. 6.4: Statue of Nishiyama Yataro next to the JFE Chiba integrated site reception office

tons of pig iron and 500,000 tons of steel. In the conditions of the time, with a small fragile market oversupplied with expensive steel, this plan was strongly opposed within the industry and also by MITI and the Bank of Japan who were shocked at the 16.5 billion yen project estimate. But Nishiyama continued to argue that with the unique opportunity offered by the break-up of Japan Steel the high entry barrier for new production was lowered and that the price of inefficient steel production and the strategic dependence on American scrap made a new plant essential to support Japanese recovery.

In fact three crucial innovations were involved in the Chiba scheme that were to prove seminal to Japanese industrial growth throughout the next twenty five years. Firstly the project sought out rights to the best available technology. Nishiyama maintained his own technical mission in the USA throughout 1951 which led to major improvements in the original plant specification. Secondly Kawasaki Steel sought to defensively integrate the whole production process to keep as much control as possible both within the company and within Japanese oversight. Finally the way of raising capital was innovative – and especially the practice of ‘over-borrowing’ from banks with government backing of loans which pioneered an approach that later became a standard practice for MITI. Nishiyama also was the first Japanese industrialist to secure foreign loans through the World Bank, obtaining \$20 million in 1953. In these ways the Chiba project played a very crucial role in influencing the evolving relationship between government and corporate Japan. The first blast furnace commissioned in 1953 and the second area of the plant in 1958.

6.5 The city planning regulatory framework

The regulatory framework in place at the end of the war for dealing with urban planning was primarily based around the 1919 City Planning Law. In December 1945 a proposal for addressing the devastation of city areas was published in the ‘Basic Policy for War-Damaged Areas Reconstruction’ (*Sensaichi Fukkōkeikaku Kihonhōshin*), defining targets for rebuilding and suggesting nine new principles to direct the practical design of projects, the institution of planning controls and establishing building standards. In September 1946 a ‘Special City Planning Law’ was adopted based in part on the legislation drafted to facilitate the reconstruction of Tokyo following the 1923 Great Kanto Earthquake. A ‘War

Damage Reconstruction Board' (*Sensai Fukkōin*) was created as the agency to oversee and co-ordinate the work of planning and implementing projects at local level intended to cover 650 km² in 102 cities. There was a strong focus on delivering an effective highway network, improved zoning and the provision of more green space – around 10% of total space within cities.

In practice the strategy had only very limited success and for exactly the same kinds of reasons that had thwarted planners in Tokyo during reconstruction in the 1920's. As Tiratsoo et al (2002) comment:

Reconstruction produced passionate argument, and a climate of mutual distrust between the authorities, outside experts, and the general public which inevitably affected outcomes (p.49) ... the general public began to view the planning process as obstructing their immediate needs and desires. They wanted housing at all costs, not platitudes about a golden future (p.55)

By the time the Board was wound up twelve years later planned projects had only delivered around 200km² of redevelopment. The problem was that the scope was much too ambitious. It must have seemed self-evident to urban planners – many of whom had just been repatriated after colonial service in Manchukuo - that the best time to comprehensively remodel a city was when existing structures had been completely destroyed. In fact exactly the opposite was the case – in 1946 there was a dire need to re-establish the economic and social function of these areas as quickly as possible, and property owners had their own priorities. As Andre Sorensen (2002:167) comments in respect of Tokyo "while the built fabric had been virtually obliterated what remained were property ownership patterns (which) could not be erased by a few bombs."

Of the main strategies outlined in the original 1945 policy document the improvement of the inner urban major road networks was relatively successful with many new 100 metre boulevards and 36 metre principal highways being established. There was much more limited success in creating clear zones of use and green spaces because there was simply not the budget available to purchase land to achieve these aims, and especially so after the stringent controls imposed by Joseph Dodge's balanced budgets slashed public spending in 1949.

More importantly and especially in smaller cities the speed of rebuilding by plot owners began to rapidly close down options after 1947. As we have seen in the case of Chiba-*shi*, much of the town centre had already been covered with new structures by the end of that year. This had a major impact on the scope of planning. A City Planning Board in Chiba had been established in 1929 as part of the evolution of the military *gunto* and a



Fig. 6.5: Fujimi-chō was one of the few areas of Chiba to have 36m highways designated in a *Sensai Fukkoin* plan. The width proved useful later in the 1990s for the monorail project

draft plan had been produced in 1932 which formed an initial basis for planning in 1946. In 1945 sixteen hectares of land had also been acquired by the city to create refuges and fire breaks. The first 1947 interim plan proposed a very ambitious scheme for a 'city of the future' covering 5.6km² (about 2.5 times the area destroyed by bombing) but by 1948 this had been reduced to just 2.0km² and by the time the plan was completed in 1956 only 1.3km² had actually been produced. In the event this still was a very influential piece of work as it involved the creation of a boulevard linking the proposed new central

station site with a central public space and the widening of several key highways (Cs-Shi 1993;1: 136-137).

6.6 Population change and patterns of migration

An overview of population changes within Chiba-*shi* between 1947 and 1960 is presented in Table 6.3. During 1954 and early 1955 five surrounding administrative units³ comprising 71.7km² were amalgamated with the *shi*, almost doubling the area. Most of these districts were deeply rural in character, although Makuhari-*machi* was a significant small fishing town with a population of 7,500. Between 1947 and 1950 the urban population of the *shi* within the 1940 boundaries increased by 3.2% a year but if the growth is diluted by incorporating data from the rural parts of the enlarged 1955 area the annual population growth rate was 2.7%. Between 1950 and 1955 this increased slightly to 2.9% and then very significantly after 1955 as more employment became available in the area to 4.4%.

population and households in '000		1947	1950	annual % growth	1955	annual % growth	1960	annual % growth
Chiba- <i>shi</i> [1940]	<i>pop</i>	122.0	133.8	3.2%				
	<i>hh</i>	25.5	28.2	3.5%				
	<i>hh size</i>	4.78	4.74					
rural areas absorbed 1954/55	<i>pop</i>	37.8	39.0	1.1%				
	<i>hh</i>	7.2	7.3	0.5%				
	<i>hh size</i>	5.25	5.35					
Chiba- <i>shi</i> [1955]	<i>pop</i>	159.8	172.9	2.7%	198.0	2.9%	241.7	4.4%
	<i>hh</i>	32.7	35.5	2.9%	40.9	3.0%	56.1	7.4%
	<i>hh size</i>	4.88	4.87		4.84		4.31	

Source: Population Census of Japan; Chiba-ken reports various tables. Household size in persons

This accelerating increase is even more significant in terms of the total number of households, with the average annual growth for the extended area increasing from 2.9% to 7.4%. The number of households is increasing at a faster rate because the average household size is declining, and especially so after 1955. Quite a complex dynamic appears to be at work here, and this is revealed in the data in Table 6.4 which analyses households by size. In the smaller administrative area represented by Chiba-*shi* [1950]

³ Oihama-machi, Shiina-mura, Honda-mura, Kotehashi-mura and Makuhari-machi

single person households comprise 6.4% of the total which must be primarily a consequence of both war widows and unmarried adults without family being a significant element in the total household mix. In the enlarged *shi* of 1955 boundary changes have made three generation rural families a more significant part of the total household mix but the number of single person households has actually declined in absolute terms to return to a typical pre-war proportion of the mix again. By 1960 the pattern has changed once more. Single person households have increased absolutely and also as a percentage of the total mix back to 6% and also the numbers living in 'quasi-households' – at this time primarily represented by worker dormitories – has grown dramatically. This of course is a reflection of the commissioning of the extended Kawasaki Steel plant and 'downstream' ferrous industry enterprises. But the really interesting thing here is the growth in households consisting of two to four persons which now account for 53.1% of the total mix. This must reflect in part the growing ease of new household formation due to better housing availability but surely also reflects the beginnings of a trend which will become much more important during the 1960's – of the growing migration of whole families, as opposed to just adult offspring – from rural to urban Japan.

	1950		1955		1960	
	('000)	%	('000)	%	('000)	('000)
All households	28228		40868		59151	
<i>All household members</i>	133844		197962		257759	
ordinary households	27784	100.0%	39269	100.0%	55859	100.0%
<i>household members</i>	127432		185559		238737	
<i>single person households</i>	1771	6.4%	1334	3.4%	3344	6.0%
<i>2 - 4 members</i>	12908	46.5%	18538	47.2%	29675	53.1%
<i>5 or more members</i>	13105	47.2%	19397	49.4%	22840	40.9%
average size (persons)	4.59		4.73		4.27	
quasi-households	444		1599		3290	
<i>household members</i>	6412		12403		19022	
<i>% of total population</i>	4.8%		6.3%		7.4%	

Source: Population Census of Japan. Chiba-ken volumes.

This trend is confirmed by the 'cohort analysis' presented in Table 6.5. This table presents changes in the size of each five year cohort between each census for the *shi* based on enlarged (post February 1955) boundaries. So for example if there was no migration of any kind taking place the 0-4 year old cohort in the 1950 census would be

the same size as the 5-9 year old cohort in the 1955 census, apart from a very few premature deaths. But in the example here, this cohort has increased by 579 over the five year period, representing an increase of 2.6%. This growth can only be caused by net in-migration. Of course from around 55 years of age cohorts will start to shrink naturally due to an increasing number of deaths.

<i>age range</i>	<i>Total population</i>				<i>Total male population</i>			
	<i>+/- persons</i>		<i>% change</i>		<i>+/- persons</i>		<i>% change</i>	
	<i>1950-55</i>	<i>1955-60</i>	<i>1950-55</i>	<i>1955-60</i>	<i>1950-55</i>	<i>1955-60</i>	<i>1950-55</i>	<i>1955-60</i>
5-9	579	1779	2.6%	9.5%	273	919	2.4%	9.6%
10-14	629	1611	3.1%	7.0%	326	793	3.2%	6.8%
15-19	2022	5118	12.1%	24.8%	1008	2967	12.1%	28.2%
20-24	3933	7827	23.3%	41.9%	2590	5284	30.6%	56.5%
25-29	1909	5494	11.2%	26.4%	864	2989	9.5%	27.0%
30-34	830	2746	5.8%	14.5%	402	1556	6.0%	15.7%
35-39	67	931	0.5%	6.2%	6	488	0.1%	6.9%
40-44	33	498	0.3%	3.9%	-27	195	-0.5%	3.3%
45-49	-5	436	-0.1%	3.8%	-73	214	-1.4%	3.7%
50-54	-119	146	-1.4%	1.5%	-36	52	-0.8%	1.0%
55-59	-182	-45	-2.8%	-0.6%	-115	-67	-3.5%	-1.6%
60-64	-370	-197	-7.4%	-3.1%	-243	-229	-9.7%	-7.2%

Source: Population Census of Japan 1950, 1955, 1960. For explanation see text.

It is clear from Table 6.5 that there is a very significant in-migration in progress in both quinquennial periods but that its character is changing. Between 1950 and 1955 the strongest influx is of males in the 20-24 year old cohort and there are very few children under 15 – and hence families – moving into the area. Between 1955 and 1960 20-24 year old males are still the most important element within the net migration mix but now the spread of in-migration is much more complex and involves movement of people in their late twenties and early thirties arriving with young children.

<i>location</i>	<i>place of birth</i>			<i>residence 12 months previously</i>
	<i>1950 all shi in Chiba-ken</i>	<i>1950 Chiba shi</i>	<i>1950 all gun in Chiba-ken</i>	<i>1960 all shi in Chiba-ken</i>
in the same place	54.27%	52.45%	69.29%	93.17%
Elsewhere in Chiba-ken	12.79%	16.91%	17.90%	2.01%
In other ken	31.50%	28.51%	12.03%	4.79%
<i>of which from Tokyo</i>	<i>14.36%</i>	<i>12.20%</i>	<i>5.78%</i>	<i>2.39%</i>

Source: Population Census of Japan

Unfortunately the published summary data from Basic Residence Registers from this period provides no details at individual *shi* level for the origin of migration into the area

but both the 1950 and 1960 census reports give some, (although different) metrics. In the 1950 Census 'place of birth' information was collected for the last time and this is presented in Table 6.6. Unsurprisingly rural *gun* within Chiba-ken have more residents born locally, or in neighbouring parts of the *ken*, and relatively fewer from other *ken* or from Tokyo. Chiba-*shi* also has relatively more residents born within the *ken* compared with the average for all *shi* – perhaps an indication of its ongoing role as the primary administrative centre. The figures for 1960 are on a completely different basis – the location of residence twelve months previously - and are only available for all *shi* in the *ken*. They do suggest however that during the 1950's migrants from Tokyo-*to* continued to comprise about half the migrants moving into the *ken* from elsewhere in Japan.

6.7 Evolution of local employment 1947-1960

Table 6.7 summarises employment of the economically active residential population of Chiba-*shi* by primary industrial sector for each population census from 1947 to 1960. This data is not adjusted for the expansion of the *shi* boundaries in 1954/55 which increased the economically active population by around 15,000 – if this is taken into account the true net annual intercensal growth was around 6.5%. there is also inconsistency in this table in that in 1947 many self-employed and professional workers were classified as 'other' while their treatment was consistent in the other three census classifications with the appropriate primary industrial grouping.

These qualifications made, the data reveals many important trends in the evolution of employment during the period. The low economic activity rate in 1947 points to the very fragile state of the local economy at that time. Agriculture remains by far the most significant element within the mix and throughout the 1950's it will continue to rely primarily on female labour with often only part time seasonal contributions from men who otherwise seek waged employment. Manufacturing is an important part of the total mix because there were many small industrial plants around the margin of the *shi* which had escaped bombing and at a time when manufacturing in large cities had been laid waste this was important capacity. Public sector employment is also a significant source

	1947	1950	1955	1960
economically active ('000)	36.2	48.3	79.2	107.9
<i>(average intercensal annual % growth)</i>		<i>11.1%</i>	<i>12.8%</i>	<i>7.2%</i>
<u>% of total mix</u>				
agriculture	25.3%	20.9%	22.5%	14.1%
construction	6.0%	5.5%	4.7%	6.7%
manufacturing	19.2%	15.4%	17.5%	24.0%
wholesale/retail	9.6%	16.7%	17.3%	18.9%
finance/ real estate	1.6%	2.5%	2.9%	3.4%
transport/utilities	8.6%	8.7%	8.5%	8.2%
services	3.7%	16.8%	17.5%	15.8%
public sector	12.5%	9.6%	6.4%	6.6%
all other	13.6%	3.9%	2.7%	2.2%
<i>(% of population economically active)</i>	<i>29.7%</i>	<i>36.1%</i>	<i>40.3%</i>	<i>44.6%</i>
<u>% of male mix</u>				
agriculture	16.7%	14.7%	15.9%	9.7%
construction	8.3%	7.7%	6.9%	9.1%
manufacturing	24.0%	18.9%	22.1%	28.4%
wholesale/retail	10.0%	15.3%	15.5%	16.2%
finance/ real estate	1.7%	2.7%	3.0%	3.2%
transport/utilities	11.0%	11.8%	11.6%	10.7%
services	2.6%	14.3%	14.7%	12.5%
public sector	13.6%	11.2%	7.9%	8.3%
all other	12.1%	3.5%	2.5%	2.0%
<i>(% of males economically active)</i>	<i>41.2%</i>	<i>48.4%</i>	<i>52.5%</i>	<i>59.3%</i>
<u>% of female mix</u>				
agriculture	45.0%	33.7%	34.8%	23.5%
construction	0.6%	0.9%	0.6%	1.6%
manufacturing	8.4%	8.2%	8.7%	14.8%
wholesale/retail	8.6%	19.6%	20.8%	24.6%
finance/ real estate	1.4%	2.2%	2.8%	3.7%
transport/utilities	3.1%	2.5%	2.7%	3.1%
services	6.1%	22.1%	22.7%	23.0%
public sector	9.9%	6.2%	3.7%	3.0%
all other	16.9%	4.6%	3.1%	2.8%
<i>(% of females economically active)</i>	<i>18.1%</i>	<i>23.7%</i>	<i>28.0%</i>	<i>29.3%</i>

Source: Population Census of Japan

of work but in an economy with so few resources wholesale, retail and service employment make a very minor contribution to the total.

By 1950 a new pattern has already emerged. The overall economic activity rate has increased by more than 6% and employment in the wholesale/retail sector has almost doubled primarily through the movement of female labour in from agriculture. Male employment remains about the same in numerical terms in manufacturing but there has

been a significant increase in share of male employment in wholesaling, retailing and services. Part of this is accounted for by the spread of independent small traders in these sectors during the early 1950's - a revised version of the 1937 Large Store Law was introduced to protect their businesses in 1956 (Larke 1994:105). 1955 data is not directly comparable with 1950 due to the addition of around 11,000 jobs in agriculture in rural areas to the data but the continued improvement of economic activity rates is clear, much of it in new steelmaking employment. Structurally, perhaps the most interesting changes of the whole period occur between 1955 and 1960. During this period agriculture declines dramatically as a source of employment and in addition to the expansion of male employment taking place in manufacturing there is also a substantial increase in women working in this sector too, together with a further expansion of female employment in retailing. Table 6.8 clarifies where these changes were taking place. The largest net increase in employment in manufacturing was 5,600 jobs in ferrous industries – not only on the main Kawasaki Steel site but also in steel fabrication.

<i>industrial sector</i>	<i>TOTAL employed</i>			<i>% of these industries</i>			<i>% of females</i>		
	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1950</i>	<i>1955</i>	<i>1960</i>	<i>1950</i>	<i>1955</i>	<i>1960</i>
construction	2649	3739	7192	14.7%	11.9%	13.4%	5.7%	4.3%	7.6%
manufacturing	7338	13933	25930	40.7%	44.3%	48.5%	17.7%	17.3%	19.7%
<i>food and drink products</i>	1728	2155	2714	9.6%	6.8%	5.1%	26.3%	26.9%	31.5%
<i>textiles</i>	335	465	585	1.9%	1.5%	1.1%	48.1%	58.3%	67.7%
<i>lumber and wood products</i>	356	354	386	2.0%	1.1%	0.7%	8.4%	11.9%	16.8%
<i>furniture</i>	285	383	414	1.6%	1.2%	0.8%	2.5%	6.3%	12.6%
<i>publishing and printing</i>	779	1243	1691	4.3%	3.9%	3.2%	11.9%	15.0%	18.6%
<i>chemical products</i>	544	686	1120	3.0%	2.2%	2.1%	16.9%	21.7%	24.6%
<i>stone, ceramics, glass, y</i>	126	316	640	0.7%	1.0%	1.2%	13.5%	23.7%	22.8%
<i>iron and steel etc</i>	191	3870	9464	1.1%	12.3%	17.7%	7.3%	5.9%	4.6%
<i>fabricated metal products</i>	542	889	2000	3.0%	2.8%	3.7%	8.5%	10.5%	21.8%
<i>machinery and weapons</i>	829	706	1682	4.6%	2.2%	3.1%	5.4%	6.7%	13.0%
<i>electrical machinery</i>	255	489	1286	1.4%	1.6%	2.4%	13.3%	15.7%	32.6%
<i>transportation equipment</i>	463	522	643	2.6%	1.7%	1.2%	7.8%	5.2%	8.9%
<i>scientific, medical, optical</i>	197	447	764	1.1%	1.4%	1.4%	16.2%	24.2%	40.6%
<i>all other manufacturing</i>	708	1408	2541	2.5%	4.5%	4.8%	33.5%	35.5%	44.8%
wholesaling	1514	3562	6501	8.4%	11.3%	12.2%	19.1%	22.3%	25.2%
retailing	6547	10248	13868	36.3%	32.6%	25.9%	43.3%	48.2%	49.8%
TOTAL of these industries	18048	31482	53491	100%	100%	100%	25.3%	26.4%	26.6%



Fig 6.6: In the early 1950's the Samugawa and Makuhari inshore fishing fleets were still important food providers employing more than 600. Boats near the Miyako River 1953

and stockholding enterprises and in fabricated metal products. Growing female employment in manufacturing was focused in food and drink products, on assembly lines in fabricated metal products and electrical equipment (increasingly basic white goods) and in a host of smaller subcontracting businesses grouped in the 'other manufacturing' sector.

6.8 The evolution of urban space 1948-1960

To assess the impact of the changing economy and migration during the 1950's I used the general approach documented in Section 3.10 to try and establish a view of the use of space within Chiba-*shi* in 1948. The area selected for sampling was the 20.8km² subsequently defined as DID in the 1960 Census as a formal sample of this area in that year was already available within my main Sample Point Survey database.. The area is larger than the 15.9km² of the 1936 administrative *shi* presented in Table 5.21. There was no comprehensive aerial photography coverage for the whole area available in local

archives for 1948 so the comparison made here is of enlarged images of the 1:25,000 Soga and Chiba-Tobu and Chiba-Seibu sheets revised in 1948 and 1949 compared with aerial image coverage from 1960. The 1960 data comprises 897 sample points, the 1948 data 610 sample points (for the sampling error of this see Table 3.15) .

		share of sampled points			would represent (km ²)		
		1948	1960	change	1948	1960	change
1. Circulation and movement		10.8%	12.7%	1.9%	2.2	2.6	0.4
2. Residential and commercial							
<i>urban area</i>	11.8%	22.0%	36.1%	14.1%	4.6	7.5	2.9
<i>village area</i>	5.6%						
<i>temporary/dormitory/issued housing</i>	4.6%						
3. Manufacturing and distribution, (in 1948 former munitions and military sites)		21.0%	18.7%	(2.3%)	4.4	3.9	(0.5)
4. Social provision		7.5%	8.6%	1.1%	1.6	1.8	0.2
5. Agriculture		35.1%	11.3%	(23.8%)	7.3	2.4	(4.9)
6. Urban space without structures			6.7%	6.7%		1.4	1.4
7. All other uses		3.6%	5.9%	2.3%	0.7	1.2	0.5

Sample Size: 1948 data N=610. 1960 data N=897. 1960 data is from Sample Point Survey.

Table 6.9 summarises the changes that took place in terms of land use during the evolution of this core area of Chiba-*shi* over twelve years. In 1948 the area comprised several distinct settlements – Chiba itself and the small fishing town of Makuhari and the new industrial area around Soga together with the villages of Inage, Samugawa and Nobuto. About 35% of the land was still farmed. By 1960 a further 24% of the area had moved out of agricultural use and been converted to urban functions. Most of the 1948 Chiba core area destroyed by bombing had been reconstructed with very basic one storey structures and parts already reconstructed a second time and sometimes with two or three storey premises. But both the original main residential and commercial area and surrounding village housing areas are only slightly larger than they were in 1936. There are clusters of temporary, dormitory and issued housing created for munitions workers in Soga, Inage and north of the town centre which now occupy 4.6% of the total area.

During the 1950s residential and commercial urban space expanded by nearly 3km² extending in two main directions. Along the Keisei Railway and Sobu line north of the centre of Chiba-*shi* there was new *danchi* development of 'suburban' plots consisting at



Fig.6.7: Away from the centre of town much of the dwelling stock surviving the war consisted of small Taisho era structures (1910-1925). Many of them were still thatched. Nobuto 1953.

this time of mainly single storey properties. Initially these must have been primarily developed as housing for well-to-do Chiba-*shi* workers but by the 1955 Census⁴ 12,700 people were already commuting into Tokyo from districts like Kurosuna and Midori-chō. A second concentration of housing was developing around Soga in areas like Imai-chō for employees in the steelworks and this included some of the earliest ferroconcrete housing 'issued' to employees. Most of this extension was at the expense of land taken out of agricultural production but some housing – especially early timber multiple structures - was also developed on former military sites, for example in Todoroki-chō. In addition to actual housing constructed there was advance provision by 1960 or around 1.4 km² of plots for new dwellings.

At the end of the war there was a very large bank of land amounting to about 4.4 km², mainly in public ownership, that had been previously acquired either directly for military

⁴ 1955 Population Census of Japan Vol.4.1 p.207



Fig. 6.8: Carpenter constructed house from about 1952. Before tin cladding was available for plywood cedar shingles continued to be used for exterior cladding. Shioda-chō

Use, or by military planners for use for munitions and war materiel production. The largest of these was the former Hitachi aero engine site on which the first steel plant was created but there were many others – especially in Anagawa-chō – which provided sites for factories either during this period or later during the period of high speed growth in the 1960's.

6.9 Evolution of housing before 1960.

In the immediate post war years there was a formidable shortage of housing in area like Chiba which had both been bombed and also absorbed homeless families from Tokyo and also returning families and ex-servicemen from overseas. At the end of the war perhaps 12,000 households – around 40% - were without their own dwellings and those with nobody to share premises with had no alternative but to squat in derelict structures or piece together shanty dwellings. The characteristics of these have been documented in some detail by Nishiyama (1975:(1) 263-324). There was no Japanese equivalent of a 'Nissen hut'. As Table 6.10 reveals, even by October 1950 1,430 families in the area – around 5% - had no separate dwelling and were sharing occupancy of a structure.



Fig. 6.9: Early wooden framed public housing. These survivors are 1960's nagaya (terrace houses). Earlier cheap apartments for steelworkers were similar structures. Chishirodai

<i>category</i>	<i>count ('000)</i>		<i>average size (persons)</i>		<i>% of total</i>	
	<i>1950</i>	<i>1960</i>	<i>1950</i>	<i>1960</i>	<i>1950</i>	<i>1960</i>
Ordinary households in dwellings	26.35	55.86	4.65	4.27	94.8%	99.9%
Owned	15.79	34.06	5.18	4.82	56.8%	61.0%
Rented	6.60	15.03	4.16	3.35	23.8%	26.9%
<i>Public</i>		<i>2.53</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>
<i>private</i>		<i>12.50</i>				
Issued	1.61	4.38	4.28	3.91	5.8%	7.8%
rented rooms	2.35	2.34	2.71	3.06	8.5%	4.2%
(other situation)	1.43	0.06	3.43	2.97	5.1%	0.1%

Source: Population Census of Japan 1950 and 1960

The data in this table refers to the area of the *shi* as at the date of each census and so around 23% of the increase in households between 1950 and 1960 is due to the expansion of the administrative area. As ownership of dwellings was rather commoner in villages the actual proportion of home ownership in urban areas probably changed only slightly during the decade, remaining at around 58%. In terms of share of mix households lacking separate dwellings and in-migrants were primarily absorbed by a more rapid expansion of (at this time private) rented and company issued housing. Average household size data suggests that three generation families were largely

occupying owned dwellings by 1960 with younger couples and nuclear families in rented or issued accommodation.

Not only are owned dwellings significantly larger than rented dwellings on average but the size of new owned dwellings also increased significantly during the decade compared with rented property (see Table 6:11). This will remain characteristic of the whole post-war period. As the physical extension of existing dwellings is rare this is primarily due to larger new dwellings being completed and the figures suggest that two storey houses with a one or two bedroom upper storey were becoming commoner in *danchi* areas in the late 1950's – a trend that will be explored in more detail in the next chapter. The living area of the very 'basic' issued accommodation offered by employers did not change much during the decade, but there was a widespread development of private rented housing to meet housing shortages and this was often built in the rear gardens of larger houses as the developer's 'retirement investment'. This trend actually led to the construction of smaller and cheaper dwelling units next to the landlord's dwelling - a situation described by Ann Waswo (2002:Chapter 1). The small increase in the average size of rented room lettings is set against an increasing tendency for young families with children to have to resort to this accommodation.

<i>type of dwelling</i>	<i>dwelling area[1] (metres²)</i>			<i>dwelling area tatami per person</i>		
	<i>1950</i>	<i>1960</i>	<i>% change</i>	<i>1950</i>	<i>1960</i>	<i>% change</i>
All dwelling houses	23.03	25.67	11%	3.00	3.64	21%
owned	26.57	31.46	18%	3.11	3.96	27%
rented	18.87	15.70	-17%	2.75	2.84	3%
issued	23.15	22.63	-2%	3.28	3.51	7%
(rented rooms)	10.80	11.27	4%	2.42	2.23	-8%

[1] Dwelling rooms defined as areas used for living and sleeping. Does not include kitchen, bath, toilet
Source: Population Census of Japan 1960 Vol.4-12, Table 19. 1950 Vol 2-12 Table 23 p. 277

Table 6.12 provides a summary of the age of the dwelling stock in Chiba-shi by age in 1960 based on the contemporary Housing Survey reports. The data suggests that there was a consistent rate of construction throughout the 1950's and that by the end of the decade the demand and supply of housing was more or less in equilibrium. Some of the very poor quality structures erected in the immediate post-war period had already been demolished. It is not possible from these survey reports to answer the interesting

question “what proportion of this housing comprised two storey structures?” However based on tables for the whole *ken* an estimate might be made of around 10% in the immediate post war period rising to perhaps 15%-20% by 1960.

<i>(values in '000 dwelling units)</i>	<i>'ordinary' house holds</i>	<i>new build^[1]</i>	<i>dwelling stock in 1950</i>			<i>dwelling stock in 1960</i>		
			<i>units</i>	<i>% surviving</i>	<i>already demol - ished</i>	<i>units</i>	<i>% surviving</i>	<i>already demol - ished</i>
built before 1945	33	24	23	96%	(1.0)	19.4	81%	(4.6)
built 1945 - 1950	38	12	11.5	96%	(0.5)	8.7	73%	(3.3)
built 1950 - 1955	42.2	14				13.2	96%	(0.8)
built 1955 - 1960	56.5	15.5				15.3	98%	(0.2)
net 1960	56.5		34.5		(1.5)	56.6		(8.9)

[1] 'before 1945' value is the 'starting stock' of housing surviving the 1945 air-raids, not 'new build'
Source: consolidated from tables in the Housing Survey of Japan 1953 , 1958 and 1963

6.10. Summary of changing associations.

In this complex period the initial recovery of Chiba-shi in the first year after the War is driven from the bottom upwards, as the effective power of the State partially fails, and most households are faced with the crisis and necessity of attempting to re-establish many or all of the basic functions listed in Table 3.2 for themselves as quickly as practicable. Often this is based in rudimentary or makeshift dwellings. Despite the efforts of the State to manage this process it is primarily achieved through individual effort and based on existing legal title to sites. Many households have been impacted by the loss of members and loss of livelihoods.

As the State negotiates a transition into a completely new mode of regulation dependent on the wider world economy, the local enterprise base is increasingly transformed by opportunities in export markets, and in the case of large enterprises by some introduction of international capital. There is a concentration of new factory based employment in premises and on sites previously used for military purposes. This eventually creates a buoyant market for local labour and a strong flow of migrant labour into the area. At first this consists mainly of individual workers but later of whole families; two generation nuclear families become a more common format of household.

This inflow requires the provision of new dwellings which is accommodated partly by workers hostels, partly by tied worker housing and partly by the private provision of vacant lots for development of cheap, new and mainly single storey dwellings in new housing *danchi*. Towards the end of the period larger scale public housing projects are implemented. Compared with earlier enlargement of the *shi* on the edge of the built up area, much of this new extension is initially more scattered, taking advantage of land in public ownership.

All a matter of economic policy? Expansion 1960 to 1975

Seishin, seido to kashite, shisu. Kore rekishi no hōsoku nari

The spirit, reduced to a system, dies. This is a law of history.¹

Uchimura Kanzō (1861-1930)

7.1 Introduction

How were the economic and social transformations that accompanied the emergence of Japan as a major economic power during the nineteen-sixties inscribed in the production of urban space? Which institutions and opportunities influenced and gave direction to the processes of change taking place? What new constructed urban forms emerged and how were they incorporated into evolving patterns of daily life?

This chapter explores the processes and characteristics of urbanisation within Chiba-*shi* during a seminal period in modern Japanese history. Following admission to GATT in 1956 and the boom in domestic demand discussed at the end of the last chapter which took place between 1957 and 1959, Japan's political and industrial leaders consciously promoted new economic and manufacturing strategies to take advantage of the opportunities that enhanced access to global markets presented. The context of this strategy is outlined in the following section, and then the subsequent sections consider in more detail some of the wider environmental and related issues that quickly began to emerge as a consequence of growth. The ways in which demand for suitable space to satisfy the emerging new regime of accumulation is considered in Section 7.3, the political impact of pollution in Section 7.4 and the growth of private vehicle ownership in Section 7.5. The first part of the chapter dealing with the national context concludes with Section 7.6 which outlines the changing planning regulatory framework within which these changes were made.

¹Quoted from the essay 'Ware ikanishite kirisutokyō to narashite'

Later sections of the chapter examine how national priorities and trends were reflected in terms of local outcomes. Section 7.7 summarises the impact of the maturing Toyotaist mode of regulation in respect of change within the built environment of Chiba-*shi* and how this both modified existing forms and promoted new kinds of emerging urban space within the city. Five aspects of this transformation are then explored in some detail. Section 7.8 examines the spatial impact of change on local employment, Section 7.9 emerging patterns of commuting and Section 7.10 the scale and dynamics of migration into the urban area. The following three sections of the chapter (7.11 - 7.13) explore how these changes were reflected in the characteristics of households, the quality and character of the dwelling stock and the volume and character of new urban space allocated to dwellings. Finally in Section 7.14 I will briefly summarise the outcome of these changes in terms of overall association between the character of dwelling space and other components of the built environment.

A fascination with Japanese organisational and managerial style in these years engendered by contemporary classics such as Rodney Clark's *'The Japanese Company'* (1979) and Pascal and Athos' *'The Art of Japanese Management'* (1981) has arguably promoted a sense of this period as representing a kind of enduring and accepted natural condition, a seamless and unchallenged order of things. But closer examination of contemporary events and discourses suggests that this was far from being the case. It may be true that, as Kenneth Pyle argues, "Japan was the beneficiary of the postwar international order. For more than a quarter of a century after the end of World War II, Japan operated in extraordinary and uniquely favourable political-economic circumstances." (Pyle 992:43). But any sense of uncritical optimism that high speed growth engendered was characteristic of only a few years in the early 1960's. The broader environmental and social consequences of this economic policy soon became very apparent too. The Japanese had, at least partly consciously and by design, engineered and constructed a system that replicated growth which took shape in institutions and forms that they did not always like and also could not easily walk away from.

7.2 An emerging economic power

In Chapter Six I suggested that although by the late 1950's Japan had both effective institutions in place to support an investment strategy and ways of working which potentially favoured the expansion of the industrial base, political and economic security were far from an assured outcomes. As late as 1957 the Harvard scholar Edwin Reischauer² would comment that "The economic situation in Japan may be so fundamentally unsound that no policies, no matter how wise, can save her from slow economic starvation and all the concomitant political and social ills that situation would produce" (Reischauer, 1957:51).



Fig. 7.1: The Olympic torch and spirit arrives at a muddy Hanazono Elementary School in Hanamigawa-ku, October 1964. Chiba-*shi* hosted the modern pentathlon cross country event.

However important transformations had already begun to take place. The Jimmu *keiki* ('boom') of 1955-1957 had encouraged much higher levels of investment in new plant, equipment and technologies and there was a sophisticated approach in place co-ordinated by MITI to rationalise each industrial sector and to promote new policy and manufacturing strategies based on evaluations of foreign competition (Hein, 1993:112;

² Later United States Ambassador to Japan 1961-1966

Table 7.1: Chronology of the period 1960 - 1975	
1958-1961	[Iwato <i>keiki</i> (boom)]
1960	Renewal of US-Japan Security Treaty. Miike mine strike
	Ikeda Hayato premiership begins
	Income Doubling Plan formally adopted
1962	First <i>Zensō</i> (<i>Zenkoku Sōgō Kaihatsu Keikaku</i>) Comprehensive National Development Plan
1963	New Residential Area Development Law ('New Town' Act)
	Building Standards Law revisions ease height controls.
	<i>Addition of Izumi-machi into the area of Chiba-shi</i>
1964	Tokaido Shinkansen opens. Tokyo Olympic Games
	Japan joins OECD
	Satō Eisaku premiership begins
1965	Pollution Counter-Measures Basic Law adopted
1965-1970	[Izanagi <i>keiki</i> (boom)]
1967	Basic Pollution Control Law implemented
	Narita Airport environmental demonstrations begin
1968	Japan's output of goods and services second only to USA
	<i>Shin Toshi Keikaku Hō</i> New City Planning Law
	Implementation of Air Pollution Control Law and Noise Regulation Law
1969	<i>Toshi Saikaihatsu Hō</i> Urban Redevelopment Law. Second <i>Zensō</i>
	<i>Addition of Toke-machi into the area of Chiba-shi</i>
1970	'Pollution Session' in Diet Lower House July - photochemical smog in Tokyo
	Major revision of Building Standards Law .
1971	Environment Agency formed
	Nixon opens diplomatic relations with China
	Fixed dollar yen exchange rate abandoned
1972	"Big Four" anti-pollution cases
	Tanaka Kakuei premiership begins
	Okinawa reverts to Japan. Relationship with China normalized.
1973	First Global Oil Crisis
1974	National Land Agency created. National Land Planning Law
	Tanaka resigns as Prime Minister
1976	Revision of Building Standards Law to protect access to natural light.

Johnson,1982:253). This strategic review was facilitated by the emergence of the *keiretsu* - the post-war alliances referred to in Chapter Two. After the reforms of the 1950's Japanese business was well placed to take advantage of the Iwato *keiki* - the boom lasting from mid-1959 to the end of 1961 - which encouraged further growth in consumer spending and enabled some modest investment in health, welfare and educational infrastructure. A new generation of consumer durables based on new production technologies such as refrigerators and TV sets also began to appear in stores in 1958 and 1959. Although high levels of mass car ownership would not arrive until the mid-1960's (see Section 7.5) the first Toyopet Crown models had already been launched

in the domestic market in 1955 and the automotive industry was catering for increasing domestic demand for two and three wheel vehicles encouraged by a strengthened agricultural sector.

With the post-war recovery complete the direction of economic strategy had become part of a much wider and intense political debate about the future. What course should be pursued in the context of the worldwide liberalisation of markets and to what degree could Japan safely depend on imported resources – especially energy - and long term easy access to international markets for exports? Was there any realistic and less vulnerable alternative strategy relying more on domestic markets and resources? This question reflected a more pervasive unease about Japan's relationship with the wider world which erupted during the summer of 1960 into the violent protests against the renewal of the US-Japan Security Treaty and the demise of the Kishi premiership in July. It also lay behind the bitter confrontations with organised labour at the Miike coal mine in Kyūshū, provoked by Mitsui and MITI proposals to rationalise production as cheap imported oil began to supplant domestic coal as a primary energy source (Garon and Mokizuki, 1983:159-160) Coal's share of the Japanese energy market eventually declined from 31.3% to 6.1% during the decade after 1961 (Tsuzuki, 2000:391-392)

Ikeda Hayato, a technocrat and a former Minister of both MITI and Finance became premier in July 1960. Kosei (1986:130) recounts that on the eve of his appointment he was asked by his Secretary, Itō Masaya "What will you do if you become Prime Minister" and is said to have replied "Isn't it all a matter of economic policy? I'll go for income doubling". This strategy, founded partly on the theoretical work of the economist Shinomura Osamu was formally adopted by the government as the "Income Doubling Plan" of December 1960. The plan's objective was to double national income within ten years. It was based on achieving high levels of investment in productivity and new technologies by corporate private industry sharing a common vision of export opportunities and working in partnership with a government committed to the promotion of infrastructure (especially coastal sites, transport and utilities), international trade liberalisation and the stimulation of domestic consumer demand and spending.

Measure	1956-60	1960-64	1965-69	1970-74
Economic Growth Rate	8.7%	9.7%	12.2%	5.1%
Increase in Employment	2.2%	1.7%	1.8%	0.4%
Increase in Productivity	6.5%	8.0%	10.4%	4.7%
Gross Expenditure -Private Final Consumption	7.7%	8.3%	9.7%	6.0%
Gross Expenditure - Private Housing	14.5%	17.4%	13.7%	6.2%
Gross Expenditure - Plant and Equipment	22.6%	8.7%	22.8%	0.9%
Gross National Output	8.7%	9.7%	12.2%	5.1%

Source: *Kokumin shotoku tōkei* (National Income Statistics): Summarised from Kosei (1986) Tables p-3, p-5

A chronology of some key events for the period is presented in Table 7.1 and selected economic metrics for the quinquennial periods before, during and following the years of the Income Doubling Plan are presented in Table 7.2. High levels of investment starting around 1957 led to increased productivity and employment which in turn promoted an annual economic growth rate of around 10%. Part of this was represented in terms of greater consumer spending and in housing expenditure.

The first half of the 1960's are still remembered in Japan as years of rising incomes and expectations, and of a manifest sense of pride in recovery from defeat. A pervasive optimism in the future was epitomised in events such as the hosting of the Tokyo Olympics in 1964 and the completion of the first high speed *shinkansen* rail route from the capital to Osaka. Despite a brief recession in 1965 the second half of the decade recorded even greater levels of growth now in part based on the sheer impetus and efficiency within the system and the robustness of mechanisms of economic expansion. But commentators describe a quite different quality to this period. As Kosai Yutaka observes:

“Firms, households and the government had all come to behave as though economic growth were the natural course of things, and this further sustained economic growth. The boundless world market seemed to limitlessly guarantee the continuation of the transformation into a world superpower. If ... (the decade from 1955–1964) ... was the age of charismatic leaders who fought hard battles, then the decade from 1965-74 was the age of the masses, the era of technostructure.” (2003:168)

The spirit and creativity of the initial years of growth had somehow become a system, something mechanical. And as in the fable of the 'Sorcerer's Apprentice' the machine could not be easily turned off. There was a profound and growing unease about the social and environmental costs which mirrored contemporary social trends in Europe and North America. Reischauer and Jensen comment:

In their headlong industrialisation ... the Japanese had despoiled their natural environment and created conditions of terrible crowding and pollution in their urbanised areas. In all industrial countries people were becoming conscious of these problems but the Japanese suddenly realised that they faced perhaps the most serious conditions of pollution and overcrowding in the whole world (1995:117-118)

The onset of recession in late 1970 followed by sharply rising inflation marked the end of the decade of stability which had enabled such consistent high speed economic growth to be achieved. Inflation was a precursor of more fundamental changes in the international arena beginning in 1971 when the position of Japan was transformed at a stroke as United States abandoned the fixed exchange rate maintained at \$1=¥360 since 1949 and precipitated a 17% revaluation of the yen against the dollar. In the same year US President Nixon's surprise rapprochement with China propelled Japan into a hasty reappraisal and readjustment of its own neglected relationships with its Asian neighbour.

7.3 The creation and assembly of new space for urban use.

How the strategy of high speed economic growth and the emergence of Japan as an economic superpower were reflected in the production of particular urban spaces in Chiba-*shi* are considered later in this chapter but the importance of two general mechanisms of production – the roles of coastal landfill and the legal framework of *kukakuseiri* (Land Readjustment) should be discussed here. The transition to more sophisticated forms of manufacturing and the structural conversion to cheaper and more flexible energy sources were initially the most obvious physical consequences of new growth policies, and neither would have been possible without an expansion of the *kombinato* model of industrial development for petrochemical and other heavy industries. These projects were usually promoted on large coastal landfill projects, which were the cheapest method of assembling large level sites, and attracted high levels of public f

Table 7.3: Summary of Japanese coastal landfill 1960-1975					
<i>Area</i>	<i>1960 to 1965 (km²)</i>	<i>1965 to 1970 (km²)</i>	<i>1970 to 1975 (km²)</i>	<i>TOTAL 1960 to 1975 (km²)</i>	<i>% of Total Area</i>
Total Honshu and Shikoku ¹	90.8	142.0	148.2	381.0	100.0%
<i>Tokyo Bay coastline (Keihin/ Keiyō industrial areas in Chiba-ken, Kanagawa-ken and Tokyo-to)</i>	<i>31.4</i>	<i>44.5</i>	<i>46.3</i>	122.2	<i>32.1%</i>
<i>Chiba-ken</i>	<i>16.0</i>	<i>28.4</i>	<i>36.0</i>	80.4	<i>21.1%</i>
<i>Chiba-shi</i>	<i>0.2</i>	<i>9.3</i>	<i>12.8</i>	22.3	<i>5.8%</i>
<i>Nagoya Bay (Chūkyō and Aichi-ken)</i>	<i>6.5</i>	<i>19.9</i>	<i>29.8</i>	56.3	<i>14.8%</i>
<i>Hanshin (Osaka-fu and Hyogo-ken)</i>	<i>21.1</i>	<i>22.5</i>	<i>16.4</i>	60.0	<i>15.7%</i>
<i>Seto (Inland Sea) Okayama-ken, Hiroshima-ken, Yamaguchi-ken, Kagawa-ken² and Ehime-ken</i>	<i>23.7</i>	<i>39.5</i>	<i>34.7</i>	97.9	<i>25.7%</i>
<p>¹ Honshu and Shikoku account for about 90% of all Japanese landfill. Boundary changes and the return of Okinawa in 1972 make an accurate 'all-Japan' value impossible to calculate using this approach.</p> <p>Source: 2000 Population Census of Japan Volume 1, Table 7. Calculated from quinquennial changes in areas of islands and prefectures.</p>					



Fig. 7.2 'Dredge Reclamation' in progress on the foreshore at Inage 1964. This was the commonest technique used for landfill and consists of pumping silt dredged offshore into banded areas as slurry and allowing the material to dry out and solidify into new ground.

unding for infrastructure (Kornhauser, 1982:137-139). In the case of Chiba-*ken* public land was even sometimes gifted to industrial corporations. Table 7.3 summarises the extent of landfill projects around the coasts of Honshu and Shikoku between 1960 and 1975. Some of these involved the creation of new farmland but most had a major industrial component. Several of the key players involved in promoting and planning *kombinato* schemes from Kishi Nobosuke (Prime Minister 1957-1960) down to the many planning officials working on projects had been employed in the development of Manchukuo during the pre-war era (Sorensen 2002 :164, Hein 2003b) and it is tempting to see both economic and emotional links between that colonial project and this new physical enlargement of Japan which was the spatial equivalent of adding a small new prefecture around the nation's coast line. Nearly all of this expansion was deliberately concentrated in the Pacific Belt region to a degree which provoked strong political opposition even from other constituency Diet Members within the LDP. The growing pressure for investment in more peripheral regions was partly addressed in the first *Zensō* (Comprehensive National Development Plan) of 1962 but this provoked counter-lobbying from industry which in turn led to the designation of six additional "Special Areas for Industrial Concentration" adjacent to core area *kombinato* (Calder 1988). None of these were in Chiba-*ken*, although Kashima just across the Tone River in adjacent Ibaraki-*ken* was designated a Special Area. The extension of the Keihin and Keiyō *kombinato* around the eastern shore of Tokyo bay was already well in progress by 1965 with huge new petrochemical sites in Ichihara, Kisarazu and Sodegaura in addition to the expanding Kawasaki Steel site off Chiba-*shi*. Considered over the whole period 1960-1975 Tokyo Bay accounted for nearly a third of all Japanese landfill projects with Chiba-*ken* accounting for 21% of new land created and Chiba-*shi* nearly 6%. Some of this – and especially within Chiba-*shi* – was allocated for housing but the most was committed as industrial space.

The State, primarily through the agency of prefectural and local government, also intervened decisively elsewhere in terms of providing new manufacturing space and infrastructure both directly and also through encouraging local authorities to promote

infrastructure, serviced industrial sites and new primary distributors (Morimura, 1994). Compulsory purchase was relatively little used in post-war Japan (for details and background see Hebbert and Nagai, 1988a:42). According to Sorensen (2002:183) the

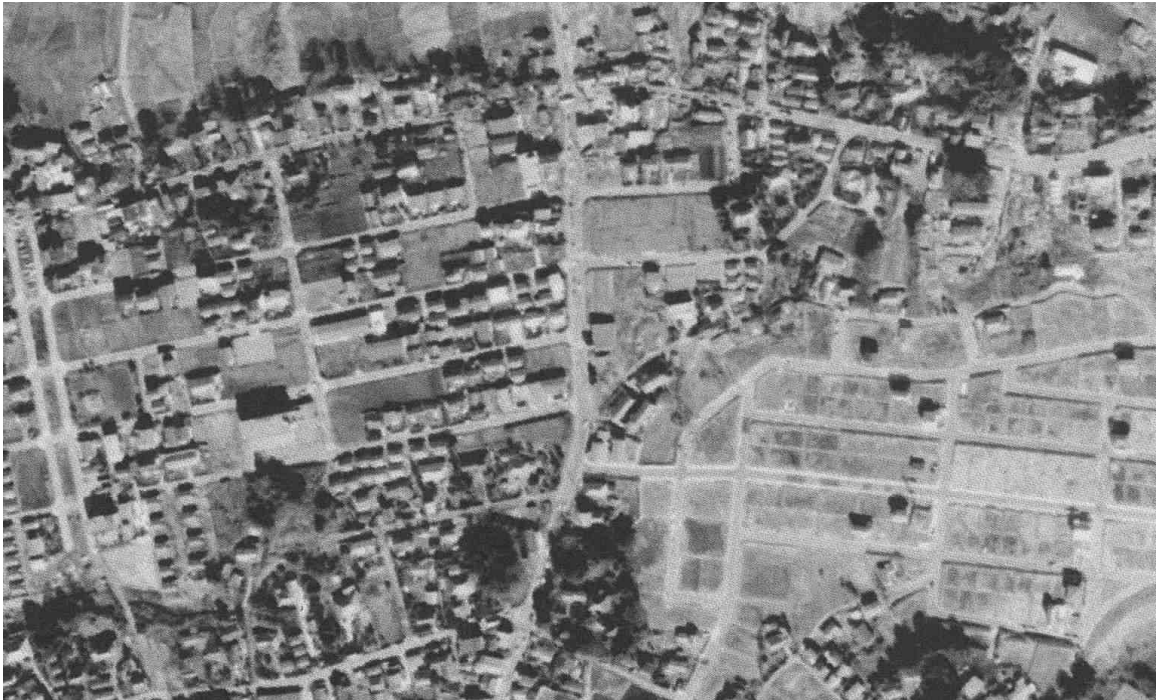


Fig. 7.3 Danchi created using 'land readjustment'. Around 70% of their original stake has been returned to land owners as dwelling plots. On the left Miyako 1-chome is 50% built over eight years after completion, on the right Miyako-chō is only about 10% complete. [1975 photo]

expanded powers contained within the 1954 Land Readjustment Act (*Tochi Kukaku Seiri Hō*) were used to great advantage in this context and also by both local government and landowners to assemble and develop land for housing. Land readjustment procedures also avoided the need for major commitments of public capital for housing land.

Concern about the relatively poor quality of housing constructed in the 1960's – and especially the small plots they were built on and the limited living space they provided compared with American and European dwellings – is a regular concern in the contemporary literature (for example Nishiyama 1975 vol.3). Nagamine comments:

“A report prepared by the EEC a few years ago³ described the Japanese lifestyle as that of 'urban workaholics living in rabbit hutches' It is important to understand that Japanese industry has been able to survive not in spite of but because of such living conditions ... In

³ Probably a Japanese 'urban myth'. It is referred to in several sources but I can trace no specific reference to this.

other words one of the major factors in accounting for the prosperity of the Japanese economy is that her people have opted to tolerate, rightly or wrongly, a meagre resource allocation for their living conditions, thereby leaving the maximum amount of resources for industrial development ... It would be fair to say that it is almost solely '*kukakuseiri*' (Land Readjustment) that effectively worked as a systematic device for urban land development in Japan.... Japan would have failed to accomplish high economic growth without this urban development device." (1986:52).

7.4 Pollution and environmental damage

The speed and scale of change during this period provoked many environmental issues of which the most hazardous and best documented (in English by Ui, 1992) was toxic pollution from industrial processes. Four infamous and lethal cases⁴ of toxic pollution which eventually took more than a decade to resolve became a national *cause célèbre* during the early 1960's, and by the end of the decade the extent of the wider perceived destruction of the environment by industry abetted by bureaucracy had become a major political issue and begun to seriously erode LDP support in local and Diet elections. The evidence of atmospheric pollution by the chemical industry at Yokkaichi in Mie-*ken* for example encouraged successful resistance to a *kombinato* proposal at Mishima in Shizuoka-*ken* in 1964, in which the local mayor and city office actually pre-empted a MITI environmental impact assessment (EIA) by publishing one of its own (Barret and Therivel, 1991:94; Lewis, 1980). Under this kind of pressure in 1965 MITI evolved its own procedures for regularly undertaking environmental impact assessments for all big projects and a flurry of environmental legislation followed the creation of the National Environment Agency in 1971 and the eventual resolution of the 'Big Four' pollution cases in 1972. The limits of public tolerance were clear. By the mid-1970's Japanese industry had considerably improved its pollution record, inevitably and ironically often through the construction of yet more large scale infrastructure projects.

In the case of Chiba-*shi* the Kawasaki Steel integrated plant caused several pollution problems from the time of its opening and in particular air pollution which allegedly caused about thirty deaths from asthma during the 1960's and led to the prosecution of

⁴ Mercury poisoning of Minamata Bay by Chisso Chemicals in 1956 and of the Agano River, Niigata by Shōwa Electric in 1965. Sulphur dioxide and nitrogen dioxide atmospheric pollution at Yokkaichi, Mie-*ken* in 1961. Ongoing cadmium poisoning of rivers by mining in Toyama-*ken* ("Itai-itai" Disease).

the company by City Hall in 1975, a case which dragged on until the 1992. (Cs-Shi, 1993:1:241). By 1977 the firm had adopted a strategy that became common later with Japanese companies – one of exporting the worst of its pollution processes to offshore production sites in poorer countries. In the case of Kawasaki Steel this involved the dirty ‘sintering’ element of steel manufacturing being ‘exported’ to a new plant owned by a subsidiary, PSC, in Villanueva on Mindanao in the Philippines while the cleaner and technically sophisticated integrated finishing processes remained at the Chiba plant.⁵

Apart from the specific risks of toxic pollution there were the beginnings of greater public challenge to the spread of major projects during the late 1960’s. Many of these debates focused on local opposition to specific land readjustment schemes, a trend that led to the formation in 1968 of the All-Japan Land Readjustment League (*Kukaku Seiri Taisaku Zenkoku Renraku Kaigi*) which still serves to exchange information about anti-development strategies (Sorensen 2000:62). By far the largest confrontation at this time between protesters and the state took place within Chiba-ken over the construction of the new Tokyo International Airport south of Narita-shi at Sanrizuka. Demonstrations and blockades began in 1967 and delayed the opening of the airport for seven years⁶ (McKean, 1981; Apter and Sawa, 1984). The proposed *shinkansen* route from the airport into Tokyo across Chiba-ken was approved by the Satō cabinet in July 1966 but is still not built. The link is likely to be finally completed in a much reduced form in 2010.

7.5 The growth of vehicle ownership.

Widespread private vehicle ownership began to emerge in Japan during the period 1960 - 1975 and played a major part in transforming urban space both in terms of highway construction and provision of parking. Before World War II there had been very little domestic private vehicle production or ownership even of motor cycles, the limited luxury car and taxi market being mainly supported by imported models. During the 1920’s and 1930’s domestic production was focused on public service and military vehicles. After World War II American army contracts for trucks during the Korean War (1950-1953)

⁵ As late as 2005 Kawasaki Steel’s successor at Chiba, JFE Steel, were still admitting to offences of cyanide pollution of Tokyo Bay from the Chiba site and related document falsification. *Japan Times online 25 October 2005*.

⁶ All public access to this airport area still remains closely controlled by Chiba-ken police in 2009.



Fig. 7.4. Students at Sarashina Junior High School with the school's keisanrin in 1963. The first generation of 2 and 3 wheel private vehicles outnumbered private cars until 1969.

Table 7.4: Motor vehicles registered in Chiba-ken

Year	Total number '000			Total per 100 households			parking area required in Chiba-shi ^[1] (ha)
	Freight Vehicles and Buses	two- and three wheel vehicles ^[2]	Private cars	Freight Vehicles and Buses	two- and three wheel vehicles ^[2]	Private cars	
1955	14.90	9.95	1.47	3.5	2.3	0.3	0.2
1956	17.87	10.23	1.78	4.1	2.4	0.4	0.2
1957	20.46	12.00	2.12	4.6	2.7	0.5	0.2
1958	23.62	15.65	2.74	5.2	3.4	0.6	0.3
1959	26.59	22.00	3.45	5.7	4.7	0.7	0.4
1960	29.49	30.18	4.09	6.1	6.2	0.8	0.5
1961	32.36	45.55	5.28	6.4	9.1	1.0	0.6
1962	38.55	68.38	8.07	7.2	12.8	1.5	1.0
1963	45.80	87.15	12.41	8.1	15.4	2.2	1.6
1964	54.89	54.80	19.48	9.0	9.0	3.2	2.6
1965	66.02	62.51	28.22	10.4	9.8	4.4	3.8
1966	77.74	70.34	38.84	11.5	10.4	5.8	5.5
1967	93.05	78.40	54.23	12.9	10.9	7.5	7.8
1968	114.27	91.17	77.28	14.9	11.9	10.0	11.5
1969	135.70	105.17	110.07	16.2	12.6	13.2	17.2
1970	152.99	121.52	150.94	17.5	13.9	17.3	24.2
1971	167.64	139.47	198.51	18.0	15.0	21.3	31.7
1972	180.60	153.31	247.15	18.3	15.6	25.1	39.9
1973	197.94	162.54	312.98	18.9	15.5	29.9	52.1
1974	214.14	163.00	370.55	19.4	14.7	33.5	63.5
1975	227.39	163.25	425.75	19.7	14.2	36.9	74.8

[1] Parking area required in Chiba-shi based on assumption 2.2m*4.5m per vehicle

[2] After 1963 agricultural three wheel vehicles excluded from taxation

Source: Annual editions of Chiba-ken tōkeisho

enabled some manufacturers, including Isuzu and Toyota, to re-tool and begin to develop designs for the domestic market and initially most of this business consisted of supplying *keisanrin* – the cheap three wheel vehicles with two-stroke engines ideal for farmers, tradesmen and local small business use.

Table 7.4 summarises vehicle ownership within Chiba-ken from 1955 to 1975. Unfortunately separate data are not available for Chiba-shi for most of this period but a comparison of available data from the early 1970's suggests that the *shi* had slightly higher levels of ownership – perhaps the equivalent of a year in advance of the rest of the *ken*. The trends within the data are quite clear. Beginning in the late 1950's *keisanrin* and motorcycle ownership increased quite rapidly. A change in the taxation regulations removed vehicles solely for agricultural use in 1963 but the number of vehicles in use increased until it reached around 15 per 100 households in 1972. Private cars on the other hand don't begin to increase significantly until the Income Doubling Plan began to influence disposable incomes and a number of small family 'kei' car models have begun to appear in volume on the market in the early 1960's (for example Subaru 360, Mitsubishi 500). Ownership begins to 'take off' in 1962 and accelerates rapidly during the late 1960's. However it should be noted that in 1971 mass car ownership is still far below European levels, lagging about five to eight years behind (21.3% of households compared with around 38% in the UK for example).

The space implications for these changes are profound. In 1963 no-one was considering residential parking as a planning issue, dwellings were being constructed covering the whole available plot and often within the 1960 DID still with only pedestrian access to the property down a narrow *roji*. Twelve years later parking lots in the *shi* covered a notional 75 hectares, around 1% of the DID area, and no-one was building dwellings without vehicle access. The small gardens of many older properties were being sacrificed to create a parking place and few new owner-occupied dwellings were being built without one. In Japan all on-highway parking is forbidden and for residents of properties with no space for parking available the only option was to take a monthly lease on a gravel or metalled parking bay on a vacant lot in the area. This became and has since remained a very characteristic element of Japanese urban space.

7.6 Regulating the production of new urban space

Although the first *Zensō* promoted a political vision and a policy framework for an emerging geography of economic growth no overall regulatory development framework equivalent to, for example, the UK 1947 Town and Country Planning Act, was ever developed to cover the whole of the area of Japan. For almost a whole decade the urban planning needed to support high speed growth policies was managed within the framework of the 1919 City Planning Law which offered only limited scope to either impose new infrastructure or control the spread of urbanisation. Not only did the quality of the urban environment become a serious political issue during the sixties, but the accelerating costs associated with attempting to retro-fit social and utility infrastructure in urban space being permitted to develop on a piecemeal basis was excessive (Hebbert and Nakai, 1988a; 1988b).

Three pieces of legislation in the late 1960's created a new framework for urbanisation and they continue to serve as the basis of urban planning and development control today and so will be outlined in some detail. These were the 1968 New City Planning Law (*Shin Toshi Keikaku Hō*) and the related 1969 Urban Redevelopment Law (*Toshi Saikaihatsu Hō*) and the revised Building Standards Law of 1970. This outline of the new powers they provided is mainly summarised here from Sorensen (2002:213-223)

The main purpose of all the legislation was to provide some measure of control over the processes of rapid and unstructured conversion of land at the urban fringe into urban space. The requirement for new controls was a consequence both of high net migration taking place into the larger metropolitan areas and especially of the suburbanisation of residential areas due to rising land prices and the conversion of central areas to commercial and service uses. The key 1968 New City Planning Law was the most important of the three and was concerned with five main areas of provision:-

- i) **Urban planning powers were delegated to local government**, in the case of Chiba-*shi* these powers were shared between the Prefectural Offices and City Hall although since Chiba became a 'Designated *Shi*' in 1992 most

planning functions are now allocated to the *shi*. In practice effective central supervision of priorities was maintained through tight control of budgets (Shindo, 1983; Neary, 2002:151-153), the employment of local government in an agency capacity by central government and the regular secondment of Ministry career bureaucrats to serve as section heads (Samuels, 1983)

- ii) **City Planning Areas (CPAs) were delimited which could then be designated as for either urban promotion or control.** The intention was for new urban space to be focused in Urbanisation Promotion Areas (UPAs) while building would be restricted in adjacent Urbanisation Control Areas (UCAs). This system is known in Japan as *senbiki* – “drawing the line”. The important point here is that the relationship within CPAs between UPAs and UCAs is not intended to be fixed and is subject to quinquennial review. The main purpose here was to control social ‘overhead’ by promoting orderly growth in areas where infrastructure development could be focused.
- iii) A new **development permission system** enabled planners to withhold permission for projects within the UPAs unless adequate infrastructure requirements were included in the plan and paid for by developers.
- iv) A new **development zoning model** was introduced increasing the number of categories of urban land from the four defined in the original 1919 Law to eight (Sorensen 2002:221). This was associated with changes in the building regulations which enforced defined floor area and plot coverage ratios and absolute building heights for new developments in each zone
- v) Finally there was a requirement for **public participation** although in practice this was often interpreted to mean informing the public of new projects rather than to encouraging feedback on plans⁷.

Although this new planning framework provided additional opportunities for public control of the private formation of new urban space it proved only a very limited success in controlling urban development both during the period under review in this chapter and

⁷ This legislation was exactly contemporary with the UK Skeffington Report which suffered from precisely the same failings in implementation

also the subsequent period 1975-1990 considered in Chapter Eight. The equivocal and transient status of UCAs and the exemptions on changes of use permitted



Fig. 7.5. A typical 'minikaihatsu' development in Tsuga, ten houses along a cul-de-sac. The 4m access lane has been metalled later and most of the dwelling plots rebuilt in the 1990's.

within them were inevitably exploited by developers. The intention was for them to stage developments in line with the need for building requirements rather than function as permanent 'green belts' and at each quinquennial review there was intense pressure for *senbiki* to be redrawn as generously as possible which led to massive over-provision of development land. Many small housing plots scattered around the districts of Chiba-*shi* developed in the 1960's have subsequently remained vacant lots and never been used. Several are simply now too small to use for modern private dwelling construction.

Public authorities and agencies were also neither restricted by the terms of the law nor bound by the development status of land, the premise being that public bodies would always act in the public's best interest. Often this had exactly the opposite effect to the one intended with large marginal sites in UCAs being selected for projects because urban fringe land was cheaper and in good supply. In Chiba-*shi* this is almost certainly the case

in respect of the big Japan Housing and Urban Development Corporation (JHC) projects from the early 1960's at Hanamigawa-*cho* and Mitsuwadai-*cho* for example.

But by far the most common cause of urban sprawl and the patchwork extension of urban space was a lack of control over small projects on the urban fringe, a problem aggravated by a property taxation structure that encouraged farmers to hold back farmland as an investment. An exemption on change of use that was widely exploited within Urban Promotion Areas was that small housing plot developments of under 1000m² (say 10-12 cramped dwelling plots and a 4 metre unmetalled access road) did not require development permission. In Chiba-*shi* as elsewhere this exemption enabled farmers and small landowners to promote hundreds of '*minikaihatsu*' ('mini developments') of small, unserviced building plots on narrow, unconnected lanes which then required later connection to mains water and sewerage systems. Not only did *minikaihatsu* completely undermine the purpose of the 1968 Urban Planning Law but the exemption actually actively promoted the piecemeal development of farmland on urban fringes. From a purchaser's viewpoint there was often a significant price advantage and the dwelling plot enjoyed – at least initially – a quasi-rural aspect. For the seller the development of one small area of *hatake* for building plots would enable a farming family to raise enough capital to cover the retirement of one generation while retaining enough land to ensure an ongoing part time farming income (and appreciating asset) for the next (Teruoka, 1989). A similar loophole known as *kisontakuchi* ('existing building plot') rights was exploited around villages in the UCAs to increase the density of dwellings within villages.

The flexibility of the zoning introduced by the law also failed to control many specific development issues. One that became an increasingly serious political issue was access of properties to natural light. All categories of zoning except three (Category I and II Exclusive Residential, and Exclusive Industrial) permitted a mix of industrial, residential and commercial use and the possible location of large new industrial sheds adjacent to dwellings. After 1970 there were no controls on building height in Category II Exclusive Residential and Residential zones other than Building Law site/floor area ratios and 'sunshine rights' rapidly became an issue in central Tokyo (McKean 1981:113). In Chiba-

shi however this high rise issue properly belongs in the next chapter. (Sorensen2002:252)

7.7 Evolving urban space in Chiba-shi 1960-1975 – an overview

How was this national economic strategy of high speed growth, based on a modernised manufacturing sector and operating within the framework of an emerging Toyotaist mode of regulation, reflected in terms of the production of new of urban space within Chiba-*shi* between 1960 and 1975? Some of the important dynamics have already been identified; development took place here in the way it did because Chiba-*shi* was both a coastal site and potentially well integrated into the commuting infrastructure of the wider Tokyo Metropolitan Area. The requirements of the expanding Keiyo *kombinato* for new manufacturing sites were the occasion for large extensions to the built environment and changing patterns of local employment. The redevelopment of central Tokyo had the dual effect of both promoting migration for work into the Chiba area and also encouraging commuting, with parts of the enlarged urban area emerging as primarily dormitory suburbs. Structural changes in patterns of daily and family life were inscribed in the character of the built environment and particularly in the format of dwellings.

Table 7.4 summarises and compares changes in the use of urban space that took place within the areas designated as Chiba-*shi* Densely Inhabited District (DID), contrasting the area existing in 1960 with the production of new urban space between 1960 and 1975. At the 1960 Population Census Chiba-shi contained two separate designated DID parcels (see Fig. 3.3) aligned along the JNR Sobu line towards Tokyo and southwards along the Sotobo line. The larger (southern) area covered 17.8 km² and included the main urban core of Chiba-*shi*, Inage and Soga together with some modest eastward extensions of these centres. It also included the original integrated steel plant site in Kawasaki-*cho* together with adjacent landfill sites occupied by utilities in Niihama-*cho*. The smaller (northern) area of 3.0 km² included Makuhari, Kemigawa and some recent growth around the JNR Shin-Kemigawa station opened in 1951 to promote suburban development. Total residential population density was 80.5 persons / 18.5 private household dwellings per hectare (about 84 and 19.2 respectively if the original wholly industrial 70 hectare Kawasaki plant site is excluded from the calculation)

Table 7.4 Overview of changes in use of space in Chiba-shi DID 1960-1975						
	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1960	1975	change % area	1960	1975	change % area
<u>1960 Densely Inhabited District</u>						
1. Circulation and movement	12.7%	14.7%	2.0%	2.64	3.06	0.42
2. Residential and commercial	36.1%	38.1%	1.4%	7.51	7.93	0.30
3. Manufacture, distribution, utilities	18.7%	19.5%	0.8%	3.90	4.06	0.16
4. Social provision	8.6%	10.1%	1.6%	1.79	2.11	0.32
5. Public spaces	4.1%	5.7%	1.6%	0.86	1.18	0.32
6. Urban space without structures	6.7%	8.4%	1.7%	1.39	1.74	0.35
7. Agricultural use	11.3%	2.8%	-8.5%	2.34	0.58	-1.76
8. Landfill and water	1.6%	0.7%	-0.9%	0.32	0.14	-0.19
	<i>(Sample: N=897 = 100%)</i>			<i>(sampled area = 20.8 km²)</i>		
<u>DID extension 1960 - 1975</u>						
1. Circulation and movement	3.8%	15.3%	11.5%	1.76	7.12	5.36
2. Residential and commercial	6.6%	29.1%	22.5%	3.09	13.54	10.45
3. Manufacture, distribution, utilities	1.5%	16.4%	14.9%	0.68	7.63	6.95
4. Social provision	0.9%	4.1%	3.2%	0.43	1.91	1.47
5. Public spaces	0.9%	4.0%	3.1%	0.43	1.86	1.42
6. Urban space without structures	3.3%	15.6%	12.3%	1.54	7.26	5.72
7. Agricultural use	52.3%	12.2%	-40.1%	24.30	5.67	-18.63
8. Landfill and water	30.7%	3.3%	-27.4%	14.26	1.52	-12.74
	<i>(Sample: N=1927 = 100%)</i>			<i>(sampled area = 46.5 km²)</i>		
<u>1975 Densely Inhabited District</u>						
1. Circulation and movement	6.5%	15.1%	8.6%	4.41	10.18	5.77
2. Residential and commercial	15.8%	31.9%	16.1%	10.60	21.47	10.75
3. Manufacture, distribution, utilities	6.8%	17.4%	10.6%	4.57	11.68	7.11
4. Social provision	3.3%	6.0%	2.7%	2.22	4.02	1.80
5. Public spaces	1.9%	4.5%	2.6%	1.29	3.04	1.75
6. Urban space without structures	4.4%	13.4%	9.0%	2.94	9.00	6.07
7. Agricultural use	39.6%	9.3%	-30.3%	26.64	6.25	-20.39
8. Landfill and water	21.7%	2.5%	-19.2%	14.59	1.66	-12.93
	<i>(Sample: N=2824 = 100%)</i>			<i>(sampled area = 67.3 km²)</i>		

Source: Sample Point Survey Database

Fifteen years later the total Chiba-shi DID area had expanded threefold. Most of this extension of urban space was created by converting farmland to residential use and incorporating surrounding villages into the expanded built environment. However 23% of the extended new urban area was built on landfill in Tokyo Bay. There were five parcels of designated DID, the largest of which incorporated both of the 1960 parcels described above and had further expanded to front the entire 17km *shi* coastline from Makuharihongo down to Murata-*mura* and cover 57.4 km² (total resident population

density 72 persons per hectare). In addition four smaller detached parcels of new residential land incorporated 9.9 km² and included two large Japan Housing and Urban Development Corporation *danchi* of five storey apartment housing at Hanamigawa and Satsukigaoka. These parcels had a higher average resident population density of 114 persons per hectare.

The overview of Sample Point Survey data presented in Table 7.4 is tabulated to enable a comparison to between two distinct dynamics of change to be made, as is most similar material from this exercise presented later in this chapter and in the following two chapters. The first section of the table summarises the use of space in 1960 within the 20.8km² of the original 1960 DID area based on 897 sample points and compares this with use of space recorded for the same sample points in 1975. This provides a view of changes in progress within the *existing* 1960 urban area. The second section of the table summarises the use of space in the 46.5 km² area additionally classified as DID between 1960 and 1975 based on 1927 sample points, and again compares the use of this space in 1960 and 1975. This provides a view of how *new* urban space was constituted. The final section of the table sums these two components to provide a consolidated analysis of change between 1960 and 1975 within the whole 1975 DID area.

In 1960 the 87% of land within the 1960 DID area boundaries had already been converted to urban uses. During the period 1960-1975 the most significant changes of use in this zone were to facilitate spreading car ownership - a direct conversion of a further 2% of the area to support circulation and movement (mainly to create secondary distributor and local access roads) and an additional 1.7% transformed into 'urban space without structures' which primarily constituted the conversion of some surviving pockets of farmland into vacant lots for contract parking. Small plot sizes and in some cases the lack of any vehicular access to residential plots meant that most dwellings in this area initially had no adjacent parking space and that parking in the area had to be leased on a monthly basis. This is still very common practice today for first vehicles, and almost universally the case for second vehicles in two car families within this 1960 DID area.

There was some limited conversion within the 1960 DID of land from other uses to create social provision – nearly always an elementary or junior high school - and also some conversion of farmland into public spaces such as sports pitches and neighbourhood parks. But there was very little extension of either housing or commercial property (often impossible to distinguish separately in aerial images at this time) or manufacturing and distribution space. The changing use of existing housing land is considered in Section 7.13 below. Nearly all new urban space was created at the expense of remaining *hatake* and *tanbo* and cultivation had declined to only 2.8% of total 1960 DID area by 1975.

Of the 46.5 km² area additionally designated as DID between 1960 and 1975 some 24.3 km² was former farmland, mainly easily developed *hatake* (13.3km²) and timber (6.7 km²) but also 4.3 km² of *tanbo*. Around 3 km² consisted of the existing built envelopes of some twenty villages and hamlets which were absorbed into the expanded urban area and a further 1.7 km² was existing roads and railways. But the biggest single source of new urban space was 14.3 km² of land created by the second generation of dredge reclamation landfill projects along the Tokyo Bay shore. During the fifteen year period



Fig. 7.6 A kind of new Atlantis? Standard five storey, twenty apartment Japan Housing Corporation blocks on recent landfill. The former shore line in Saiwai-cho, 1963

around 19km² of new building land were created but not all of this was ready for development by 1975. This was a parcel of land in which original legal title was wholly vested in the State and the disposal of which could be planned comprehensively.

How was this incremental DID area transformed between 1960 and 1975? There are four categories of land use which experienced large net growth. The single most important category of new space created were new sites for residential and commercial use (10.5 km²), but there was also 7 km² of new space for manufacturing, distribution and utilities added, mainly as landfill for the Kawasaki Steel plant and the development of new areas for primary storage and manufacture in the new port districts of Shin Minato and Chuō Kō. These are both considered in detail in the next section. During the 1960's infrastructure investment created 5.6 km² of new space for circulation and movement, partly as local access road networks supporting the extension of residential areas but also more strategically to extend the national highway and primary distribution network and add the first part of the motorway network.

Finally the category of 'urban space without structures' expanded by 5.7 km² and this consists primarily of two different forms of land use. One is the use of fragments of former *hatake* as parking lots already referred to but the more important is the presence of new developed vacant housing lots on new *banchi* through land readjustment projects (See Fig. 7.3) and *minikaihatsu*. This is part of a development cycle quite unfamiliar in a British context, where developable land is usually transformed directly into dwellings by speculative building. The economics of land readjustment encouraged speculative holding of completed housing plots for future sale, and since 1975 these have been an important feature of the suburban environment.

7.8 Local employment and new manufacturing and commercial spaces

How did the local employment base within Chiba-*shi* evolve between 1960 and 1975 and how was this reflected in the production of new urban space? One view of local employment – that represented by the population census data - is presented in Table 7.5. Over the fifteen years period local employment within the *shi* doubled with the addition

of nearly 142 thousand new jobs, an annualised rate of growth of 8.8%. This growth was almost all in waged or salaried employment. The sectors showing the highest rates of growth were construction, real estate and finance reflecting the rapid expansion of

sector	'000 persons			annual % change	% share of mix		% females	
	1960	1975	change		1960	1975	1960	1975
TOTAL econ. active	107.39	249.30	141.91	8.8%	100%	100%	33.1%	31.4%
Agriculture	21.32	10.48	-10.84	-3.4%	19.9%	4.2%	53.0%	49.9%
Fisheries	2.28	0.05	-2.24	-6.5%	2.1%	0.0%	40.8%	22.2%
Construction	7.65	27.73	20.08	17.5%	7.1%	11.1%	7.5%	10.9%
Manufacturing	20.03	47.99	27.96	9.3%	18.6%	19.2%	19.8%	19.4%
Retail and Wholesale	20.14	63.53	43.39	14.4%	18.8%	25.5%	42.0%	42.2%
Finance Real Estate	3.05	12.14	9.08	19.8%	2.8%	4.9%	35.0%	42.4%
Transport Communication	6.97	21.15	14.18	13.6%	6.5%	8.5%	12.4%	9.8%
Utilities	1.25	2.69	1.44	7.7%	1.2%	1.1%	9.6%	17.1%
Services	16.71	48.11	31.40	12.5%	15.6%	19.3%	46.6%	46.2%
Government not elsewhere	7.88	14.76	6.88	5.8%	7.3%	5.9%	14.8%	24.3%
Others/not described	0.12	0.70	0.58	33.6%	0.0%	0.2%	14.10%	11.0%

1960 data adjusted to 1975 boundaries for comparison
Source: Population Census of Japan. Tabulation by place of work.

new urban space and the re-use of the existing plots but in terms of the volume of new employment being added, the retail/wholesale and service sectors are responsible for the greatest number of new jobs reflecting both the qualitative change in the character of daily life and routines during the era of high speed growth and also the increases in personal disposable income associated with rising GNP. Although manufacturing was very much the driver of that growth in terms of creation of value, and was also increasing faster than the job market average in terms of creating new employment due mainly to the development of a new industrial zone in Shin-minato. But even at this period of very high manufacturing focus it is not the dominant sector in terms of job opportunities.

On the other hand fishing vanished as a source of local employment when the government bought out local fishing families at Makuhari in the early 1960s to proceed with landfill in this part of Tokyo Bay (Cs-shi, 1:608). Although as a source of part-time work farming was booming in the 1960's, it shrank dramatically as a source of full time employment through a combination of factors including modernisation of farming practices and improved productivity, the existence of well paid jobs in the area for

younger family members and of course the local transfer of productive land to urban uses. As women on family farms had previously made up half the agricultural labour

Business Sector	1960		1975		Establishments ('000)		Average size (persons)	
	Persons ('000)	% counted vs. population census	Persons ('000)	% counted vs. population census	1960	1975	1960	1975
Construction	4.20	56%	22.86	82%	0.34	1.77	12.34	12.95
Manufacturing	17.07	88%	38.42	80%	0.51	1.19	33.33	32.20
Retail/Wholesale	19.76	100%	67.31	106%	4.26	10.62	4.63	6.34
Finance Ins. Real Estate	4.24	139%	14.62	120%	0.37	1.67	11.37	8.73
Transport Comm ^[1]	6.25	91%	12.70	60%	0.16	0.38	40.06	33.67
Utilities ^[1]	0.90	72%	1.62	60%	0.01	0.01	81.64	115.93
Services ^[1]	15.13	93%	29.41	61%	2.12	4.26	7.14	6.90

[1] Population Census data includes public servants excluded from the Establishment Census data
Source: 1960 and 1975 Establishment Census Chiba. 1960 and 1975 Population Census of Japan

force one consequence of this was a further fall in the percentage of women recorded as economically active despite there being some growth in female employment in retailing and services.



Fig 7.7. Retailing was still primarily a sector dominated by small family merchant businesses in Chiba-shi in 1965 although larger 'chain' managed stores were increasing. Chuō 1-chome.

How are these trends reflected in terms of the number and size of business establishments? There is no simple correlation between contemporary population census and employment census records and as can be seen from Table 7.6 they are not straightforward to reconcile. In fact the two do not measure the same variable because the former records '*employed persons*' responding to a household based questionnaire while the latter tabulates '*persons engaged*' with significantly different definitions⁸ included in a business enterprise questionnaire. The dates of the two exercises also differ with the population census more likely to pick up seasonal casual workers, and there are groups of public servants excluded from the count in three of the Employment Census data categories (JNR railway staff in 'Transport', teachers in public schools in 'Services' and *shi* water workers in 'Utilities'). But even setting these aside there are significant differences which must be due to individuals (legally or illegally) subcontracted in construction and manufacturing (the Japanese equivalent of the contemporary UK 'Lump

<i>Establishments</i>	1 - 4 persons engaged		5 - 19 persons engaged		20+ persons engaged		<i>TOTAL Private</i>
	<i>establish - ments</i>	<i>% of total</i>	<i>establish - ments</i>	<i>% of total</i>	<i>establish - ments</i>	<i>% of total</i>	
Construction	683	38.7%	798	45.2%	284	16.1%	1765
Manufacturing	446	37.4%	504	42.2%	243	20.4%	1193
Utilities	3	21.4%	5	35.7%	6	42.9%	14
Transport/Communication	124	32.9%	117	31.0%	136	36.1%	377
Retail/Wholesale [1]	7205	67.8%	2923	27.5%	495	4.7%	10623
Finance/Insurance	92	31.0%	68	22.9%	137	46.1%	297
Real Estate	1247	90.6%	109	7.9%	21	1.5%	1377
Services [2]	2877	67.5%	1128	26.5%	259	6.1%	4264
<i>Pesons Engaged</i>	<i>persons</i>	<i>% of total</i>	<i>persons</i>	<i>% of total</i>	<i>persons</i>	<i>% of total</i>	<i>Total</i>
Construction	1721	7.5%	7395	32.4%	13742	60.1%	22858
Manufacturing	1189	3.1%	4581	11.9%	32646	85.0%	38416
Utilities	9	0.6%	67	4.1%	1547	95.3%	1623
Transport/Communication	217	1.7%	1293	10.2%	11185	88.1%	12695
Retail/Wholesale [1]	17239	25.6%	23915	35.5%	26159	38.9%	67313
Finance/Insurance	218	2.0%	738	6.9%	9795	91.1%	10751
Real Estate	1700	44.0%	829	21.4%	1336	34.6%	3865
Services [2]	5900	20.1%	9762	33.2%	13745	46.7%	29407

Notes: [1] includes eating/drinking in the 1975 Establishment Census [2] includes private but excludes public education
Source: re-presented from Japan Establishment Census 1975, Vol.III, Part 12, Table 4

⁸ See 1960 Establishment Census of Japan Vol.III, Part 12, p3 and 1975 Population Census of Japan Vol.3-12, p.X for precise definitions of the respective categories.

Labour Scheme'?) and also commission only staff within financial services This issue persists through all the reconciliations between these sources in remaining chapters.

Bearing in mind these qualifications there are three clear trends within the data in Table 7.6. Firstly there is a remarkable stability during these years in the average size of establishment in construction and manufacturing. Although the overall number of establishments in both sectors grows the average size is static, there is neither dilution of the mix by large numbers of small new entrants nor evidence of merger and consolidation. This might be rather typical of a commercial environment dominated the hierarchical ties within a *keiretsu* business environment. At this date the survey contains no information on the organisational status of establishments in *shi* level tables but clearly a lot of the growth in these sectors is through the emergence of local branches or production units of larger businesses taking advantage of either available sites or the expanding local market. There is however a significant growth in establishment size within retail/wholesale as family 'merchant' businesses begin to play a less significant part in a changing consumer environment, and also the development of the port facilitates the emergence of larger regional wholesaling businesses. In real estate on the other hand the high energy of the market has encouraged many new players diluting the size of establishments, and the spread of small haulage firms had a similar effect on the transportation market. All these trends influenced the character of urban space.

There is no 1960 data available at *shi* level for establishments analysed by number of employees and so it is not possible to analyse change in this dimension, but the data available for 1975 is presented in Table 7.7. and it supports the hypotheses suggested in the previous paragraph. In manufacturing in particular the local employment market is now dominated by large and medium enterprises which are also identifiable in contemporary street atlases and directories and are typically new or relocated manufacturing or logistics sites belonging to national or Kanto-wide enterprises started up on new industrial and supply chain sites in the dock area and which now dominate the local manufacturing, utility and transportation sectors. Small establishments still continue to be prevalent in retailing, services and real estate – a mixture of new entrepreneurs,

small businesses and longstanding merchant families spread throughout most of the expanded urban area with the exception of public housing districts (Fig. 7.8).

	TOTAL	proprietors	family workers [3]	employees [4]	other private sector [5]	public servants
<u>persons engaged</u>						
Construction	23040	550	294	20313	1792	91
Manufacturing	39074	415	410	36619	1301	329
Utilities	3431	0	0	2522	5	904
Transport/Communication	26175	89	19	18957	370	6740
Retail/Wholesale [1]	67609	5882	5292	51273	5014	148
Finance/Insurance	10751	41	19	10463	228	0
Real Estate	3865	986	177	2231	471	0
Services [2]	58776	2622	1580	39926	1650	12998
<u>% of persons engaged by category</u>						
Construction	100.00%	2.4%	1.3%	88.2%	7.8%	0.4%
Manufacturing	100.00%	1.1%	1.0%	93.7%	3.3%	0.8%
Utilities	100.00%	0.0%	0.0%	73.5%	0.1%	26.3%
Transport/Communication	100.00%	0.3%	0.1%	72.4%	1.4%	25.7%
Retail/Wholesale [1]	100.00%	8.7%	7.8%	75.8%	7.4%	0.2%
Finance/Insurance	100.00%	0.4%	0.2%	97.3%	2.1%	0.0%
Real Estate	100.00%	25.5%	4.6%	57.7%	12.2%	0.0%
Services [2]	100.00%	4.5%	2.7%	67.9%	2.8%	22.1%
Notes: [1] includes eating and drinking out in the 1975 Establishment Census [2] includes both public and private education						
[3] unwaged [4] includes both paid directors and waged family members [5] casual, agency and commission employment						
Source: adapted from 1975 Establishment Census of Japan Vol. III, Part 12, Table 4						

Finally Table 7.8 summarises this changing pattern in terms of the relationship between persons engaged and establishments. By 1975 waged and salaried labour had already become the ubiquitous within most sectors but in retailing (along with agriculture) there is still a strong residual pattern of merchant proprietorship supported by frequently unwaged family labour. Casual employment remains an important feature of construction, and some groups within retailing and services

How were these trends within local employment and establishment base reflected in changes in the use of urban space? A summary of relevant field results is presented in Table 7.9 which is sectioned into the same areas used in Table 7.4 Although vehicle ownership had grown dramatically between 1960 and 1975 (see Section 7.5) there was

still general dependence for travel to work on public transport and bicycle and so almost all the new commercial and manufacturing sites developed at this time within Chiba-*shi* were located within the expanded DID area. Within the original 1960 DID area the most significant expansion was in the use of space employed for retailing, on-site services and commercial structures which increased by around 44 hectares, and most of this change was a result of the redevelopment of plots comprising undifferentiated dwellings or dwelling/commercial properties. But in fact most of the extension of retailing and commercial space took place through developing new premises in the newly urbanised areas through suburban and community retailing on sites on new secondary distributors.



Fig 7.8. Classic 'kombinato'. 'Dredge reclamation' of additional new land for Kawasaki Steel at Niihama in 1963. The air pollution from the TEPCO coal power station and the Kawasaki Steel integrated site behind are obvious. The site is for new steel finishing processes.

A second focus of manufacturing growth was an offshore extension to *Kawasaki-cho* completed which provided an area within the steel plant in *Niihama-cho* to handle the import of coal, ore and sintered ore and steel finishing. Together these added around 2.8 km² to the Kawasaki Steel integrated site, with a further adjacent 0.5 km² being added to build a new TEPCO generating plant. Finally the first of a new series of manufacturing sites was developed on the north east side of the city at *Naganuma-cho*.

7.9 The influence of commuting on employment

Despite this extension of local employment based on port functions and the location of subsidiary production sites during this period the *shi* was primarily expanding as a base

Table 7.9 Changes in use of industrial and commercial space 1960-1975						
	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1960	1975	change	1960	1975	change
<i>1960 Densely Inhabited District</i>						
Retailing	1.1%	2.2%	1.1%	0.23	0.46	0.23
Services (on and off site)	0.4%	1.0%	0.6%	0.09	0.21	0.12
Commercial and banking	0.2%	0.7%	0.4%	0.05	0.14	0.09
Manufacturing	15.5%	15.8%	0.3%	3.22	3.29	0.07
<i>of which: production sheds</i>	<i>1.6%</i>	<i>1.4%</i>	<i>-0.1%</i>	<i>0.32</i>	<i>0.30</i>	<i>-0.02</i>
<i>purpose designed sites</i>	<i>0.7%</i>	<i>0.7%</i>	<i>0.0%</i>	<i>0.14</i>	<i>0.14</i>	<i>0.00</i>
<i>JFE integrated steelworks</i>	<i>13.2%</i>	<i>13.4%</i>	<i>0.2%</i>	<i>2.74</i>	<i>2.78</i>	<i>0.05</i>
Distribution Chain	0.1%	0.4%	0.3%	0.02	0.09	0.07
<i>of which: wholesaler depots</i>	<i>0.0%</i>	<i>0.2%</i>	<i>0.2%</i>	<i>0.00</i>	<i>0.05</i>	<i>0.05</i>
Utility sites	3.1%	3.2%	0.1%	0.65	0.67	0.02
TOTAL	20.5%	23.4%	2.9%	4.27	4.87	0.60
<i>DID added 1960 - 1975</i>						
Retailing	0.0%	1.5%	1.5%	0.00	0.70	0.70
Services (on and off site)	0.2%	1.3%	1.1%	0.10	0.63	0.53
Commercial and banking	0.1%	0.4%	0.3%	0.02	0.17	0.14
Manufacturing	1.3%	10.7%	9.4%	0.60	4.97	4.37
<i>of which: production sheds</i>	<i>0.6%</i>	<i>1.9%</i>	<i>1.3%</i>	<i>0.27</i>	<i>0.89</i>	<i>0.63</i>
<i>purpose designed sites</i>	<i>0.1%</i>	<i>2.0%</i>	<i>1.9%</i>	<i>0.05</i>	<i>0.92</i>	<i>0.87</i>
<i>JFE integrated steelworks</i>	<i>0.6%</i>	<i>6.7%</i>	<i>6.1%</i>	<i>0.27</i>	<i>3.11</i>	<i>2.85</i>
Distribution Chain	0.1%	4.4%	4.4%	0.02	2.05	2.03
<i>of which: primary internal storage</i>	<i>0.1%</i>	<i>1.2%</i>	<i>1.2%</i>	<i>0.02</i>	<i>0.58</i>	<i>0.56</i>
<i>primary open air storage</i>	<i>0.0%</i>	<i>2.2%</i>	<i>2.2%</i>	<i>0.00</i>	<i>1.04</i>	<i>1.04</i>
<i>wholesaler depots</i>	<i>0.0%</i>	<i>0.7%</i>	<i>0.7%</i>	<i>0.00</i>	<i>0.34</i>	<i>0.34</i>
Utility sites	0.1%	1.3%	1.2%	0.05	0.60	0.56
TOTAL	1.7%	19.6%	17.9%	0.80	9.12	8.33
<i>1975 Densely Inhabited District</i>						
Retailing	0.3%	1.7%	1.4%	0.23	1.16	0.93
Services (on and off site)	0.3%	1.2%	1.0%	0.19	0.84	0.65
Commercial and banking	0.1%	0.5%	0.4%	0.07	0.31	0.24
Manufacturing	5.7%	12.3%	6.6%	3.83	8.26	4.44
<i>of which: production sheds</i>	<i>0.9%</i>	<i>1.8%</i>	<i>0.9%</i>	<i>0.59</i>	<i>1.19</i>	<i>0.60</i>
<i>purpose designed sites</i>	<i>0.3%</i>	<i>1.6%</i>	<i>1.3%</i>	<i>0.19</i>	<i>1.06</i>	<i>0.87</i>
<i>JFE integrated steelworks</i>	<i>4.5%</i>	<i>8.8%</i>	<i>4.3%</i>	<i>3.00</i>	<i>5.90</i>	<i>2.89</i>
Distribution Chain	0.1%	3.2%	3.1%	0.05	2.14	2.10
<i>of which: primary internal storage</i>	<i>0.0%</i>	<i>0.9%</i>	<i>0.8%</i>	<i>0.02</i>	<i>0.58</i>	<i>0.56</i>
<i>primary open air storage</i>	<i>0.0%</i>	<i>1.5%</i>	<i>1.5%</i>	<i>0.00</i>	<i>1.04</i>	<i>1.04</i>
<i>wholesaler depots</i>	<i>0.0%</i>	<i>0.6%</i>	<i>0.6%</i>	<i>0.00</i>	<i>0.38</i>	<i>0.38</i>
Utility sites	1.0%	1.9%	0.9%	0.70	1.28	0.58
TOTAL	7.5%	20.8%	13.3%	5.06	13.99	8.93

Source: Sample Point Survey Database

for commuting, and an understanding of the scale and basis of this is essential to understanding the changes of basic form of Chiba. The dynamics of commuting within the Japanese metropolitan areas have been examined in some detail from the viewpoint of their impact on central areas (for this period see especially Ishimizu and Ishihara, 1980) but here I want to consider their influence on one emerging dormitory area.

Table 7.10: Growth in commuting 1960 - 1975						
	LIVE in CHIBA-SHI		WORK or STUDY in Chiba-shi		NET daily movement	
	1960	1975	1960	1975	1960	1975
number of persons ('000)						
Live or work/study within Chiba-shi	122.87	320.71	118.78	292.28	(4.09)	(28.43)
<i>Both live and work/study in Chiba shi</i>	<i>91.29</i>	<i>204.48</i>	<i>91.288</i>	<i>204.48</i>		
Travelling to or from another area	31.58	116.23	27.50	87.80	(4.09)	(28.43)
 <i>Within Chiba-ken</i>	8.15	36.82	23.89	74.50	15.74	37.68
 <i>Outside Chiba-ken</i>	23.43	79.41	3.61	13.30	(19.82)	(66.11)
<i> Tokyo-to</i>	<i>22.88</i>	<i>77.25</i>		<i>9.75</i>	<i>(22.88)</i>	<i>(67.49)</i>
<i> (of which with Tokyo 23ku)</i>	<i>22.73</i>	<i>76.47</i>		<i>2.47</i>	<i>(22.73)</i>	<i>(67.58)</i>
% of total count						
<i>Both live and work/study in Chiba shi</i>	74.4%	63.8%				
Travelling to or from another area	25.7%	36.2%	23.1%	30.0%	(3.3%)	(8.9%)
 <i>Within Chiba-ken</i>	6.6%	11.5%	20.1%	25.4%	12.8%	11.7%
 <i>Outside Chiba-ken</i>	19.1%	24.8%	3.0%	4.5%	(16.1%)	(20.6%)
<i> tokyo-to</i>	<i>18.6%</i>	<i>24.1%</i>	<i>0.0%</i>	<i>3.3%</i>		
<i> (of which with Tokyo 23ku)</i>	<i>18.5%</i>	<i>23.8%</i>				
<i>Source: Population Census of Japan 1960 Part 3-3 Tables 3 and 4, 1975 Part 4-1 Tables 6 and 7.</i>						

Table 7.10 summarises changes in the scale of commuting affecting Chiba-*shi* between 1960 and 1975. Total net daily flow movement increased sevenfold from just over 4 thousand to more than 28 thousand per day. However these net values conceal two quite different dynamics in progress. As described in Section 7.8 there has been an expansion of local employment and this was met by a doubling of employees flowing into the urban area from surrounding parts of Chiba-*ken*. But there is a much stronger net daily outflow taking place. Chiba-*shi* has expanded as a dormitory for Tokyo, with 20.6% of the population living in the *shi* and either in work or over 15 and in full time study now commuting out of the *ken* daily. Almost all of these commuters are headed for Tokyo, and the majority for the 23 *ku* of central Tokyo.

Table 7.11 Origin and destination of Chiba-shi commuting 1975

	Employed Population ('000)			Over 15 and in Education ('000)		
	<i>LIVE in CHIBA-shi</i>	<i>WORK in Chiba-shi</i>	<i>NET move-ment</i>	<i>LIVE in Chiba-shi</i>	<i>STUDY in Chiba-shi</i>	<i>NET move-ment</i>
Population working/studying	281.29	251.85	(29.43)	39.42	40.42	1.00
Live and work/study in Chiba shi	180.93			23.54	23.54	
Live in another place		70.92				
Travel to or from another area	100.36	70.92	(29.43)	15.88	16.88	1.00
 <i>Within Chiba-ken</i>	29.67	61.37	31.69	7.15	13.13	5.98
<i>Ichikawa-shi</i>	4.31	2.57	(1.74)	1.95	0.79	(1.16)
<i>Funabashi-shi</i>	7.63	6.60	(1.03)	0.92	2.05	1.14
<i>Kisarazu-shi</i>	0.72	1.98	1.26	0.19	0.35	0.16
<i>Mobara-shi</i>	0.29	2.98	2.68	0.09	0.15	0.06
<i>Narita-shi</i>	0.55	1.36	0.81	0.02	0.31	0.29
<i>Sakura-shi</i>	0.69	2.75	2.06	0.28	0.78	0.51
<i>Togane-shi</i>	0.36	2.14	1.78	0.33	0.19	(0.14)
<i>Narashino-shi</i>	3.07	3.39	0.32	1.46	0.73	(0.73)
<i>Ichihara-shi</i>	5.79	9.13	3.34	0.17	2.14	1.96
<i>Yachiyo-shi</i>	1.93	2.54	0.61	0.21	0.65	0.44
<i>Yotsukaido-machi</i>	0.82	4.57	3.74	0.92	0.59	(0.33)
<i>Yachimata-machi</i>	0.15	1.53	1.38	0.06	0.24	0.17
<i>Ōami-shirasato-machi</i>	0.14	1.94	1.80	0.19	0.17	(0.03)
 <i>Outside Chiba-ken</i>	70.68	9.56	(61.13)	8.73	3.75	(4.98)
<i>Tokyo-to</i>	69.07	7.03	(62.04)	8.18	2.73	(5.46)
<i>Tokyo 23ku</i>	68.76	0.01	(68.75)	7.71	2.48	(5.23)
<i>Chiyoda-ku</i>	16.60					
<i>Chuō-ku</i>	14.08					

Source: Compiled for Population Census of Japan 1975 Volume 4-1 (Kanto) Tables 6 and 7

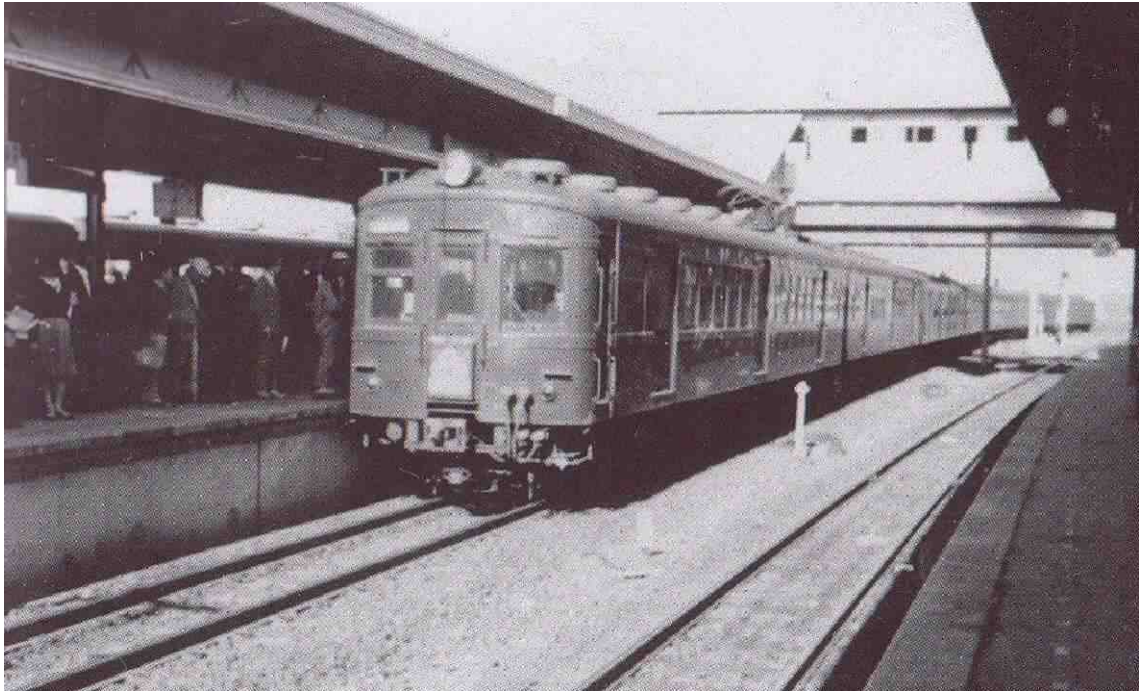


Fig 7.9. A JNR 101 Class electric commuter service for Tokyo arrives at Inage. 1965

Table: 7.12 Population in employment resident or working in Chiba-shi by sector and location of work 1960 and 1975

<i>sector</i>	<i>LIVE in CHIBA-SHI</i>			<i>and working elsewhere</i>		
	<i>persons ('000)</i>	<i>persons ('000)</i>	<i>% of total</i>	<i>outside Chiba-ken[1]</i>	<i>WORK in CHIBA-SHI persons ('000)</i>	<i>and live elsewhere persons ('000)</i>
<i>In 1960 (modern boundaries)</i>						
TOTAL	116.12	28.03	24.1%		107.39	19.30
Agriculture and Fisheries	23.59	0.04	0.2%		23.60	0.06
Construction	7.40	1.50	20.3%		7.65	1.76
Manufacturing	26.52	10.68	40.3%		20.03	4.19
Wholesale and Retail Trade	20.86	3.84	18.4%		20.14	3.12
Finance Insurance Real Estate	3.67	1.57	42.9%	n/a	3.05	0.96
Transport communication	8.14	4.09	50.2%		6.97	2.92
Services	17.52	4.12	23.5%		16.71	3.30
Government not classified elsewhere	7.28	1.84	25.3%		7.88	2.45
All other	1.15	0.35	30.2%		1.37	0.57
<i>In 1975 (same boundaries)</i>						
TOTAL	281.29	100.36	35.7%	70.68	251.85	70.92
Agriculture and Fisheries	10.45	0.22	2.1%	0.17	10.38	0.14
Construction	26.77	8.03	30.0%	5.34	27.42	8.67
Manufacturing	63.34	27.47	43.4%	18.56	49.24	13.37
Wholesale and Retail Trade	67.34	20.05	29.8%	15.92	62.07	14.78
Finance Insurance Real Estate	15.02	7.57	50.4%	5.53	12.45	5.00
Transport communication	22.55	10.76	47.7%	7.55	21.64	9.86
Services	53.66	17.94	33.4%	11.97	48.09	12.38
Government not classified elsewhere	16.91	6.51	38.5%	4.76	15.57	5.18
All other	5.26	1.80	34.2%	0.88	5.01	1.55

^[1] 98% of employment of Chiba-shi residents outside Chiba-ken in 1975 was in Tokyo-to

Source: re-presented from Population Census of Japan 1960 Part III, 1975 Vol.4.1 Tables 6,7

This development is explored in more detail in Table 7.11. By 1975 just over 100,000 people – over a third of the resident workforce – were commuting out of the area and nearly 70% of these were commuting westwards into Tokyo with about half the remainder commuting to intermediate centres along the JNR Sobu Line such as Ichikawa, Funabashi and Narashino. A local counter-flow of more than 70,000 workers had developed from nearby towns especially to the east and south – and in particular Ichihara. In terms of high school and university education Chiba-shi experienced a net inflow of high school and university students from the *ken* which more than matched the daily outflow of university students into Tokyo⁹.

Table 7.12 examines the changing pattern of commuting and its relation to employment by sector, and it sheds some light on the basis on which parts of Chiba-*shi* were becoming dormitory suburbs for Tokyo. In this first generation of mass commuting the

⁹ In Japan the vast majority of university students live at home and commute. High School is not mandatory and selective and many students commute long distances for the best schools

largest proportion of daily outflow from Chiba-*shi* for work was of people employed in the manufacturing sector within the capital and from the previous table we know that most of this employment was not just across the Edo River in adjacent parts of the metropolis in wards such as Edogawa but within the central *ku* and especially in Chiyoda-*ku* and Chuo-*ku*. The main occupation groups involved in this emerging pattern of commuting are summarised in Table 7.13. The actually resident population in Chiba-*shi* is rather heavily biased towards managerial and public service employment and especially clerical occupations but it is this is primarily because it is now acting as a dormitory area for (mainly male) commuters carrying out these roles in Tokyo. Table 7.12 confirms that much of this employment was within manufacturing companies. The picture that emerges is that between 1960 and 1975 the early core commuting areas of the *shi* – places like Inage and Shin-kemigawa have emerged partly as dormitories for staff in

Table: 7.13 Population in employment resident or working in Chiba-shi by occupation and location of work 1960 and 1975						
<i>occupational sector</i>	TOTAL working persons (‘000)	<i>working outside shi</i>			<i>In Tokyo</i>	<i>Downtown Tokyo [1]</i>
		% of total	persons (‘000)	% share of category	persons (‘000)	persons (‘000)
<u>Living in Chiba-shi 1975</u>						
TOTAL	279.17	100.0%	101.11	36.2%	69.73	38.46
Professional/ Technical	28.36	10.2%	12.11	42.7%	7.76	4.23
Managers and Officials	16.73	6.0%	8.31	49.7%	5.94	3.37
Clerical	67.15	24.1%	34.21	50.9%	26.25	16.84
Sales Workers	43.45	15.6%	15.35	35.3%	12.31	7.37
Farmers fishermen	10.57	3.8%	0.15	1.4%	0.07	0.03
Transport and Communcation	12.36	4.4%	4.53	36.7%	2.82	1.19
Craftsmen, Process Workers, Labourer	74.08	26.5%	21.94	29.6%	11.78	4.06
Emergency and Security Services	4.96	1.8%	1.26	25.3%	0.82	0.33
Service Providers	20.82	7.5%	3.15	15.1%	1.93	1.02
<u>Working in Chiba-shi 1975</u>						
TOTAL	249.30	100.0%	71.24	28.6%		
Professional/ Technical	23.10	9.3%	6.85	29.6%		
Managers and Officials	12.41	5.0%	3.99	32.2%		
Clerical	53.03	21.3%	20.09	37.9%		
Sales Workers	37.25	14.9%	9.15	24.6%		
Farmers fishermen	10.51	4.2%	0.09	0.8%		
Transport and Communcation	13.47	5.4%	5.64	41.9%		
Craftsmen, Process Workers, Labourer	72.91	29.2%	20.77	28.5%		
Emergency and Security Services	5.38	2.2%	1.68	31.2%		
Service Providers	20.62	8.3%	2.95	14.3%		
[1] Here defined as Chiyoda, Chuo, Minato and Shinjuku-ku						
Source: re-presented from Population Census of Japan 1960 Part III, 1975 Vol.4.1 Tables 3,4						

head office functions in corporations in central Tokyo, and to some degree also for public officials working in central government offices in the capital. Conversely the *shi* is drawing in commuting manual workers and clerical workers from neighbouring areas of Chiba-ken. In the 1960's almost all longer distance commuting movement was by train with local journeys either on foot or by bicycle supplemented by some bus services. In the early 1970's cars began to be used for local commuting. Long distance commuters not within walking distance of stations used bicycles for the first stage of their daily journey which from Chiba into Tokyo would involve a typical commute of more than two hours in each direction. This was the origin of the vast civic cycle parks which have been very characteristic since of most station neighbourhoods. The Keisei Railway route to Ueno and north Tokyo had been electrified since 1923 and the JNR Sobu Line from Tokyo as far as Chiba since 1932 but during the 1960's JNR began a large investment programme to widen the whole Sobu Line from Tokyo to Chiba to four tracks and elevate most of the route. A new fifteen kilometre tunnel was created to take the line from its original terminus at Ryōgoku east of the Sumida River into and under central Tokyo. This upgraded link was opened to Tsudanuma in 1972 and to Chiba in 1981 and provided a peak commuting capacity of around 40 trains/ 250,000 passengers an hour.



Fig. 7.10. Commuters bikes parked next to Kamatori station. During the 1960's two or three stage commuting involving long cycle journeys to the nearest station became common.

7.10 Migration

The characteristics of Japanese internal migration during the 1960's were quite different to the pre-war movement documented by Irene Taeuber (1958). During the years between 1920 and 1940 there had been a wave of migration directly into larger metropolitan areas but urbanisation had relied on the younger children of rural households seeking waged work. The number of farming households nationally had remained static at around 5.5 million with a total agricultural labour force of around 14 million (Kawabe 1980:381). First sons had remained at home to farm holdings and maintain the family *ie* (Ochiai 2005, Hendry 1995, Nakane 1970). But after the post-war land reforms had greatly reduced tenant farming and the *ie* as a legal entity had been abolished, a rationalisation and mechanisation took place that transformed the structure and techniques of farming and prompted a further and much a larger exodus to the city involving older workers and families and also, in areas like Chiba-ken, of part time seasonal labour. Migration into the Tokyo Metropolitan Area commonly followed a pattern

Table 7.14: Migration within Japan 1960 - 1975						
Year	From rural ken into Metropolitan^[1] areas		Migration within Metropolitan Areas		From Metropolitan areas into rural ken	
	'000	%^[2]	'000	%^[2]	'000	%^[2]
1960	999	17.7%	706	12.5%	406	7.2%
1961	1104	18.4%	794	13.2%	449	7.5%
1962	1188	18.1%	919	14.0%	536	8.1%
1963	1208	17.4%	995	14.3%	589	8.5%
1964	1217	16.8%	1089	15.0%	639	8.8%
1965	1186	16.1%	1116	15.1%	705	9.6%
1966	1138	15.3%	1144	15.4%	732	9.8%
1967	1154	15.4%	1180	15.8%	750	10.0%
1968	1202	15.5%	1241	16.0%	784	10.1%
1969	1252	15.4%	1321	16.3%	827	10.2%
1970	1263	15.3%	1346	16.3%	870	10.5%
1971	1214	14.5%	1351	16.2%	926	11.1%
1972	1127	13.5%	1361	16.3%	921	11.0%
1973	1099	12.9%	1378	16.1%	985	11.5%
1974	987	12.3%	1259	15.7%	949	11.8%
1975	912	12.1%	1174	15.6%	901	11.9%

[1] Metropolitan Areas of Tokyo, Osaka and Nagoya. Tokyo MA includes Chiba, Saitama and Kanagawa-ken

[2] % of all inter and intra-ken migration recorded in Basic Residence Registers

Source: Annual Report on Internal Migration derived from Basic Residence Registers. Re-presented from Tables 4 and 5 in Kawabe 1980:382-3

based on a two stage process. Initially arrivals from rural prefectures would find work and a rented rooms within the 23-*ku*. At a later stage, perhaps on marriage, there would be a suburban relocation in either a rented or purchased dwelling, usually taking advantage of commuting¹⁰ support offered by an employer.

The national pattern of migration between 1960 and 1975 is summarised in Table 7.14. Migration from rural-ken shows two distinct peaks in 1964 and 1970 which were the peaks of GNP increase in the first and second periods of high speed growth respectively. Migration within and between metropolitan areas on the other hand – which in the definitions used here would include migration to the suburbs from Tokyo into Chiba-ken – grows consistently right through the whole period until the oil shock of 1973. In the more central of Tokyo's 23-*ku* this dynamic is already being driven by rapidly rising land values in the early 1960's and a conversion of space from residential to commercial use (Ishimizu and Ishihara 1980). Throughout the whole of this period there is also a significant growth in migration back out from metropolitan to rural areas, – the so-called 'U' curve. This is a product of many trends but certainly in part at this time represents a relocation of older migrants back to home regions on retirement.

Table 7.15 presents local residence register summary data for Chiba-*shi* for these years analysed into 'natural' and 'social' increase. As more local (and especially public) housing becomes available from about 1963 the net rate of social increase (in-migration less out-migration) rises to around 5%. This is initially based mainly of the growth of suburban house plots but in 1968/69 the completion of some large public housing projects (in Saiwai-chō and Inage) pushes the rate of social increase over 8%, a level of growth that is almost repeated in 1972-1974 as further public housing is completed on landfill sites in what is now Mihama-*ku*. Looking over the whole 15 years 70.3% of the net population growth is social increase, amounting to nearly 300 thousand people moving into the area. In other words around half the resident population were not living in the *shi* fifteen years previously.

¹⁰ In Japan employers often either provide interest free loans for season tickets or fund the whole cost. This is not a taxable benefit.

Year to 30/9	('000)		net increase '000 persons			net increase % of total		
	House-holds	Persons	TOTAL	natural	social	TOTAL	natural	social
1960-61	56.02	241.62	12.32	3.27	9.05	5.1%	1.4%	3.7%
1961-62	59.56	253.93	13.21	3.63	9.58	5.2%	1.4%	3.8%
1962-63	65.42	276.38	14.98	4.29	10.70	5.4%	1.6%	3.9%
1963-64	71.60	291.36	20.17	5.50	14.66	6.9%	1.9%	5.0%
1964-65	79.06	311.53	20.66	5.12	15.54	6.6%	1.6%	5.0%
1965-66*	85.30	332.19	22.47	4.79	17.68	6.8%	1.4%	5.3%
1966-67	93.44	354.66	25.39	7.27	18.12	7.2%	2.0%	5.1%
1967-68	102.59	380.04	27.39	8.14	19.26	7.2%	2.1%	5.1%
1968-69	113.50	415.48	42.55	8.54	34.02	10.2%	2.1%	8.2%
1969-70	128.29	458.03	30.96	9.16	21.80	6.8%	2.0%	4.8%
1970-71	136.24	482.13	21.83	9.68	12.15	4.5%	2.0%	2.5%
1971-72	144.68	503.97	22.20	10.14	12.06	4.4%	2.0%	2.4%
1972-73	152.82	526.17	43.27	10.83	32.44	8.2%	2.1%	6.2%
1973-74	169.36	569.44	40.18	11.63	28.55	7.1%	2.0%	5.0%
1974-75	183.61	609.63	37.34	11.41	25.93	6.1%	1.9%	4.3%
1975-76	196.21	659.36	24.17	11.20	12.97	3.7%	1.7%	2.0%
TOTAL			419.09	124.59	294.51		29.7%	70.3%

Note: Source data also includes small differences due to boundary revisions
* 1966 was 'hinoeuma' - an inauspicious 'Fire Horse' year when registered births in Japan declined by a quarter
Source: Basic Residence Register returns published in Chiba-ken tokeisho

Fiscal Year	from elsewhere in Chiba-ken		from Tokyo-to		from everywhere else		TOTAL ('000)
	('000)	%	('000)	%	('000)	%	
1967	2.14	17.1%	5.41	43.1%	4.99	39.8%	12.55
1968	4.27	17.3%	12.48	50.5%	7.92	32.0%	24.72
1969	8.65	27.6%	15.24	48.7%	7.42	23.7%	31.31
1970	2.65	15.0%	5.47	30.9%	9.57	54.1%	17.69
1971	2.96	19.0%	6.56	42.0%	6.08	39.0%	15.60
1972	4.19	18.5%	11.74	51.7%	6.77	29.8%	22.70
1973	9.07	32.0%	14.44	50.9%	4.85	17.1%	28.36
1974	7.86	25.8%	15.66	51.3%	6.99	22.9%	30.51
1975	4.10	21.1%	10.17	52.4%	5.15	26.5%	19.41
TOTAL	45.90	22.6%	97.16	47.9%	59.74	29.4%	202.85

Source: Summarised from Basic Residence Register data published annually in Chiba-shi tōkei

There is no published data for Chiba-*shi* prior to 1967 identifying the origin and destination of individual migration movements in and out of the *shi* but a summary of information for the last nine years of the period is presented in Table 7.16. In five of these nine years migration from Tokyo-*to* accounted for more than half of all net in-migration and the only year in which this was not the case is 1970 when no major public apartment housing schemes were completed. In the mid 1970's local migration into Chiba-*shi* – which by now contained a very large public housing resource – became

relatively more important. But where were these migrants actually originally from? It is interesting to compare this migration with similar events elsewhere. I make no formal comparison here but for example the process was clearly quite different to the creation of post-war New Towns in the UK, where many of the new residents were from families that had previously lived in inner city housing for several generations. Many of the migrants to Chiba from Tokyo were making a second move in one generation, their childhood and teenage years had been spent in country areas in Tohoku or in Hokkaido, where extended family ties and family graves were still located¹¹. In this way the Japanese experience of migration was probably much more like the equivalent French post-war counterpart, with young men and women with a strong sense of 'peasant' roots in a distant *furusato* experiencing the anonymity of a Tokyo *banlieue*. This youthful link with farming experience has an interesting consequence that I will revisit later

7.11 Changing household characteristics

Table 7.17 summarises changes in household size between 1960 and 1975, and the importance of migration in the transformation taking place here is clear. As the *shi* expands, primarily as a function of net in-migration, two dynamics are emerging. Firstly the proportion of single person households has more than doubled partly because of presence of single migrants in the new population but because of an increase in widowed and divorced residents. Secondly there are many more small nuclear one or two generation households within the *shi*. Two to four person households have increased from 53% to 73% of the total mix while the proportion of larger households has declined. In other words incoming single people and nuclear households have diluted the proportion of local extended families (which of course were often families farming the land which has now been urbanised). This has led to a 22% decline in average ordinary household size (4.27 to 3.31 persons), a massive transformation. In rural areas around Chiba-*shi* extended family households remained the commonest format at this time. In neighbouring Izumi-*machi* for example the average household size in 1975 was still 4.95 persons. Within Chiba-shi itself in 1960 – the only occasion on which this data was ever

¹¹ My own Japanese family by marriage relocated to Kanto just after this time but extended family, and the family graves nine hundred kilometres away at Kure in Hiroshima-ken, are still regularly visited 'roots' in 2009.

	<i>Chiba-shi</i> 1960		<i>Chiba-shi</i> 1975		(1960 DID)	
	('000)	%	('000)	%	('000)	%
All households	59.15		196.21		41.24	
<i>All household members</i>	257.76		659.36		167.37	
ordinary households	55.86	100.0%	191.68	100.0%	38.40	100.0%
<i>household members</i>	238.74		634.18		154.93	
<i>single person households</i>	3.34	6.0%	25.00	13.0%	2.74	7.1%
<i>2 - 4 members</i>	29.68	53.1%	136.70	71.3%	21.72	56.6%
<i>5 or more members</i>	22.84	40.9%	29.98	15.6%	13.93	36.3%
average size (persons)	4.27		3.31		4.04	
quasi-households	3.29		3.75		2.85	
<i>household members</i>	19.02		23.93		12.44	
<i>% of total population</i>	7.4%		3.6%		7.4%	

Source: Population Census of Japan

type of household	<i>Chiba-shi</i>		<i>Chiba-ken all rural gun</i>	
	('000)	%	('000)	%
TOTAL ORDINARY HOUSEHOLDS	191.68	100.0%	166.79	100.0%
I - RELATIVES HOUSEHOLDS	166.28	86.7%	155.45	93.2%
a. NUCLEAR FAMILIES	142.79	74.5%	86.62	51.9%
<i>Married Couple</i>	22.63	11.8%	15.19	9.1%
<i>Married Couple and their child(ren)</i>	111.18	58.0%	62.73	37.6%
<i>Father and his child(ren)</i>	1.40	0.7%	1.57	0.9%
<i>Mother and her child(ren)</i>	7.58	4.0%	7.14	4.3%
b. EXTENDED 'OTHER RELATIVES' HOUSEHOLDS	23.49	12.3%	68.83	41.3%
<i>Couple with their parents</i>	0.46	0.2%	1.57	0.9%
<i>Couple with their parent</i>	1.02	0.5%	2.37	1.4%
<i>Couple with their child(ren) and parents</i>	3.50	1.8%	17.61	10.6%
<i>Couple with their child(ren) and parent</i>	8.61	4.5%	22.87	13.7%
<i>Couple and relative(s) other than children and parents</i>	0.59	0.3%	0.85	0.5%
<i>Couple with child(ren) and relative(s) other than parents</i>	2.57	1.3%	3.95	2.4%
<i>Couple with their parent(s) and relative(s) other than child(ren)</i>	0.61	0.3%	2.61	1.6%
<i>Couple with their child(ren) parent(s) and other relative(s)</i>	2.77	1.4%	13.57	8.1%
<i>Other relatives households not elsewhere described</i>	3.36	1.8%	3.42	2.1%
II - NON-RELATIVES HOUSEHOLDS	0.40	0.2%	0.23	0.1%
III - ONE PERSON HOUSEHOLDS	25.00	13.0%	11.11	6.7%
TOTAL QUASI-HOUSEHOLDS	23.93		12.26	
<i>Student Dormitories</i>	2.58		1.16	
<i>Worker Dormitories</i>	12.72		3.43	
<i>Hospitals</i>	2.37		1.34	
<i>(all others)</i>	6.27		6.33	

Source: Population Census of Japan 1975

published - there was already a significant difference between the core DID and the whole *shi* in terms of household characteristics. A count by household type was not made in 1960 but is available for later censuses and an analysis of the position in 1975 is given in Table 7.18 which illustrates the contrast between Chiba-*shi* and the surrounding rural *gun* of Chiba-ken. This makes contemporary trends even clearer. The urban area shows a much stronger bias towards single person households and nuclear families while in rural areas around a quarter of households still involve children, parents and grandparents living under one roof. In addition to single person households, quasi-households (mainly institutions) in 1960 house 7.4% of the population and about half of this number were male workers in dormitories. The importance of dormitory accommodation declines significantly later as more small apartments become available. It is worth noting that the increase in 'solitary' households could not have taken place without many technical innovations associated with the household functions listed in Table 3.2 – not least the spread of frozen and dehydrated food technologies and the availability of white goods.

Table 7.19 examines household tenure of dwellings, and the changing relationship between tenure and family size. In 1960 tenure patterns are rather simple – 61% of households are living in dwellings they own, and the rented market is dominated by private landlords. By 1975 public housing has expanded to provide 18% of the total and diluting the proportion of home ownership, and the share of tied company housing has increased. Much of this new capacity in all categories is occupied by smaller nuclear families.

<i>category</i>	<i>count ('000)</i>		<i>average size (persons)</i>		<i>% of total</i>	
	1960	1975	1960	1975	1960	1975
ordinary households	55.86	191.68	4.27	3.31	100.0%	100.0%
owned	34.06	91.53	4.82	3.80	61.0%	47.8%
rented	15.03	79.47	3.35	2.75	26.9%	41.5%
<i>public</i>	<i>2.53</i>	<i>34.44</i>	<i>n/a</i>	<i>3.25</i>	<i>n/a</i>	<i>18.0%</i>
<i>private</i>	<i>12.50</i>	<i>45.03</i>		<i>2.36</i>		<i>23.5%</i>
issued	4.38	19.38	3.91	3.30	7.8%	10.1%
rented rooms	2.34	0.90	3.06	3.12	4.2%	0.5%
(other situation)	0.06	0.40	2.97	2.97	0.1%	0.2%

Source: Population Census of Japan 1960 and 1975

7.12 The size and age of dwellings.

Table 7:20 summarises the major changes that the years of 'high speed growth' brought in terms of the average amount of dwelling space available to families in Chiba-*shi*. Even the way in which terms and definitions are used in this table points to an underlying change in the concept of 'dwelling' in progress. 'Dwelling rooms' in contemporary official statistics in 1960 were defined as rooms "to be used for living and sleeping, such as the living room, sitting room, bed room, drawing room, Buddhist altar room, study room, maid's room etc"¹². Their area was reported in tatami mats as all residents would be aware of the standard tatami sizes of their rooms, two tatami being reckoned as 3.3 m² in rooms with wooden floors (for a full discussion see Chapter Three). In traditional vernacular structures partition of dwelling space was mainly by sliding and removable *shoji* partitions which meant that in 1960 houses the concept of an individual 'room' was still sometimes a tentative one. This was much less the case by 1975, when there were still likely to be *shoji* between the *washitsu* and other living space but other internal partitions might be fixed. This is why a 'room count' only appears for the 1975 census.

<i>type of dwelling</i>	<i>dwelling area[1] (metres²)</i>			<i>dwelling area tatami per person</i>			<i>rooms</i>
	<i>1960</i>	<i>1975</i>	<i>% change</i>	<i>1960</i>	<i>1975</i>	<i>% change</i>	<i>1975</i>
All dwelling houses	25.67	35.49	38%	3.64	6.5	79%	3.72
Owned	31.46	47.67	52%	3.96	7.6	92%	4.77
Rented	15.70	23.12	47%	2.84	5.1	79%	2.65
<i>Public</i>		27.39			5.1		3.13
<i>Private</i>		19.85			5.0		2.29
employer issued	22.63	28.85	27%	3.51	5.3	51%	3.21
(rented rooms)	11.27	22.16	97%	2.23	4.3	93%	2.34

[1] Dwelling rooms defined as areas used for living and sleeping. Does not include kitchen, bath, toilet
Source: Populaton Census of Japan 1960 Vol.4-12, Table 19. 1975 Vol.3-12 Table 14.

The reported increase in average dwelling space within houses is 38%, Some level of increase occurs in all dwelling types but the key numbers are the 47% increase in dwelling space in rented dwellings – a function of the large quantity of public apartments built in the area by Japan Housing and Urban Development Corporation and which offered much more generous living spaces than post-war private rented accommodation, and a 52% increase in living space within owned homes. Taken together with declining

¹² Standard 1960 Population Census definition of terms in English contained in main volumes

average household sizes and the prevalence of three or four person nuclear families mentioned above this resulted in nearly a doubling of dwelling space per person in owned homes – from 3.96 to 7.6 tatami.

How was such a dramatic increase in average household size achieved in fifteen years? As Japanese timber residential properties are seldom extended or adapted the change can only be achieved through building more, bigger dwellings, either in addition to or as replacements for existing housing stock. Table 7.21 summarises information available

<i>(values in '000 dwelling units)</i>	<i>'ordinary' house-holds</i>	<i>new build^[1]</i>	<i>dwelling stock in 1960</i>			<i>dwelling stock in 1975</i>		
			<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>	<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>
constructed before 1945	33	24	19.4	81%	(4.6)	8.7	36%	(10.7)
constructed 1945 - 1950	38	12	8.7	73%	(3.3)	4.6	38%	(4.1)
constructed 1950 - 1955	42.2	14	9	64%	(5.0)	5.8	41%	(3.2)
constructed 1955 - 1960	52.8	15.5	14.9	96%	(0.6)	12.2	79%	(2.7)
net position by 1960	52.8		52		(13.5)	31.3		(20.7)
constructed 1961 - 1965	83.7	42				40.5	96%	(1.5)
constructed 1966 - 1970	132.1	47				46	98%	(1.0)
constructed 1971 - 1975	191.7	74				73.9	100%	(0.1)
net position by 1975	191.7					191.7		(23.3)

[1] 'before 1945' value is the 'starting stock' of housing surviving the 1945 air-raids, and not 'new build'
Source: consolidated from tables in the Housing Survey of Japan 1963, 1968, 1973, 1978

from the quinquennial Housing Survey relating to property age and gives a clear view of the process of dwelling renewal in progress. In 1960 the average age of dwelling units in Chiba-*shi* was 17.1 years (assuming a mean building date of 1930 for pre 1945 property) but by 1975 new construction was taking place at such a speed that the average age of residential property had been reduced to only 10.1 years. The increase in the size of properties was almost entirely down to new formats of housing - the widespread construction of public apartments with larger floor areas (Waswo, 2002) but especially the increasing share of two storey properties within the total mix of detached housing.

Understanding the spread of two storey housing is really a key to understanding much about the dynamics of urban change in this period, but unfortunately there is no consistent data - the only occasion on which a specific value was given for the *shi* is in

	<i>detached houses built/ existing ('000)</i>		<i>% of total detached over one storey</i>	
	<i>Total</i>	<i>more than one storey</i>	<i>Chiba- ken</i>	<i>Chiba-shi</i>
<i>period built</i>				
before 1945	831	634	24%	15%
1945-50	239	166	28%	10%
1950-55			33%	20%
1955-60	559	324	42%	35%
1960-65			52%	52%
1965-70	2163	968	58%	58%
1970-75	2230	698	68%	68%
<i>cumulative residual position</i>				
position in 1960	1629	1124	31%	20%
<i>[shi position 1968]</i>	<i>[151]</i>	<i>[62.6]</i>		<i>24%</i>
position in 1975	6022	2790	54%	50%
<i>Source: projected from Japan Housing Survey 1978 Table 4, p.7</i>				

the 1968 Housing Survey.¹³ However it is possible to project an estimate based on statistics available for the whole of Chiba-ken in the 1978 Housing Survey by working from the average number of storeys by period of construction and this is presented in Table 7.22. Chiba-shi was one of the few urban area in Chiba-ken to be destroyed by incendiary bombing in 1945 and on that basis, supported by the evidence of contemporary street photographs, I have assumed that most surviving structures in the area were one storey rural homes and that a higher proportion of rebuilding until 1950 also comprised simple one storey utility structures. A higher proportion of one-storey detached dwellings was also a feature of 1950's construction to create cheap and quick worker housing. But from around 1960 I have assumed that Chiba-shi approximately followed the ken average.

On the basis of this estimate it is easy to understand the underlying basis of rapid growth in average dwelling areas from 1960 to 1975, because Chiba-shi has moved from being in a position of having relatively poor and small post-war housing to a local dwelling stock based on better quality two storey structures and a large injection of public housing. Table 7.23 summarises some additional evidence available from the quinquennial Housing Surveys during this period and in particular changes of the kind of structure and

¹³ 1968 Housing Survey Vol.3-12 Table 18 p.133

	1963 Housing Survey		1978 Housing Survey	
	dwelling ('000)	% of TOTAL	dwelling ('000)	% of TOTAL
TOTAL Occupied Dwellings	64.3	100%	206.6	100%
<u>kind of structure</u>				
wooden	53.8	84%	85.3	41%
wooden fireproof	7.4	12%	39.6	19%
ferro-concrete	3.1	5%	81.7	40%
<u>kind of dwelling</u>				
exclusively a dwelling	56.0	87%	198.7	96%
combined with farming/fishing	1.9	3%	0.1	0%
combined with commercial use	5.2	8%	7.8	4%
(other)	1.1	2%		
<u>tenure</u>				
owned detached dwelling	36.7	57%	100.0	48%
public rented			36.5	18%
private rented	15.9	25%	44.4	21%
company issued			17.9	9%
<u>format (owned and private rent)</u>				
detached building			100.0	48%
tenement			12.1	6%
unoccupied dwellings	3.1	5%	22.5	10%

Source: Housing Survey of Japan 1963 and 1968. Vols.12 Part 2 various tables

dwelling taking place. The two most important changes in terms of physical structure were firstly the wider adoption of more fireproof wooden dwellings using fire-resistant tin or later inert plastic waterproof 'siding' as a plywood wall cover rather than bare cedar, and secondly the use of ferro-concrete which was mandatory under Building Law for all

Fiscal Year	TOT	Timber		all ferroconcrete		steel-framed	
	'000 m²	'000 m²	% of total	'000 m²	% of total	'000 m²	% of total
1963	435.2	236.2	54.3%	112.2	25.8%	74.7	17.2%
1964	636.7	271.8	42.7%	253.4	39.8%	99.9	15.7%
1965	731.6	304.2	41.6%	212.3	29.0%	199.4	27.3%
1966	758.3	283.1	37.3%	336.0	44.3%	122.7	16.2%
1967	887.8	321.9	36.3%	319.7	36.0%	231.6	26.1%
1968	885.2	395.5	44.7%	229.4	25.9%	240.6	27.2%
1969	1907.2	461.7	24.2%	1042.8	54.7%	393.0	20.6%
1970	1395.3	512.9	36.8%	403.4	28.9%	472.7	33.9%
1971	2010.7	498.9	24.8%	1096.3	54.5%	412.0	20.5%
1972	2609.9	692.2	26.5%	1479.6	56.7%	436.6	16.7%
1973	2459.4	786.7	32.0%	1084.8	44.1%	582.4	23.7%
1974	1487.7	484.1	32.5%	589.1	39.6%	411.7	27.7%
1975	1002.1	458.5	45.8%	307.6	30.7%	224.4	22.4%

Values do not add to 100% because some minor categories are omitted.
Source: Chiba-shi tōkeisho. Annual Building Regulation Summaries

structures over three storeys. Starting with the widespread introduction of ferroconcrete designs in public housing around 1958 more than 40% of dwellings were constructed within ferroconcrete structures by 1978.

The increasing importance of ferroconcrete (both steel-framed and reinforced) as a building material is further illustrated by Table 7.24, which covers all buildings authorised in the *shi* from 1963 – 1975. In 1963 timber structures still account for more than half of the new-built area but the level of authorisation for new ferroconcrete structures – initially reinforced designs for JHC – quickly comes to dominate new starts as public housing projects get underway. Steel-framed buildings also begin to assume an importance particularly for service space.

Another feature of this period illustrated in Table 7.23 is the general decline in the relative importance of dwellings combined with commercial uses. Buildings with combined agricultural use decline sharply and those used for fishing of course vanish. Although the overall number of those combined with commercial use increases this is



Fig. 7.11. Detached public dwellings built 1962, Miyanogi-cho. Until ferroconcrete construction became established JHUDC practice these 'late austerity' designs were still widely produced.

primarily due to an increase in family merchant retailing and services like dry cleaning and hairdressing in new residential areas offsetting a decline in workshops associated with traditional craft industries such as *tatami*-making.

It is unfortunately not possible to quantify some of the other changes in progress at this time for the *shi*, even though some of the information was collected and published for the *ken* as a whole. This is especially the case in terms of understanding changes in the format of rented accommodation and the spread of apartment living. In Chiba-*shi* in 1960 for example probably around a quarter of the 12,000 rented dwellings were *nagaya*, the cramped and cheap one storey barrack-like family tenement accommodation, but this can't be identified in the Housing Survey tables, nor can it any longer be identified in the urban environment as it has almost all long been demolished. By the time 'tenements' are identified separately in the 1978 Survey (see table) the word was being used to describe better quality one or two room *mokuzo chintai apārto* used more by single people or young households.

Although building height restrictions were eased nationally in 1963, apartment living in 1975 was still rather 'low rise'. Table 7.25 presents the situation for the whole of Chiba-*ken* in 1978. As apartment blocks were primarily an urban phenomenon at this time we can assume that data for Chiba-*shi* would have been about the same order. There are clearly two very distinct categories of dwelling being defined as 'apartment block' here – the two storey (usually one or two room plus kitchen) *mokuzo chintai apārto* which

	<i>up to 2 storey</i>	<i>3-5 storey</i>	<i>6 or more storeys</i>	<i>TOTAL</i>
<i>('000 apartment dwellings)</i>				
wooden structure	119.9	0	0	119.9
ferro-concrete	10.7	178.6	41.1	230.4
TOTAL	130.6	178.6	41.1	350.3
<i>% of all apartments</i>				
wooden structure	34%	0%	0%	34%
ferro-concrete	3%	51%	12%	66%
TOTAL	37%	51%	12%	100%

Source: 1978 Housing Survey of Japan. Chiba Vol. 1 p.6 Table 4.

comprise a third of the apartment stock and (usually five storey, less commonly four) public housing apartment blocks. As restrictions of 30 metres height remained on residential property until the 1970 Building Regulations, buildings over five storeys are still uncommon.



Fig. 7.12. One form of 'nagaya' tenement dwelling used for 'issued accommodation' by a joinery firm in Murata in the 1960's, now storage. It is very difficult to piece together any overview of this kind of dwelling at the period because it was almost all demolished by 1990.

7.13 The expansion of dwelling space

The methods used to conduct the Sample Point Survey data were described in Chapter 3, and it was emphasised there that the historical data for sample points depends on *observable* uses in earlier aerial photo images being recorded in the light of observation of the current site. The 1960 and 1975 values recorded for points associated with structures were the most difficult to assess because so many observations in the original urban core – the 1960 DID area - involved images of points that were either too small or too ambiguous to be logged as anything other than “undifferentiated older dwellings”. There was also no way in which the presence of shared use dwelling/commercial premises that have not survived (which must be the majority) could be established,

Table 7.26 Identifiable changes of use in residential space 1960-1975 – 1						
Area of original 1960 Densely Inhabited District	share of all sampled points			would represent in terms of urban space (km²)		
	1960	1975	change	1960	1975	change
TOTAL RESIDENTIAL (inc. vacant lots)	40.5%	41.2%	0.7%	8.41	8.58	0.17
(undifferentiated older dwellings)	22.5%	17.4%	-5.1%	4.68	3.62	-1.07
utility dwellings	7.0%	4.8%	-2.2%	1.46	1.00	-0.46
one storey detached dwellings with no parking	0.4%	1.7%	1.2%	0.09	0.35	0.26
one storey detached dwellings with parking	0.0%	0.3%	0.3%	0.00	0.07	0.07
two storey detached dwellings with no parking	0.4%	1.4%	1.0%	0.09	0.30	0.21
two storey detached dwellings with parking	0.2%	2.6%	2.3%	0.05	0.53	0.49
<i>ie</i> building clusters	1.1%	1.1%	0.0%	0.23	0.23	0.00
combined residential/commercial	0.3%	0.8%	0.4%	0.07	0.16	0.09
Total Individual Dwellings	32.1%	30.1%	-2.0%	6.68	6.26	-0.42
early multiple properties	2.5%	3.0%	0.6%	0.51	0.63	0.12
mokuzo chintai apārto	0.1%	0.4%	0.3%	0.02	0.09	0.07
external stairwell apartment blocks	0.0%	0.9%	0.9%	0.00	0.19	0.19
internal stairwell blocks/early mansions	0.0%	0.4%	0.4%	0.00	0.09	0.09
Total Multiple Dwellings	2.6%	4.8%	2.2%	0.53	1.00	0.46
residential/contract parking	0.1%	1.1%	1.0%	0.02	0.23	0.21
vacant lots	5.7%	5.2%	-0.4%	1.18	1.09	-0.09

Source: Sample Point Survey Database



Fig. 7.13 The former fishing community of Samugawa in 1975, now landlocked by Kawasaki Steel and Highway 14 following the former beach. Transverse structures with 'roji' access. It is now impossible to determine specific building uses from aerial images for this kind of area.

although of course it was possible to identify commercial structures that had been built in the 1960-1975 period and which still survive. Conversely it was not possible to confirm earlier housing between 1960 and 1975 which – from the data presented in Table 7.22 with certainty most inner urban plots where new two storey structures had replaced probably amounts to almost half the 1960 DID plots. The pool of “undifferentiated older dwellings” is an inescapable and significant limitation on the value of data obtained by analysing aerial photograph images for this early period which doesn’t apply to the same extent with later records used in subsequent chapters.

For these reasons it is not possible to have as well a focused view of changes in use of space for dwellings in the original core as was presented for commercial uses in Section 7.8, but having made these caveats some important trends can be seen in progress within the 1960 DID core during this period. Overall use of space for individual housing declines in favour of other uses. It is possible to confirm a shift of 0.46km² into early multiple property formats either as two storey wooden structures (in Soga and Todoroki-cho) or three and four storey city and issued housing (in Konakadai 6-chome, Makuhari

Table 7.27: Identifiable changes of use in residential space 1960-1975

Area of DID added 1960 to 1975	share of all sampled points			would represent in terms of urban space (km ²)		
	1960	1975	change	1960	1975	change
TOTAL RESIDENTIAL (inc. vacant lots)	9.2%	38.8%	29.6%	4.27	18.05	13.78
(undifferentiated older dwellings)	3.4%	9.1%	5.7%	1.59	4.25	2.65
utility dwellings	1.5%	3.7%	2.2%	0.70	1.74	1.04
one storey detached dwellings with no parking	0.1%	0.5%	0.5%	0.02	0.24	0.22
one storey detached dwellings with parking	0.0%	0.4%	0.4%	0.00	0.19	0.19
two or more storey detached dwellings with no parking	0.1%	0.8%	0.7%	0.02	0.36	0.34
two or more storey detached dwellings with parking	0.1%	2.8%	2.7%	0.02	1.28	1.25
ie building clusters	0.5%	0.5%	0.0%	0.22	0.22	0.00
shared sites/semis/terrace dwellings	0.1%	0.8%	0.7%	0.05	0.36	0.31
combined residential/commercial	0.1%	0.4%	0.4%	0.02	0.19	0.17
Total Individual Dwellings	5.7%	19.0%	13.3%	2.65	8.83	6.18
early multiple properties	0.7%	1.7%	1.0%	0.34	0.80	0.46
<i>mokuzo chintai apārto</i>	0.0%	0.4%	0.4%	0.00	0.17	0.17
external stairwell apartment blocks	0.0%	4.8%	4.8%	0.00	2.21	2.21
internal stairwell blocks/early mansions	0.0%	0.5%	0.5%	0.00	0.23	0.23
Total Multiple Dwellings	0.7%	7.3%	6.6%	0.34	3.40	3.06
residential/contract parking	0.0%	1.1%	1.1%	0.00	0.51	0.51
vacant lots	2.8%	11.4%	8.7%	1.28	5.31	4.03

Source: Sample Point Survey Database

1-chome). This construction replaces both vacant lots and older undifferentiated housing. Residential contract parking has become a significant use of DID land – mainly small former housing plots with six or eight places and the area of 0.21 km² is certainly supplemented by unidentified informal parking on vacant lots.

In the area of DID added between 1960 and 1975 there were already many existing pockets of dwellings – mainly within the twelve village cores absorbed into the urban area at this stage – comprised just over 4km² but the residential area (including vacant lots ready for structures created in land readjustment projects) expanded to over 18km² by 1975. The largest growth was in terms of individual dwellings which at an additional 6km² generated about half the growth. At least half this increase was in *minikaihatsu* in areas like Miyako-chō, Miyanagi-chō and Numa-chō although there were also several larger formal *danchi* schemes developed as LR projects and often with local government involvement – for example particularly the two large urban extension schemes at Koteshidai and Oguradai/Chishirodai which included a mix of public housing and private sites.



Fig. 7.14 Two storey dwelling design from the early 1960's. The use of zinc plated coating to protect the underlying plywood skin is typical of the period. No parking place. Benten 1-chome.

What kinds of dwellings were built on these private plots? In the early 1960's they tended to be mainly simple one-storey timber framed villas with pre-cut main structural members located centrally on the plot and finished by carpenters on site. By 1995 most pre-1965 dwellings had been already replaced by bigger two storey structures, and by 2005 a few sampled building plots even appeared to be on a third generation of structure. By the end of the 1960's most plots were being developed by building more substantial two storey structures chosen by the buyer and there are several common contemporary designs which I did not research in detail but in Chiba-*shi* the Tokyu Homes RS model was one model widely built (see Nishiyama, 1975:2:366). Sites were developed by that time in such a way as to include a parking space.

The length of time involved in promoting a larger land readjustment projects and also negotiating social provision prior to granting planning consents after the 1969 Law favoured a rash of *minikaihatsu* off rural lanes at the expense of formally developed plots on bigger estates on the *hatake* to the north and east of Chiba-shi. By 1975 a huge



Fig 7.15. Four stairwell five storey JHUDC steel-framed ferro-concrete public apartment blocks completed in Hanamigawa-cho in 1967. There are over 90 similar blocks in this one *danchi*

number of *danchi* plots were available for building around the urban margins, and they make a striking feature on contemporary aerial images. These accounted for around 4 km² of land in 1975 around 15,000 plots or about three years supply at the contemporary rate of building. By 1975 public housing accounted for about 40,000 dwelling units in Chiba-shi, mainly managed by Japan Housing and Urban Development Corporation but also in parts of Chiba locally by the City Housing Department. Nearly all of this was in five storey apartment blocks with external stairwell access, two apartments per landing and without elevators. There were also a further 10,000 issued dwelling units allocated to key workers belonging to public corporations such as NTT and private companies like Kawasaki Steel, often built by JHC as contractors but also in some cases to older and more cramped four storey designs. At the time of construction these apartments were much sought after because of their generous size compared with available private rented accommodation and low rents, and they offered an opportunity for Tokyo residents to relocate to a planned suburban environment.

7.14. Summary of changing associations.

I want to argue that the evidence presented here suggests that three major international and national transformations were instrumental in creating the regulatory framework and context within which much of the detailed change documented in this chapter took place. Firstly, Japan becomes integrated into the international framework that has emerged out of the Bretton Woods agreements, and which is based on an emerging international 'Fordist' mode of regulation. Secondly, the State very effectively exploits the opportunities presented by low energy prices and access to international markets to promote a distinctive 'Toyotaist' mode of regulation based on MITI devised manufacturing strategies, very high levels of investment in new production technologies and forms of social protection based on corporate systems. Growth is pursued to the extent that the environment is seriously degraded. Finally the impact of this is to accelerate rates of urbanisation, and especially to focus much of the new manufacturing and infrastructural investment in the Tokyo Metropolitan Region.

The outcome of this within the material urban environment is evident in several ways. Changes in the character of establishments and an expansion in employment in sophisticated manufacturing are reflected the size and complexity of premises, sites and industrial plant, much of which is now corporately owned and managed. However there is also a corresponding increase within the 'secondary circuit of capital' in social investment and especially in terms of the space and establishments required to facilitate service high levels of growth – sectors such as construction, real estate, retailing and education.

The speed and extent of labour concentration in progress within Kanto and an increase in real wages completely transforms both the structure of households and the format of dwellings. New solitary and nuclear family households migrating into the area now considerably outnumber previous residents. Commonly there is a spatial rupture with earlier generations. Commuting to work in Tokyo becomes established as an important pattern of biography. Many new formats of dwelling, and especially large areas of public housing in apartments, are introduced to facilitate the sheer volume of change, and as incomes rise demand grows for both increased dwelling space and mobility. Daily life is expressed in a completely new order of experience; the whole basis on which households operate is changed in terms of their make-up, affluence and ambitions.

Deregulation, Boom and Bubble: 1975 to 1990

The economy seemed to defy comparative economic experiences and business cycles. Triumphalism swept the nation.

T.J. Pempel 1998:196

8.1 Introduction

In an essay entitled '*Of City, Nation and Style*' and reflecting on his design for the 'Plaza' in Tsukuba Science City, the architect Arata Isozaki observes that:

In the 1970's amalgamation of emperor, state and capital generated a prevailing structure in which architecture became commercial merchandise. ... In short, the state was withering away. (Arata, 1989: 52-53).

In making this comment he was not suggesting that the power and influence of the State were in any way diminished, but rather that he believed that in Japan the functions of governance had finally become indistinguishable from the exercise of commercial and financial power. The political scientist Chalmers Johnson expressed a similar view when he dryly wrote of Japan becoming '*La Serenissima of The East*', during the 1980's and comparing the character of the 'Developmental State' with that of medieval Venice, commenting that "not making decisions that do not have a commercial rationale is, of course, central to the longevity of such regimes" (Johnson, 1995:24) Daniel Okimoto (1989) has suggested the term 'network state' to describe the new emerging consensus between political bureaucratic and corporate power in the 1980's.

This chapter will consider the expansion and transformation of urban space within Chiba-*shi* between 1975 and 1990. Although the city expanded in area less than during the years covered in the previous chapter, it expanded upwards much further and faster, and the context of this is more complex than the simple metanarrative of industrial growth nurtured by State strategic planning characteristic of the previous fifteen years. The management of the aftermath of the first oil crisis of 1973 offers a clear point of

departure, and the dramatic collapse of the stock market and land price bubbles in 1990 a neat conclusion, to the neoliberalism of the Nakasone era. But between these two events a complex pattern of processes and influences underlies the urban transformations associated with the emergence of Japan as an economic superpower.

An outline chronology for the period is presented in Table 8.1. I want to consider the evolution of the Japanese economy during this period as comprising of two distinct stages. From the mid 1970's until the second year of the Nakasone administration in 1983 the new reality of high energy prices dominated political and corporate thinking and promoted a national agenda focused on productivity and restructuring. The key features of these years are sketched in Section 8.2. After the Plaza Accord of September 1984 the economy was transformed by the neoliberal agenda pursued both in Japan and abroad, and especially by the close relationship between the Japanese leadership and the Reagan administration, which led to a change of focus to promote domestic demand rather than primarily export led growth. The consequences of this are explored in Section 8.3. Neither of these two sections is intended to provide a comprehensive summary of the economic history of the period but simply to introduce and outline some of the important political and economic trends which influenced the expansion of the city discussed in the remainder of the chapter. This generally follows a structure similar to that used for

Table 8.1: Chronology of the period 1975 – 1990	
1976	Revision of Building Standards Law to control building heights.
1976	Lockheed allegations in American Senate implicate Tanaka administration
1978	Normalisation of relations with China
1979	Iranian Revolution. Second Oil Price Shock
1980	<i>Nantonaku kurisutaru</i> ("Forever, Crystal") published
	District Planning System
1982	First Nakasone administration
1983	Tanaka found guilty of taking bribes
1985	22 Sep Plaza Accord Agreement
1986	First Equal Employment Opportunity Law takes effect
1987	Fourth Comprehensive National Development Plan
	Law for the Development of Comprehensive Resort Areas
1989	Jan Showa Emperor Dies
	Dec Basic Land Law revision
	Jun Recruit scandal
1990	Nikkei stock average falls 40%

Chapter Seven, with separate sections dealing with the planning context, vehicle ownership, employment, commuting, migration, and changes in household structures

and their influence on dwellings. There are two topics which are especially important influences on the changing quality of urban space during the 1980's. One of these – the transformation of the distribution chain and particularly retailing, is considered separately in Section 8.5. The other – the rise both literally and metaphorically of condominium housing – is considered in the wider context of dwelling space in Section 8.12.

8.2 The consequences of the 1973 and 1979 oil price crises

The outcome of the collapse in 1971 of the system of relationships established by the Bretton Woods agreement, and the impact of the subsequent revaluation of the yen, was considered on page 184. In the following February the political landscape of East Asia was dramatically changed by Nixon's China visit, a step which eventually also led to Japan's normalisation of relations with China in 1978 . But the most important factor driving change within the Japanese economy after 1973 was the rising cost of energy. The wholesale conversion to liquid energy sources which had taken place during the 1960's made Japan especially vulnerable to high oil prices and led to a balance of payments deficit of 4.7 trillion dollars in 1974 (see Table 8.2). A similar deficit followed the second oil price crisis in 1979 in the wake of the Iranian Revolution, and a national strategy was devised to enable Japan to successfully overcome inflation and remain competitive by transforming the industrial structure from being "energy-dependent" to "energy-saving". This strategy involved not only determined and direct tactical action to economise on the use of energy in production processes (see Tabb 1995:96, 107) but also strategic reorientation to concentrate growth in manufacturing sectors with low energy demands. This focus on reducing energy costs helped to reduce inflation and Japan avoided the 'stagflation' experienced at this time in other economies.

In an attempt to consolidate voter support the LDP designated 1973 as the '*fukushi gannen*' - the 'First Year of the Welfare State - borrowing heavily for their manifestoes from programmes policies first introduced by reformist mayors across Japan. The strategy worked; in the late 1970's mushrooming welfare spending and support of environmental policies won back evaporating LDP support (Pempel 1998:188). To address haemorrhaging electoral influence and to retain power nationally the LDP had

Table: 8.2 Some key Japanese economic metrics 1974 - 1991						
<i>Calendar Year</i>	Balance of Payments (\$ trillion)	Exchange Rate yen per dollar	<i>Per Capita Gross National Income</i>			
			<i>Japan US \$</i>	<i>annual % change</i>	<i>USA US \$</i>	<i>UK US \$</i>
1974	(4.7)	308	4132	9.3%	6836	3527
1975	(0.7)	308	4442	7.5%	7355	4177
1976	3.7	308	4938	11.2%	8107	4017
1977	10.9	308	6021	21.9%	8971	4478
1978	16.5	234	8391	39.4%	10032	5693
1979	(8.8)	206	8668	3.3%	11066	7364
1980	(10.7)	242	8996	3.8%	11959	9392
1981	4.8	210	9851	9.5%	13323	8930
1982	6.9	233	9108	-7.5%	13860	8480
1983	20.8	237	9876	8.4%	14702	8089
1984	35.0	231	10450	5.8%	16314	7624
1985	49.2	254	11142	6.6%	17269	7975
1986	85.8	185	16418	47.4%	17909	9828
1987	87.0	151	19859	21.0%	18933	12045
1988	79.6	127	24013	20.9%	20367	14632
1989	57.2	130	23951	-0.3%	21421	14677
1990	35.8	150	24486	2.2%	22358	17148
1991	72.9	135	27910	12.3%	22811	17916

Source: GNI data from United Nations Statistics Division website. Other data from BOJ Historical Series website. Both extracted 29.10.2008

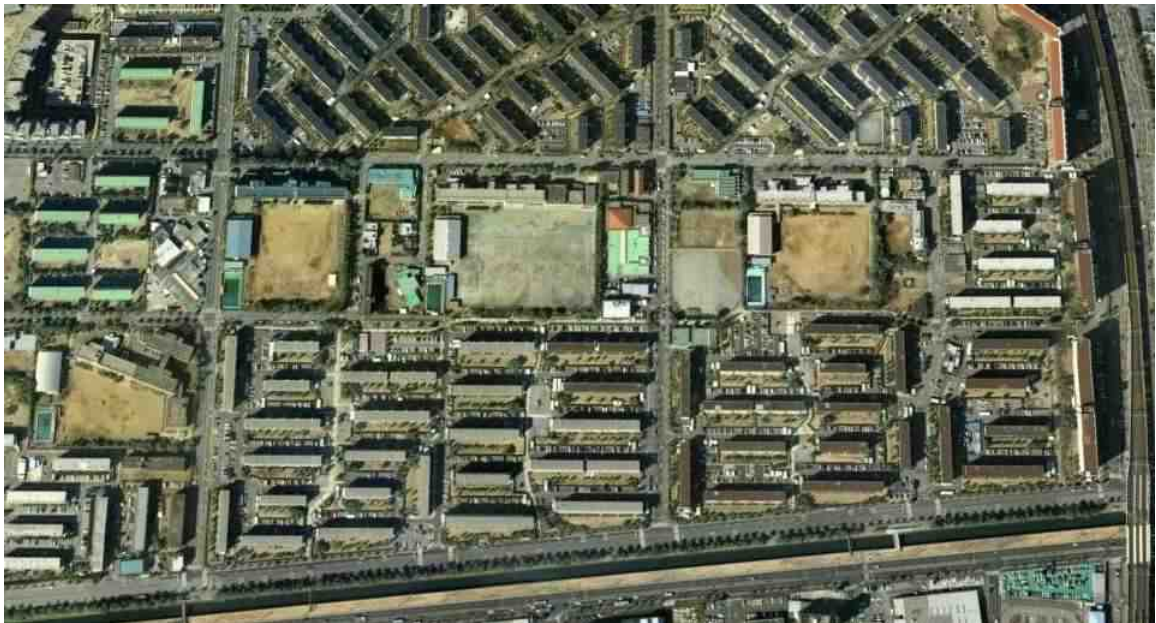


Fig. 8.1: The 'fukushi gannen' strategy led to extensive, sometimes excessive provision of local welfare and social projects. This public housing area from the late 1970's incorporates two elementary schools, a junior high school, a kindergarten and a welfare/health centre. Thirty years on the area is massively overprovided with school places. Takasu 2-chome. Google Earth

been forced not only to take environmental concerns more seriously thanks to the radical efforts of several city administrations but also to move towards a better welfare and social provision, in a new political climate where voters were becoming far more aware of the standards in areas such as Europe. As ever in Japan these commitments were visibly made manifest in concrete and steel, with programmes of investment in new health care buildings, *kōminkan* and libraries. The 1974 round of national wage settlements was also generous, but the 1977 and 1978 bargaining rounds were much more keenly fought by corporate Japan, leading to lower than inflation rate settlements in terms of basic remuneration. During the recession from 1979 to 1982 corporate business players further argued for retrenchment of social costs and the period of welfare expansion was effectively closed down by Nakasone's "administrative reform" policies in the early 1980's. Instead of becoming a 'welfare state' Japan became instead a 'welfare society' with the burden of care placed on the family (Goodman and Peng, 1996).



Fig. 8.2: During the 1970's the use of English in advertising and signage first became popular as a means of promoting an image of sophistication, even if the business and sign writer might have only a hazy notion about meaning. Optician's shop fascia in *Mitsuwadai 2-chome*. [IR]

The impact of these economic changes was complex. The recession of the early eighties impacted on people's personal lives in terms of an increasingly bullish neo-liberal agenda, lower bonuses and longer working hours. The government no longer directly controlled the direction of investment through financial controls and administrative guidance and many of the forms of industrial promotion that were attempted - for example joint high-tech consortia such as the VLSI and TRON projects - (Callon, 1995) - were relatively unsuccessful due to the kind of heavy command structure and project planning required by government bureaucrats. On the other hand heavy direct investment by major players in car manufacturing and electronics created a new generation of products and a very efficient production environment.

During the later 1970's the globalisation of both contemporary fashions and consumer technologies began to deeply influence Japanese perceptions of their cultural and ethnic identity, a theme explored in detail in respect of urban lifestyles and consumption by John Clammer (1997, 2001). Norma Field suggests that an influential moment in this transformation was the publication of the 'postmodern novel' *'Nan to naku kurisutaru'* by Tanaka Yasuo in 1980¹, a book she describes as "... in part a study of the brand name syndrome ... the great majority of items in the book are foreign-made or licensed by foreign firms and therefore conspicuously represented in the syllabary reserved for foreign loan words (Field 1989:173). About this time branding in English and the use of English language labels and signs became a commonplace feature of urban spaces (see Fig.8.2. The use of *'rōmaji'* – the Roman alphabet – became a measure of sophistication.

8.3 Deregulation, Globalisation and the Bubble Economy

Many commentators (for example see Tabb 1995: 98-99) argue that the course of events between 1983 and 1990 owe their immediate cause to the outcome of 'Reaganomics', and especially the United States strategy in 1981-82 of implementing major tax cuts with the supposed aim of increasing revenue. It is certainly true that at that time neither the Japanese government nor any key corporate players were intending to specifically target major activity on the North American market. However the resulting American spending

¹ Usually rendered into English as 'Somehow, Crystal'. It contains 442 footnote references to product brands and retail stores. No English translation available in print so far identified.

boom promoted soaring exports of Japanese products, to the United States, and a massive balance of payments surplus for Japan from 1983 onwards (Table 8.2). The Plaza Accord of September 1985 was intended to address this by devaluing the dollar further against the yen but this strategy did not succeed – the year of the lowest dollar/yen exchange rate corresponded with the highest exports, despite the degree to which Japanese capital was now being invested in production abroad in both North America and elsewhere. During the 1980s Japanese car manufacturers opened seven plants in the USA (Tabb, 1995:115; Kennly and Florida, 1995) and there were several major and sometimes iconic investments in both American real estate and business - for example the acquisition of Columbia by Sony.

This process of off-shore investment in both real estate and manufacturing capacity, and the tendency for powerful Japanese multinationals to expand in directions which took them increasingly outside direct control of the Japanese State, were key characteristics of the decade. In 1983-84 the Reagan administration sought liberalisation of Japanese



Fig. 8.3: The drive to invest in leisure in the late 1980's led to the destruction of many residual areas of forest and farmland on the urban fringe. Golf course in *Kashiwai-cho*. [Google]

capital markets to encourage capital outflow from Japan. By 1984 the Nikkei224 sales index had outdistanced the Dow Jones average (Sassen 2001:176). Within urban Japan many of the regional dynamics that had influenced patterns of urban concentration over the previous decade began to be diluted by these new trends. Both Osaka and Nagoya ceased to expand as manufacturing centres needing to attract migrant labour from rural prefectures. On the other hand the Tokyo Metropolitan Region continued to expand, at least partly driven by Tokyo's emerging role as a corporate and financial command centre within the global economy (Cybriwsky, 1998; Sassen, 2001).

The Plaza Accord meetings in September 1985 signified the arrival of Japan as a major player in the management of the international monetary system. Over the following two years devaluation of the dollar went some way to correct the weakness of the American economy in respect of Europe but the imbalance *versus* Japan continued unabated, despite a depreciation of the dollar against the yen by nearly 50% and the high value of the currency triggering the second *endaka fukyo* ('high yen recession') of 1986-1988. By 1986 Japan's trade surplus was running at \$100 billion (Williams, 1994), and in a new strategy which eventually led to the Louvre Accord the United States demanded that the Japanese should focus more on domestic demand and promoting leisure. In 1987 the Japanese government published the Maekawa Reports which proposed exactly these kinds of structural transition. These were important changes of strategy from the perspective of urban growth, and focused on the expansion of domestic demand, improving foreign access to Japanese markets, cutting working hours, and a new emphasis on regional cities away from the 'Pacific Belt' growth areas. Perhaps inevitably in a Japanese context any move towards a 'leisure society' involved increasing levels of construction, earth-moving, and concrete pouring. However the Americans were not satisfied that this new focus on domestic demand was sufficient and in 1989 proposed a further 'Structural Impediments Initiative' demanding 240 changes to the ways in which the domestic Japanese market including amendments to the "Large Stores Law, intervention to lower the high cost of living space (which they alleged was lowering domestic demand) and action to open up the *dangō* closed bidding procedures in public procurement" (Price, 2000).

The flood of capital available to Japanese corporate institutions after 1985 fuelled a brief but very intensive real estate 'bubble', primarily in land at home but also in property abroad in both London and some major American cities. The impact in Chiba-ken of so much capital in search of assets to buy can be judged from the average price per metre of residential, commercial and industrial land presented in Table 8.3. Foreign Direct Investment in China, Korea and Taiwan effectively transferred off-shore many of the process production jobs formerly carried out by subcontractors in Japan. In 1987 both the fourth *Zenso* (National Economic Development Plan) and the Law for the Development of Comprehensive Resort Areas encouraged the conversion of farmland and especially forests for leisure use (McCormack, 2001:86-97). Within Chiba-*shi* five golf course and country club projects were built at this time and received tax breaks under the new legislation, but all were sited outside of the 1990 DID area (Fig. 8.3).

Table 8.3: Average land prices in Chiba-ken 1980-1991

Year	Prepared Residential Sites		Commercial Sites		Industrial Sites	
	('000 ¥ m ²)	% annual increase	('000 ¥ m ²)	% annual increase	('000 ¥ m ²)	% annual increase
1980	65		212		37	
1981	77	18%	230	8%	40	8%
1982	92	19%	270	17%	45	13%
1983	105	14%	300	11%	47	4%
1984	106	1%	328	9%	49	4%
1985	108	2%	337	3%	53	8%
1986	91	-16%	333	-1%	52	-2%
1987	126	38%	816	145%	70	35%
1988	178	41%	1,230	51%	105	50%
1989	211	19%	1,518	23%	140	33%
1990	268	27%	1,823	20%	180	29%
1991	265	-1%	1,834	1%	184	2%

Source: Annual Reports: Land and Water Bureau, Ministry of Land, Infrastructure and Transport.

In the planning field the end of the 1980's represented a period characterised by the conception of ever grander 'visionary' and occasionally bizarre projects (Sorensen 2002:284-287; Obitsu and Nagase, 1998: 325-331). Brenner and Theodore (2002a: 371) point to the way in which 'mega-projects' have become as a characteristic feature of neoliberal urban space because of their 'capacity to attract corporate investment and reconfigure local land use patterns', but some Japanese proposals were predicated on engineering solutions of a theatrical scale, such as the Obayashi Corporation 'Laputa Plan' proposals for 'platform cites' above Tokyo, and schemes to fill in the whole of

Tokyo Bay to create a new global megalopolis. Some of these 'Urban Battleship Yamato' visions seemed but a heartbeat away from contemporary *manga* science fiction. Before many could be promoted however the 'Bubble Economy' came to a spectacular and precipitate end with the collapse first of share prices on the Tokyo Stock Exchange in the first months of 1990 and the rather more drawn out but equally dramatic plunge in land values after 1991.

8.4 Planning context

By the mid 1970's the increasing expense of retro-fitting highways, utilities and social provision to begin to compensate for the unsatisfactory development standards tolerated during the previous decade was becoming obvious. Mains water and sewerage connection could usually be relatively easily installed and recharged to residents. New school sites might often be located on landfill or at the contemporary margin of urbanisation. Better highway networks and local access however were often very difficult to achieve and several areas of Chiba-*shi* built up during the 1970's and 1980's still depend completely on the legacy network of four or five metre wide former rural lanes. Residents who had gratefully moved into these areas of cramped and makeshift development ten years before were now more affluent, vehicle owners and increasingly viewed their surroundings more critically. At the same time the 1976 revision of the Building Standards Law permitted higher rise apartments of up to eleven storeys in most planning zones, capable of seriously blighting the quality of life in surrounding residential areas without requiring any specific planning consent.

The most important new planning legislation in the earlier part of this period was the 1980 City Planning and Building Standards Laws which facilitated the development of a District Plan system. The legislation was modelled on the German *Bebauungs* Plan system and a typical plan devised under the legislation would consist of a policy statement and a district improvement plan. The new law effectively empowered the promotion of better building and zoning controls in existing areas. It provided a framework within which to protect established suburban areas from future unsatisfactory development (and especially large high rise projects), to enable a planning authority to impose better highway standards in new urban areas and incrementally improve



Fig. 8.4: By the 1980's much of the area of Chiba-shi developed in the 1950's and 1960's had been rebuilt with higher quality detached dwellings and smaller apartment buildings but there was little scope to improve social and highway infrastructure. *Konakadai 3-chome*

existing networks, to conserve a limited number of historical urban environments, to facilitate the redevelopment of former industrial areas and as a technique of encouraging incremental improvements to established built up areas not achievable under the 1968 legislation (Sorensen 2002: 265-268). In Chiba-*shi* it was used to promote district plans covering Kemigawa, Makuhari and the centres of some of the former villages incorporated within the urban area.

In respect of the development of urban space the Nakasone administration from 1982 to 1987 broadly adopted an agenda based on three areas of policy concern (Hebbert and Nakai, 1988). These were administrative reform to tackle the ballooning public sector deficits of the previous decade, the revitalisation of the private sector through stimulating demand and deregulation, and reorienting the economy towards greater domestic demand. The focus on deregulation and disposal of national assets followed patterns established by the Reagan and Thatcher governments, whose neo-conservative thinking Nakasone partly shared. Nippon Telegraph and Telephone (NTT) was floated as a

corporation in 1985 and Japanese National Railways were stripped of property assets and broken up into seven regional companies in 1987. The capital and land released promoted a major investment in public works and infrastructure. There were supplemental budgets in 1986 and 1987 and also large loans underwritten through the *Zaito* 'FILP' Fiscal Investment and Loans Programme which drew on Japanese Post Office personal savings accounts. Woodall (1996) argues that many of these projects were 'pork barrel' politics and *dangō* rigged contract bidding of the most blatant kind, sometimes involving *jiage* 'land-sharking' where elderly residents were intimidated into selling or occasionally even murdered for crucial plots of land. The Japan Project Industry Council (JAPIC) was formed as a lobbying consortium by major corporate interests in 1979 and promoted several major infrastructure projects through 1980's. These usually, as in the case of the Tokyo Bay '*Aqualine*' project to the south of Chiba, involved massive spends of public money on easily implemented schemes (see Barret and Therivel, 1991; Otake, 1993; Oizumi, 1994). Within Chiba-*shi* infrastructure projects related to the development of Keihan Makuhari and the new JR Keio line were promoted by JAPIC.

The trajectory of Japanese urban development within a neoliberal planning regime differed from that described, for example, to the European and American city in Brenner and Theodore (2002b) or the more recent United States experience documented by Hackworth (2007) There was an underlying tension between the pursuit of a commitment to neoliberal agendas and the functioning of a mode of regulation which so dependent of the role of the 'developmental state'. There was also considerable bureaucratic ambivalence and often opposition towards all forms of deregulation. Hebbert and Nakai (1988:130) suggest that the "Nakasone legacy did not include any substantial or irreversible dismantling of the system of planning intervention. Perhaps the greatest damage was rather to the self esteem of planners than their practical competence". They argue that the buoyancy of urban redevelopment was a function more of the stimulus of domestic demand strategies, lowering interest rates and cheaper building materials. The 'ideal' of planning control deregulation was however certainly promoted by several lobby groups. The Real Estates Association lobbied on behalf of large developers, the Urban Development Association represented private railway companies who were also major players in suburban housing schemes, and the National

Federation of Land and Building Agents was active on behalf of small and medium scale property developers. Opponents of local planning regulation successfully canvassed to have local development manuals called in for central government review (Hebbert and Nakai 1988b:389), and it was strongly argued (see for example the economist Miyao Yaka-hiro, 1987) that planning controls placing restrictions of density and high rise impeded the working of free market forces in promoting growth. The outcome of this pressure was that there was some relaxation of the planning framework, most significantly a rezoning in Tokyo in 1982 of 'Exclusive Residential' Zone 1 and 2 standards to permit high rise apartments (Hebbert and Nakai, 1988a: 386). In Chiba-ken a more significant change was a reduction in the scale at which new development within the Urban Control Area would be authorised. From January 1986 projects were permitted on sites of more than 5ha but only for construction of factories, laboratories and educational facilities or any combination of these with housing.

8.5 Retailing and distribution

Between 1975 and 1990 the profile and character of retailing and the structure of the entire distribution chain within Japanese urban space was transformed. At the beginning of this period almost every link within the chain was still dominated by independent merchants, either trading as independent family businesses or operating small incorporated groups of stores or depots. Larger cities offered characteristically Japanese-style department store outlets for bigger purchases, some of which traded through agents or by mail order. This pattern of distribution had emerged over a century and still bore resemblances – and even often direct family connections - with patterns of retailing existing in the Edo Period. The prevalence of small operators extended through the whole distribution chain with many small and specialist wholesalers based on local sites. This was partly a reflection of the relative economy of small depots and limited stockholding in an urban environment where sites were expensive and secondary product handling was relatively cheap. It also reflected the complexity of making frequent small deliveries and maintaining inventories using paper based systems in the days before computing technology (see Czinkota and Woronoff ,1986)



Fig. 8.5: Independent small retailers remained a crucial part of the distribution chain during the 1980's often in leased two or three storey steel-framed custom-built units and frequently – as here, with an integral apartment. Franchises are common. Chishirodai 3-chome IR]

There were (and still are) typically three levels of wholesaling in operation within Japan's complex distribution chain functioning on national, regional and prefectural or city scales. By the 1970's Japan's powerful corporate manufacturers had become the dominant players in prescribing the ways in which this whole network functioned. It had become producer rather than retailer driven, with consumers ranking a poor third (Flath, 1989).

We have already noted in Chapter Six that the 1937 Large Store Law - repealed during the American Occupation - was re-introduced in 1956. This was specifically to protect the independent merchant community - which was as active and vocal in early LDP politics as its farming counterpart - from the worst of potential competition from larger retailing groups. The 1956 Law required prospective developers to engage in structured consultation and negotiation within a local business community before any new retail business over 1500 m² could be permitted. The law was applied with varying degrees of rigour and there were significant 'loopholes' in the legislation itself. For example the size limit applied to a 'business' not 'premises', and it could be partly circumnavigated by

Table 8.4: Japanese distribution chain metrics 1979-1991								
	1982	change vs. 1979	1985	change vs. 1982	1988	change vs. 1985	1991	change vs. 1988
RETAIL OUTLETS	1721.5	2.9%	1628.6	-5.4%	1619.8	-0.5%	1591.2	-1.8%
less than 50m ²	1194.9	-1.6%	1057.4	-11.5%	998.6	-5.6%	918.5	-8.0%
50m ² to 199.9m ²	339.3	14.7%	352.0	3.7%	367.5	4.4%	391.4	6.5%
200m ² to 499.8m ²	38.7	16.3%	36.4	-6.1%	48.4	33.2%	56.5	16.7%
500m ² to 999.9m ²	8.9	5.6%	8.2	-8.4%	8.4	3.0%	8.8	4.7%
1000m ² to 1499.9m ²	3.7	30.3%	3.4	-8.8%	3.9	14.4%	4.4	12.1%
more than 1500m ²	3.3	11.5%	3.9	-18.8%	4.2	6.8%	4.6	11.7%
<i>(unknown no response)</i>	<i>132.6</i>	<i>14.3%</i>	<i>167.5</i>	<i>26.3%</i>	<i>188.8</i>	<i>12.7%</i>	<i>207.0</i>	<i>9.6%</i>
WHOLESALERS								
Enterprises ('000)	314.8	11.7%	302.4	-3.9%	313.0	3.5%	333.8	6.6%
<i>incorporated</i>	<i>186.5</i>	<i>12.1%</i>	<i>186.2</i>	<i>-0.2%</i>	<i>196.9</i>	<i>5.8%</i>	<i>221.3</i>	<i>12.4%</i>
<i>unincorporated</i>	<i>128.3</i>	<i>11.1%</i>	<i>116.3</i>	<i>-9.4%</i>	<i>116.1</i>	<i>0.1%</i>	<i>112.5</i>	<i>-3.1%</i>
Outlets ('000)	428.9	16.3%	413.0	-0.4%	436.4	5.7%	476.0	9.1%
<i>incorporated</i>	<i>297.4</i>	<i>18.8%</i>	<i>294.2</i>	<i>-1.1%</i>	<i>317.9</i>	<i>8.0%</i>	<i>361.6</i>	<i>13.8%</i>
<i>unincorporated</i>	<i>131.5</i>	<i>11.2%</i>	<i>118.8</i>	<i>-9.6%</i>	<i>118.5</i>	<i>-0.2%</i>	<i>114.4</i>	<i>-3.5%</i>
Source: MITI Census of Commerce 1984-92 re-presented from Larke (1994) Tables 3.4 and 4.2. 'All Japan' data is presented here because local Chiba- <i>shi</i> data was not located. Note the scale of non-response for retail outlets in 1985.								

operating a new General Store development as a group of 'separate businesses'. To conform to this legal fiction many such stores still have internal steel shutters that can be lowered at night between departments. A re-drafting of the law in 1974 tightened up the complex procedures for authorising new stores. Later, in the 1980's, the perceived Byzantine application of this legislation to prospective foreign retail investors was vigorously challenged by American SII negotiators, but it is hard to assess the extent to which it ultimately succeeded in influencing the provision of a new generation of retail space in an increasingly global consumer market. Specific MITI data for Chiba-*shi* has not been located but Table 8.4 presents some basic distribution chain metrics for the whole of Japan from 1979 to 1991. During the late 1970's the retail base was expanding but following the 1979-82 recession there was a decline of more than 5%. The overall number of retail outlets then continued to decline slowly throughout the decade but this was entirely a consequence of small store closure – undoubtedly mainly older and marginal 'mom and pop' businesses. However the expansion in larger stores is not consistent, the strongest expansion is in the categories of new convenience stores and speciality stores of 200m² to 500m² and again in larger retail sheds just below the



Fig. 8.6: Where department stores were developed the scale was large. The 1990 SATY store near Inage station has five floors and 8000 m² of retailing area [IR]

1500m² limit. The 1974 Law seems to be influencing not so much the number of bigger new stores here, nor the total area of new retail space, but the size format developers are adopting with the main growth categories being just below the two thresholds defined in the legislation. It was not worth the extra effort of going for attempting to promote very large single outlets in excess of 1500m² unless the site and opportunity was a good one. This certainly seems to have been the case in Chiba-*shi* where the two largest shopping developments that took place in the 1970s were both central department stores of more than 8000m², and two that took place in the 1980's were on prime suburban sites adjacent to railway stations (Fig.8.6).

The crucial changes that took place at the retail end of the distribution chain during the nineteen seventies and eighties were concerned with the capitalisation and branding of outlets, and many new national and international players emerged. A good example with strong links with Chiba is the former Okadayaya store group rebranded as 'JusCo' in 1970.



Fig. 8.7. This style of 'arcading' with a tin roof linking several independent retail units very characteristic of town centre shopping areas developed in during this period. Sakae-chō [IR]

By 1976 the company had expanded through mergers and was listed on the First Sections of the Tokyo, Osaka and Nagoya Stock Exchanges, now restructured as the corporate retailing giant Aeon² Co. (*Ion Kabushiki Gaisha*). During the period covered in this chapter the company established more than 200 general merchandise stores within Japan. But equally importantly the group had diversified in several ways. The first expansion was into the supermarket (*Maxvalu* and *Maruetsu*) drugstore and speciality store sectors, and it then launched its own convenience store brand (*Ministop*) based on franchise agreements with independent merchants. All of these innovations required new retail units and steel-framed retail sheds throughout urban areas. Aeon also diversified into both the quality department store (*BonBelta*) and specialist retailing sectors (pharmacies, DIY). Abroad it had established subsidiaries in China and Taiwan, and during the mid 1980's had been instrumental in launching key global brands within Japan (Laura Ashley 1986, Body Shop 1990). Aeon is rather typical of the kind of corporate development which revolutionised Japanese retailing and retail space during the 1980's.

² Information on Aeon Group taken from <http://www.aeon.info/en/index.html> last accessed 23/07/2009

In contrast to the UK, this restructuring of retailing did not inevitably lead to large retailers taking direct ownership of their distribution chains although clearly larger incorporated wholesalers capable of investing in systems and lorry fleets played a

Premises type <i>(count of sample points)</i>	1960 DID		1960 - 1975 DID Extension		1975 - 1990 DID Extension		1990 Total DID Area		% <i>change</i>
	1975	1990	1975	1990	1975	1990	1975	1990	
extended dwelling	3	10	5	17	2	9	10	43	330%
custom built unit	0	1	1	6		1	1	9	800%
detached unit	0	3	7	13	3	9	10	35	250%
purpose specific		0		1		2		3	
On-site Services	3	14	13	37	5	21	21	90	329%
commercial premises	14	17	21	15	4	11	39	68	74%
extended dwelling	3	7	2	5	2	2	7	18	157%
custom built unit	2	5	3	2	1	5	6	16	167%
shopping cluster	0	1	1	1			1	3	200%
retail shed	1	2	2	17	1	13	4	35	775%
department store/mall		1		2		2		5	
Retailing	20	33	29	42	8	33	57	145	154%
TOTAL	23	47	42	78	13	54	78	234	200%
	104%		86%		315%		200%		

Source: Sample Point Survey. Count is sample point records in each DID Zone for 1975 and 1990

growing role in logistics. The lower part of table 8.4 shows that rising consumer demand led to an increase in wholesalers and depots during the 1980's but that this growth was entirely within the incorporated sector and that the unincorporated sector continued to shrink in line with the small trader base it served.

Table 8.5 presents Sample Point Survey data for retailing for 1975 and 1990 and the main changes taking place by premises type and location. In view of the small samples within most categories the data is presented as a simple record count but the overall totals represent an expansion in on-site services (garages, restaurants, hairdressers) and merchandise retailers from 1.9km² (1.7%) to 5.55km² (5.1%) of the total 1990 DID. Overall there was a doubling of retailing area through change of land use within the core 1960 DID area but most of the growth was taking place in the extensions of urban space. There was some expansion of both extended dwellings (usually now owner's apartment over a shop) and 'commercial premises' (typically traditional single storey timber boxes) but the change in the quality of the retail environment is picked up by the appearance of

new custom built units (usually now leased units in larger multiple use structures as in Fig. 8.7 and freestanding convenience stores) and steel framed retail sheds located in 'strips', malls and at urban margins. There is some expansion in department store sites.

8.6 Vehicle Ownership

Table 8.6 [cf.7.4] summarises the number of registered vehicles in Chiba-*shi* by year between 1975 and 1990. There are three quite distinct trends in motor vehicle use revealed in this data. Firstly and most significantly the spread of car ownership continues unabated with only a slight slackening of demand during the second oil price shock in 1979. Ownership doubled between 1975 and 1990, by which date most households in the city had access to at least one car and around 2.2% of the DID area was required for residential parking. Secondly numbers of registered buses and freight vehicles continued to increase in line with the expansion of the urban area but their *per capita* usage begins to decline. In 1984 the Japanese National Railways had abandoned all traditional wagon-load rail freight business after which all goods were moved by sea or road, and the reduction in small wholesaler and retail operators led to reduced net demand for tertiary wholesale distribution. In effect the market was now saturated for buses and lorries.

Year	Total number '000			Total per 100 households			parking area required in Chiba-shi ^[1]
	Freight Vehicles and Buses	two- and three wheel vehicles ^[2]	Private cars	Freight Vehicles and Buses	two- and three wheel vehicles ^[2]	Private cars	
1975	227.39	163.25	425.75	19.7	14.2	36.9	74.8
1976	241.76	165.19	487.13	20.3	13.9	40.8	82.1
1977	258.44	152.22	543.91	20.9	12.3	44.1	91.4
1978	266.29	157.35	601.23	20.8	12.3	46.9	100.1
1979	284.63	164.65	675.60	21.5	12.4	51.0	111.8
1980	299.00	179.55	745.52	21.1	12.7	52.5	122.6
1981	307.62	200.36	803.34	21.1	13.8	55.2	131.1
1982	308.40	227.88	858.95	20.7	15.3	57.6	138.4
1983	308.65	262.16	913.30	20.2	17.2	59.8	146.8
1984	306.29	297.79	965.71	19.6	19.1	61.9	155.2
1985	306.36	336.84	1015.02	19.5	21.4	64.5	161.6
1986	306.74	376.51	1068.54	19.0	23.4	66.4	169.3
1987	309.43	417.03	1126.25	18.6	25.1	67.8	181.0
1988	319.17	459.59	1203.73	18.6	26.8	70.2	191.9
1989	334.79	501.04	1280.44	18.9	28.3	72.4	202.6
1990	348.22	527.86	1395.64	19.2	29.1	76.9	216.6

[1] Overnight parking area required in hectares for private cars assuming 2.2m*4.5m per vehicle
[2] After 1963 agricultural three wheel vehicles excluded from taxation
Source: Annual volumes of Chiba-ken tokeisho

Finally there is a growth from around 1982 in the use of mopeds and scooters as these begin to be marketed as a second vehicle, typically at this time for commuting journeys to the nearest station by one member of a household which has already invested in a car.

8.7 Evolving urban space in Chiba-*shi* 1975 to 1990

Table 8.7 summarises the expansion of Densely Inhabited Districts both nationally and regionally in terms of area and population for each quinquennial period between 1975 and 1990. Although the pace of urbanisation had already slackened off compared with the late 1960's there was still significant urban expansion across most of Japan during the whole period despite the recession between 1979 and 1982. The rate of extension of urban areas in southern Kanto closely follows the pattern for Japan as a whole, but as most developable land within both Tokyo-to and Kanagawa-ken was already designated as DID by this stage the strongest growth was located in Chiba-*ken* and Saitama-*ken*. Until 1980 Chiba-*shi* continued to expand very rapidly due to public housing projects on landfill sites. The land price bubble period 1985 -1990 saw a second major wave of suburban expansion based on private villa and condominium construction around Tokyo with a further designation of more than 280 km² of DID in southern Kanto. A third of this was located in Chiba-*ken*, but this time the most growth was focused to the north and west of Chiba-*shi* in Higashi-katsushika and Imba.

A characteristic of this expansion is that in the two periods of stronger economic growth – 1975 to 1980 and 1985 to 1990 - the *area* of DID expands at a faster rate than the

Fig 8.7: Expansion of national and regional DID areas 1975-1990

Period	increase km ²	% annual change		increase km ²	% annual change	
		area	pop		Area	pop
TOTAL JAPAN				CHIBA-ken		
1975-1980	1739	4.2%	1.9%	97	5.9%	4.7%
1980-1985	556	1.1%	1.0%	52	2.4%	2.7%
1985-1990	1162	2.2%	1.3%	93	3.9%	3.0%
Southern KANTO ^[1]				CHIBA-shi		
1975-1980	386	3.3%	1.8%	26	7.6%	4.0%
1980-1985	142	1.0%	1.3%	5	1.1%	1.3%
1985-1990	283	2.0%	1.5%	13	2.7%	1.5%

Source: 2005 Population Census of Japan DID Report Table
 [1] Southern Kanto comprises Tokyo-to and Kanagawa, Saitama and Chiba-ken

population, not only because of additional construction of dwellings in a more buoyant housing market but also because of relative faster investment in infrastructure. During the recession in the aftermath of the second oil price shock on the other hand the opposite is the case (at least in Kanto) due to lower rates of public investment.

Table 8.8 [cf. 7.4] summarises and compares changes in the use of urban space that took place within the expanding area designated as Chiba-*shi* (DID) existing in 1975 and 1990. By 1990 this had expanded from the five parcels described on p.197 to seven. A much larger 'core' urban area now covered most of the additional 13km² of additional landfill at Inage and Makuhari, and also extended on average two or three kilometres further north and east on the landward side of the city. This largest parcel now covered 100.4 km². Two of the earlier 1975 'outliers' including the JHC housing at Satsukigaoka had been 'absorbed' into the expanded core area but four more had emerged – the expanding 'new town' areas well to the south west of central Chiba along the JR Sotobo Line at Toke and Honda, and a small urbanised area near the Keisei Railway along the north west boundary of the *shi* which was an offshoot of development in neighbouring Yachiyo-*shi*.

The main changes which took place within the 1975 DID area revealed by analysis of the Sample Point Survey were primarily an outcome of the conversion of surviving agricultural land within the 1960-1975 extension to other kinds of use, and also of the conversion of un-built sites (mainly vacant lots but also some former contract parking) across the whole of the DID to housing and commercial land use which expands by 3.6km² to cover 37.3% of the whole 1975 DID area. There are also significant land conversions for additional highways, social use (new educational sites to cater for a rising school population), public open space and new industrial sites especially in Inage and Hanamigawa.

Within the new 1975-1990 DID extension new housing and commercial development has expanded by 6.2km² but the cumulative expansion of new circulation infrastructure, including the completion of the motorway link around the city (3.6km²), manufacturing

Table 8.8 Summary of changes in use of space in Chiba-shi DID 1975-1990						
	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1975	1990	change % area	1975	1990	change % area
<u>1975 Densely Inhabited District</u>						
1. Circulation and movement	15.1%	17.1%	2.0%	10.18	11.53	1.35
2. Residential and commercial	31.9%	37.3%	5.4%	21.47	25.07	3.60
3. Manufacture, distribution, utilities	17.4%	18.3%	1.0%	11.68	12.34	0.66
4. Social provision	6.0%	7.1%	1.1%	4.02	4.77	0.75
5. Public spaces	4.5%	6.2%	1.7%	3.04	4.17	1.13
6. Urban space without structures	13.4%	9.2%	-4.2%	9.00	6.17	-2.83
7. Agricultural use	9.3%	4.0%	-5.3%	6.25	2.69	-3.56
8. Landfill and water	2.5%	0.8%	-1.7%	1.66	0.55	-1.11
	<i>(Sample: N=2824 = 100%)</i>			<i>(sampled area = 67.3 km²)</i>		
<u>DID extension 1975 - 1990</u>						
1. Circulation and movement	8.3%	16.8%	8.4%	3.51	7.08	3.56
2. Residential and commercial	11.7%	26.4%	14.7%	4.95	11.16	6.20
3. Manufacture, distribution, utilities	4.7%	14.4%	9.7%	1.98	6.06	4.08
4. Social provision	1.5%	5.1%	3.7%	0.61	2.17	1.56
5. Public spaces	3.8%	12.1%	8.3%	1.60	5.10	3.49
6. Urban space without structures	16.3%	13.5%	-2.9%	6.89	5.68	-1.20
7. Agricultural use	24.3%	10.9%	-13.4%	10.24	4.60	-5.64
8. Landfill and water	29.4%	0.8%	-28.6%	12.41	0.35	-12.05
	<i>(Sample: N=1789 = 100%)</i>			<i>(sampled area = 42.2 km²)</i>		
<u>1990 Densely Inhabited District</u>						
1. Circulation and movement	12.5%	17.0%	4.5%	13.67	18.61	4.94
2. Residential and commercial	24.1%	33.1%	8.9%	26.42	36.20	9.78
3. Manufacture, distribution, utilities	12.5%	16.8%	4.3%	13.65	18.40	4.75
4. Social provision	4.2%	6.3%	2.1%	4.65	6.93	2.28
5. Public spaces	4.2%	8.5%	4.2%	4.65	9.28	4.63
6. Urban space without structures	14.5%	10.8%	-3.6%	15.86	11.87	-3.99
7. Agricultural use	15.0%	6.7%	-8.4%	16.47	7.31	-9.16
8. Landfill and water	12.9%	0.8%	-12.1%	14.12	0.90	-13.22
	<i>(Sample: N=4613 = 100%)</i>			<i>(sampled area = 109.5 km²)</i>		
<i>Source: Sample Point Survey Database</i>						

(4.1km²), social provision 1.6km²) and public open space (3.5 km²) are much more significant accounting in total for an extension of 12.8km² of urbanisation. The new manufacturing sites are located on the northern margin of the city in areas like Sanno-chō but the expansion of social provision and public open space is primarily due to the addition of 13.2km² of new landfill along the Tokyo Bay shore since 1975. This area is a wholly planned environment conceived exactly at that moment in the mid 1970's when Japan had moved most strongly towards the model of a 'welfare state'. Throughout much the Mihama-ku development generous elementary and junior high school site provision was included and the area of the new shoreline landscaped as a 'Marine Park'.

8.8 Local employment and new manufacturing and commercial spaces

Table 8.9 Summarises the changes within the employment base of people working within Chiba-*shi* between 1975 and 1990 as recorded within the population census. Over the period there was an average 3% annual increase in the recorded number of people employed in the city. This is greater than the overall DID population increase reported in Table 8.7 and underlines the growing importance of daily commuting inflow to support the economy of Chiba-*shi*. In both absolute and percentage terms growth is focused in

sector	'000 persons			annual % change	% share of mix		% females	
	1975	1990	<i>Change</i>		1975	1990	1975	1990
Economically active	249.30	361.33	112.03	3.0%	100.0%	100.0%	31.4%	37.8%
Agriculture	10.48	5.81	-4.66	-3.0%	4.2%	1.6%	49.9%	47.3%
Fisheries	0.05	0.04	-0.01	-0.7%	0.0%	0.0%	22.2%	22.5%
Construction	27.73	41.41	13.68	3.3%	11.1%	11.5%	10.9%	15.5%
Manufacturing	47.99	51.16	3.17	0.4%	19.2%	14.2%	19.4%	29.0%
Retail and Wholesale	63.53	92.02	28.50	3.0%	25.5%	25.5%	42.2%	47.8%
Finance Insurance Real Estate	12.14	22.68	10.54	5.8%	4.9%	6.3%	42.4%	47.5%
Transport Communication	21.15	27.54	6.39	2.0%	8.5%	7.6%	9.8%	13.4%
Utilities	2.69	2.90	0.21	0.5%	1.1%	0.8%	17.1%	16.2%
Services	48.11	94.68	46.57	6.5%	19.3%	26.2%	46.2%	49.1%
Government not elsewhere	14.76	17.43	2.67	1.2%	5.9%	4.8%	24.3%	25.4%
Others/not described	0.70	5.66	0.58	33.6%	0.2%	1.6%	11.0%	47.5%

1975 data excludes Honda-machi (about 0.8% of population total)
Source: Population Census of Japan 1975 and 1990 Prefectural Reports.

services – education, medical, social welfare, business and professional services, hotel and exhibition facilities (Makuhari Messe) and also sectors such as vehicle repair. Collectively these have expanded at an average rate of 6.5% p.a. The associated construction, finance and real estate sectors also all grew rapidly as employers. Retail employment continued to expand at around 3% per annum. With the exception of construction all of these sectors were all significant employers of female staff and the overall share of female employees in the workforce consequently increased by more than 6% Table 8.10 compares Establishment Census data from 1975 and 1991 with Population Census data. The discrepancies between these two sources were discussed in the previous chapter and the significant differences in these two years are almost certainly due to self-employment and agency status. The changes in establishment size reveal two interesting trends in process. In the wholesale/ retail, finance/real estate and

services there is a significant increase in establishment size reflecting the gradual corporatisation of enterprises in these sectors, with family based business losing share

Business Sector	1975		1991		Establishments ('000)		average size (persons)	
	Persons ('000)	% counted vs. population census	Persons ('000)	% counted vs. population census	1975	1991	1975	1991
Construction	22.86	82%	36.58	88%	1.77	3.08	12.95	11.86
Manufacturing	38.42	80%	41.57	81%	1.19	1.82	32.20	22.86
Wholesale Retail	67.31	106%	112.27	122%	10.62	14.48	6.34	7.75
Finance Ins. Real Estate	14.62	120%	26.62	117%	1.67	2.92	8.73	9.12
Transport Comm ^[1]	12.70	60%	25.70	93%	0.38	0.81	33.67	31.62
Utilities ^[1]	1.62	60%	1.50	52%	0.01	0.02	115.93	88.24
Services ^[1]	29.41	61%	83.46	88%	4.26	8.54	6.90	9.78

[1] Population Census data in both years includes public servants excluded from the Establishment Census data
Source: 1975 and 1991 Establishment Census Chiba volumes. 1975 and 1991 Population Census of Japan

to larger operations. In utilities and manufacturing on the other hand the trend is exactly the opposite. In part this is due to the global trend towards restructuring and privatisation of utilities (see Graham and Marvin, 2001:137-177) which in Japan had also begun on a large scale during the Nakasone period. The manufacturing transformations in progress are more complex.

	1 - 4 persons engaged			5 - 19 persons engaged			20+ persons engaged		
	Estab.	% of total	change of share	Estab.	% of total	change of share	Estab.	% of total	change of share
<i>Establishments</i>									
Construction	1113	36.1%	-2.6%	1554	50.4%	5.2%	417	13.5%	-2.6%
Manufacturing	703	38.7%	1.3%	754	41.5%	-0.8%	361	19.9%	-0.5%
Utilities	3	17.6%	-3.8%	4	23.5%	-12.2%	10	58.8%	16.0%
Transport/Comms.	263	32.3%	-0.5%	256	31.5%	0.5%	294	36.2%	0.1%
Retail/Wholesale [1]	8386	57.9%	-9.9%	5012	34.6%	7.1%	1084	7.5%	2.8%
Finance/Insurance	235	34.8%	3.8%	208	30.8%	7.9%	232	34.4%	-11.8%
Real Estate	1790	79.8%	-10.8%	417	18.6%	10.7%	37	1.6%	0.1%
Services [2]	4953	58.0%	-9.5%	2785	32.6%	6.2%	799	9.4%	3.3%
<i>Persons Engaged</i>									
Construction	2921	8.0%	0.5%	14323	39.2%	6.8%	19340	52.9%	-7.3%
Manufacturing	1830	4.4%	1.3%	7140	17.2%	5.3%	32596	78.4%	-6.6%
Utilities	5	0.3%	-0.2%	58	3.9%	-0.3%	1436	95.8%	0.5%
Transport/Comms.	465	1.8%	0.1%	2753	10.7%	0.5%	22485	87.5%	-0.6%
Retail/Wholesale [1]	20888	18.6%	-7.0%	43494	38.7%	3.2%	47884	42.7%	3.8%
Finance/Insurance	542	3.0%	0.9%	2309	12.6%	5.8%	15452	84.4%	-6.7%
Real Estate	3114	37.4%	-6.5%	3139	37.7%	16.3%	2065	24.8%	-9.7%
Services [2]	10459	12.5%	-7.5%	25048	30.0%	-3.2%	47975	57.5%	10.7%

Notes: [1] includes eating/drinking in the 1975 Establishment Census [2] includes private but excludes public education
Source: re-presented from Japan Establishment Census 1991, Vol.III, Part 12, Table 12

During the late 1960's major environmental issues began to arise in connection with the Kawasaki Steel integrated plant. Areas of the city immediately north east of the site experienced a high incidence of respiratory diseases which are thought to have caused as many as two hundred premature deaths. The problem was identified as high levels of sulphur dioxide emissions creating such acidic rain that was dissolving the galvanised tin roofs of houses in Imai-chō and Katsuragi-chō. In 1975 the city began a seventeen year legal dispute against Kawasaki Steel, one consequence of which was that their ore sintering operations were moved from Chiba to Mindanao in the Philippines. Combined with the impact of modernising other processes this led to a 45% decline in employment on the site. However this loss of jobs was compensated for by increases in 'downstream' finishing and specialist operations in plants elsewhere in the city.

The changes outlined in interpreting Table 8.10 are confirmed in the analysis of establishments and employment by establishment size presented in Table 8.11. By 1990 the bulk of employment in retailing and services is in medium and large scale

Table 8.12: Relationship of persons engaged to the establishment 1991						
	TOTAL	proprietors	family workers [3]	employees [4]	other private sector [5]	Public servants
<i>persons engaged</i>						
Construction	36584	587	182	31806	4009	0
Manufacturing	41566	483	223	38747	2113	0
Utilities	3215	0	0	2390	12	813
Transport/Communication	29904	186	32	27247	740	1699
Retail/Wholesale [1]	112489	6655	3018	93942	8850	24
Finance/Insurance	18310	94	27	17690	496	3
Real Estate	8955	1223	246	5620	1577	289
Services [2]	114788	1223	246	93439	8336	11544
<i>% of persons engaged by category 1991 [1975]</i>						
Construction	100.00%	1.6%[2.4]	0.5%[1.3]	86.9%[88.2]	11.0%[7.8]	0.0%[0.4]
Manufacturing	100.00%	1.2%[1.1]	0.5%[1.0]	93.2%[93.7]	5.1%[3.3%]	0.0%[0.8]
Utilities	100.00%	0.0%[0.0]	0.9%[0.0]	74.3%[73.5]	0.4%[0.1]	25.3%[26.3]
Transport/Communication	100.00%	0.6%[0.3]	0.1%[0.1]	91.1%[72.4]	2.5%[1.4]	5.7%[25.7]
Retail/Wholesale [1]	100.00%	5.9%[8.7]	2.7%[7.8]	83.5%[75.8]	7.9%[7.4]	0.0%[0.2]
Finance/Insurance	100.00%	0.5%[0.4]	0.1%[0.2]	96.6%[97.3]	2.7%[2.1]	0.0%[0.0]
Real Estate	100.00%	13.7%[25.5]	2.7%[4.6]	62.8%[57.7]	17.6%[12.2]	3.2%[0.0]
Services [2]	100.00%	4.5%[1.1]	0.2%[2.7]	81.4%[67.9]	7.3%[2.8]	10.1%[22.1]
Notes: [1] includes eating and drinking out in the 1991 Establishment Census [2] includes both public and private education [3] unwaged [4] includes both paid directors and waged family members [5] casual, agency and commission employment Source: adapted from 1991 Establishment Census of Japan Vol. III, Part 2-12, Table 7						

establishments although in both these sectors small operations play an important but declining role. In construction, manufacturing and real estate employment has expanded most rapidly in establishments employing 5-19 employees. As Table 8.12 confirms the net outcome of these changes is a decline in proprietor run enterprises in favour of salaried or waged employees across every employment sector with some minor anomalies in finance and real estate due to commission based workers.

What impact did these major structural changes have on the transformation of commercial and industrial space within Chiba-shi? Table 8.13 presents an overview of changes taking place in the period. Those within wholesaling and retailing have been discussed in detail in Section 8.5, and the expansion of both of these was significant. Apart from these two there were very little net change in the space required for industrial and commercial use within the 1975 DID apart from the designation of a large new sewerage and water plant on a coastal infill site in Isobe 8-chome. However there was a very substantial net growth of industrial space within the 1975-1990 DID extension

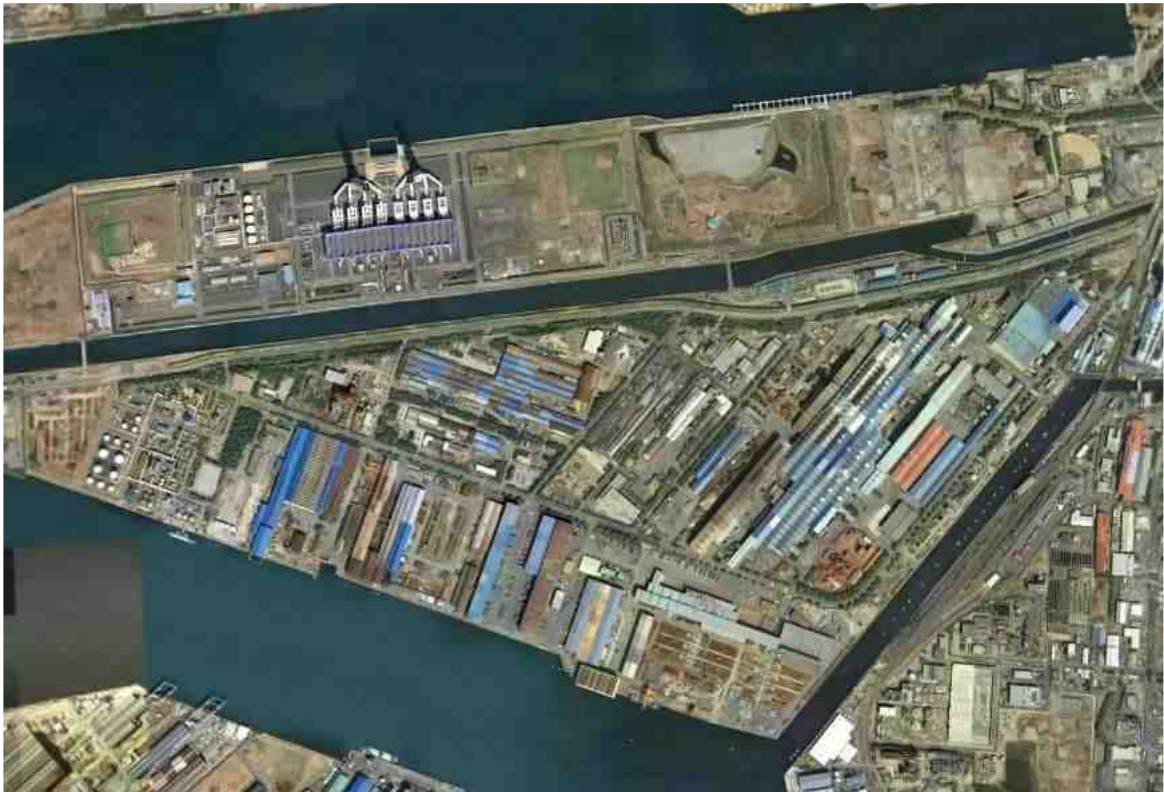


Fig. 8.7: 1980's development adjacent to the Kawasaki Steel plant. Seven new subsidiary sites focus on high technology 'downstream' finishing processes. Miihama-chō [Google]

and almost all of this new production area was developed on foreshore landfill in Kawasaki-chō and Niihama-chō. Many of these sites were devoted to special steel technologies involving subsidiary and partner companies. TepCo also invested here in a new gas fired power station to replace an earlier coal fired plant. Elsewhere there was a small net reduction in manufacturing within the whole 1990 DID, with many 1960's manufacturing sheds already being cleared to develop sites for commercial premises, multi-storey housing and some retailing.

8. 9 The influence of commuting on employment

Table 8.14 summarises changes taking place between 1975 and 1990 in the net daily flows of commuters and high school (15+) and university students in and out of the *shi*. This data captures the peak of commuting into Tokyo, which probably fell in the autumn of 1990 just before the collapse of the stock market, when 120,000 daily journeys were being made from the sixteen stations with services into the capital. This amounted to almost a quarter of the locally resident labour force moving daily into Tokyo. Most of this flow was destined for the 23-ku area. While during the 'High Speed Growth' era Tokyo had developed as the command centre of a national economy dominated by major corporate players during the 1980's a new layer was added to this – those functions that Sassen (2001) refers to as being of the order of the 'global city' and concerned with the control of an expanding international finance industry and the provision of new technical and producer services. We have already noted in Chapter One that in the context of the 'developmental state' these changes followed a different trajectory to New York and London, but nevertheless the demand for new commercial space in central Tokyo forced residential use to the margins of the metropolitan area. 1990 was the year when land prices peaked in the capital region.

Net movements from other parts of Chiba-ken into Chiba-*shi* have also doubled during the period (as have commuting movements through the city towards Tokyo). These are not presented in detail here but the pattern changed considerably. As already noted in Table 7.11, by 1975 commuting into Chiba was mainly focused along the shores of Tokyo Bay with industrialised areas like Ichihara being important blue collar dormitories. By

Table 8.13: Changes in use of industrial and commercial space 1975-1990						
	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1975	1990	change	1975	1990	change
<i>1975 DID</i>						
Retailing	1.7%	3.0%	1.3%	1.16	2.03	0.86
Services (on and off site)	1.2%	3.0%	1.8%	0.84	2.03	1.19
Commercial and banking	0.5%	0.8%	0.4%	0.31	0.57	0.26
Manufacturing	12.3%	11.9%	-0.4%	8.26	8.01	-0.26
<i>Of which: production sheds</i>	1.8%	0.9%	-0.9%	1.19	0.62	-0.57
<i>purpose designed sites</i>	1.6%	2.0%	0.4%	1.06	1.36	0.30
<i>JFE integrated steelworks</i>	8.8%	8.9%	0.2%	5.90	6.01	0.11
Distribution Chain	3.2%	3.2%	0.0%	2.14	2.17	0.02
<i>Of which: primary internal storage</i>	0.9%	1.1%	0.2%	0.58	0.71	0.14
<i>primary open air storage</i>	1.5%	1.0%	-0.5%	1.04	0.69	-0.35
<i>wholesaler depots</i>	0.6%	0.8%	0.2%	0.38	0.52	0.14
Utility sites	1.9%	3.2%	1.3%	1.28	2.17	0.89
TOTAL	20.8%	25.2%	4.4%	13.99	16.97	2.98
<i>DID added 1975 - 1990</i>						
Retailing	0.4%	1.8%	1.4%	0.19	0.78	0.59
Services (on and off site)	0.7%	2.0%	1.3%	0.28	0.85	0.57
Commercial and banking	0.1%	0.6%	0.5%	0.02	0.24	0.21
Manufacturing	3.4%	9.7%	6.3%	1.44	4.08	2.64
<i>Of which: production sheds</i>	1.2%	1.0%	-0.2%	0.50	0.40	-0.09
<i>purpose designed sites</i>	2.1%	1.8%	-0.3%	0.90	0.75	-0.14
<i>JFE integrated steelworks</i>		6.7%	6.7%		2.81	2.81
Distribution Chain	0.8%	2.5%	1.7%	0.35	1.06	0.71
<i>Of which: primary internal storage</i>	0.1%	0.1%	0.0%	0.02	0.02	0.00
<i>primary open air storage</i>	0.4%	1.0%	0.6%	0.17	0.40	0.24
<i>wholesaler depots</i>	0.3%	1.5%	1.1%	0.14	0.61	0.47
Utility sites	0.4%	2.2%	1.8%	0.17	0.92	0.75
TOTAL	5.8%	18.8%	13.0%	2.45	7.93	5.47
<i>1990 DID</i>						
Retailing	1.2%	2.6%	1.3%	1.35	2.80	1.45
Services (on and off site)	1.0%	2.6%	1.6%	1.12	2.87	1.76
Commercial and banking	0.3%	0.7%	0.4%	0.33	0.81	0.48
Manufacturing	8.9%	11.0%	2.2%	9.70	12.09	2.39
<i>Of which: production sheds</i>	1.5%	0.9%	-0.6%	1.69	1.02	-0.67
<i>purpose designed sites</i>	1.8%	1.9%	0.2%	1.95	2.11	0.16
<i>JFE integrated steelworks</i>	5.4%	8.0%	2.6%	5.90	8.81	2.92
Distribution Chain	2.3%	2.9%	0.7%	2.50	3.23	0.73
<i>Of which: primary internal storage</i>	0.5%	0.7%	0.1%	0.60	0.74	0.14
<i>primary open air storage</i>	1.1%	1.0%	-0.1%	1.20	1.09	-0.11
<i>wholesaler depots</i>	0.5%	1.0%	0.6%	0.53	1.14	0.61
Utility sites	1.3%	2.8%	1.5%	1.44	3.09	1.65
TOTAL	15.0%	22.7%	7.7%	16.44	24.89	8.45

Source: Sample Point Survey Database

1990 'New Town' style extensions to country towns further out from Tokyo and beyond Chiba-*shi* such as Yotsukaido, Sakura, Yachimata and Ōami-Shirasato had become important locations in the suburbanisation of the region because they now enjoyed

Table 8.14: Growth in commuting 1975 - 1990						
	LIVE in CHIBA-SHI		WORK or STUDY in Chiba-shi		NET movement	
	1975	1990	1975	1990	1975	1990
number of persons ('000)						
Live or work/study within Chiba-shi	320.71	489.99	292.28	438.74	(28.43)	(51.26)
<i>Both live and work/study in Chiba shi</i>	<i>204.48</i>	<i>285.14</i>	<i>204.48</i>	<i>285.14</i>		
Travelling to or from another area	116.23	204.85	87.80	153.60	(28.43)	(51.26)
Within Chiba-ken	36.82	79.69	74.50	132.77	37.68	53.08
Outside Chiba-ken	79.41	125.17	13.30	20.83	(66.11)	(104.34)
<i>Tokyo-to</i>	<i>77.25</i>	<i>119.26</i>	<i>9.75</i>	<i>13.13</i>	<i>(67.49)</i>	<i>(106.13)</i>
<i>of which with Tokyo 23ku)</i>	<i>76.47</i>	<i>116.85</i>	<i>2.47</i>	<i>11.84</i>	<i>(67.58)</i>	<i>(105.01)</i>
% of total count						
<i>Both live and work/study in Chiba shi</i>	63.8%	58.2%				
Travelling to or from another area	36.2%	41.8%	30.0%	35.0%	(8.9%)	(10.5%)
Within Chiba-ken	11.5%	16.3%	25.4%	30.3%	11.7%	10.8%
Outside Chiba-ken	24.8%	25.5%	4.5%	4.7%	(20.6%)	(21.3%)
<i>Tokyo-to</i>	<i>24.1%</i>	<i>24.3%</i>	<i>3.3%</i>	<i>3.0%</i>		
<i>(of which with Tokyo 23ku)</i>	<i>23.8%</i>	<i>23.8%</i>				

Source: Population Census of Japan 1975 Part 4-1 Tables 6 and 7, 1990 6-1-2-12 Tables 2 and 3.



Fig. 8.8: The 1990 Population Census reveals that the average Tokyo commute from Chiba-shi for both employees and further education students involved four hours of travelling daily

better access to railway stations than more marginal areas of the 1990 Chiba-*shi* DID.

Tables 8.15 and 8.16 summarise these patterns of daily commuting by the employment and occupation sector they represent [cf. 7.12]. The first table confirms the increase in commuting to work that has taken place during the period and also that there are some significant differences by sector. As might be expected workers are least likely to commute for agricultural work and also less likely to commute across administrative boundaries for work in construction, distribution and services than they are for work in manufacturing, finance and real estate and transport and communication. But the really interesting thing here is that almost all these sectors demonstrate a general uplift of between 5%-10%. The habit of mind of separating work and residence that commuting represents has become pervasive, and not restricted by occupation or by employment sector, although there is still a net outflow of professional, managerial, clerical and sales staff into Tokyo and a net inflow of service and craft workers into Chiba.

Table:8.15 Population in employment resident or working in Chiba-shi by sector and location of work 1975 and 1990						
<i>sector</i>	<i>LIVE in CHIBA-SHI persons ('000)</i>	<i>and working elsewhere</i>			<i>WORK in CHIBA-SHI persons ('000)</i>	<i>and live elsewhere persons ('000)</i>
		<i>persons ('000)</i>	<i>% of total</i>	<i>outside Chiba-ken[1]</i>		
<i>In 1975</i>						
TOTAL	281.29	100.36	35.7%	70.68	251.85	70.92
Agriculture and Fisheries	10.45	0.22	2.1%	0.17	10.38	0.14
Construction	26.77	8.03	30.0%	5.34	27.42	8.67
Manufacturing	63.34	27.47	43.4%	18.56	49.24	13.37
Wholesale and Retail Trade	67.34	20.05	29.8%	15.92	62.07	14.78
Finance Insurance Real Estate	15.02	7.57	50.4%	5.53	12.45	5.00
Transport communication	22.55	10.76	47.7%	7.55	21.64	9.86
Services	53.66	17.94	33.4%	11.97	48.09	12.38
Government not classified elsewhere	16.91	6.51	38.5%	4.76	15.57	5.18
All other	5.26	1.80	34.2%	0.88	5.01	1.55
<i>In 1990</i>						
TOTAL	409.8	170.70	41.7%	107.98	361.33	122.23
Agriculture and Fisheries	5.996	0.22	3.6%	0.09	5.85	0.26
Construction	40.659	14.52	35.7%	8.64	41.41	15.28
Manufacturing	69.748	35.76	51.3%	22.70	51.16	17.17
Wholesale and Retail Trade	102.479	36.80	35.9%	24.52	92.02	26.34
Finance Insurance Real Estate	28.168	14.91	52.9%	10.89	22.68	9.42
Transport communication	30.139	15.66	51.9%	8.72	27.54	13.06
Services	105.131	41.46	39.4%	25.17	94.68	31.04
Government not classified elsewhere	18.227	7.88	43.2%	5.36	17.43	7.08
All other	9.253	3.49	37.7%	1.89	8.56	2.58
<i>[1] 98% of employment of Chiba-shi residents outside Chiba-ken in 1975 was in Tokyo-to. The comparable figure in 1990 was 97%</i>						
<i>Source: Population Census of Japan 1975 Vol.4.1 Tables 6,7, 1990 6-1-2-12 Table 5.</i>						

The conclusion here must be that by 1990 Chiba-shi was becoming an urban space that was functioning in at least two quite distinct contexts. On one hand the city was still very identifiable as a relatively discreet and distinct urban unit with powerful political functions and serving as the administrative centre of the prefecture. It supported a well developed infrastructure, a substantial local retailing and service economy and a varied manufacturing base – in fact it was an urban centre which had taken more than a century to mature. In this mode of operation it shared characteristics with similar prefectural principal centres from Miyazaki and Kumamoto in Kyūshū north to Morioka and Aomori. And at the same time it was now functioning in a much more complex relationship as a primary centre within the Greater Tokyo region. This was apparent in the extent to which the dormitory function now dominated whole areas of the city and especially the western half and the areas around key railway stations. But it was also becoming equally apparent in the development the built urban environment. Schemes

Table: 8.16 Employed population resident or working in Chiba-shi by occupation and location of work 1990						
<i>Occupational sector</i>	<i>TOTAL working persons ('000)</i>	<i>working outside shi</i>			<i>In Tokyo</i>	<i>Downtown Tokyo [1]</i>
		<i>% of total</i>	<i>persons ('000)</i>	<i>% share of category</i>	<i>persons ('000)</i>	<i>persons ('000)</i>
<i>Living in Chiba-shi 1990</i>						
TOTAL	409.80	100.0%	170.61	41.6%	103.82	62.50
Professional/ Technical	55.54	13.6%	26.02	46.8%	15.19	8.52
Managers and Officials	19.91	4.9%	11.19	56.2%	7.83	5.02
Clerical	100.26	24.5%	49.75	49.6%	35.70	24.48
Sales Workers	70.90	17.3%	32.76	46.2%	22.47	14.27
Service Workers	30.41	7.4%	6.85	22.5%	2.83	1.71
Protective Service Workers	6.80	1.7%	2.65	39.0%	1.52	0.81
Agriculture, forestry and Fisheries	5.85	1.4%	0.46	7.9%	0.03	0.01
Transport and Communcation	14.34	3.5%	5.71	39.8%	2.71	0.92
Craftsmen, Production, Construcion	99.24	24.2%	34.12	34.4%	14.52	6.17
Not classed by occupation	6.56	1.6%	1.68	25.7%	1.04	0.59
<i>Working in Chiba-shi 1990</i>						
		<i>living outside shi</i>				
TOTAL	361.33	100.0%	122.23	33.8%		
Professional/ Technical	47.26	13.1%	17.74	37.5%		
Managers and Officials	14.55	4.0%	5.82	40.0%		
Clerical	81.85	22.7%	31.35	38.3%		
Sales Workers	58.57	16.2%	21.43	36.6%		
Service Workers	28.41	7.9%	4.85	17.1%		
Protective Service Workers	7.48	2.1%	3.34	44.6%		
Agriculture, forestry and Fisheries	5.95	1.6%	0.25	4.2%		
Transport and Communcation	15.32	4.2%	6.69	43.6%		
Craftsmen, Production, Construcion	96.40	26.7%	31.09	32.3%		
Not classed by occupation	5.54	1.5%	0.67	12.1%		
[1] Here defined as Chiyoda, Chuo, Minato and Shinjuku-ku						
Source: re-presented from Population Census of Japan 1990 Vol. 6-2-1 Table 1						

such as the Keihin Makuhari 'business city' and the Makuhari Messe International Convention and Exhibition Centre were major regional projects which could only function in the context of Greater Tokyo and its new role as a world city. How this emerged after 1990, and the extent to which Chiba has begun to take on the characteristics of an 'Edge City' that bore resemblance to European and North American experience, will be considered further in the next chapter.

8.10 Migration

Table 8.17 summarises net annual natural and social population increase recorded in the Basic Residence Register for Chiba-shi from 1975 to 1990. Until 1978-79 there was still a considerable social increase in progress which was being driven by the development of JHC public housing estates in Mihama and Hanamigawa-ku, but after the second oil shock recession - which actually led to a slight net out-migration in 1981-82 - the net rate of social increase declined to 0.1% by the end of the decade and most population growth in the city came from rates of natural increase which themselves were inexorably falling as the birth rate plummeted. This table also identifies clearly the other very

<i>Year to 30/9</i>	<i>('000)</i>		<i>net increase '000 persons</i>			<i>net increase % of total</i>		
	<i>House-holds</i>	<i>Persons</i>	<i>TOTAL</i>	<i>natural</i>	<i>social</i>	<i>TOTAL</i>	<i>natural</i>	<i>social</i>
1975-76	196.21	659.36	24.17	11.20	12.97	3.7%	1.7%	2.0%
1976-77	203.06	683.53	19.25	10.17	9.08	2.9%	1.5%	1.4%
1977-78	209.46	702.82	18.18	9.85	8.33	2.7%	1.4%	1.2%
1978-79	215.53	721.00	16.87	9.03	7.84	2.4%	1.3%	1.1%
1979-80	221.40	737.87	12.24	8.39	3.85	1.7%	1.2%	0.5%
1980-81	235.74	746.43	9.30	7.96	1.35	1.3%	1.1%	0.2%
1981-82	240.00	755.73	5.49	7.61	(2.11)	0.7%	1.0%	(0.3%)
1982-83	242.81	761.22	10.62	6.89	3.74	1.4%	0.9%	0.5%
1983-84	248.03	771.85	10.43	6.83	3.60	1.4%	0.9%	0.5%
1984-85	253.15	782.28	6.64	6.66	(0.02)	0.9%	0.9%	0.0%
1985-86	252.96	788.93	7.74	5.92	1.82	1.0%	0.8%	0.2%
1986-87	257.74	796.67	8.94	5.75	3.19	1.1%	0.7%	0.4%
1987-88	269.78	805.61	9.63	5.20	4.43	1.2%	0.7%	0.6%
1988-89	276.25	815.24	7.38	4.98	2.41	0.9%	0.6%	0.3%
1989-90	282.62	822.62	6.85	4.55	1.30	0.8%	0.6%	0.2%
1990-91	284.28	829.46	5.09	4.20	0.89	0.6%	0.5%	0.1%
TOTAL			178.82	115.18	62.64			

Note: Source data also includes small differences due to boundary revisions
 Source: Basic Residence Register returns published in Chiba-ken tokeisho

Table 8.18: Net migration into Chiba-shi by year by origin.							
<i>Fiscal Year</i>	<i>from elsewhere in Chiba-ken</i>		<i>from Tokyo-to</i>		<i>from everywhere else</i>		<i>TOTAL</i>
	<i>('000)</i>	<i>%</i>	<i>('000)</i>	<i>%</i>	<i>('000)</i>	<i>%</i>	<i>('000)</i>
1975	4.10	0.6%	10.17	1.5%	5.15	0.8%	19.41
1976	0.35	0.1%	7.78	1.1%	2.56	0.4%	10.69
1977	-1.68	-0.2%	6.31	0.9%	3.01	0.4%	9.23
1978	-0.53	-0.1%	7.05	1.0%	12.83	1.8%	19.35
1979	-1.84	-0.2%	5.83	0.8%	1.21	0.2%	5.21
1980	-3.49	-0.5%	4.36	0.6%	2.59	0.3%	3.46
1981	-4.26	-0.6%	1.45	0.2%	1.08	0.1%	-1.73
1982	-2.88	-0.4%	2.39	0.3%	1.40	0.2%	0.92
1983	-0.86	-0.1%	2.10	0.3%	1.96	0.3%	3.19
1984	-0.58	-0.1%	1.18	0.2%	1.99	0.3%	2.59
1985	-1.07	-0.1%	0.98	0.1%	1.08	0.1%	1.71
1986	-1.94	-0.2%	1.39	0.2%	2.80	0.4%	2.25
1987	-2.42	-0.3%	1.92	0.2%	3.18	0.4%	2.68
1988	-2.92	-0.4%	2.86	0.4%	3.97	0.5%	3.92
1989	-4.31	-0.5%	2.78	0.3%	4.12	0.5%	2.60
1990	-5.30	-0.6%	1.59	0.2%	5.76	0.7%	2.05

Source: Summarised from Basic Residence Register data published annually in Chiba-shi tōkei. Calendar Years

important dynamic established at this time. Because of declining average household size registered households numbers were consistently increasing much more rapidly than population – on average at 2.1% p.a. as opposed to population at 1.1%. p.a..

Table 8.18 identifies the source of this net growth. After 1980 the net inflow of migration from Tokyo-to is relatively weak, but during the decade the modest net inflow from other parts of Japan becomes stronger – migrants to Kanto bypassing the centre of the metropolitan area and moving directly into Chiba on arrival in the Tokyo region. As the decade progresses there is a net outflow established between Chiba-*shi* and the rest of the prefecture which represents a new generation of younger families brought up in Chiba-*shi* now looking for cheaper first homes in nearby 'New Town' zones.

8.11 Changing household characteristics

Table 8.19 summarises the change in household size within Chiba-shi between 1975 and 1990. There is a general reduction in average household size from 3.31 to 2.92 members, and within the urbanised core DID area the tendency towards smaller households is even stronger. The number of single person households increases dramatically as a

percentage of the total, almost doubling in fifteen years, and nuclear and extended families have a correspondingly smaller share of the mix. Part of this change arises from the decline of *quasi* and institutional households, with young workers who a generation earlier were formerly occupying rooms in company dwellings now occupying one and two room apartments.

	<i>Chiba-shi 1975</i>		<i>Chiba-shi 1990</i>		<i>(1990 DID)</i>	
	<i>Persons</i>	<i>%</i>	<i>Persons</i>	<i>%</i>	<i>Persons</i>	<i>('000)</i>
All households	196206					
<i>All household members</i>	<i>659356</i>					
ordinary households	191682	100.0%	278884	100.0%	250232	100.0%
<i>household members</i>	<i>634184</i>		<i>814774</i>		<i>717274</i>	
<i>single person households</i>	<i>25000</i>	<i>13.0%</i>	<i>62370</i>	<i>22.4%</i>	<i>58802</i>	<i>23.5%</i>
<i>2 - 4 members</i>	<i>136703</i>	<i>71.3%</i>	<i>184066</i>	<i>66.0%</i>	<i>164827</i>	<i>65.9%</i>
<i>5 or more members</i>	<i>29979</i>	<i>15.6%</i>	<i>32448</i>	<i>11.6%</i>	<i>26603</i>	<i>10.6%</i>
average size (persons)	3.31		2.92		2.87	
quasi-households^[1]	3753		1146			
<i>household members</i>	<i>23933</i>		<i>9261</i>			
<i>% of total population</i>	<i>3.6%</i>					
<i>[1] by 1990 'institutional households had been substituted with a modified definition</i>						
<i>Source: Population Census of Japan</i>						

In table 8.20 we get the first clear comparison across a fifteen year span by type of household which adds an additional important dimension to the overview of analysis by size presented in the previous table. The changes taking place in nuclear family households are apparent, with a decline of more than 10% in terms of the total mix of married couples with children but some growth in the share of both childless couples and also of single parents. The trend in progress here is clearly one of staying single longer, marrying later and perhaps staying childless longer within marriage but equally important is what the figures do not reveal. 'Married couple' here is likely to mean just that, there is limited formal cohabitation in Japan (White 2002: 93). Declared non-relatives households comprises only 0.2% but of course there will be some deliberate misrepresentation here. However young people in relationships probably do maintain two small apartments as a *modus vivendi* for some time, or one partner may nominally 'live with parents'. Increasingly by 1990 the 'child' declared in a nuclear family might be a young adult in

Table 8.20: Changes in family type of household 1975 to 1990				
<i>family type of household</i>	1975		1990	
	<i>('000)</i>	<i>%</i>	<i>('000)</i>	<i>%</i>
TOTAL ORDINARY HOUSEHOLDS	191.68	100.0%	278.88	100.0%
I - RELATIVES HOUSEHOLDS	166.28	86.7%	215.84	77.4%
a. NUCLEAR FAMILIES	142.79	74.5%	190.06	68.2%
<i>Married Couple</i>	22.63	11.8%	38.07	13.7%
<i>Married Couple and their child(ren)</i>	111.18	58.0%	133.31	47.8%
<i>Father and his child(ren)</i>	1.4	0.7%	3.11	1.1%
<i>Mother and her child(ren)</i>	7.58	4.0%	15.56	5.6%
b. OTHER RELATIVES HOUSHOLD	23.49	12.3%	25.78	9.2%
<i>Couple with their parents</i>	0.46	0.2%	0.63	0.2%
<i>Couple with their parent</i>	1.02	0.5%	1.89	0.7%
<i>Couple with their child(ren) and parents</i>	3.5	1.8%	5.07	1.8%
<i>Couple with their child(ren) and parent</i>	8.61	4.5%	10.37	3.7%
<i>Couple and relative(s) other than children and parents</i>	0.59	0.3%	0.54	0.2%
<i>Couple with child(ren) and relative(s) other than parents</i>	2.57	1.3%	1.54	0.6%
<i>Couple with their parent(s) and relative(s) other than child(ren)</i>	0.61	0.3%	0.36	0.1%
<i>Couple with their child(ren) parent(s) and other relative(s)</i>	2.77	1.4%	1.57	0.6%
<i>Brothers or Sisters only</i>		0.0%	1.55	0.6%
<i>Other relatives households not elsewhere described</i>	3.36	1.8%	2.27	0.8%
II - NON-RELATIVES HOUSEHOLDS	0.40	0.2%	0.67	0.2%
III - ONE PERSON HOUSEHOLDS	25.00	13.0%	62.37	22.4%
TOTAL QUASI-HOUSEHOLDS (persons)	23.93		9.26	
<i>Student Dormitories</i>	2.58		1.78	
<i>Worker Dormitories</i>	12.72			
<i>Hospitals</i>	2.37		3.10	
<i>(all others)</i>	6.27		4.38	

Source: Population Census of Japan Chiba household reports, 1975 and 1990

employment and unable to afford separate accommodation.

But the truly complex figure here is the 'one person household' which is a function of many different dynamics – single through lack of marriage, separation and divorce or widowhood or possibly occupying a second dwelling due to long term deployment at a local company office away from the family home as part of a career development path, an increasingly pervasive aspect of employment for aspiring middle managers.

In contrast to the pre-1975 focus on major projects to create thousands of public apartments in large *danchi*, most housing growth in the period 1975-1990 was met by an extension of home ownership based on bank loans. Until 1980 this was largely absorbed by building detached wooden family properties both on landfill in Midori-ku and 'green field' sites especially in Wakaba-ku, but in the last ten years construction of condominium apartments became an important element in providing owned property. There was some

significant expansion of public rented property until about 1980 but most new rented dwellings were smaller private sector apartments. There was a significant decline in the size of household in public sector households as demand for this kind of property from established nuclear families with children migrating into the area dried up and its appeal was to local young married couples without capital as tenants and increasingly older couples whose children had left home staying on in properties that they had occupied for fifteen or twenty years already.

The outsider's perception of Japan at the height of the land price bubble is of a society increasingly being priced out of home ownership. While there may be some truth in this in terms of central Tokyo home ownership increased considerably in Chiba-*shi*, with a corresponding decline in all other forms of tenure. The decline in public housing household size suggests that increasingly these areas were housing an ageing population whose families had migrated away into home ownership, a conclusion supported by the age profiles available at *chōme* level for this period. Private renting and rented rooms was a form of tenure increasingly dominated by single tenants or newly-weds.

Table 8.21: Households by tenure of dwelling 1975 and 1990

category	count ('000)		average size (persons)		% of total	
	1975	1990	1975	1990	1975	1990
ordinary households	191.68	267.99	3.31	3.00	100.0%	100.0%
owned	91.53	145.73	3.80	3.43	47.8%	54.4%
rented	79.47	99.42	2.75	2.36	41.5%	37.1%
<i>public</i>	<i>34.44</i>	<i>39.97</i>	<i>3.25</i>	<i>2.88</i>	<i>18.0%</i>	<i>14.9%</i>
<i>private</i>	<i>45.03</i>	<i>59.45</i>	<i>2.36</i>	<i>2.00</i>	<i>23.5%</i>	<i>22.2%</i>
issued	19.38	20.89	3.30	3.13	10.1%	7.8%
rented rooms	0.90	1.96	3.12	1.90	0.5%	0.7%
(other situation)	0.40	0.85	2.97	1.00	0.2%	0.3%

Source: Population Census of Japan 1975 and 1990

8.12 The size and age of dwellings

Table 8.22 summarises the overall changes in living space during this period analysed by tenure. Average dwelling size increased by more than 20m², a figure achieved by a combination of greater home ownership, the demolition of much very basic housing constructed in the 1950's and 1960's and redevelopment involving the almost universal adoption of two storey designs for new detached housing. Apartments for sale in this period were also larger than earlier public housing designs – typically 80m² to 90m² 2LDK

and 3LDK formats. There is some increase in the number of dwelling rooms particularly through the incorporation of a third bedroom in owned dwellings but in general size increase was a function of larger rooms rather than extended formats, a change associated with the 'westernisation' of the use of internal space and the use of

Table 8.22: Change in dwelling space in Chiba-*shi* homes 1975 - 1990

type of dwelling	floor space (metres ²)			floor space metres ² per person			dwelling rooms ^[1]	
	1975	1990	% change	1975	1990	% change	1975	1990
All dwelling houses	49.78	71.70	44%	15.04	23.8	58%	3.72	4.11
owned	64.67	95.50	48%	17.01	27.8	63%	4.77	5.16
rented	35.12	40.41	15%	12.78	17.15	34%	2.65	2.78
<i>public</i>	39.39	46.40	18%	12.1	16.1	33%	3.13	3.1
<i>private</i>	31.85	36.40	14%	13.5	18.1	34%	2.29	2.45
issued	40.85	54.30	33%	12.38	17.3	40%	3.21	3.48
(rented rooms)	22.16	29.60	34%	7.1	15.6	120%	2.34	1.76

[1] Dwelling rooms defined as areas used for living and sleeping. Does not include kitchen, bath, toilet. In 1975 only 'dwelling space' was recorded and to create values comparable with 1990 'floor space' the data has been adjusted by adding 17m² for owned houses and 12m² for all other property.

freestanding furniture and chairs (Waswo, 2002). Although the area of rented properties increases more slowly this is partly offset by the reduction in average household size.



Fig. 8.9: Typical two storey owner occupied home from about 1980. Wooden structure with plywood skin protected by paint, standard components, and a car port. Higashi Chishirodai

Table 8.23 [cf. Table 7.21] provides an estimated 'balance sheet' of the whole dwelling stock at the time of the 1992 housing survey summarised by age. Only about half the dwelling stock constructed before 1960 still survived by this date. Most of the immediate post-war stock had already been replaced and much of the poorer quality 1955-60 timber framed public apartment stock has also been demolished along with some of the housing – especially single storey units – built in the 1960's with galvanised weatherproofing. The two recent waves of new construction carried out between 1975-80 and 1985-90, which consisted partly of modern detached timber property and partly of 'mansion' condominium-style development have added to the stock of larger properties.

I have emphasised at several points in the last four chapters the important part played by the increasing share of two storey detached dwellings within the total universe of detached properties in terms of explaining the net rise in the average area of residential space per dwelling. Table 8.24 provides a final summary of this issue in terms of the housing stock in 1993. By this time around 40% of the remaining pre-1960 stock consisted of better quality and larger two storey 'survivors' and cumulatively 80% of the total detached stock now comprised two storey dwellings. This reflected a complete change in the deployment of dwelling space since the early 1960's, from collective family living to nuclear households offering private dwelling spaces for individual members.

<i>(values in '000 dwelling units)</i>	<i>new build</i> ^[1]	<i>dwelling stock in 1975</i>			<i>dwelling stock in 1992</i>		
		<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>	<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>
constructed before 1945	24	8.7	36%	(15.3)	2.7	11%	(21.3)
constructed 1945 - 1950	12	4.6	38%	(7.4)	1.8	15%	(10.2)
constructed 1950 - 1955	14	5.8	41%	(8.2)	2.5	18%	(11.5)
constructed 1955 - 1960	15.5	12.2	79%	(3.3)	5.8	37%	(6.4)
net position by 1960		31.3		(34.2)	12.8		(49.4)
constructed 1961 - 1965	42	40.5	96%	(1.5)	20.1	48%	(20.4)
constructed 1966 - 1970	47	46	98%	(1.0)	30.8	66%	(15.2)
constructed 1971 - 1975	74	73.9	100%	(0.1)	60.6	82%	(13.3)
net position by 1975		191.7		(36.8)	124.3		(98.3)
constructed 1976 - 1980	50.5				49.4	98%	(1.1)
constructed 1980 - 1985	38				37	97%	(1.0)
constructed 1985 - 1990	45.7				45.4	99%	(0.3)
<i>(constructed 1990 - 93)</i>	<i>29.4</i>				<i>29.4</i>	100%	-
net position by 1990					256.1		(100.7)

[1] 'before 1945' value is the 'starting stock' of housing surviving the 1945 air-riads, not 'new build'
Source: consolidated from tables in the Housing Survey of Japan 1963, 1968, 1973, 1978, 1983, 1988, 1993

Table 8:24 Surviving detached housing in Chiba-shi in 1993 by age and number of storeys				
	<i>detached houses built/ existing</i>			<i>% of surviving total detached over one storey</i>
	<i>Total</i>	<i>One storey</i>	<i>More than one storey</i>	
<i>period built</i>				
before 1945	2.6	1.8	0.8	31%
1945-50	1.6	0.9	0.7	44%
1951-55	5.7	3.3	2.4	42%
1956-60	21.3	7.3	14.0	66%
1961-65	24.1	4.8	19.3	80%
1966-70	25.5	3.2	22.3	87%
1971-75	17.9	1.8	16.1	90%
1976-80	18.3	1.4	16.9	92%
1981-85	6.6	0.4	6.2	94%
1986-90				
after 1991				
<i>cumulative residual position</i>	<i>123.6</i>	<i>24.9</i>	<i>98.7</i>	<i>80%</i>

Source: Japan Housing Survey 1993 Vol.3:12 Table 4, p.14

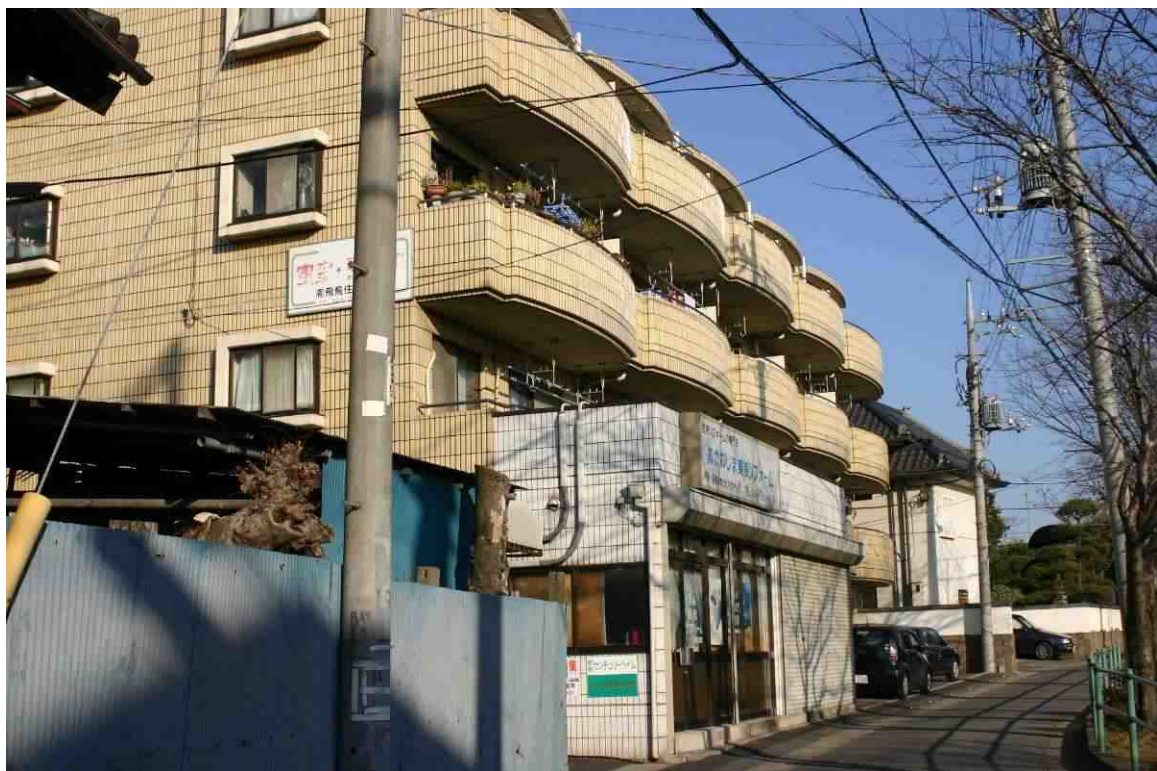


Fig 8.10: A small four storey 20 apartment *bunjō-manshun* 20 condominium development in Tsuga 3-chome. One apartment converted to accommodate an interior design business [IR]

The most profound change within the development of the housing stock during this period and an aspect crucial to understanding the evolution of urban space is the spread of a new dwelling format – the *bunjō-manshon* or ‘divided building mansion’. This is the Japanese term for condominium apartments where legal title to the whole residential structure resides collectively with the owners of the dwelling units. Initially Japanese banks had been reluctant to lend in situations where capital was tied up in jointly owned residential buildings, not least because of the potential for problems with liability in the event of major earthquakes, but from around 1960 small condominium apartment blocks began to be constructed. Inevitably ‘official statistics’ failed to separately identify the new housing format for a long time. In the Japan Housing Survey quinquennial reports they can’t be clearly distinguished until the 1990’s because they overlap with three other sets of definitions – public apartments, the distinction between private/public housing, and wooden two storey private apartments for letting. The only relevant local data for Chiba-*shi* located (CHIBA-SHI 2000: 26, see especially Table 239) is from a specially commissioned survey which suggests that from 1961 to 1970, 2,600 condominium apartments were completed in the city and then from 1970 to 1980, 22,300 of which 7,100 (32%) were in structures over five storeys, permitted in Chiba-*shi* after 1971. Most of this early wave of construction was focused on redeveloping former detached dwelling sites with apartments for sale near commuting stations (especially Inage and Nishi-Chiba). Only 7,700 apartments for sale were completed during the 1980s although they were often in larger structures - 4,700 of these (61%) were in buildings over five storeys. Most of these were in blocks of 30-100 apartments.

Table 8.25 summarises all dwellings in Chiba-*shi* in 1993 by format, structure type and number of storeys. There is no earlier published data which clearly distinguishes apartments by both status of tenure and number or storeys but we can estimate that in 1978 there were about 80,000 apartments in use, 50,000 of which were in five storey blocks and 80% of which were public housing. There were also a further 15,000 apartments in two storey blocks and a similar number in six or more storey structures). About 38% of the total number of dwelling units therefore comprised apartments. By 1993 about 53% of dwellings were apartments. Conversely private detached dwellings

declined from 48.5% to 44.6% of the total mix. Although 67,000 had been constructed during the previous fifteen years the net gain after demolitions was only around 27,000.

Table 8:25: Dwellings by format, structure type and storeys 1975 - 1993							
	<i>All Dwellings ('000)</i>	<i>Detached Houses ('000)</i>	<i>Tene-ments ('000)</i>	<i>Apart-ments ('000)</i>	<i>2 storey</i>	<i>3 to 5 storey</i>	<i>6 or more storeys</i>
Total dwellings in 1993							
all structures	285.4	126.8	7.8	150.8	41.7	77.7	31.4
<i>wooden structures</i>	156.1	121.9	5.5	28.7	28.5	0.2	0.0
<i>steel framed/ferroconcrete</i>	129.3	4.9	2.3	122.1	13.2	77.5	31.4
% of total dwellings							
all structures	100.0%	44.4%	2.7%	52.8%	14.6%	27.2%	11.0%
<i>wooden structures</i>	54.7%	42.7%	1.9%	10.1%	10.0%	0.1%	0.0%
<i>steel framed/ferroconcrete</i>	45.3%	1.7%	0.8%	42.8%	4.6%	27.2%	11.0%
(built 1978 – 1993)							
all structures	131.6	61.8	2.7	67.1	25.1	28.7	13.3
<i>wooden structures</i>	76.7	58.7	1.5	16.5	16.3	0.2	0.0
<i>steel framed/ferroconcrete</i>	54.9	3.1	1.2	50.6	8.8	28.5	13.3
% of total dwellings							
all structures	100.0%	47.0%	2.1%	51.0%	19.1%	21.8%	10.1%
<i>wooden structures</i>	58.3%	44.6%	1.1%	12.5%	12.4%	0.2%	0.0%
<i>steel framed/ferroconcrete</i>	41.7%	2.4%	0.9%	38.4%	6.7%	21.7%	10.1%

Source: 1993 Housing Survey of Japan. Chiba-ken Vol.1

8.13 The expansion of dwelling space

What then was the impact of these changes in dwelling size and format on the structure of expanding residential space within Chiba-*sh*? Table 8.26 summarises the rather complex set of trends that were emerging by 1990. Within the original core 1960 DID some quite complex restructuring was already in progress. Most of the mass of undifferentiated older dwellings and the post-war utility dwellings that were such a characteristic feature of the 1960 aerial coverage had been demolished, as had been some remaining *ie* clusters in former villages. These had partly been replaced by two storey dwellings. Older multiple properties, mainly timber structures, had been demolished and there had been some increase in all the multiple dwelling formats. There had also been an increase in residential and contract parking.

The 1960-75 DID expansion area saw a similar decrease in older undifferentiated urban and village dwellings and especially of utility dwellings as this was the zone which had

Dwelling/ Land use (all values in this table are what Sample Point Survey results would represent expressed in terms of km ²)	1960 DID		1960-75 DID Expansion		1975-90 DID Expansion		TOTAL 1990 DID		
	1990	+/- 1975	1990	+/- 1975	1990	+/- 1975	1990	+/- 1975	% change
TOTAL RESIDENTIAL (inc. lots)	7.8	(0.8)	17.0	(1.1)	12.7	3.2	37.4	1.3	4%
(undifferentiated older dwellings)	1.2	(2.5)	0.8	(3.4)	0.5	(0.8)	2.5	(6.7)	-73%
utility dwellings	0.3	(0.7)	0.5	(1.2)	0.3	(0.4)	1.1	(2.3)	-67%
one storey detached no parking	0.4	0.1	0.3	0.0	0.3	0.1	1.0	0.2	31%
one storey detached with parking	0.2	0.2	0.5	0.3	0.3	0.1	1.0	0.6	120%
two storey detached no parking	0.8	0.5	0.9	0.6	0.3	0.2	2.0	1.2	159%
two storey detached with parking	1.8	1.3	6.0	4.7	4.7	3.7	12.6	9.8	345%
<i>ie</i> building clusters	0.2	(0.1)	0.2	0.0	0.2	0.0	0.6	(0.1)	-11%
shared sites	0.3	0.3	0.5	0.1	0.5	0.2	1.3	0.6	95%
combined residential/commercial	0.2	0.0	0.3	0.1	0.0	0.0	0.4	0.1	20%
INDIVIDUAL DWELLINGS	5.3	(1.0)	10.1	1.3	7.2	3.2	22.5	3.4	18%
old multiple property	0.2	(0.5)	0.2	(0.6)	0.0	(0.1)	0.5	(1.1)	-71%
mokuzo chintai apārto	0.6	0.5	0.6	0.4	0.4	0.2	1.5	1.1	236%
external staircase apartment blocks	0.3	0.2	2.3	0.3	1.2	1.1	3.8	1.5	67%
internal stairwells/ early mansions	0.4	0.3	0.9	0.5	0.4	0.4	1.7	1.1	194%
MULTIPLE DWELLINGS	1.4	0.4	4.0	0.6	2.0	1.6	7.5	2.6	53%
residential and contract parking	0.8	0.6	1.4	0.9	0.9	0.9	3.2	2.4	299%
vacant lot	0.2	(0.8)	1.4	(3.9)	2.5	(2.4)	4.2	(7.2)	-63%

Source: Sample Point Survey

absorbed most of the early boom demand for cheap short term housing. There was much redevelopment in the area involving second generation two storey dwelling construction and especially with attached parking but overall a net loss of detached dwelling coverage at the expense of both new multiple dwelling structures and other uses. Much of the condominium development at this time (as in Fig. 8.10) was in these areas. There had also been much building out of vacant lots.

Change in the outer area of 1975-90 DID expansion was primarily driven by conversion of vacant lots into two storey dwellings with parking but during the 1970's there was still completion of public housing projects in progress in this zone.

Overall the most striking new trend in the emergence of new dwelling spaces was the extension of new multiple dwellings which expanded by about 2.6km² (53%) compared with an extension of 3.4 km² (18%) in the area of coverage of detached dwellings. Around 1km² of this multiple growth was in internal staircase condominium dwellings and these new projects were evenly spread between the three zones wherever sites were

available that were likely to attract buyers but principally with good access to railway stations.

8.14 Summary of changing associations.

During the period covered in this chapter the relationships between the entities defined at the beginning of Chapter 3 becomes far more complex. This step change is reflected in the built environment of the city. The separation between the individual's experience of routine time in terms of the entities on left and right side of Diagram 3.1 becomes more extreme, to the extent that many (and especially males) routinely spend most of their waking life two or more hours distant from their dwellings. Their workplace has become their primary social environment. Rates of engagement in economic activity are high for men and increase rapidly for women. This has become a society dominated by organisations, an environment in which the power of corporate and institutional enterprise is pervasive. Most larger local premises and sites in all employment sectors are now parts of networks of corporate functionality which although are mainly in Japanese ownership are global in extent and influence. The establishments that expand most rapidly in terms of space requirements are now those that are linked with consumption, retailing and services. The State increasingly adopts neoliberal values and practices to support this trend.

The size of households and the way in which they function is deeply influenced by these tendencies. The proportion of solitary households of all ages rises as a share of the mix, there are many more childless couples and the proportion of children in the community declines. Three generation households are now increasingly rare. The development of a whole new range of dwelling formats and relations of ownership reflects and enables these changes. Affluence, consumption and especially the aspirations for expanded space within nuclear families lead to a growth in the size of dwellings. Commuting leads to increasing dwelling densities near to stations which are achieved by building upwards.

The 'Lost Decade' and after: 1990 to 2005

Isaac Newton actually arrived in Japan in 1990. His presence did not prove a pretty sight in a country where too many people had concluded that the laws of gravity, when applied to their own financial markets, had somehow been suspended

Christopher Wood¹

9.1 Introduction

The climax of the four years of 'Bubble Economy' described in the previous chapter arrived swiftly and decisively. After achieving an 'all-time high' in terms of share prices on 29 December 1989, when stock markets reopened after the New Year holiday the Nikkei 225 began to slide. Nine months later the market had lost 48% of its value, many securities held by Japanese banks in respect of land and property investments at home and abroad were worth only a fraction of their former asset value, and there was a severe 'squeeze' on both capital for domestic industry and Japanese lending for foreign investments (Wood, 2005:7). By the following year the collapse in stock prices had begun to lead to a general sharp decline of both property and land prices. Christopher Wood observes that "by late 1991 genuine bids for office buildings after 2001 key Tokyo and Osaka Metropolitan markets was already 30% to 50% below 'official' National Land Agency prices (p.53)" This slide in property value would continue until late 1993.

Historians often find it difficult to offer any kind of considered perspective on recent events, and events in Japan since 1990 appear to resist easy classification in terms of any one particular metanarrative. An outline chronology is provided in Table 9.1. The 1990's are called *ushinawareta jūnen* in Japanese – the 'lost decade'. The economist Richard Katz (1998:6) suggests that one underlying theme that characterised these years was a loss of strategic direction on the part of bureaucrats and politicians; that "if industrial policy is a matter of picking winners and losers, then the essence of Japan's malaise is that it gradually shifted from promoting winners to protecting losers". However Japan's economic difficulties at this time manifested primarily as a crisis of confidence associated with assets and market instability, the mechanics of the creation of wealth remained relatively strong. . Apart from the recession beginning in 1997

¹ 2006:7

1990	Nikkei stock average falls by 40%
1991	Japan supplies financial support for the Gulf War
	March: Sagawa scandal. Arrest of Kanemaru Shin
1993	Hosokawa Morihiro becomes first non LDP Prime Minister since 1954
1994	Several Junior High suicides draw attention to bullying
1995	January 17 Great Hanshin Earthquake
1995	20 March Subway Sarin Incident
1997	July Pan-Asian Financial Crisis
2001	First Koizumi Junichiro administration
2003	Decision to send Japanese troops to Iraq
2006	Privatisation of the Post Office Bank

caused by Pan-Asian Financial Crises which originated in the contraction the 'Tiger Economies', Japan managed to grow GDP in every year, and in four years achieved a level of GDP growth in excess of 2%. However if Gross National Income (GNI) is taken as an indicator of a robust economy (see Table 9.2), then the significant impact of declining earnings from overseas business operations and investments is more clearly seen, with a decline in per capita GNI between 1996 and 1998 and again after 2001.

Calendar Year	Balance of Payments (trillion yen)[1]	Exchange Rate yen per dollar	GNI per capita Japan		(USA)	(UK)
			US \$	annual % change	US \$	US \$
1990	6.47	135	24486		22358	17148
1991	9.18	125	27910	14.0%	22811	17916
1992	14.24	124	30416	9.0%	23478	18632
1993	14.67	112	34816	14.5%	24563	16667
1994	13.34	100	38187	9.7%	25812	18117
1995	10.39	103	41953	9.9%	26927	19612
1996	7.15	115	37244	-11.2%	20204	20580
1997	11.73	130	34201	-8.2%	29753	22935
1998	15.53	115	30913	-9.6%	31296	24780
1999	13.05	102	34905	12.9%	32940	25108
2000	12.88	110	37211	6.6%	34863	24666
2001	10.65	131	32717	-12.1%	35469	24365
2002	14.14	119	31249	-4.5%	35997	27176
2003	15.77	107	33704	7.9%	37150	31214
2004	18.62	104	36736	9.0%	39374	36940
2005	18.25	117	36433	-0.8%	41486	37988

Source: GNI data from United Nations Statistics Division website. Other data from BOJ Historical Series website [1] Current Account. Both extracted 29.10.2008

Foreign competition also strengthened considerably at this time, exposing weaker Japanese players. Perhaps the best known case is the 'alliance' that ailing Nissan was forced to strike with Renault in 1999.

But the problem was not only an issue of asset bubbles. A key underlying cause of this economic weakness was the subtle but growing impact of Japan's 'ageing society', a theme which will be considered in Section 9.3. This impacted on the economy from two



Fig.9.1: A changing order. In 2005 the first blast furnace and strip mill built in 1953 by Nishiyama Yataro are demolished in favour of a retail mall and a business innovation park.

directions. There were direct consequences as the *per capita* productivity of Japanese society began to decline and as an increasing percentage of the population reached retirement age, began to call down retirement savings and cash in investments and pension plans, and seek additional welfare and medical support from the state. But equally important were the changing needs of an ageing population for goods and services, with demand now becoming focused on relatively low cost care and recreational provision, and less requirement for sophisticated or high value items such as the purchase of capital and electronic goods and new homes.

I do not intend to explore in detail the complex political background to this period. Very briefly the LDP - which had ruled since 1954 - increasingly lost voter support after 1990, a situation which was not helped by factional infighting involving former Prime Minister Tanaka's supporters. After the 1993 election there was a brief period when Hosogawa Morihito formed a coalition administration which excluded the LDP. This survived only a year but led to a series of ongoing administrative and electoral reforms which persisted throughout the 1990's. The main electoral reform led to the creation of a two tier system of constituency and regional seats that stripped power away from the original conservative LDP rural farming constituency in favour of an under-represented urban electorate. Between 1990 Japan and the first Koizumi administration in 2001 Japan had eleven Prime Ministers as factions within the LDP vied with each other for power.

During this period Japan also became, if only slightly, more of a presence as a 'world' - as opposed to 'economic' - power. In the 1991 Kuwait War the administration did not commit troops but did, rather unwillingly, practice what was referred to at that time as "chequebook diplomacy". But in the 2003 Iraq War, Prime Minister Koizumi did commit troops at the insistence of US President George W. Bush although only in a minor support role and in the face of fierce domestic opposition.

In the following sections I want to consider social themes prominent throughout the period that have a strong spatial context. In Section 9.2 I want to consider changing attitudes amongst young people, and how these involved both the use of space and related to the changes identified in the last two chapters. In Section 9.3 I want to consider the impact of falling fertility rates and the emergence of an 'ageing society' on urban form. Then in Section 9.4 I want to briefly consider the relevance of current discourses on 'edge communities' in respect of the recent development of Chiba-*shi*.

The remainder of this chapter, comprising Sections 9.5-9.14, largely follows the layout and order of topics that has been established in the previous two chapters.

9.2 Young people, households and urban space.

During the last fifteen years there has been a growing perception in Japan of an increase in a characteristic range of problem behaviours amongst teenagers and people in their twenties. Many of the issues related to this age group that are evident in the UK (for example drug use, alcohol abuse and gang culture) are almost unknown in Japan but the problem behaviours that do exist are considered serious because they affect both the completion of education and smooth entry into employment, (see for example Sugimoto (2003:136-138). They are of particular interest here because they point to a new form of transience in terms of the social reproduction of values associated with the children of the first generation raised in newly formed urban nuclear families during the high speed growth years of the nineteen sixties. They are also related to fundamental changes taking place now within household structures, the changing use of dwelling space, and the relationship between households and employment.

The first of these 'pathologies' to attract widespread public attention was bullying (*ijime*). It first drew media interest when it appeared to become more prevalent in Japanese schools in the 1980's and many commentators (see for example Zielenziger 2007:50-53) have pointed to the extent to which in Japan it is often associated with pressures for conformity within institutions, where it may involve a majority of students and even staff putting pressure one pupil. An especially shocking case involving the

suicide of a thirteen year old boy in Aichi-ken in 1994² elevated bullying to the status of ongoing national and political debate. One of many contemporary causes of *ijime* identified by Goodman (1990) were the 'problems' associated with 'reintegrating' those children of Japanese managers who had spent time studying abroad while their fathers were employed at a foreign subsidiaries, and who had been exposed to foreign educational systems.

An increasingly common consequence of bullying has been a rising incidence of *futōkō* – school 'refusals'. This problem is still very weakly addressed in the competitive educational environment of Japan's Junior High Schools. It is believed that currently as many as 5% of Junior High students may currently be counted this category, and that less than half make it back into the theoretically compulsory education system for under 16's (Nakayama 2003). High School education is not compulsory, and the abandonment of courses of study over the age of 15 is not recorded as *futōkō*. There are no published national statistics available recording the extent of refusals.

At a more serious level, and with consequences which will endure for a lifetime in Japan's 'one-shot' society, pressures to conform and a sense of rejection have led to the phenomenon of social withdrawal known as *hikikomori*. Individuals in their late teens and twenties retreat into their rooms and refuse all social contact with the world outside. Often *hikikomori* have been previously involved in school refusal or identified as victims of bullying. The leading expert on this condition in Japan, the psychologist Tamaki Saitō, believes that as many as 1.2 million young adults in Japan suffer from the syndrome (Zielenziger 2007:60). One self-evident aspect of this condition from the perspective of this study is that it could only occur in the kind of new dwelling spaces constructed over the last thirty years in which young people have been provided with separate dwelling spaces in larger houses, which they can then define and defend as private territory where even parents are not admitted.

Some researchers believe that part of the underlying problem here also relates to the changed patterns of social reproduction that have emerged in the last forty years. In particular long term parental absences from home, the pressures of commuting, and endless hours of 'voluntary unpaid overtime' and after-work socialising with company colleagues can result in fathers and children being virtual strangers. Hamada (2005:129) suggests that in these years after the 'Bubble Economy' corporate 'familism' and 'groupism' have assumed an even more powerful position of influence in Japanese establishments and management thinking. She writes that:

² A student called Kiyoteru Okochi

As the Japanese economy moved to World centre-stage, management began to recognise that *ie* ideology – that of organisational continuity over time or “the reproduction of its structure over time” (Eto, 1993) was creatively adopted by the Japanese business elite, which often invoked it to contrast it with ‘individual-based’ social control mechanisms.

Part of a management career track is also likely to involve fathers living away from home (*tanshin funin*), a related issue also widely referred to by commentators. Merry White (2002:110) comments that:

"tanshin funin" is a very common experience amongst middle class families, at least for some time during children’s schooling since it results from a parallel concern for a continuous career (in school or in an organisation). Separation adds to the already considerable strain felt in families about school and work.

Some contemporary Japanese popular writing draws attention to the ultimately corrosive effects of increasingly tentative family and household ties. The novels of Yoshimoto Mahako (‘Banana’ Yoshimoto) for example point to the disaffection of young Japanese, and their sense of a lack of trust in their parent’s generation. The central characters in her novella ‘Kitchen’ (1988) for example eventually realise that they have never been able to rely on the older people in their lives.

At a less pathological level competitive employment patterns have made many young people consciously reject the option of a career and responsibility, and deliberately opt for a ‘*Furiiitā*’ lifestyle based on temporary casual employment (in Japanese *‘furii arubaito’* from the German ‘frei arbeiter’). The soaring costs of house ownership in the late 1980’s encouraged a trend towards existence as a ‘parasite single’ (*parasaito shinguru*). This relies on an economic relationship in respect of ageing parents where ‘singles’ in their twenties and thirties, continue to live in the parental home enjoying a well-funded lifestyle as consumers, and foreign travel with friends, but making little contribution to household expenses (Sakamaki, 1996). Again, this is a form of internal household relationship that would have been impossible to follow in a small pre-1970 dwelling with no separate bedrooms.

9.3 Fertility and an ageing society

Two interlinked themes – low fertility rates and the consequences of a transition into an ageing society – have become so characteristic of Japanese public discourse over the last fifteen years that it comes as a surprise to discover that these topics were seldom

identified as 'problems' in material published even as late as the mid-1980's. Fertility³ in Japan declined rapidly during the 1950's, from a 1947 peak of 4.92 to less than half this rate by 1960, (See Table 9.3) but with the rate of formation of new nuclear families in the years of high speed growth discussed in previous chapters the rate rose again to around 2.3 in the early 1970's. Since the first oil price shock of 1973 however the rate has consistently declined. This situation first made major headlines in Japanese newspapers as the "*1.57-shokku*" in data published in June 1990, and in the following year the fertility rate declined even further to 1.54. This erosion continued remorselessly until 2005, by which time it had fallen to 1.26 (Ogino, 1993).

What has been the cause of this long term decline in fertility? Merry White (2002: 19-41) summarises the ongoing debates in Japan, and many of the issues she discusses have already been explored here. Urban Japan – and especially the Tokyo Metropolitan Region – constitutes a society in which dwelling and place of employment have become wholly remote from each other for the majority of households; the common experience is of extreme physical separation of enterprise and dwelling. To succeed in their careers, even to remain in employment, men are expected to put in long hours at work, to build their social life around their place of work, and to be prepared to live away from home as part of career development. Migration into major metropolitan areas has meant that a pattern has emerged in which wives raise children with the husband absent, and without the help of extended families. This pattern was being documented even a few years after World War II by sociologists like Ronald Dore (1953) and it is still a familiar pattern. But as female economic activity rates have risen it has become an increasingly unacceptable and unsustainable social model. Child-rearing is very expensive in Japan and poorly supported by the State; fees are charged even for High School education in state-run schools. Many women delay or simply avoid marriage⁴ to enjoy independent lives as consumers (Iwao, 1993:131) in solitary households. Women who do eventually bear children do so on average nearly five years later than they did in 1970. This is of course not simply a Japanese phenomenon, and it has become a common pattern across urban East Asia (see Abernethy and Penaloza, 2002).

The inevitable consequence of this decline in fertility as the post-war baby boom reaches retirement age is a rapidly ageing population. Table 9.3 shows the dynamics of this over the long term. Until 1950 the profile of the population by age was relatively stable and but from the late 1950's the proportion of over 65's in the population began

³ In Japanese statistics calculated as the average number of children that would be born alive to a hypothetical cohort of women if, throughout their reproductive years, the age-specific fertility rates for the specified year remained unchanged.

⁴ Mean age at first marriage for women in 1950 was 23.0. In 2008 it was 28.5.

to increase slowly, and then very rapidly in the last twenty years during which the number of over 65's has doubled. Latest official projections are that the number of over 65's will rise to around 30% of the population in the next decade, and the population, which began to decline in 2006, will shrink by about five million. By 2050 it is estimated that the Japanese population will have fallen by nearly a quarter⁵.

Current debates around problems focus on the perceived support and welfare issues as a rapidly growing retired and elderly population depend on a shrinking working population. However the spatial consequences of this are potentially equally dramatic. So far the diminishing size of households has kept the number of households increasing or stable even in areas of Japan with rapidly declining populations. But in five years time this will no longer be the case even in relatively buoyant urban areas like Chiba-*shi*. A lot of less attractive property, or dwellings at the margins of the city with poor amenities and public transport links, will simply be surplus to requirements and need to be demolished. What function will this dispersed and fragmented land then serve?

Table 9.3: Total Japanese population by age

Year	population (million)			population (% of total)			Fertility Rate
	0 to 15 years	15-64 years	65 years and over	0 to 15 years	15-64 years	65 years and over	
1920	20.4	32.6	2.9	36.5%	58.3%	5.3%	3.87
1930	23.6	37.8	3.1	36.6%	58.7%	4.8%	3.92
1940	26.4	43.3	3.5	36.1%	59.2%	4.7%	n/a
1950	29.4	49.7	4.1	35.4%	59.7%	4.9%	3.65
1960	28.1	60.0	5.3	30.0%	64.2%	5.7%	2.00
1970	24.8	71.6	7.3	23.9%	69.0%	7.1%	2.31
1980	27.5	78.8	10.6	23.5%	67.3%	9.1%	1.75
1990	22.5	85.9	14.9	18.2%	69.5%	12.0%	1.54
2000	18.5	86.2	22.0	14.6%	67.9%	17.3%	1.36
2005	17.5	84.1	25.7	13.7%	65.8%	20.1%	1.26

Source: Japan Statistical Yearbook 2007. Excludes non-respondents and in 1950/60 Okinawa-ken

9.4 Chiba as an emerging 'Edge Community'?

In preceding chapters I have considered Chiba-*shi* in relationship to the expanding capital city region and emergence of Tokyo as a global city mainly in the contexts of commuting and migration, but within the changing framework of the 1990's I want to also consider it in respect of contemporary discourses related to 'edge' urban geographies (Garreau, 1991). How does the administrative city area relate to what Phelps and Parsons for example, reflecting on the contrasts between North American and European experience, refer to as "edge or peripheral urban areas" (2003:1726).

⁵ Ministry of Health, Labour and Welfare estimates as at December 2006.

Chiba-*shi* as a whole is eligible for consideration in respect of only three of the five original criteria suggested by Joel Garreau in 'Edge Cities' (1991) as summarised in Johnson et al (2000:203). The administrative area would 'qualify' in terms of size and identity, but the city is a long established entity and has a clear dormitory function with around three times as many 'bedrooms' as jobs. Phelps and Parsons suggest a number of alternative perspectives under which the significance of edge urban areas might be assessed. What is their role for example in facilitating the contemporary rescaling of socioeconomic processes? Are they primarily functionally dynamic or administratively created? What part do they play in the wider emergence of city regions?



Fig. 9.2 During the 1990's a new sense of local identity emerged, typified by the relocation of the Japanese Premier League football team JEF United from Ichihara to a new stadium on former steelworks land. The baseball team Lotte Marines also relocated to Makuhari

The contemporary Japanese context contrasts rather sharply with both North America and Europe. Although the relationship between the State and corporate Japan was transformed during the 1980's both bureaucrats and politicians continued to play a very direct role in both the framework and the implementation of strategic planning. The Nakasone government's neoliberal agenda discussed in the last chapter did not encompass any belief in 'small government' nor in any reduction in the state's direct involvement in urban development. In fact there is arguably a strong inherent tension between many of the "destructive and creative moments of neoliberal localization"

proposed by Brenner and Theodore (2000a) and the Japanese developmental State . McCormack (2001:58) for example criticises the 1987 Fourth Zensō as being 'characterised by ambitious, impractical, desktop bureaucratic projects for reorganising the country'. He blames it for most of the rampant speculation in land on the urban margin between 1987 and 1991. In the capital region the rescaling of economic and social processes associated with the emergence of Tokyo as an transnational finance centre was also accompanied by and achieved through the massive reconstruction of parts of the central 23-*ku* area (Cybriwsky, 1998; Sassen, 2001). Although the relationship between the state, local government and corporate interests involved in the expansion and promotion of the wider metropolitan region has been fostered through a Byzantine array of public corporations and cross-functional fora (Samuels, 1983; Tsuji, 1984) effective local agendas for development have tended to remain in the hands of *ken*, the one unit of local government with relatively stable boundaries. However this is not the case in respect of Chiba-*shi* which was granted 'designated city' status in 1992 which devolved powers for most ongoing strategic projects to City Office. This process involved a major revision of internal administrative boundaries to create *ku*.

One specific part of Chiba-*shi* – the Makuhari New City – might be considered a much more promising candidate for 'edge city' status even by North American standards. This 5.2 km² project has been built on foreshore landfill within the last twenty five years, has a current working population of around 55,000 (planned to eventually reach 150,000) and yet has a night time residential population of only around 26,000. Since 1988 management of the project has been the responsibility of an independent QUANGO – the Makuhari New City Urban Development Council. A strategic regional planning policy known as the Chiba Industrial Triangle Concept devised in 1983 was intended to focus economic expansion in an area bounded by a Makuhari New City, Narita International Airport City (another clear candidate for 'edge urban area' status in southern Kanto), and Kazusa Akademia Park. These were all comprehensively planned projects promoted by the state and *ken*, and each was intended to involve relocation of public bodies from central Tokyo.

The Makuhari project has evolved in three phases. The first foreshore infill sites around the recently completed Higashi Kanto Miyanogo interchange were used in the mid-1980's to relocate educational and related institutions no longer permitted to expand in central Tokyo - the *Hōsō Daigaku* (Open University of Japan), Japan Academy for Municipal Personnel, a new campus of Keio University, JETRO (Japan External Trade Organization), SIAP (Statistical Institute for Asia and the Pacific) and IDE *Ajia Kezai Kenkyu-sho* (Institute for the Developing Economies). The second phase of this

development followed the opening of the JR Keio Line into central Tokyo in 1986 which provided a high capacity commuting resource, and it involved construction of *Makuhari Messe* (originally and optimistically positioned as the “Nippon Convention Centre”) and



Fig. 9.3: Makuhari New Town combines clusters of advanced technology research and development with a convention and exhibition centre, several educational institutions, leisure facilities and areas of residential development. A Japanese ‘edge’ community?

the consolidation of several large corporate developments in Nakase by both Japanese players – NTT, Toshiba, Fuji, Sumitomo and *Shāpu Kabushika-gaisha* (Sharp Corporation) - and some global IT players including IBM. A zone for international trade development was established - the Makuhari ‘technogarden’ and the World Business Garden., a new major league baseball stadium (Lotte Marines) completed and sites provided for very large international retailers - Costco and a 30,000m² Carrefour outlet.

In a final phase since 1998 a planned residential area of Makuhari New Town in Utase 1-3 chome has been the last area of the project to be developed, now approaching completion with a population of 26,000.

By any standard Makuhari New Town is a powerful new urban focus created on a new site on the margins of Tokyo between two existing substantial settlements – Chiba-*shi* and Narashino-*shi*. It has limited separate administrative identity, owes its existence to public planning policy, state promotion and investment and public-private partnership

projects, and relies on high capacity public transport connections more than on the regional road network for integration into the wider TMR. These are all rather characteristic of the Japanese 'Developmental State' involvement. On the other hand Makuhari New Town fulfils all five of the conditions suggested in his 1991 work by Joel Garreau, and is clearly with its focus on internet and communications development both 'functionally dynamic' and concerned with the 'rescaling of contemporary socioeconomic processes'. The Makuhari New Town area of Chiba-*shi* would seem to qualify in its own right as a Japanese 'edge community'.

9.5 Evolving urban space in Chiba-shi 1990-2005

Table 9.4 summarises the expansion of Densely Inhabited District nationally and regionally, and in terms of both area and population, for each quinquennial period between 1990 and 2005. Comparison with the equivalent data for 1975-90 [Table 8.7] underlines the degree to which the rate of extension of Japanese urban space as measured by DID growth has declined for Japan as a whole, for the Kanto region and within Chiba-*shi*. In Chiba-*shi* there were 12 extensions of the margin of the designated DID area over 15 years but only two of these extended the urban envelope by more than 1km². It should however be remembered that this 7km² expansion in Chiba is net. As pointed out in Chapter Three, a feature of DID definition is that, with declining population due to smaller household sizes, areas can and do fall out of DID status even if the number of buildings has remained stable or even increased slightly. This condition did apply to enumeration blocks in some *chome* in Wakaba-ku between 1990 and 2000.

Fig 9.4: Expansion of DID areas 1990-2005						
<i>Period</i>	<i>increase km²</i>	<i>% annual change</i>		<i>increase km²</i>	<i>% annual change</i>	
		<i>area</i>	<i>pop</i>		<i>area</i>	<i>pop</i>
	TOTAL JAPAN			CHIBA-ken		
1990-1995	528	0.9%	0.8%	28	1.0%	1.2%
1995-2000	197	0.3%	0.4%	18	0.6%	0.6%
2000-2005	103	0.2%	0.4%	6	0.2%	0.7%
	All KANTO			CHIBA-shi		
1990-1995	102	0.6%	0.7%	2	0.3%	0.7%
1995-2000	45	0.3%	0.6%	4	0.7%	1.0%
2000-2005	23	0.1%	0.7%	1	0.2%	1.0%

Source: 2005 Population Census of Japan DID Report Table

For Japan as a whole, but especially Kanto and Chiba, increasing densities due to the spread of new condominium housing has resulted in the DID population growing at a higher rate than the increase in the related urban area, and this trend has accelerated. In 1990-1995 new investment was still being made in large new detached housing projects on the urban margins, but progressively new dwelling construction has focused on condominium projects on recycled sites. However this generalisation should be

treated with caution; within Chiba-*shi* in the Toke area of Midori-*ku* for example, between 2000-2005 there was a large new development of detached properties which is not yet built out to sufficiently high density to qualify as DID.

Table 9.5 Summary of changes in use of space in Chiba-shi DID 1990-2005						
	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1990	2005	change % area	1990	2005	change % area
<u>1990 Densely Inhabited District</u>						
1. Circulation and movement	17.0%	17.8%	0.8%	18.61	19.46	0.85
2. Residential and commercial	33.1%	37.1%	4.1%	36.20	40.64	4.44
3. Manufacture, distribution, utilities	16.8%	15.7%	-1.1%	18.40	17.16	-1.23
4. Social provision	6.3%	6.6%	0.2%	6.93	7.19	0.26
5. Public spaces	8.5%	9.1%	0.6%	9.28	9.97	0.69
6. Urban space without structures	10.8%	9.1%	-1.8%	11.87	9.92	-1.95
7. Agricultural use	6.7%	3.9%	-2.8%	7.31	4.30	-3.01
8. Landfill and water	0.8%	0.8%	0.0%	0.90	0.85	-0.05
			<i>(Sample: N=4613 = 100%)</i>			<i>(sampled area = 109.5 km²)</i>
<u>DID extension 1990 - 2005</u>						
1. Circulation and movement	16.5%	22.6%	6.1%	1.20	1.65	0.45
2. Residential and commercial	13.2%	38.1%	24.8%	0.97	2.78	1.81
3. Manufacture, distribution, utilities	4.2%	4.5%	0.3%	0.31	0.33	0.02
4. Social provision	6.1%	10.3%	4.2%	0.45	0.75	0.31
5. Public spaces	5.2%	7.4%	2.3%	0.38	0.54	0.16
6. Urban space without structures	49.4%	13.5%	-35.8%	3.60	0.99	-2.61
7. Agricultural use	5.2%	3.2%	-1.9%	0.38	0.24	-0.14
8. Landfill and water	0.3%	0.3%	0.0%	0.02	0.02	0.00
			<i>(Sample: N=310 = 100%)</i>			<i>(sampled area = 7.3 km²)</i>
<u>2005 Densely Inhabited District</u>						
1. Circulation and movement	17.0%	18.1%	1.1%	19.81	21.12	1.30
2. Residential and commercial	31.8%	37.2%	5.4%	37.15	43.42	6.26
3. Manufacture, distribution, utilities	16.0%	15.0%	-1.0%	18.70	17.49	-1.21
4. Social provision	6.3%	6.8%	0.5%	7.38	7.95	0.57
5. Public spaces	8.3%	9.0%	0.7%	9.66	10.51	0.85
6. Urban space without structures	13.3%	9.3%	-3.9%	15.49	10.91	-4.58
7. Agricultural use	6.6%	3.9%	-2.7%	7.69	4.53	-3.16
8. Landfill and water	0.8%	0.8%	0.0%	0.93	0.88	-0.05
			<i>(Sample: N=4923 = 100%)</i>			<i>(sampled area = 116.8 km²)</i>
<i>Source: Sample Point Survey Database</i>						

Table 9.5 [cf. Table 8.8] summarises and compares changes in the use of urban space that took place within the expanding area designated as Chiba-*shi* (DID) as existing in 1990 and 2005. Some of the limited spatial extension consisted of new *danchi* of detached housing on the urban margins, but there were also larger projects associated with the Makuhari and Kamatori New Town developments. The location of new construction connected some of the seven existing DID parcels, reducing them to five. The total net expansion during this period was only 7.3km², and the small sample this involves – 310 sample points – means that this separate DID extension data must be

used with more caution⁶. Also field sampling was based on the 2000 DID boundaries and so did not include a further 0.8 km² of new development built during the final five years of the period. However with these reservations the character of the DID extension component in the table is fortunately straightforward. The only significant change within the new area is the conversion of former agricultural land and forests, largely comprising sites already prepared as vacant lots in a 'New Town' environment, into residential and commercial use. There are also some significant conversion of farm land into additional (mainly secondary) highway networks and school sites.

The changes in process within the existing pre 1990 DID area between 1990 and 2005 follow a similar though more complex pattern. Part of the 4.4 km² of new residential and commercial development was converted from land already serviced and prepared as sites in the 1975-1990 DID extension during the boom years after 1985, but the largest 'take' overall is still from land in agricultural use in these same areas and especially in developments along the Sotobō Line in Midori-ku. There is a very significant net reduction of 1.23 km² in land used for manufacturing, distribution and utilities within the 1990 DID boundaries and much of this land, primarily in Chūo and Inage-ku went for either retail mall use or as sites for new centrally located condominium developments. Both of these are discussed further below.

9.6 Evolving Distribution and Retailing Space

The broad trends described in Section 8.5 continued to be characteristic of transformation in the distribution change throughout the 1990's and so the national picture for Japan is not considered further here. The extent of change taking place within Chiba-shi is presented in Table 9.6. Because of the relatively small number of sample points involved (391) I have presented data only in terms of a count of sample points. To provide a clearer picture of the distribution of change the columns represent the four cumulative concentric DID zones and the rows detail within the three categories of wholesale/logistics, on-site services and retailing.

There was relatively little change in the amount of space allocated to wholesaling and distribution, which by 1990 was focused mainly within the 1975 DID area around the docks or in the adjacent area with a few modern distribution and logistics depots adjacent to the motorway network. Within the dock area during the 1990's a number of outdoor storage areas for timber and raw material imports⁷ were converted to other

⁶ Sample confidence interval at 95% confidence level is 5.6%

⁷ Quayside ore and coal imports used within the JFE integrated steel site are counted as production storage and accounted for as 'industrial use' in this study

uses, in some cases condominium sites, and so there is a net decline in the space employed for primary outdoor storage. Some new depots had been constructed for retailer owned distribution storage within the 1975-1990 DID area.

Premises Type <i>(count of sample points)</i>	Total 1960 DID		Total 1975 DID		Total 1990 DID		Total 2000 DID		
	2005	+/- 1990	2005	+/- 1990	2005	+/- 1990	2005	+/- 1990	% change
TOTAL	49	-4	246	18	376	48	391	56	17%
logistics companies	1	0	6	0	7	1	7	1	17%
primary cold storage	0	0	1	0	2	0	2	0	0%
primary indoor storage	0	0	34	4	35	4	35	4	13%
primary outdoor storage	0	0	18	-11	31	-15	31	-15	-33%
retailer distribution centres	2	0	3	0	5	2	5	2	67%
wholesaler chain	1	-1	21	-1	47	-1	49	-1	-2%
Total wholesale/logistics	4	-1	83	-8	127	-9	129	-9	-7%
custom unit	2	1	11	4	13	5	14	6	75%
detached unit	4	1	24	8	37	12	38	12	46%
extended dwelling	11	1	30	3	42	6	42	6	17%
outdoor space	0	0	2	1	3	1	3	1	50%
purpose specific structure	1	1	3	2	14	11	14	11	367%
Total On-Site Services	18	4	70	18	109	35	111	36	48%
custom unit	5	0	22	7	29	9	31	10	48%
department store	4	2	5	3	7	3	8	4	100%
extended dwelling	8	1	13	1	16	2	18	3	20%
kiosk	0	0	4	2	5	3	6	4	200%
mall	5	5	16	15	17	16	18	17	1700%
retail shed	4	2	30	11	60	28	63	31	97%
shopping cluster	1	0	3	1	6	4	7	4	133%
Total Retailing	27	10	93	40	140	65	151	73	94%
(undifferentiated former retail)	0	-17	0	-32	0	-43	0	-44	

Source: Sample Point Survey



Fig. 9.4: Part of the 'Mihama Newport Resort' mall, constructed on a large area originally designated for rail freight marshalling yards and which was never fully completed.

There was substantial overall growth throughout the whole urbanised area, but especially those parts of the shi built urbanised after 1975, of 'on site' services. This category included a very wide range of functions from hairdressing and veterinary services to fitness centres, funeral ceremony halls and those garages where the main part of the site is devoted to repairs and servicing. The largest growth in terms of actual numbers of structures was in respect of 'custom' shop-style leased and detached units but the most significant in terms of site area involved were those requiring substantial outdoor spaces such as garage forecourts and driving schools.

The two biggest changes within this area however were in retailing. Retail sheds continued to emerge as the largest growth area in terms of new retail space and this expansion was mainly in the 1975-1990 DID extension, with sites as in the UK typically located along the secondary highway network and near intersections. Three large mall developments were completed, all on former industrial sites. One of these sites – was constructed on the landward side of the JFE integrated site on the land occupied by Nishiyama Yataro's 1953 blast furnaces and the other, 'Mihama Newport Resort', on the land allocated in the 1970's for building a marshalling yard to service the steelworks complex and general docks area only a few years before the JNR rail freight business was abandoned.

9.7 Changes in vehicle ownership

Table 9.7 [*cf. Table 8.6*] summarises changing patterns in ownership of motor vehicles between 1990 and 2005. Three dynamics appear to be at work here. After the recession of 1992 the number of freight vehicles and buses began to decline in Chiba-ken, at first in terms of rate per '000 households but from 1999 in absolute terms. This is a combination of at least a number of factors such as rationalization or suspension of rural bus routes and increasing freight vehicle size, but probably most important was the decline on the number of independent wholesaler operations and a rationalization of distribution capacity based on the introduction of information technology. Two and three wheel vehicle ownership continues an upward trend begun in 1982 which from observing usage appears to be an outcome of growing usage amongst an increasing grey society, and also increasing personal mobility amongst the young.

But perhaps the most significant element in the table is that for the first time since car ownership took off in the early 1960's levels of ownership per household show a relative decline after the 1998 recession. By 2006 this decline had become absolute both in

Chiba-ken and nationally as retiring elderly drivers exceeded new drivers and car ownership declined.

Year	Total number '000			Total per 100 households			parking area required in Chiba-shi [1]
	Freight Vehicles and Buses	two- and three wheel vehicles^[2]	Private cars	Freight Vehicles and Buses	two- and three wheel vehicles^[2]	Private cars	
1990	348.22	527.86	1395.64	19.2	29.1	76.9	216.6
1991	361.51	555.01	1496.61	19.4	29.7	80.1	230.8
1992	371.72	577.71	1592.93	19.4	30.1	82.9	245.0
1993	375.20	595.12	1671.72	19.1	30.3	85.0	257.7
1994	374.50	613.65	1746.07	18.7	30.6	87.2	268.9
1995	373.10	631.99	1816.87	18.5	31.4	90.2	282.5
1996	370.37	651.76	1887.31	18.1	31.8	92.2	293.5
1997	367.12	666.70	1956.47	17.6	32.0	94.0	305.0
1998	363.18	677.69	1999.32	17.1	32.0	94.3	313.0
1999	355.53	695.13	2026.23	16.5	32.2	94.0	318.4
2000	349.02	724.32	2042.97	16.1	33.3	94.0	324.0
2001	343.69	757.82	2060.87	15.5	34.2	93.0	327.3
2002	337.38	790.12	2073.64	15.1	35.3	92.6	332.8
2003	325.75	823.69	2087.63	14.4	36.4	92.4	338.1
2004	309.13	861.11	2091.07	13.5	37.7	91.6	340.1
2005	305.27	899.82	2101.98	13.2	39.0	91.2	342.8

[1] Overnight parking area required in Chiba-shi for private cars assuming 2.2m*4.5m per vehicle
[2] After 1963 agricultural three wheel vehicles excluded from taxation
Source: Annual volumes of Chiba-ken tokeisho

9.8 Evolution of local employment

Table 9.8 summarises changes in employment by sector between 1990 and 2005. Overall there was a 0.8% p.a. increase in the number of economically active adults which was partially achieved by a higher overall percentage of women in paid employment.

It isn't possible to present a completely consistent comparison between 1990 and 2005 for two reasons. Firstly data on services in 2005 was collected using a much more comprehensive set of low level categories and analysed into three primary categories rather than one (here these are simply combined). Similarly employment in aspects of computing services (internet programming and development for example) are analysed as part of 'transport and communications' along with telephony. This is a significant source of employment in Chiba-shi because of the specialist product development being undertaken in research and development centres in Makuhari New Town. Despite the new treatment of census data the use of the internet does of course represent a major real change in employment patterns, and also one that attracts female employment.

After 1990 the decline in both construction and local manufacturing employment has been striking. Manufacturing has shrunk most rapidly of any significant employment group, at a rate of 2.2% p.a. Retailing has also declined as a source of employment as



Fig. 9.5 Most of the growth in employment in this period came in service roles within larger establishments. One of four large extensions in the 1990's at Chiba University Hospital.

Employment sector	'000 persons			annual % change	% share of mix		% females	
	1990	2005	change		1990	2005	1990	2005
TOTAL economically active	361.33	403.04	41.71	0.8%	100.0 %	100.0 %	37.8%	39.8%
Agriculture	5.81	3.64	-2.17	-2.5%	1.6%	0.9%	47.3%	43.9%
Fisheries	0.04	0.00	-0.04	-6.3%	0.0%	0.0%	22.5%	11.1%
Construction	41.41	35.96	-5.46	-0.9%	11.5%	8.9%	15.5%	14.5%
Manufacturing	51.16	34.31	-16.85	-2.2%	14.2%	8.5%	29.0%	24.7%
Retail and Wholesale	92.02	79.56	-12.46	-0.9%	25.5%	19.7%	47.8%	48.0%
Finance Insurance Real Estate	22.68	23.00	0.32	0.1%	6.3%	5.7%	47.5%	48.1%
Transport Communication	27.54	40.92	13.38	3.2%	7.6%	10.2%	13.4%	19.8%
Utilities	2.90	2.53	-0.37	-0.9%	0.8%	0.6%	16.2%	13.9%
Services	94.68	152.29	57.61	4.1%	26.2%	37.8%	49.1%	52.9%
Government not elsewhere	17.43	16.76	-0.67	-0.3%	4.8%	4.2%	25.4%	23.4%
Others/not described	5.66	13.98	0.58	33.6%	1.6%	3.5%	47.5%	39.7%

Source: Population Census of Japan. Chiba-ken volumes 1990 and 2005

smaller establishments have left the arena and been replaced by larger premises – typically retail sheds or units in mall developments – designed to use space at high levels of productivity and be operated with limited staff. Services represent by far the largest area of employment expansion, growing at around 4% p.a. and now

representing 38% of all local employment. The most rapid growth in service employment is found in large establishments such as hospitals.

The changing relationship between employment and establishments by sector between 1991 and 2006 is presented in Table 9.9. The relationship here in terms of under/over reporting between the establishment and population census due primarily to part time and commission work is similar to the same relationships in the previous two chapters.

Business Sector	1991		2006		Establishments ('000)		average size (persons)	
	Persons ('000)	% counted vs. population census	Persons ('000)	% counted vs. population census	1991	2006	1991	2006
Construction	36.58	88%	26.75	74%	3.08	2.45	11.86	10.92
Manufacturing	41.57	81%	28.18	82%	1.82	1.11	22.86	25.39
Wholesale Retail	112.27	122%	86.73	109%	14.48	7.90	7.75	10.98
Finance Ins. Real Estate	26.62	117%	21.29	93%	2.92	2.32	9.12	9.16
Transport Comm ^[1]	25.70	93%	30.92	76%	0.81	0.92	31.62	33.50
Utilities ^[1]	1.50	52%	1.92	76%	0.02	0.02	88.24	101.05
Services ^[1]	83.46	88%	140.21	92%	8.54	12.59	9.78	11.14

*[1] Population Census data in both years includes public servants excluded from the Establishment Census data
Source: 1975 and 1991 Establishment Census Chiba volumes. 1975 and 1991 Population Census of Japan*

Broadly speaking there is a distinction here between construction, where sub-contracting to small enterprises offering specific technical skills for use on other sites is the norm, and wholesale/retail, communications and services where there is a general increase of around 20% in average establishment size. Larger enterprises, and those establishments integrated into, or with strong links with, wider organisational hierarchies are those more likely to survive in recessions. This hypothesis is born out by the following two tables. Table 9.10 analyses establishments and persons engaged by size of establishment and employment sector. Apart from construction, where there has been an increase in the number of small employers, the most significant growth in terms of establishments – and so by implication the expansion in a requirement for physical premises and sites – has generally been in terms of medium sized enterprises (5-19 persons). This is exactly what was identified as being characteristic of the new Post-Toyotaist company environment of the 1990's on pp. 52. But this increase in establishments is not reflected in any expansion of the average size of these medium sized businesses – actually they marginally shed labour during the period. The significant expansions of workforce are in the area of large retail outlets (department stores and large mall outlets), large real estate businesses concerned with promoting condominium projects and especially in large service providers – healthcare, welfare

and educational establishments.

	1 - 4 persons engaged			5 - 19 persons engaged			20+ persons engaged		
	<i>Estab lish ments</i>	<i>% of total</i>	<i>change of share</i>	<i>Estab lish ments</i>	<i>% of total</i>	<i>change of share</i>	<i>Estab lish ments</i>	<i>% of total</i>	<i>change of share</i>
<i>Establishments</i>									
Construction	995	40.6%	4.5%	1165	47.5%	-2.9%	290	11.8%	-1.7%
Manufacturing	429	38.6%	0.0%	428	38.5%	-3.0%	253	22.8%	2.9%
Utilities	4	21.1%	3.4%	5	26.3%	2.8%	10	52.6%	-6.2%
Transport/Communication	245	26.5%	-5.8%	335	36.3%	4.8%	343	37.2%	1.0%
Retail/Wholesale	3780	47.9%	-10.0%	3290	41.6%	7.0%	824	10.4%	2.9%
Finance/Insurance	160	30.5%	-4.3%	220	41.8%	11.0%	145	27.6%	-6.8%
Real Estate	1465	81.7%	1.9%	289	16.1%	-2.5%	39	2.2%	0.5%
Services [1]	7046	56.0%	-2.0%	4044	32.1%	-0.5%	1494	11.9%	2.5%
<i>Persons Engaged</i>									
	<i>persons</i>	<i>% of total</i>	<i>change of share</i>	<i>person s</i>	<i>% of total</i>	<i>change of share</i>	<i>person s</i>	<i>% of total</i>	<i>change of share</i>
Construction	2580	9.6%	1.7%	10534	39.4%	0.2%	13634	51.0%	-1.9%
Manufacturing	1082	3.8%	-0.6%	4008	14.2%	-3.0%	23089	81.9%	3.5%
Utilities	14	0.7%	0.4%	51	2.7%	-1.2%	1854	96.6%	0.8%
Transport/Communication	494	1.6%	-0.2%	3401	11.0%	0.3%	27025	87.4%	-0.1%
Retail/Wholesale	9440	10.9%	-7.7%	30837	35.6%	-3.2%	46457	53.6%	10.9%
Finance/Insurance	391	2.7%	-0.2%	2349	16.4%	3.8%	11577	80.9%	-3.6%
Real Estate	2693	38.6%	1.2%	2223	31.9%	-5.8%	2053	29.5%	4.6%
Services [1]	15463	11.0%	-1.5%	37129	26.5%	-3.5%	87620	62.5%	5.0%

Notes: [1] includes private but excludes public education

Source: re-presented from Japan Establishment Census 2006. See text for changes in definitions

	TOTAL	proprietors	family workers [3]	employees [4]	other private sector [5]	public servants
<i>persons engaged</i>						
Construction	26748	330	95	22874	3449	0
Manufacturing	28179	199	84	26328	1568	0
Utilities	4097	0	0	2997	11	1089
Transport/Communication	24676	115	17	23543	925	76
Retail/Wholesale [1]	86778	1881	647	79053	5175	22
Finance/Insurance	14317	45	3	13808	461	0
Real Estate	7083	866	154	4562	1444	57
Services [2]	166537	4011	671	136629	8847	16379
<i>% of persons engaged by category 2006</i>						
<i>[1991]</i>						
Construction	100.00%	1.2%[1.6]	0.4%[0.5]	85.5%[86.9]	12.9%[11.0]	0.0%[0.0]
Manufacturing	100.00%	0.7%[1.2]	0.3%[0.5]	93.4%[93.2]	5.6%[5.1]	0.0%[0.0]
Utilities	100.00%	0.0%[0.0]	0.0%[0.0]	73.2%[74.3]	0.3%[0.4]	26.6%[25.3]
Transport/Communication	100.00%	0.5%[0.6]	0.1%[0.1]	95.4%[91.1]	3.7%[2.5]	0.3%[5.7]
Retail/Wholesale [1]	100.00%	2.2%[5.9]	0.7%[2.7]	91.1%[83.5]	6.0%[7.9]	0.0%[0.0]
Finance/Insurance	100.00%	0.3%[0.5]	0.0%[0.1]	96.4%[96.6]	3.2%[2.7]	0.0%[0.0]
Real Estate	100.00%	12.2%[13.7]	2.2%[2.7]	64.4%[62.8]	20.4%[17.6]	0.8%[3.2]
Services [2]	100.00%	2.4%[1.1]	0.4%[0.2]	82.0%[81.9]	5.3%[7.3]	9.8%[10.1]

Notes: [1] includes eating and drinking out in the both the 1991 and 2006 Establishment Census [2] includes both public and private education [3] unwaged [4] includes both paid directors and waged family members [5] casual, agency and commission employment

Source: adapted from 2006 Establishment Census of Japan Vol. III, Part 2-12, Table 7

This pattern is confirmed by the relationship between persons engaged and establishments presented in Table 9.11. Apart from services the percentage of proprietors in each category has fallen, in retail/wholesale from 5.9% to 2.2%. The share of paid employees on the other hand has risen across every category.

	<i>share of all sampled points</i>			<i>would represent in terms of urban space (km²)</i>		
	1990	2005	change	1990	2005	change
<i>1990 Densely Inhabited District</i>						
Retailing	2.6%	3.0%	0.5%	2.80	3.32	0.52
Services (on and off site)	2.6%	3.4%	0.8%	2.88	3.75	0.87
Commercial and banking	0.9%	1.1%	0.2%	0.80	1.19	0.39
Manufacturing	11.0%	10.0%	-1.1%	12.08	10.92	-1.16
<i>of which: production sheds</i>	<i>0.9%</i>	<i>0.3%</i>	<i>-0.6%</i>	<i>1.02</i>	<i>0.36</i>	<i>-0.66</i>
<i>purpose designed sites</i>	<i>1.9%</i>	<i>2.0%</i>	<i>0.1%</i>	<i>2.11</i>	<i>2.14</i>	<i>0.03</i>
<i>JFE integrated steelworks</i>	<i>8.0%</i>	<i>7.7%</i>	<i>-0.4%</i>	<i>8.81</i>	<i>8.38</i>	<i>-0.43</i>
Distribution Chain	2.9%	2.8%	-0.2%	3.23	3.01	-0.22
<i>of which: primary internal storage</i>	<i>0.7%</i>	<i>0.8%</i>	<i>0.1%</i>	<i>0.74</i>	<i>0.83</i>	<i>0.09</i>
<i>primary open air storage</i>	<i>1.0%</i>	<i>0.7%</i>	<i>-0.3%</i>	<i>1.09</i>	<i>0.74</i>	<i>-0.35</i>
<i>wholesaler depots</i>	<i>1.0%</i>	<i>1.0%</i>	<i>0.0%</i>	<i>1.14</i>	<i>1.12</i>	<i>-0.02</i>
Utility sites	2.8%	3.0%	0.2%	3.09	3.23	0.14
TOTAL	22.9%	23.2%	0.4%	24.88	25.42	0.54
<i>2005 Densely Inhabited District</i>						
Retailing	2.5%	3.1%	0.6%	2.89	3.58	0.69
Services (on and off site)	2.5%	3.3%	0.8%	2.92	3.82	0.90
Commercial and banking	0.7%	1.1%	0.4%	0.80	1.28	0.48
Manufacturing	10.5%	9.5%	-1.0%	12.27	11.06	-1.21
<i>of which: production sheds</i>	<i>1.0%</i>	<i>0.4%</i>	<i>-0.6%</i>	<i>1.12</i>	<i>0.43</i>	<i>-0.69</i>
<i>purpose designed sites</i>	<i>1.9%</i>	<i>1.9%</i>	<i>0.0%</i>	<i>2.18</i>	<i>2.21</i>	<i>0.03</i>
<i>JFE integrated steelworks</i>	<i>7.5%</i>	<i>7.2%</i>	<i>-0.3%</i>	<i>8.80</i>	<i>8.38</i>	<i>-0.42</i>
Distribution Chain	2.8%	2.6%	-0.2%	3.27	3.06	-0.21
<i>of which: primary internal storage</i>	<i>0.6%</i>	<i>0.7%</i>	<i>0.1%</i>	<i>0.74</i>	<i>0.83</i>	<i>0.09</i>
<i>primary open air storage</i>	<i>0.9%</i>	<i>0.6%</i>	<i>-0.3%</i>	<i>1.09</i>	<i>0.74</i>	<i>-0.35</i>
<i>wholesaler depots</i>	<i>1.0%</i>	<i>1.0%</i>	<i>0.0%</i>	<i>1.19</i>	<i>1.16</i>	<i>-0.03</i>
Utility sites	2.7%	2.9%	0.2%	3.16	3.37	0.21
TOTAL	21.7%	22.4%	0.7%	25.31	26.17	0.86

Source: Sample Point Survey Database

What has been the overall impact of these changes on the use of urban space? The available data is presented in Table 9.12. Taking the whole of the extended 2005 DID the actual net change in space deployed for establishment sites and premises is rather small – around 0.7% of the total area or 0.86km². However this is because the net expansion contains two quite different dynamics. There is a development of an additional 2.07km² for retailing, services and commercial developments, but a large proportion of this land, about 1.21km², has however been recycled from former industrial use (and about a third of this area is released from the JFE steelworks site).

9.9 The influence of commuting on employment

Table 9.13 summarises changes taking place between 1990 and 2005 in the net daily flows of commuters and high school (15+) and university students in and out of the *shi*. In the previous chapter it was noted that the 1990 data represents the 'high point' of commuter flows from Chiba into Tokyo. Between 1990 and 2005 the overall numbers of those living in Chiba-*shi* and/or working or studying in the capital for example declined by about 12%. This was partly an outcome of increasing numbers of retired people in the population, but when the values in the following two tables are taken into account and compared with the previous chapter there is clearly also a reduction in the numbers of students commuting. In other words although changing patterns of employment may be partly responsible for a decline in commuting, the primary causes are the demographic changes discussed above in Section 9.3.

The net outflow from the *shi* in 2005 was around 25,000 daily and this was half what it had been in 1990. Most of the net reduction consisted of a decline of around 15,000 in commuting into Tokyo's 23-*ku*. There was a slight decline in the numbers both living and working within the Chiba-*shi* urban area but an increase of around 6,000 in the number of Chiba-*shi* residents commuting to work elsewhere in Chiba-*ken*. A very important value here is the net increase of around 11,000 in the number of commuters coming into the administrative area, a figure certainly partly a result of the development of communications and service employment in Makuhari New Town.

Table 9.13: Changing commuting trends 1990 - 2005						
<i>Data is employed persons or students over 15 years old</i>	LIVE in CHIBA-SHI		WORK or STUDY in Chiba-shi		NET movement	
	1990	2005	1990	2005	1990	2005
number of persons ('000)						
Live or work/study within Chiba-shi	489.99	482.37	438.74	457.31	(51.26)	(25.07)
<i>Both live and work/study in Chiba shi</i>	<i>285.14</i>	<i>283.17</i>	<i>285.14</i>	<i>283.17</i>		
Travelling to or from another area	204.85	199.21	153.60	174.14	(51.26)	(25.07)
<i>Within Chiba-ken</i>	<i>79.69</i>	<i>85.88</i>	<i>132.77</i>	<i>150.82</i>	<i>53.08</i>	<i>64.95</i>
<i>Outside Chiba-ken</i>	<i>125.17</i>	<i>113.33</i>	<i>20.83</i>	<i>23.32</i>	<i>(104.34)</i>	<i>(90.02)</i>
<i>Tokyo-to</i>	<i>119.26</i>	<i>105.64</i>	<i>13.13</i>	<i>13.41</i>	<i>(106.13)</i>	<i>(92.23)</i>
<i>(of which with Tokyo 23ku)</i>	<i>116.85</i>	<i>103.47</i>	<i>11.84</i>	<i>12.16</i>	<i>(105.01)</i>	<i>(91.31)</i>
% of total count						
<i>Both live and work/study in Chiba shi</i>	58.2%	57.8%				
Travelling to or from another area	41.8%	41.3%	35.0%	38.1%	(10.5%)	(5.2%)
<i>Within Chiba-ken</i>	<i>16.3%</i>	<i>17.8%</i>	<i>30.3%</i>	<i>33.0%</i>	<i>10.8%</i>	<i>13.5%</i>
<i>Outside Chiba-ken</i>	<i>25.5%</i>	<i>23.5%</i>	<i>4.7%</i>	<i>5.1%</i>	<i>(21.3%)</i>	<i>(18.7%)</i>
<i>Tokyo-to</i>	<i>24.3%</i>	<i>21.9%</i>	<i>3.0%</i>	<i>2.9%</i>		
<i>(of which with Tokyo 23ku)</i>	<i>23.8%</i>	<i>21.5%</i>				

Source: Population Census of Japan 1990 6-1 Tables 2 and 3, 2005 6-1 Tables 2 and 3

Table 9.14 presents these changes in terms of employment sector and location. Between 1975 and 1990 [*cf. Table 8.15*] commuting to work increased in almost every

Table:9.14 Population in employment resident or working in Chiba-shi by sector and location of work 1990 and 2005

sector	LIVE in CHIBA-SHI persons (‘000)	and working elsewhere		WORK in CHIBA-SHI persons (‘000)	and live elsewhere persons (‘000)	
		persons (‘000)	% of total			outside Chiba-ken [1]
<i>In 1990</i>						
TOTAL	409.8	170.70	41.7%	107.98	361.33	122.23
Agriculture and Fisheries	5.996	0.22	3.6%	0.09	5.85	0.26
Construction	40.659	14.52	35.7%	8.64	41.41	15.28
Manufacturing	69.748	35.76	51.3%	22.70	51.16	17.17
Wholesale and Retail Trade	102.479	36.80	35.9%	24.52	92.02	26.34
Finance Insurance Real Estate	28.168	14.91	52.9%	10.89	22.68	9.42
Transport communication	30.139	15.66	51.9%	8.72	27.54	13.06
Services	105.131	41.46	39.4%	25.17	94.68	31.04
Government not classified elsewhere	18.227	7.88	43.2%	5.36	17.43	7.08
All other	9.253	3.49	37.7%	1.89	8.56	2.58
<i>In 2005</i>						
TOTAL	431.78	178.08	41.2%	103.15	403.04	129.92
Agriculture and Fisheries	3.69	0.26	7.1%	0.09	3.74	0.27
Construction	35.71	13.98	39.1%	7.54	35.96	11.91
Manufacturing	46.90	26.39	56.3%	14.82	34.31	11.82
Wholesale and Retail Trade	82.42	31.22	37.9%	18.70	79.56	24.63
Finance Insurance Real Estate	25.48	12.78	50.2%	9.24	23.00	9.00
Transport communication	46.98	26.97	57.4%	18.40	41.19	17.50
Services	157.25	54.79	34.8%	28.07	152.29	44.19
Government not classified elsewhere	15.34	6.91	45.0%	3.81	16.76	7.79
All other	18.02	4.77	26.5%	2.48	16.50	2.83

[1] 97% of employment of Chiba-shi residents outside Chiba-ken in 1990 was in Tokyo-to. The comparable figure in 2005 was 94%
Source: Population Census of Japan 1975 Vol.4.1 Tables 6,7, 1990 6-1-2-12 Table 5.

Table 9.15 Origin and destination of Chiba-shi commuting 2005

	Employed Population (‘000)			Over 15 and in Education (‘000)		
	LIVE in CHIBA-shi	WORK in Chiba-shi	NET move- ment	LIVE in Chiba-shi	STUDY in Chiba-shi	NET move- ment
Population working/studying	431.78	403.04	-28.74	50.60	54.27	3.68
Live and work/study in Chiba shi	253.70	253.70	0.00	29.46	29.46	0.00
Travel to or from another area	178.08	149.34	-28.74	21.13	24.81	3.68
Within Chiba-ken	74.93	129.92	54.99	10.95	20.91	9.96
<i>Ichikawa-shi</i>	5.99	5.20	-0.79	1.42	0.92	-0.49
<i>Funabashi-shi</i>	15.45	13.70	-1.75	1.38	2.06	0.68
<i>Kisarazu-shi</i>	1.12	3.26	2.14	0.36	0.48	0.13
<i>Mobara-shi</i>	1.80	5.53	3.73	0.12	0.83	0.71
<i>Narita-shi</i>	3.64	2.31	-1.33	0.15	0.45	0.31
<i>Sakura-shi</i>	3.10	7.77	4.67	0.34	1.44	1.11
<i>Togane-shi</i>	1.45	4.16	2.71	0.33	0.53	0.20
<i>Narashino-shi</i>	7.91	8.10	0.19	2.42	1.18	-1.23
<i>Ichihara-shi</i>	9.02	21.05	12.02	1.15	3.21	2.06
<i>Yachiyo-shi</i>	5.25	6.36	1.11	0.70	0.91	0.22
<i>Yotsukaido-machi</i>	4.00	11.37	7.38	0.94	1.14	0.20
<i>Yachimata-machi</i>	1.20	5.35	4.15	0.05	0.73	0.68
<i>Ōami-shirasato-machi</i>	0.59	4.24	3.65	0.07	0.64	0.56
Outside Chiba-ken	103.15	19.42	-83.73	10.18	3.90	-6.28
<i>Tokyo-to</i>	96.72	11.54	-85.18	8.92	1.87	-7.05
<i>Tokyo 23ku</i>	95.58	10.45	-85.14	7.89	1.71	-6.18
<i>Chiyoda-ku</i>	18.40	0.069	-18.33	1.57	0.02	-1.55
<i>Chuō-ku</i>	16.81	0.211	-16.60	0.10	0.03	-0.08

Source: Compiled for Population Census of Japan 2005 Volume 6-1-2-12 Tables 2 and 3

sector but between 1990 and 2005 this pattern has changed. There is a small net decline in the proportion of Chiba-shi residents in employment commuting out of the area to work. Construction, manufacturing, transport and communication and government all show small net growths in commuting employees, but finance, real estate and especially services were recording a strong net decline in commuting movements, sufficient to more than counterbalance other sectors. This is strong evidence of the degree to which Chiba-*shi* has emerged as a major provider of all kinds of service employment – and especially medical, welfare and educational services – within the eastern part of the Tokyo Metropolitan Region.

Finally Table 9.15 considers the principle net commuting movements by location and is directly comparable with the 1975 data presented in Table 7.10. In part what is interesting here is that over such a long period of time there has been little change in the relative patterns of movement already established based on the rail network by the end of the era of high speed growth. However there are also some significant differences. In particular there is now a net outflow to Narita, one of the nodes identified in the 'Chiba Industrial Triangle' in Section 9.4 above, and the net importance of employment of settlements towards Tokyo such as Ichikawa and Funabashi has declined as a more two way flow is established.

9.10 Migration

Table 9.16 summarises net natural and social increase for Chiba-*shi* by year from 1990 to 2005. Net natural increase continued to decline over the whole period in both absolute and percentage terms, although Chiba, having a relatively young age profile compared with much of Japan, did manage to maintain a marginal element of natural growth. Following the collapse of the property bubble there was a net outflow of residents to Tokyo as some took advantage of cheaper property prices and rents in the capital after 1992, but this flow was reversed in 1997. Analysis of statistics by *ku* and *cho* not included here suggest that this was in part due to the attraction of Makuhari New Town residential development for young professionals working in the area.

A significant part of the current net social increase now increasingly comes from the growing number of registered foreign nationals resident in Chiba-*shi*, a topic not covered in previous chapters because of the small numbers formerly involved. Table 9.17 summarises the changing significance of this component of the total population since 1965. Until the implementation of neoliberal policies during the 1980's resident 'foreigners' were a tiny minority in the Chiba-*shi* area and mainly consisted of a small

<i>Year to 30/9</i>	<i>('000)</i>		<i>net increase '000 persons</i>			<i>net increase % of total</i>		
	<i>House-holds</i>	<i>Persons</i>	<i>TOTAL</i>	<i>natural</i>	<i>social</i>	<i>TOTAL</i>	<i>natural</i>	<i>social</i>
1990-91	284.29	829.46	5.09	4.20	0.89	0.6%	0.5%	0.1%
1991-92	290.85	834.55	7.37	4.09	3.28	0.9%	0.5%	0.4%
1992-93	298.39	841.91	8.72	3.91	4.80	1.0%	0.5%	0.6%
1993-94	306.29	850.63	3.22	4.37	-1.15	0.4%	0.5%	-0.1%
1994-95	311.52	853.85	3.03	4.07	-1.04	0.4%	0.5%	-0.1%
1995-96	316.47	856.88	2.64	4.03	-1.39	0.3%	0.5%	-0.2%
1996-97	321.66	859.52	4.41	3.85	0.56	0.5%	0.4%	0.1%
1997-98	327.79	863.93	7.74	3.93	3.82	0.9%	0.5%	0.4%
1998-99	335.16	871.67	7.76	3.60	4.17	0.9%	0.4%	0.5%
1999-00	342.27	879.44	7.73	3.76	3.97	0.9%	0.4%	0.5%
2000-01	348.16	887.16	8.45	3.69	4.75	1.0%	0.4%	0.5%
2001-02	355.49	895.61	9.02	3.55	5.47	1.0%	0.4%	0.6%
2002-03	362.86	904.63	7.99	3.30	4.70	0.9%	0.4%	0.5%
2003-04	369.81	912.62	5.74	2.91	2.83	0.6%	0.3%	0.3%
2004-05	374.96	918.36	5.99	2.52	3.47	0.7%	0.3%	0.4%
2005-06	373.77	924.32	6.07	2.20	3.87	0.7%	0.2%	0.4%
TOTAL			100.97	57.97	43.00		6.7%	4.9%

Note: Source data also includes small differences due to boundary revisions
Source: Basic Residence Register returns published in Chiba-ken tokeisho

<i>Year</i>	<i>Registered foreign nationals</i>		<i>Total '000</i>			<i>% of foreigners</i>		
	<i>Total '000</i>	<i>% of total population</i>	<i>Korean</i>	<i>Chinese</i>	<i>Others</i>	<i>Korean</i>	<i>Chinese</i>	<i>Others</i>
1965	1.71	0.5%	1.26	0.24	0.22	74%	14%	13%
1970	1.95	0.4%	1.47	0.29	0.19	76%	15%	10%
1975	2.38	0.4%	1.89	0.27	0.22	79%	11%	9%
1980	2.61	0.3%	1.97	0.31	0.34	75%	12%	13%
1985	3.26	0.4%	2.22	0.46	0.58	68%	14%	18%
1990	5.38	0.6%	2.67	1.05	1.66	50%	20%	31%
1995	8.84	1.0%	3.30	2.14	3.40	37%	24%	38%
2000	10.27	1.2%	3.35	3.30	3.62	33%	32%	35%
2005	13.50	1.5%	3.24	4.64	5.62	24%	34%	42%

Source: Population Census of Japan. Chiba-ken (various volumes)

Korean community that had run bars and restaurants in the *sakariba*. A few of these families had links going back as far as the 1920's. The history of the Korean community in Japan is complex and bears some characteristics in common with Irish families in the UK. Koreans started to migrate freely to Japan in significant numbers around 1920 following annexation of the Korean Peninsula in 1910. In 1947 changes to Japanese nationality laws resulted in all Koreans reverting to the status of 'foreign nationals' but a large and partly naturalised Korean community remains (Lie, 2008).

Following the 1978 China-Japan Peace and Friendship treaty numbers of ethnic Chinese residents began to increase, initially as students and later as professional managers and spouses of Japanese nationals. Chinese residents became Japan's single

largest foreign ethnic group during the late 1990's. However both these groups share ethnicity if not culture with Japanese residents. In Chiba-*shi* their presence has only a limited impact, and the kind of patterns identified for example in Lees (2008) are not a feature of Chiba's *chōme*. The appearance of transnational companies, international marriages and particular labour shortages after the 1980's saw an increase in both North American, European and Filipino residents in the Chiba area, a but the overall proportion of foreign nationals still remains low at 1.5%.

9.11 Changing household characteristics

Table 9.18 summarises the key dynamics associated with changing household size between 1990 and 2005. The continuing trend remains very similar to that revealed in the equivalent Table 8.19, and especially in that there is a further dramatic decline in average household size associated with a corresponding increase in single person households (which in many *chō* across the urban area now becomes the modal household size). An outcome of this transformation is a further dilution of the presence of larger families - almost a halving in the number of families with five or more members as three generation households become even less common. But now an additional factor in the equation is that part of the reduction in household size is also accounted for by a large increase in nuclear families with only a single child resulting in a decline of the number of 4 member families.

Table 9.18: Changes in household size 1990 - 2005						
	<i>Chiba-shi</i> 1990		<i>Chiba-shi</i> 2005		(2005 DID)	
	('000)	%	('000)	%	('000)	('000)
ordinary households	278884	100.0%	369571	100.0%	337403	100.0%
household members	814774		907157		850383	
single person households	62370	22.4%	107233	29.0%	100575	29.8%
2 - 4 members	184066	66.0%	240141	65.0%	218184	64.7%
5 or more members	32448	11.6%	22197	6.0%	18644	5.5%
average size (persons)	2.92		2.45		2.52	
quasi-households						
household members	14681		12393			
% of total population	1.8%		1.3%			

Source: Population Census of Japan 1990 and 2005 Vol. 2-2-12

There is an interesting relationship in 2005 between the average size of family within the DID area compared with the average throughout the entire *shi* administrative area. Since DID's were created in the 1960's (and also prior to that in terms of comparisons between the *shi* and surrounding villages) the average household size in urbanised

areas has been consistently and significantly lower reflecting the lower incidence of extended families. But in 2005 this position has changed, the DID average family size slightly exceeds that for the whole administrative area. The explanation for this is probably a combination of two trends – a relative increase in the number of centrally based nuclear families now living in the larger condominium apartments built since the early 1990's, and a converse increase in solitary households in outlying areas due to a growing proportion of widows living alone in an ageing rural society.

<i>family type of household</i>	1990		2005	
	('000)	%	('000)	%
TOTAL ORDINARY HOUSEHOLDS	278.884	100.0%	369.571	100.0%
I - RELATIVES HOUSEHOLDS	215.844	77.4%	259.608	70.2%
a. NUCLEAR FAMILIES	190.061	68.2%	235.752	63.8%
<i>Married Couple</i>	38.072	13.7%	76.298	20.6%
<i>Married Couple and their child(ren)</i>	133.318	47.8%	129.223	35.0%
<i>Father and his child(ren)</i>	3.113	1.1%	4.921	1.3%
<i>Mother and her child(ren)</i>	15.558	5.6%	25.31	6.8%
b. OTHER RELATIVES HOUSHOLD	25.783	9.2%	23.826	6.4%
<i>Couple with their parents</i>	0.626	0.2%	0.793	0.2%
<i>Couple with their parent</i>	1.893	0.7%	2.875	0.8%
<i>Couple with their child(ren) and parents</i>	5.066	1.8%	3.075	0.8%
<i>Couple with their child(ren) and parent</i>	10.366	3.7%	7.838	2.1%
<i>Couple and relative(s) other than children and parents</i>	0.54	0.2%	0.641	0.2%
<i>Couple with child(ren) and relative(s) other than parents</i>	1.542	0.6%	1.963	0.5%
<i>Couple with their parent(s) and relative(s) other than child(ren)</i>	0.364	0.1%	0.353	0.1%
<i>Couple with their child(ren) parent(s) and other relative(s)</i>	1.569	0.6%	0.933	0.3%
<i>Brothers or Sisters only</i>	1.552	0.6%	2.278	0.6%
<i>Other relatives househaolds not elsewhere described</i>	2.265	0.8%	3.107	0.8%
II - NON-RELATIVES HOUSEHOLDS	0.67	0.2%	2.73	0.7%
III - ONE PERSON HOUSEHOLDS	62.37	22.4%	107.233	29.0%
TOTAL QUASI-HOUSEHOLDS				
<i>Student Dormitories</i>				
<i>Worker Dormitories</i>				
<i>Hospitals</i>				
<i>(all others)</i>				

Source: Population Census of Japan 1990 and 2005

Table 9.19 illustrates the changing composition of 'family type' households between 1990 and 2005. The broad trends already apparent in the 1980's continue, with solitary households increasing rapidly to 29% of the total mix at the while the share of the mix consisting of nuclear and extended families declines. The biggest net decline is in 'conventional' nuclear families consisting of two married parents with children. Families with only one parent present increases to 8.1% of the total, now representing a larger share of households than all forms of 'other relatives' households combined. Married but childless couples also increase their share of the total to more than 20%, and there is a small rise in the number of 'non-relatives' households. Cohabitation, officially at least, remains very exceptional in Japan.

category	count ('000)		average size (persons)		% of total count	
	1990	2005	1990	2005	1990	2005
ordinary households	267.99	361.94	3.00	2.48	100.0%	100.0%
owned	145.73	213.64	3.43	2.84	54.4%	59.0%
rented	99.42	131.14	2.36	1.91	37.1%	36.2%
public	39.97	44.63	2.88	2.22	14.9%	12.3%
private	59.45	86.51	2.00	1.75	22.2%	23.9%
issued	20.89	14.47	3.13	2.59	7.8%	4.0%
rented rooms	1.96	2.69	1.90	2.01	0.7%	0.7%
(other situation)	0.85	7.63	1.00	0.00		

Source: Population Census of Japan 1990 and 2005

Table 9.20 summarises changes in the relationship between households and the size and tenure of dwellings between 1990 and 2005. Only owner occupancy has shown any significant expansion of share within the period although there has been some growth in the share of investment in construction of properties to let. Although the sector has declined in relative share there is some net increase in the number of public dwellings



Fig 9.6: Some of the 730 late 1960's JHC apartment blocks vacated and sealed off ready for demolition and replacement by condominium clusters. Inage-kaigan 5-chome 2005. [IR]

to let, due to an active programme of building sheltered apartment accommodation. Actually during this period there has also been an increasingly active programme of demolition (or 3 to 2 conversion) of early 1960's public apartment housing, especially in fringe chome such as Chishirodai Minami-4chōme. The sector to show the most

significant absolute decline is issued accommodation. This is primarily due to changing expectations following the privatisations of the 1980's – in common with major companies elsewhere in the world corporations like NTT and JR(East) were now offering housing allowances rather than housing. Also many of the small apartments once so attractive to families in accommodation starved Japan of the 1950s and 1960s now appeared cramped and were structurally 'life-expired'.

All forms of tenure show a decline in average household size apart from the very minor 'rented room' category which shows a net increase possibly symptomatic of some nuclear families resorting to this option in a period of recession.

9.12 The size and age of dwellings

Table 9.21 summarises overall changes in living space during this period analysed by type of tenure. There was a continuing growth in average dwelling size, but this increase occurred only at about half the rate of the previous period 1975-1990 for several reasons. Net growth during the preceding period had been rapid due to the number of very small pre-boom properties being replaced but during the 1990's replacements were of larger 1960's dwellings, many of which had been two storey structures. Also replacements were often being constructed on recycled sites of restricted area, and at the cheaper end of the market developers were cramming as many speculative build wooden houses onto a small site as they could achieve, with little or no garden. The biggest consideration however was the increasing number of apartments within the mix. Increases in municipal owned housing stock were partly achieved by a series of 'two for three' apartment remodelling programmes in older ferroconcrete structures, especially in Inage-ku

In part this slow-down in increasing property sizes was also a consequence of declining household sizes and rising ratios of floor space per person. This increased by a third and the ratio improved dramatically in public apartments as these became increasingly unattractive to younger nuclear families and used mainly by older couples with no children.

Table 9.22 [*cf. Table 8.23*] completes the series of 'balance sheet' tables with which I have attempted to present a consistent diachronic record of the construction and renewal of dwelling stock since 1945. By the time of the 2003 housing census around 80% of the housing stock built between 1945 and 1960 had already been demolished

<i>type of dwelling</i>	<i>floor space (metres²)</i>			<i>floor space metres² per person</i>		
	<i>1990</i>	<i>2005</i>	<i>% change</i>	<i>1990</i>	<i>2005</i>	<i>% change</i>
All dwelling houses	71.70	79.20	10.5%	23.8	31.9	34.0%
owned	95.50	102.30	7.1%	27.8	36.1	29.9%
rented	40.41	44.50	10.1%	17.15	23.3	35.9%
<i>public</i>	46.40	49.00	5.6%	<i>16.1</i>	<i>22.1</i>	37.3%
<i>private</i>	36.40	42.00	15.4%	<i>18.1</i>	<i>24.0</i>	32.6%
issued	54.30	58.20	7.2%	17.3	22.5	30.1%
(rented rooms)	29.60	45.40	53.4%	15.6	22.6	44.9%

Source: Population Census of Japan 1990 and 2005. .n.b. comparable 'dwelling room' data was not collected in the 1990 and 2005 census.

and about two thirds of the cheapest stock built in the early part of the boom decade. Typically housing from this period was cleared from relatively central sites in Chuo, Inage and Wakaba-ku on the death of an elderly owner and two or three such adjacent plots might offer a site for a small multiple development – perhaps *mokuzō chintai apāto* or an interior stairwell apartment block. By 2003 around ten percent of the sites that had taken (especially single storey) dwellings in the early 1970's had also been cleared, confirming the that cheap timber constructions still might have a life expectancy of not more than 30-40 years.

<i>(values in '000 dwelling units)</i>	<i>new build [1]</i>	<i>dwelling stock in 1992</i>			<i>dwelling stock in 2003</i>		
		<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>	<i>dwelling units</i>	<i>% surviving</i>	<i>already demolished</i>
constructed before 1945	24	2.7	11%	(21.3)	2.5	10%	(21.5)
constructed 1945 - 1950	12	1.8	15%	(2.8)	0.9	8%	(11.1)
constructed 1950 - 1955	14	2.5	18%	(3.3)	1.8	13%	(12.2)
constructed 1955 - 1960	15.5	5.8	37%	(6.4)	3.9	25%	(11.6)
net position by 1960		31.3		(33.8)	9.1		(56.4)
constructed 1961 - 1965	42	20.1	48%	(20.4)	12.5	30%	(29.5)
constructed 1966 - 1970	47	30.8	66%	(15.2)	22.1	47%	(24.9)
constructed 1971 - 1975	74	60.6	82%	(13.3)	47	64%	(27.0)
net position by 1975		111.5		(48.9)	81.6		(81.4)
constructed 1976 - 1980	50.5	49.4	98%	(1.1)	43.4	86%	(7.1)
constructed 1980 - 1985	38	37	97%	(1.0)	35.2	93%	(2.8)
constructed 1985 - 1990	45.7	45.4	99%	(0.3)	44.5	97%	(1.2)
net position by 1990		131.8		(2.4)	123.1		(11.1)
constructed 1991 - 1995	45.3				45.1	100%	(0.2)
constructed 1996 - 2000	55.4				55.2	100%	(0.2)
constructed 2001 - 2003	30.9				30.9	100%	-
net position by 2003		274.6			345		(139.2)

[1] 'before 1945' value is the 'starting stock' of housing surviving the 1945 air-riads, not 'new build'
Source: consolidated from tables in the Housing Survey of Japan 1963, 1968, 1973, 1978, 1983, 1988, 1993, 2003

An interesting debate took place following an article in the Transactions of the Institute of British Geographers on *Class and Space in Japanese Cities* by Fielding (2004) in which the author argued that the perceived 'classlessness' of districts in many Japanese cities

was largely illusory. He used *banchi* level census data from Kyoto to make his argument, unfortunately perhaps one of the least typical of large Japanese cities. Two scholars with an interest in urban Japan, R.C. Hill and R. Wiltshire added short papers to that edition disputing his conclusions. I would also dispute them with exactly this kind of central kind of *chōme* redevelopment process in mind. Few would dispute that on a macro-scale there will be some areas in most Japanese cities considered more attractive and desirable than others. But the kind of clear segregation described by Harvey in Baltimore for example, or apparent on many English cities, simply does not exist in much of urban Japan, and for exactly the reasons being pointed to here. After perhaps forty years of seemingly random plot recycling and reassembly most *chome* are an extraordinary mix of formats of reconstruction, where an elderly widow on a small pension in her eighties can be living in a small decaying one storey property next to a site redeveloped with a large new home occupied by a doctor, or a professional childless couple in a new condominium apartment. This kind of randomly mixed use of urban space is very typical of city areas first developed before 1975.

	<i>All Dwellings ('000)</i>	<i>Detached Houses ('000)</i>	<i>Tene-ments ('000)</i>	<i>Apart-ments ('000)</i>	<i>2 storey</i>	<i>3 to 5 storey</i>	<i>6 or more storeys</i>
Total dwellings in 2003							
all structures	345.8	141.2	6.7	198.3	43.9	87	67.7
<i>wooden structures</i>	159.9	132.5	4.4	22.9	22.6	0.4	0.0
<i>steel framed/ferroconcrete</i>	185.9	8.7	2.3	175.4	21.3	86.6	67.7
% of total dwellings							
all structures	100.0%	40.8%	1.9%	57.3%	12.7%	25.2%	19.6%
<i>wooden structures</i>	46.2%	38.3%	1.3%	6.6%	6.5%	0.1%	0.0%
<i>steel framed/ferroconcrete</i>	53.8%	2.5%	0.7%	50.7%	6.2%	25.0%	19.6%
net change vs. 1993							
all structures	60.4	14.4	-1.1	47.5	2.2	9.3	36.3
<i>wooden structures</i>	3.8	10.6	-1.1	-5.8	-5.9	0.2	0.0
<i>steel framed/ferroconcrete</i>	56.6	3.8	0.0	53.3	8.1	9.1	36.3
% of total dwellings							
all structures		-3.6%	-0.8%	4.5%	-1.9%	-2.1%	8.6%
<i>wooden structures</i>	-8.5%	-4.4%	-0.7%	-3.4%	-3.5%	0.0%	0.0%
<i>steel framed/ferroconcrete</i>	8.5%	0.8%	-0.1%	7.9%	1.5%	-2.1%	8.6%
<i>Source: 1993 and 2003 Housing Survey. Chiba-ken volumes</i>							

Table 9.23 summarises dwellings by type within Chiba-shi as recorded in the 2003 Housing Survey, and compares net changes vs. the 1993 Survey. The table also records the net change within the mix of dwellings over the decade as a % of the total. The data reveals the full extent of condominium construction that has taken place over the period; an additional net 47,500 apartments have been built, and they now represent 57.3% of the whole dwelling stock. Around three quarters of the new apartments are high rise, in blocks of six or more storeys. As we know from Table 9.20 that the largest

share of dwelling growth was represented new owner occupancy dwellings we can assume that the main trend in new dwellings was to invest in condominiums in new blocks for sale. Dwellings in smaller apartment blocks, and also tenements, form a smaller part of the mix.

The other side of this picture is the extent to which detached housing has shrunk as an element of the total mix. There was a net increase after demolitions of around 14,000 units but this actually represents a net decline of 3.6% in the share of the total dwelling stock, conventional detached properties now only account for 40.8% of homes. During the 1990's the process of construction of detached housing changed significantly. Barlow (2005) points out that the very fragmented Japanese house construction industry became more integrated during this period, based on the evolution of processes to mass produce 'customised housing'. The kinds of options offered by condominium developers in terms of 'finish' and fittings before construction to prospective purchasers became increasingly available to house purchasers too. However the gross rate of build of new detached housing still suggests that not only are apartment projects absorbing former industrial sites, but also where sites can be reassembled they are also taking land formerly used for detached housing. Indeed this is known to be the case, it was observed at several sample points.

9.13 Expansion of dwelling space

Table 9.23 summarises the effects of the changes in dwelling format considered in the previous section in terms of the estimated area required for each dwelling format type in 2005 and the increase or decrease in area compared with fifteen years previously. As in Table 9.6 the columns represent the cumulative concentric DID Zones (so the 2005 DID area includes all the data to the left in this table.

Overall there is a 1.1% net decline in the area occupied by dwellings, which is primarily an outcome of many site clearances involving both older undifferentiated dwellings, most of the remaining 1950's utility dwellings and older wooden built multiple properties, together with a reduction in the area of vacant dwelling lots. Almost all the net growth in detached dwellings identified is unsurprisingly in two storey houses with parking; many of these new properties in Midori-ku and Wakaba-ku now have double parking bays or car ports to cater as 'standard' for two car ownership. This development on the urban fringe leads to a modest growth in detached housing area of 4.6%.

The emerging pattern of the replacement of life-expired detached property by multiple occupancy structures is also implicit in the extension of multiple dwellings, the

Dwelling/ Land use (values expressed in equiv. area in square kilometers)	Total 1960 DID		Total 1975 DID		Total 1990 DID		Total 2005 DID		
	2000	+/- 1990	2000	+/- 1990	2000	+/- 1990	2000	+/- 1990	% change
TOTAL RESIDENTIAL (inc. lots)	7.7	0.9	22.7	0.1	35.0	0.3	38.0	(0.4)	(1.1%)
(undifferentiated older dwellings)	0.0	(0.1)		(2.0)		(2.5)		(2.5)	-100%
utility dwellings	0.0	(0.3)	0.0	(0.8)		(1.1)		(1.2)	-100%
one storey detached no parking	0.4	0.0	0.7	0.0	1.0	0.0	1.0	0.0	0%
one storey detached with parking	0.2	0.0	0.8	0.1	1.1	0.1	1.2	0.1	11%
two storey detached no parking	0.9	0.1	1.9	0.2	2.3	0.3	2.3	0.3	15%
two storey detached with parking	2.4	0.6	9.8	2.0	16.1	3.5	17.3	4.3	32%
ie building clusters	0.2	0.0	0.4	0.0	0.6	(0.0)	0.6	(0.0)	-3%
shared sites	0.3	0.0	0.5	0.0	0.9	0.1	0.9	0.1	6%
combined residential/commercial	0.2	0.0	0.3	0.0	0.4	0.1	0.4	0.1	19%
INDIVIDUAL DWELLINGS	4.5	0.3	14.5	(0.5)	22.3	0.3	23.8	1.1	4.6%
old multiple property	0.0	(0.2)		(0.4)		(0.5)		(0.5)	-100%
mokuzo chintai apārto	0.6	0.0	1.4	0.3	2.0	0.5	2.2	0.6	40%
external staircase apartment blocks	0.5	0.2	2.6	(0.0)	4.0	0.2	4.1	0.2	6%
internal stairwells/ early mansions	0.7	0.3	1.6	0.6	1.9	0.8	2.1	1.0	86%
mansion clusters	0.1	0.1	0.5	0.3	0.9	0.6	1.2	0.9	310%
mansions	0.2	0.1	0.6	0.4	0.9	0.6	1.1	0.8	289%
MULTIPLE DWELLINGS	2.1	0.5	6.7	1.2	9.8	2.3	10.6	3.1	(29.4%)
residential and contract parking	0.8	0.0	0.6	0.1	1.1	0.1	1.2	0.1	14%
vacant lot	0.3	0.1	1.0	(0.7)	1.9	(2.4)	2.4	(4.7)	-66%

Source: Sample Point Survey



Fig. 9.7: Groups of new condominium blocks in Makuhari New Town. Entrance into each fortress-like cluster will be through a single gatehouse with sophisticated security systems.

combined site area of which expanded by 3.1km², or nearly 30%. Nearly all of this development is in condominiums and smaller internal staircase apartment blocks. Indeed in the Chishirodai-Minami area there are extensive demolitions of 1960's former JHC external staircase apartments and in the Inage-kaigan *5-chome* area a whole *danchi* of five storey blocks was earmarked for demolition to provide a large site for 'mansion' cluster.

These new clustered condominiums incorporate a level of security far beyond the intercom controlled 'mansion' block entrance halls of the early 1990's. Designs are based often on North American prototypes, three or four, eleven storey apartment blocks containing up to 750 apartments forming an impenetrable wall and clustered around a closed central area guarded by a 'gatehouse', somehow strongly reminiscent of European medieval military architecture. These are almost the only 'gated' communities in the urban area – during fieldwork I only discovered two others involving the detached properties of the very rich. These new condominium clusters are always built on sites within walking distance of railway station: *'just seven minutes walk to JR Chiba-Minato eki, 40 minutes by train to Tokyo'* is a key sales pitch used by their developers in regional advertising . In Chiba many are adjacent to the port, a kind of new city wall squeezed onto sites between the town centre and deep water that thirty years ago were used for manufacturing premises.

9.14 Summary of changing associations

To conclude this chapter I want to suggest that perhaps the most significant characteristic of this period is that the long term social consequences of urbanisation and migration associated with the emergence of the Toyotaist mode of regulation back during 1950's and 1960's have eventually become manifest and are reflected in fundamental transformations of household and family relationships during the 1990's. It could be argued that the full social consequences of urbanisation were not apparent in the first generation raised in Japan's rapidly expanding urban environment during the 1960's because their parents, whose biographies were deeply involved in that transformation, reproduced in their own children many of the values and standards that would have been familiar patterns of living and behaviour in an earlier Japan. These values were transmitted in childhood.

However this following generation born in the 1960's, together with their own children born in the 1980's and 1990's, have only ever dwelt in an urbanised environment within the context of a nuclear household format, and often with one parent almost entirely absent. They have experienced the full pressure of conforming to succeed in very

competitive educational and employment systems, and of new patterns of relating to their world as consumers. In the processes of social reproduction involved in this relationship parents are now transmitting values largely absorbed by themselves within the rhythms of daily urban life in the 1970's and 1980's and inscribed in biographies that are wholly a product of urban life. The rupture within the relationship between generations in households has come not so much through geographical relocation itself, but much later and through the cumulative affect of external pressures on the context and content of social reproduction. In other words by 1990, and beneath a very powerful veneer of discipline and conformity, many working adults have increasingly become alienated from either their company or home, many wives have increasingly become strangers to their absent husbands and children have become increasingly alienated from parents.

These outcomes of these changes can be seen in the changing characteristics of households, the premature temporary or permanent disintegration of households through separation, and a large increase in solitary households. Such changes have been reflected in turn in the styles, size and formats of dwellings, and the increasing relative value of 'convenient' locations. People are more often planning to live alone, or in smaller households, and more crucially to diminish the effort required to move between dwelling and workplace.

In terms of establishments the evolution of the post-Toyotaist mode of regulation leads to a quite different range of employment opportunities. People are more likely to work in an institutional setting, providing services on a larger site, but those employed in private enterprises can expect to be likely to be working in a medium sized establishment but one either owned by, or closely contracted, to a wider group of establishments, rather than for a single proprietor.

The enduring, the transient and processes of change

Time and change are connected to place. Real change is best understood by staying in one place¹.

Andy Goldsworthy

10.1 Introduction

In this concluding chapter I want to address three objectives. Firstly I want to review and summarise the long term transformations that have taken place in the production of Chiba's expanding urban space thematically, based on the entity model developed in Chapter Three. Section 10.2 reviews evidence for the transformation of typical Japanese biographies since the late nineteenth century, and the following section traces the changing character of households and their relationship to dwellings. Section 10.4 provides a similar brief review of transformation of the purpose and function of establishments and enterprises, and how change has been reflected in the premises they occupy. Section 10.5 provides a synthesis of the combined influence of all these entities over time in terms of the changing patterns of use of space within Chiba-*shi*, and finally Section 10.6 identifies six broad dynamics or regimes which have successively influenced these transformations.

Secondly, In Section 10.7, I want to briefly review the value of adopting process as a theoretical perspective in this study. How did I attempt to do this, to what extent did it prove possible to do it, and what did it add as an approach to understanding and answering the research question?

Finally at I want to suggest some answers to my research question. In Section 10.8 will consider the relative importance in the transformation of Chiba-*shi* of some of the themes and viewpoints first introduced in Chapters Two and Three. Which of these contributed significantly towards promoting either durability or transience within

¹ Quoted from the introduction to Goldsworthy, A. and Friedman, T. (2000). *Time*. London; Hodder and Stoughton.'

material urban space (or, in some cases, both). Finally in Section 10.9 I will summarise what I believe are aspects of social transformation which often underlie the durability or transience of many of the forms and processes evident in the city.

10.2 The transformation of biography.

In Chapter 2 I suggested that the three temporal dimensions of routine, biographical and institutional time identified by Giddens (1984:34-36) provided a helpful perspective for analysing change. 'Biographical time' featured extensively in the following chapters but primarily in the context of changing patterns of education, migration and occupation; long term trends of life expectancy have not yet been noted in detail. There is no separate 'life table' data available for the Chiba-*shi* but the relevant 'All Japan' data is presented in Table 10.1 together with a summary view of formal educational attainment.

The most striking thing to note is that the average Japanese life span is now *almost a third longer than it was seventy years ago*. In the late nineteenth century Japanese life expectancy was relatively high for those who survived infancy, but severe rural poverty in the 1920's and 1930's actually led to a shortening of the mean lifespan. In fact the method of actuarial calculation also seriously misrepresents true 'average lifespan' at this time because more than two million military deaths are excluded from the data. However the basic character of a 'typical' Japanese biography before World War II is clear. Most people surviving early childhood received six years of compulsory primary education and then worked until they died around the age of sixty. Men faced compulsory military service and then typically a working life of about 40 years in manual employment until 'retirement' due to deteriorating health shortly before death. Unless they were from urban 'middle class' or merchant households, young women in cities commonly worked in service or in factories until marriage. In the country women were involved in every stage of farm work throughout the year, and at the end of their lives would probably live a short period of widowhood in their eldest child's house.

		life expectancy based on 'life tables'				Commonest final level (and period) of formal education				male working life	male retirement	women post-family
		at birth		age five years						(years)	(years)	(years)
		Male	Female	Male	Female					(years)	(years)	(years)
<i>abt.1870</i>	42.0	43.9	51.2	51.8	<i>terakoya</i> temple school (4 years)				42	0	8	
1868 to 1890	Predominantly rural population engaged in agriculture. High mortality levels in early childhood. Four years of elementary education. Young men increasingly called for military service, young women may work seasonally in textiles. People work until ill health overtakes them.											
1890 to 1920	42.8	44.3	50.7	51.5	state elementary school (6 years)				42	1	8	
1920 to 1945	42.1	43.2	50.4	50.7	state elementary school (6 years)				42	1	8	
1945 to 1950	50.1	54.0	53.6	57.1	state elementary school (6 years)				42	1	15	
1950 to 1960	65.3	70.2	63.3	70.2	junior high school (9 years)				45	8	20	
1960 to 1975	71.7	76.9	67.8	72.8	high school (12 years)				45	12	22	
1975 to 1990	75.9	81.9	71.5	77.4	tertiary education (15 years)				40	15	27	
1990 to 2005	78.6	85.5	73.9	80.8	university (16 years)				35	22	30	

Data based on the 2009 Statistical Yearbook of Japan population chapter and life tables from earlier editions. Estimates in blue.

Around 1950 more sophisticated medical care and better nutrition began to rapidly

extend life expectancy, with about half of the entire post-war expansion of average life-span taking place during the next decade. Male biographies over the next 40 years included 40-45 economically active years but were preceded and followed by lengthening periods of education and pension-funded retirement. Formal state funded compulsory education was extended in 1947 to the age of fifteen. High school and commercial college certificates became the aspirational achievement during the 1960's, then university degrees in the 1980's. The income doubling decade of the 1960's saw the introduction of secure company pension schemes for men and their dependents that could fund 10-15 years of paid retirement, an outcome of the years of the Toyotaist mode of regulation (Pempel, 1998: 58-60; Fujita, 2003).

Female biographies follow a different pattern; women are still significantly less likely to have completed tertiary education or to have independent pensions. As entire households began to abandon farm life and to migrate into urban areas during the 1950's, promoting the formation of new urban nuclear households, the link between women and manual farm work was broken and post-marital female economic activity rates plummeted. This reinforced spatially a strong cultural pattern of husbands and wives leading almost completely separate social lives (see Iwao, 1993). Many commentators note the degree to which in post-war society women have been the household and family managers, with absent husbands whose biographies revolve entirely around the 'village life' of the distant office or factory and who play little part – certainly prior to retirement – in either household routine, or the life of their residential communities (White, 2000; 2002). The long term social consequences of this were discussed in Section 9.2. The growth first of retailing employment and then the employment of young graduate women as 'office ladies' in companies before marriage began to redress this balance in the 1970's, but even in the service focused economy of modern Japan female economic activity rates are still low and involve women in lower status work.

More complex patterns of biography have emerged in the last twenty years, and which could be contrasted quite sharply with the kind of Anglo-American values and visions of biography reflected in texts like Giddens's *Modernity and Self Identity* (1991). Men are now likely to spend as much of their lives in formal education and retirement as they will in employment, but home and working life are likely to be even more segregated. Some

women also now participate in this lifestyle, especially as young professional singles. Marriage and household formation are increasingly postponed or just never considered, with Japanese birth rates (TFR) amongst the lowest in the world - now 1.22 births per woman (cf. UK 1.66)² The population of Japan has been falling since 2006. Where married women do return to work they often seek employment in '*arbeit*' – casual or part time work - making their social lives within a circle of female friends. It is common to find the lunchtime *clientele* in restaurants consists almost entirely women dining as couples, each settling their own account. The impact of this has been discussed in Section 9.3.

What is the impact of this on urban space? One obvious consequence of longevity however is that people directly transmit personal habits, experience and values over a much longer period of time. The influence of Japan's history since about 1920 is currently directly represented within society through personal biographical experience without the mediation of social reproduction. By the rule of thumb of 'one lifespan *or two generations*' offered as a provisional definition of 'enduring' in Section 3.3, with extending life expectancy now approaching three generations people themselves have become one of the most enduring features of the contemporary urban environment.

There is an interesting contrast between discourses associated with life expectancy in the UK and Japan. Much of the contemporary study in the UK on longevity focuses on social disadvantage and health issues, and their relationship to mortality and *relative* life expectancy (see for example Shaw et al, 2008). In Japan the equivalent discourses have tended to relate to the impact of an ageing population on productivity, and the costs of and problems of supporting an ageing population in the future have been extensively researched (see Coulmas, 2009; Ermolieva 2004).

From the perspective of this study perhaps the most interesting discovery is the extent to which changes in biography transform the need for categories of urban space. Longevity places specific new demands on the amount of social space required to live an average lifespan. Modern biographies now correspond to a sequence of perhaps four or five distinct life stages in respect of the total 'footprint' they leave on the built urban environment. At least four educational institutions are attended, not just one, and after

² United Nations World Population Prospects (2006 Revision)

years of formal employment there are demands for a large range of recreational spaces in retirement and eventually buildings to provide residential and medical support. The longer term persistence of households and higher proportion of widowed and divorced that result, also increases the volume of space required for dwellings.

10.3 The transformation of households and dwellings

Some of the enduring characteristics of dwellings and their relation to household functions and social reproduction were presented in Chapter Four. Here I want to summarise the evidence for transformations that have taken place in the relationship between household, dwelling and other entities in the subsequent five chapters and the ways in which these have been inscribed in residential space.

All the specimen 'household processes' listed in Table 3.2 endured throughout the whole study period, but their relative importance and the material technology they depended on changed considerably. Before World War II for example the need to shop daily in several small stores, and to prepare and cook meals from basic ingredients made housekeeping both time consuming and impossible to combine with full time urban waged employment. Lack of domestic hot water meant that town dwellers depended on a now almost completely vanished infrastructure of public bath-houses and communal hand washing of laundry. The extended biological family was crucial in terms of mediation and security; under the Meiji Civil Code the head of the *honke* – the stem family of the 'house' – had legal power and status over other family members. On the other hand, apart from family associations with local temples and shrines, and publically fostered community organisations, there was a very poorly developed 'civil society' in Japan (Garon, 1997).

Table 10.2 summarises changes in the size and structure of households over the period of study. Until World War II the commonest pattern was for households to alternate diachronically between a three generation membership configuration, providing refuge for the ageing parent(s) of the inheriting head of household, and the two generation

Table 10.2 Significant structural changes within households					
	<i>average household size</i>	<i>% of all households comprising</i>			<i>Three generations</i>
		<i>one person</i>	<i>2 to 4 persons</i>	<i>5 or more persons</i>	
c.1870	5.8	3%	33%	64%	50%
<i>1868 to 1890</i>	Three generation households are in the majority. Most people depend on extended families for security and welfare. Formation of new households difficult.				
1890	6.0	4.0%	35.0%	61.0%	48.0%
<i>1890 to 1920</i>	The <i>ie</i> established as a legal entity in the 1898 Civil Code. Many households include 'live in' servants and apprentices. Migration of second and subsequent children				
1920	4.8	5.0%	38.0%	57.0%	40.0%
<i>1920 to 1945</i>	Increasing migration and also emigration of elder sons. Formation of urban nuclear households becomes common.				
abt.1945	4.8	6.4%	46.5%	47.2%	32.0%
<i>1945 to 1960</i>	Migration of whole households into waged economy. Limited female waged employment. Many new nuclear households.				
1960	4.3	6.0%	53.1%	40.9%	20.0%
<i>1960 to 1975</i>	Nuclear household becomes the norm in urban areas (might involve older generation living nearby). Facilitated by public housing. New owner occupancy facilitated by loans.				
1975	3.3	13.0%	71.3%	15.6%	12.3%
<i>1975 to 1990</i>	Single person households grow rapidly due to three dynamics of late household formation, divorce and widowhood. Birth rate declines. Husbands often in company accommodation.				
1990	2.9	22.4%	66.0%	11.6%	9.3%
<i>1990 to 2005</i>	Trends from previous period continue with solitary households becoming the norm and birth rate declining below death rate. 'Parasite singles' become common				
2005	2.5	29.0%	65.0%	6.0%	6.4%

Source: Population Census of Japan (see preceding chapters for details) Estimates in blue.

nuclear household to which it reverted on the death of the oldest generation until the cycle was repeated about twenty years later. In Japan the 'head of household' commonly retired and formally handed responsibility over to his heir (Hendry, 1995). Fertility rates in Japan have been low since the eighteenth century (Taeuber, 1958), and younger children did not remain a part of their natal household. During the period of study various patterns of migration increasingly took the young from villages into an urban environment. After the 1947 Land Reform led to increased farming efficiency, whole households moved to the cities in the 1950's and 1960's. For many this broke the link with a third generation accommodated under one roof, although to a degree the supporting relationship has now re-established itself in urban areas in the format of parents living nearby in a separate household 'sheltered' by the care of a daughter-in-law or daughter (Sugimoto, 1993:173-6).

After 1950 the proportion of single person households within the total mix began to increase. Initially this trend is masked by the spread of temporary worker dormitories but the trend gathers momentum firstly at the expense of larger (5 or more persons) and

three generation households and then after 1975 more gradually at the expense of all other household formats. Almost all the key social transformations in progress – living apart as part of an employment assignment, later marriage or avoidance of permanent relationships, lower fertility rates, earlier divorce, living as a widow or widower – have taken concrete form in the format of ‘solitary’ household growth.

	% owner occupancy	dwelling size (m ²)		area per person (m ²)	
		owned	Rented	owned	rented
abt.1870	90%	60	20	10	5
1868 to 1890		Small town with most dwellings family owned and in agricultural, commercial or artisanal use is extended with the introduction of mainly owner occupied dwellings for salaried administrators.			
1890	80%	50	20	8	5
1890 to 1920		Increase in smaller households established by lower income families leads to an overall decline in the average size of owned properties and rented <i>nagaya</i> dwellings.			
1920	70%	42	20	7	5
1920 to 1945		Position by the end of WWII reflects consequences of bombing with many temporary dwellings and squatting on public land.			
abt.1947	55%	35	20	7	4
1945 to 1960		New owner occupied dwellings in the 1950's return to pre-war size but simpler standardised structures housing two generation families. Company issued dwellings become available.			
1960	62%	49	28	10	8
1960 to 1975		Widespread introduction of houses with small second storey increases average dwelling size. Owner occupancy heavily diluted by massive increase in public housing			
1975	51%	65	35	17	13
1975 to 1990		Ninety percent of new detached dwellings are two storey. Condominiums are increasingly important within the dwelling mix. Significant former owner-occupied dwelling stock for rent.			
1990	54%	96	40	28	17
1990 to 2005		Larger condominiums on integrated sites and larger detached dwellings. Large increase in 'solitary' households increases the area per person ratio.			
2005	58%	102	45	36	23

Source: Summarised from Population Census of Japan, Housing Survey and Chiba Tōkei. Estimates in blue.

Table 10.3 summarises long term trends associated with the size and tenure of dwellings and dwelling space per person. Until about 1960 there was almost universal collective use of living and sleeping space in the homes of working families. Futons spread at night on *tatami* floors was the norm and interior spaces were partitioned by *fusuma* into two or three ‘rooms’ creating a distinction between well defined ‘front’ and ‘back’ regions (Goffman, 1959:106-140) Capital to purchase plots and build new dwellings was generally found within extended family resources (Waswo, 2002). With the poverty of the 1930’s and increasing migration to cities owner occupancy levels declined even in provincial towns like Chiba-*shi*.

In the 1960’s owner occupancy levels were further diluted by the construction of public, agency and issued apartments as the State intervened strongly to promote mobility of

labour. Capital to purchase sites and build dwellings began to become easily available through bank loans after 1965, and these financed the major extension of the city at that time. In the 1970's these loans became available for purchasing condominium apartments with shared title in a multiple occupancy structure.

From the late 1950's two storey structures became the norm new detached dwellings construction and by 1990 accounted for around 90% of the category. Initially this arrangement offered the opportunity to segregate sleeping arrangements – and especially to provide teenage students in the examination system with a separate space. Later it offered the whole household private space in terms of 'Western-style' individual bedrooms, and larger rooms on the ground floor also provided a family space to separate food preparation, eating and socialising from a more formal *washitsu* for entertaining visitors. From the 1970's fixed room partitions with doors and Western furnishing became common leading to a need for larger rooms. The acquisition of white, electronic and consumer goods and possessions also increased demand for space. 'Bedrooms' in Japan do not necessarily imply use of beds.

Since the 1970's detached housing has been substituted for by condominium apartments of similar size and layout, now often located in large developments consisting of as many as a thousand dwellings on up to fifteen floors, marketed strongly on centrality and proximity to stations, and progressively on 'security' - an apparent growing adoption of a Transpacific 'ecology of fear' (Davies, 1990; 1998; Soja 2000: 312-319). In the Chiba-*shi* DID area these projects now provide the majority of new dwellings.

What is at work here is the social production of space being transformed by demand for dwellings driven by an increasing numbers of smaller and especially solitary households, which probably goes far to explain the focus on 'security' in such an intrinsically safe society. In Chiba-*shi* during the three decades after 1975 the population increased by 42% but the number of households doubled. This is not a phenomenon unique to Japan (see for example Hall, 1995:25-35) but its impact on the expansion and consequent

Table 10.4 Significant structural changes in the establishment base viewed in terms of source of livelihood

	farming and fishing	construction	manufacturing	distribution chain	finance real estate	transportation	services	government	all other	PERSONS TOTAL ('000)
c. 1900	44%	4%	9%	19%	1%	2%	3%	19%	0%	8
1868 to 1890	A country town with a rural economy which has been extended by the places role as an administrative centre and later as a railway junction. Apart from salaried government officials most establishments are based on extended households which may employ day labour.									
1920	30%	6%	16%	20%	2%	5%	4%	18%	0%	12
1890 to 1920	The range of establishments has extended into several sectors expanding waged or salaried employment across the local economy. Family based employment is increasingly restricted to farming, fishing and distribution chain.									
1930	18%	6%	16%	25%	1%	9%	11%	14%	0%	16
1920 to 1945	Decentralisation of material production introduces waged employment funded by zaibatsu. Distribution chain and services expand as Chiba becomes a primary urban centre. After the war these decline but local employment in farming and manufacturing remain important									
1947	23%	2%	20%	24%	1%	9%	6%	13%	2%	35
1945 to 1960	Local employment strongly focused on manufacturing production and later steel products.									
1960	18%	6%	25%	18%	3%	7%	15%	6%	1%	116
1960 to 1975	Agriculture and fishing eclipsed as sources of income. Expansion of range of manufacturing work. Non-family employment in retail and services grows. Construction industry work important male employer.									
1975	4%	11%	20%	25%	5%	9%	19%	6%	2%	252
1975 to 1990	Construction remains buoyant. Strong focus on distribution chain and expansion of waged employment in retailing, but salaried employment in services expands the most rapidly.									
1990	2%	11%	14%	25%	6%	8%	26%	5%	2%	361
1990 to 2005	Salaried employment in services becomes by far the most dominant feature of employment.									
2005	1%	9%	9%	20%	6%	10%	38%	4%	4%	403

Source: Based on summaries of employment by place of work from the Population Census of Japan used in earlier chapters, and earlier editions of Chiba Ken toshi

transformation of urban space can hardly be exaggerated. Around 100,000 extra dwellings covering some 7km² have been constructed as a consequence of reducing household size.

In summary, after a long period prior to World War II where the quality of urban housing actually deteriorated for the majority, the relationship between household and dwelling has been totally transformed over the last sixty years with increasing earnings and consumption leading to a doubling of dwelling size and an increase in the proportion of nuclear and solitary households within the mix. These changes have led to a large expansion in the proportion of space required for dwellings within Chiba.

10.4 The transformation of establishments and premises.

The evidence for the changing relationship between these two entities is not so clear. The only long term diachronic summary metrics available for the establishment base are population census values for numbers in employment by sector of the economy, and this data is summarised in Table 10.4. After 1955 the Establishment Census data increasingly provides metrics summarising the establishment base analysed by size and ownership, but the information available at *shi* level is limited until the 1980's.

Until in the 1950's farming and fishing played important if declining roles within the local urban economy. Fishing vanished during the 1960's and farming is now mainly marginalised in surviving rural districts. Public administration has played an important role in the local economy throughout the whole history of the *shi*, more important than is apparent the summary data due to reclassification of former state employment roles as public agencies and now counted as services.

Employment in manufacturing other than of comestibles became important in the local economy around 1910 and expanded in the 1930's with the strategic dispersal of matériel production to new sites developed by *zaibatsu*. Many of these sites have survived in industrial use subsequently. The construction of the integrated steel plant created a concentration of direct new industrial employment which was supplemented over the next three decades by related employment in steel products and fabrication. However after 1975 manufacturing declined relatively as an employer and then after 1990 in absolute terms with limited levels of deindustrialisation characteristic of other

advanced economies (Soja, 1989:200-3; Harvey, 1990:189-92; Matsumoto, 1996). An important stimulus in Chiba was the offshoring of polluting steel manufacturing processes to the Philippines after 1975.

The expansion of construction, finance and real estate were all closely linked to the increasing pace of urban enlargement beginning with the first years of high-speed growth. The sectors continued to expand due to the subsequent rate of transformation and renewal of the urban environment. Since 1990 their total share of the economy has marginally declined and their character transformed as they have become more dominated by corporate capital and strategies required to deliver bigger joint projects.

Chiba was too small to attract a major department store before World War II and the city was primarily served by family capitalised businesses. The proportion of retail market share held by incorporated companies increased from the early 1960's, and from 1975 joint stock companies with international retailing interests began to dominate the whole Japanese distribution chain. Since 1985 globalising retailing formats including 'out of town' shopping malls and retail sheds (Jones and Simmons, 1990; Larke, 1994; Scott 2007) have become an important component of recycled urban space in Chiba-*shi*.

The increasing tertiarisation of the economy has also followed closely the trajectory of European and North American urban experience (Marshall and Wood, 1995) in terms of scale and timing with growth, generated by introduction of more complex technologies, the expansion of education, more medical intervention, and an expanding consumer economy. In the past decade advanced electronics and communications network research (Castells, 2000) at Makuhari has become a larger source of employment than steel and related industry.

Table 10.5 summarises the impact of these changes in terms of the changing *area* required for each function within evolving urban space. Aggregated estimated site area is the only practicable relative long term metric although its absolute value is limited because premises height is not taken into account. Manufacturing however, which is the

area estimates (km ²)	Total Premises AREA	Extended dwelling premises	Offsite Yards	On-site Services	State Functions	Education and Welfare	Distribution Chain	Banks and Commerce	Manu- facture	Utility	Venue
c.1870	0.4	0.2	0.1	*	*	*	0.1	*			
1855 to 1890	Nearly all business enterprises based in extended dwellings with storage in kura and offsite yards. Some separate administrative, educational and banking buildings.										
1890	1.1	0.2	0.1	0.1	0.2	0.3	0.2	*	*	*	
1890 to 1920	New premises for education, health and state administration and security, primarily in timber but with some brick construction. Development of small scale manufacturing premises (wooden structures). Some separation of retailing and services from premises used as dwellings.										
1920	2.0	0.3	0.1	0.1	0.4	0.5	0.2	*	0.3	0.1	*
1920 to 1945	Premises for tertiary education, hospitals, military use, and materiel manufacture either in ferroconcrete or steel framed with galvanised covering. Most other premises still with timber structural members. Most service and distribution based family businesses still based in extended dwellings										
abt.1945	3.6	0.4	0.1	0.1	0.8	1.0	0.3	0.1	0.6	0.2	*
1945 to 1960	Most new public buildings in ferroconcrete or steel framed. Steel plant imports modern new technology on purpose built site, most other industrial capacity in new steel framed sheds with asbestos cladding consolidating production, assembly and primary storage. Family businesses investing in dedicated retail premises										
1960	6.9	0.4	0.1	0.1	0.2	1.8	0.4	0.1	3.2	0.5	0.1
1960 to 1975	Massive investment in manufacturing, mainly in steel-framed sheds for manufacturing, assembly and primary materials handling and storage. Construction of two to five storey steel framed retailing and commercial buildings and new generation of standardised primary and secondary educational premises.										
1975	18.4	1.3	0.3	0.2	0.3	3.9	2.3	0.3	8.3	1.3	0.2
1975 to 1990	Investment in large complex high status projects and corporate buildings - exhibition centres and venues, bank headquarters, large scale primary distribution facilities. Investment in speculative premises in terms of retailing and commercial use.										
1990	32.0	1.6	0.6	0.9	1.8	6.7	3.1	0.8	12.1	3.1	1.3
1990 to 2005	Demolition of manufacturing premises and redevelopment of sites for supply chain and service use. Creation of new venues (e.g. JEF soccer stadium)										
2005	37.5	1.9	0.7	1.6	1.9	7.7	6.5	1.2	11.1	3.4	1.5
Source: Consolidated from Sample Point Survey results with additional estimates for early periods from Chika-kon kura institutional and family enterprise data. Notes: Data excludes the area covered by premises involved in primary agricultural production and fishing at all periods. Provisions included in marginal employment - for example sports grounds, transport facilities etc. are also not included.											

largest user of total establishment space accounting for nearly a third of the total is

clearly declining. Since a 1990 peak around 10% has been converted to either retailing or multiple residential development use. Educational premises have also expanded to take an increasing share of the total area occupied by establishments because although classroom blocks are normally standardised two or three storey structures, gravel on-site sports pitch provision has become increasingly generous in nationally defined standards since the 1920's and such space without structures now commonly accounts for 70% - 90% of all 'educational' space. Political pressure ensures that this space rarely passes out of educational use despite falling pupil numbers.

Distribution and retail chain sites account for a lot of expansion since 1975 but only about half comprises new retail sheds and shopping malls. Equally important is the growth in primary distribution – the role of Chiba port in providing dockside and cold storage, and the construction of new logistics depots. Extended dwelling premises combining retailing and on site services (including doctor's and dentists attached surgeries) continued to maintain their share of the total mix. Banks and commercial sites (including all office blocks consisted of leased space) occupied a relatively small site footprint at 1.2km² but the average height of sampled sites was 5.2 storeys so in terms of floor area this was of the same rank as distribution chain and education space.

10.5 The production and transformation of material urban space.

A final spatiotemporal 'map' of the production and transformation of material urban space within Chiba-*shi* expressed in terms of the relative percentage share by functional category is presented in Table 10.6. What are the main trends evident here?

Until the 1930's farming remained the commonest source of livelihood for residents of Chiba-*shi* itself, with cultivation alongside more urban forms of land use; subsequently it was consigned to adjacent villages which were themselves progressively absorbed into the urban envelope after 1950.. The proportion of farmed land within the urban area declined, but has never disappeared.

Residential and commercial space progressively increased in terms of share of the urban space except during the 1970's when the rapid expansion of the urban envelope following the boom decade led to speculative development which created a glut of vacant building plots ('no structure') within the system that temporarily diluted the

residential share of total space. There is always a finite 'lag' inherent in the process of urbanisation in Japan because urban land often is held for years either as serviced plots awaiting final buyers or still as isolated patches of farmland. (Hebbert and Nakai, 1988).

The expansion of residential space in Chiba-shi has experienced a number of clear 'surges' during the twentieth century. The first was associated with the coming of the railway and the second with the pre-war shift to into an 'intensive' mode of regulation. The third accompanied the emergence of a Toyotaist mode of regulation and was actualised in several different ways but especially in suburbanisation and public housing projects to facilitate migration. In a fourth surge associated with the Post-Toyotaist and post boom economy since the 1990 the expansion of the urban envelope has slowed down, and growth has been focused much more on the recycling of centrally located sites. This has resulted in increasing population density but especially, as a consequence of the grown in solitary households, as a growth in the density of dwelling units.

The proportion of urban space taken to support circulation has also consistently increased as the city has expanded through the addition of networks. Highway networks do not expand in a linear relationship to the urban envelope but roughly in line with the area squared. They also require the addition of higher levels of functionality the bigger the area becomes (highway width, higher order primary highways). On the other hand the relative share or space required for railways, utilities, distribution and manufacturing declines over time because of more efficient use of the capacity of existing investments. The investment in quayside storage in Chiba Port basin and water and sewerage treatment in Mihama-ku between 1960 and 1975 provided sufficient capacity for most subsequent demand. Similarly re-investment to expand production has been carried out at the steel plant without any need for site expansion.

The space required for education and welfare services also absorbed an increasing proportion of urban space until 1975 as new school sites were required to support young families migrating into the area and an expansion in tertiary education but during the last thirty years most expansion has been achieved by the redevelopment of existing sites.

Table 10.6: Significant structural changes in sites by function as a % of the total urban envelope

	urban area km ²	Circulation	residential commercial	manufacture distribution utilities	education and welfare	public open space	no structure	agriculture
1882	16	4%	11%		1%			85%
<i>1868 to 1890</i>	Small built-up area of about 1.5 km ² with most land within the machi boundary farmed by residents of the town. Development of administrative sites and elementary schools.							
1890	16	7%	12%		3%	1%	1%	68%
<i>1890 to 1920</i>	Increase in density of dwellings within the original urban core. Additional space taken for railway development, additional schools and small factory development.							
1936	16	10%	22%	2%	4%	1%	5%	51%
<i>1920 to 1945</i>	First extension of the residential area with land take for secondary schools, colleges, hospitals and additional factories and military sites. Arrival of second rail connection.							
c.1945	21	11%	22%	5%	8%	2%	16%	35%
<i>1945 to 1960</i>	Second expansion of urban envelope based on recirculation of former military land and the Kawasaki Steel project. Villa developments near secondary stations and issued company housing.							
1960	21	13%	36%	19%	9%	3%	7%	11%
<i>1960 to 1975</i>	Development of a substantial manufacturing space. Heavy state involvement in the commissioning of new landfill schemes, provision of public housing and extension of highway network. Growth of commuting.							
1975	67	15%	32%	17%	6%	5%	13%	9%
<i>1975 to 1990</i>	Completion of the motorway network. Further expansion of new danchi to accommodate commuters. Development of condominium apartments. Extension of retailing with new malls.							
1990	110	17%	33%	17%	6%	9%	11%	6%
<i>1990 to 2005</i>	Extensive redevelopment of sites near stations with large condominium projects. Conversion of former industrial sites to retailing and residential use. Development of Makuhari technopole project.							
2005	117	18%	37%	15%	7%	9%	9%	4%

Source: Sample Point Survey data and equivalent map exercises (reprinted in previous chapters)

Public open space has expanded consistently, a finding in line with the observation made

above in Section 10.2 about the nature of additional demands on urban space that result from longevity and the impact on individual biographies.

10.6 Dynamics of transformation

On the basis of this summing up and the detail presented in the preceding six chapters, what underlying dynamics of transformation are at work here providing impetus for the evolution of urban space? I want to suggest that there are at least six which have successively influenced the transformation of the city. The boundaries, dimensions and form of these dynamics are determined by national and international events but they are reflected in and actualised within the transformation of places, and individual biographies and household life.

1. *Imitation of foreign institutions and technologies.* The enduring fascination of the early Meiji-era for students of Japan lies in the way in which leaders managed to identify and then 'cherry-pick' crucial foreign ideas, institutions and technologies whilst reinforcing a national identity and polity. Their motive was fear of 'Western' hegemony (Gluck, 1985). This dynamic is quickly reflected institutionally in Chiba with the adoption of centralised Prefectural government on the French model, the promotion of compulsory education, conscription and of policies intended to deliberately transform social, economic and political life. In terms of most households and establishments (and these are still usually the same object), there was relatively little change. This is debatably the evolution of a Japanese equivalent of an 'extensive' mode of regulation.

2. *'Internalisation' of new institutions and technologies.* Between about 1890 and 1930 Japan emerged as a strong, centralised imperial state and with a modernised industrial infrastructure and the rise of 'foreign' institutions such as political parties and trades union. In Chiba these changes are reflected in the development of rail communication, and in the extension of industrial waged economy – at first in the form of small independent factories and later based on the *zaibatsu* capital. The state locally deploys a formidable, Foucauldian array of large new state institutions (military barracks, prisons and hospitals) concerned with the discipline and surveillance of urban space (Garon, 2003). This arguably represents a transition to a more 'intensive' mode of regulation. Despite the development of an urban and 'Westernised' middle class in larger cities, provincial urban life in Chiba was much more conservative and impacted by

surrounding rural poverty. Family businesses were still the dominant form of enterprise.

3. Militarisation of the State. With the onset of the Great Depression, the outbreak of war in Manchukuo in 1931 and the withdrawal of Japan from the League of Nations in 1933, the State is drawn into a decade of economic isolation and sanctions that deteriorate into colonial war in China, and then from 1941-1945 into total war. This precludes the emergence of any consumer led economy equivalent to North American experience. As a garrison headquarters Chiba-*shi* is deeply involved in these changes with unified civilian and military planning, the extension of a wage economy with the dispersal of matériel production managed by *zaibatsu*, and relocation of educational sites from Tokyo. The acquisition and assembly of land by the State creates new patterns of ownership that will strongly influence later development of the city.

4. Integration within the Bretton Woods system. After a short period of severe austerity and the institutional reforms of the occupation, Japan emerged developed a strong manufacturing economy based a Toyotaist mode of regulation. This was managed under strong government guidance exercised through the Ministry of Finance and the leadership of bureaucrats within MITI (Johnson, 1982) and implemented through corporate *keiretsu*. The strategy initially relied on reform of and investment in key industrial sectors, low cost imported energy and privileged access to American and European markets. The State played a central role not only in terms of strategy but also through investment in infrastructure, landfill projects and public housing, and facilitating World Bank capital for industrial investment. This paradigm survived until the 1973 oil price shocks and promoted massive urban transformation (Sorensen, 2002).

These changes strongly influenced not only institutional but also biographical and routine time. Social mobility, internal migration and exposure to 'Western' (especially American) culture from the early 1950's transformed values and lifestyles – especially amongst the cohort born in the 1930's. Western-style clothing was adopted and achievement in education – especially successful enrolment at key academic institutions – became the established route to career status. Emergent consumerism began to be reflected in increasing dwelling size. However these transformations evolved in the context of an essentially Japanese social and economic space, with only limited transnational movements of people, employment and capital. The expansion of the urban envelope

was driven by the need to facilitate industrial expansion. Environmental (especially industrial pollution) and planning controls were weak with growth taking place piecemeal. The city expanded sideways, cheaply, and untidily.

5. Globalising institutions, neo-liberalism and Post-Toyotaism. After 1975 Japan successfully restructured to promote energy efficient manufacturing. *Keiretsu* in partnership with the State developed from a largely domestic production platform to produce many globally successful corporate manufacturers and investors. Direct overseas investment promotes flexible accumulation (Harvey, 1988) and a Japanese local manufacturing presence in most key markets and promoting a pervasive globalisation of organisations, institutions and ideas. During a decade of time-space compression (Harvey 1989:240-2,305-8, 1996:242-7) driven by cheap air transport, computing and evolving communications networks, Tokyo emerges as one of the global centres of financial power - a process that fuels a boom in investment and property.

This is a period of growth in personal consumption marked by a restructuring of retailing space and a rapid growth in retail and service employment. Consumers are aware of, and now often have direct experience of, lifestyles in other developed countries. Dwelling sizes increase rapidly to facilitate this growth in possessions, and increased incomes are reflected in car ownership and larger, better built homes. The city expands both upwards in the shape of new condominium developments on central sites and outwards in the shape of better quality suburban development focused on larger *danchi* with larger, fully serviced building plots.

6. Post-boom and ageing society. Despite crises affecting banking, investment and real estate asset values, Japanese corporate power continues to be defined by the expansion of advanced technologies and world leadership in sectors such as computer hardware and automobile technology. 'Off-shoring' of manufacturing through subsidiaries or contractors has promoted much stronger economic links within East Asia and especially with China. Consumerism has become sophisticated and segmented (Clammer, 1997; 2001). Many Japanese of all ages travel extensively for pleasure and study, initially to North America but increasingly to Australia and Europe. Avoidance of marriage and low birth rates transform the population age profile. Japan is becoming an ageing society with career focused adults more likely to live alone or with their parents.

For the first time the population declines in absolute terms.

The collapse of the speculative 'bubble' in urban land between 1990 and 1992 encourages corporate investors to develop property rather than sell sites to recoup capital. There is further investment in retailing, especially in new mall developments, and also in health and welfare infrastructure. With declining land values real estate investors also seek to maximise income by speculative building for sale, either by 'infill' or especially by participating in large condominium projects with the risks distributed amongst several specialist companies. Construction is typically on recycled central sites, often land previously used for manufacturing. Urban fringe detached housing is increasingly focused in a few large 'New Town' schemes. Dwellings continue to increase in size and housing formats and designs increasingly also cater for solitary households. The city primarily extends upwards, and in the centre.

10.7 Taking 'process' as a perspective – some conclusions

In Chapter Two I outlined a theoretical context for this study which would adopt as far as practicable 'process as a perspective' and in Chapter Three I developed a methodology intended to facilitate this. To what extent has this succeeded and what has been the value of this process paradigm in ordering and presenting the substantive content of this work in the last six chapters?

The six entities that comprised the data model presented in 3.1 were all 'processual' to some degree. Both 'household' and 'establishment' were quite strongly identified as consisting of complex bundles of processes facilitating household and organisational routines and capacities. Dwellings, premises and to lesser degree site were described as concrete particulars, specific physical structures and defined areas of ground *but as functioning in the processual context of use* as a home, business or institution. I have not pursued the notion of 'buildings as processes' but their replacement surely is, and structures are often transient in terms of the criteria adopted here. Their modal life cycle of 30 to 40 years is less than that of their occupants, and the processual dimension of their functional life cycle is evident. I have not elaborated on the more philosophical idea of 'person as process' but evidently our life experience is also inherently process based.

The methodology developed in Chapter Three distinguished between 'transition' and

'change' and it was clarified that to 'privilege process as a perspective' did not mean to 'privilege observation of transition'. I feel that this study has actually privileged process to the degree that it has achieved two things. Firstly it set out to establish a set of metrics that could be used to identify and chart the patterns of change that reflected the product of key social processes over an extended period of time. Has this succeeded? I think that the first sections of this chapter are evidence that it has, because in the text and the accompanying tables I have been able to present a consistent analysis of the evolution of Chiba's urban space and incorporate that view into a summary of key dynamics that have influenced the production of this change. The perspective offered by the methodology has focused on the spatiotemporal aspect, offered a four dimensional view based on the evidence of diachronic study and making change of use of sites and space key metrics.

Secondly this approach has facilitated a consolidated view of the interrelationship of processes associated with quite different uses of urban space. The use of random samples to count the frequency of different types of site – and so estimate their changing relative area over time - gave an opportunity to consider their changing significance and interrelationship in terms of the whole area of the expanding urban envelope. This could only be meaningfully done expressed in spatial terms – what would it mean to compare a factory employing a hundred people with a *danchi* housing the same number, let alone annual business turnover and residential bedrooms?

Because the approach examined these separate spatiotemporal transformations within a single frame of analysis it has provided some original perspectives on urban change. For example a positive link has been suggested here between mode of regulation and dwelling size, and the impact of a household size on the process of recycling space.

If this had been a small scale study, perhaps an ethnographic study of changes over a year in the lives of the residents of one small *banchi* based on direct observation and interview, then detailed patterns of 'real processes' and sub-processes at work could have been categorised and examined (for example 'maintaining a household' → 'meal preparation'). But this study was not small scale. Taking Andy Goldsworthy's advice in the epigraph to this chapter we 'stayed in one place' to understand change, but it was a 'Big Place'. None of the infinite array of specific events and processes that constituted

Chiba-*shi* over 130 years were directly observable, and the surviving evidence of choices and consequences was filtered through the distorting lens of a high level of abstraction. The common format used for chapters here was to discuss briefly the history of the period in respect of key social, political and economic change insofar as they potentially influenced the built environment of the city and then, to review the six entities identified in Section 3.1 using the metrics listed in 3.10. This was not to view process directly but outcome, and as the scope of the study widened the distance from evidence of specific processes at work increases almost exponentially. This is a clear limitation on the capacity for taking process as a perspective in an even larger scale studies.

10. 8 What contexts promote transience and durability?

In these final two sections I want to offer some answers to my original research question 'what is transient and what endures in Japanese urban space?' I have already suggested that this study was unlikely to point to particular predictive or causal relationships. The patterns of urban evolution revealed even in a high level study of a single city are profoundly complex, they do not share a common cause, but neither are they random nor unrelated. I plan to draw conclusions not by nominating specific causal mechanisms but by considering which agencies and dynamics are evident in process within the transformations revealed within this diachronic study. In this first section I want to reflect on how some of the theoretical concepts introduced in Chapter Two contribute to promoting change or stability – or in some cases aspects to both of these.

1. *Agendas of institutions and organisations.* An implicit question behind each substantive chapter of this study was "to what extent is there conscious and deliberate 'authorship' behind this pattern of events? ". At the level of the built environment most decisions involve careful evidence based choices involving size, function, cost and agency concerning the planning, financing and construction of every structure. But I am thinking here rather of more enduring intention especially on the part of the State to achieve something other than good governance or a satisfactory return on capital. The intervention of the State has arguably often been distinctive, pervasive, and characteristic of Japan, a theme explored theoretically in studies such as Eisenstadt's *Japanese Civilization* (1996) referred to extensively here, but also in specialist texts such as Schwartz and Pharr (2003) and Samuels (1983). This tendency may be in a part be a legacy of an enduring framework of neo-Confucian values. But is also more directly a

product of the lessons of East Asian history which engendered a single-minded pursuit first of military and later economic security as Japan strove to maintain national integrity. The evolution of Chiba is often strongly and directly influenced by this agenda, beginning with the institution of Prefectural government and compulsory education, and later through military strategies, coastal landfill schemes and worker housing projects. 'Hands on' government intervention to implement contemporary agendas is a distinctively enduring characteristic of Chiba's urban space. The State is no passive referee. It is active at the level of space constituting power, a conceived space with which it engages at a quite different level of magnitude compared with representations of space sponsored either by regulation and the construction of infrastructure.

2. *The long durée of institutions.* The imprecise meaning of the term 'institution' and its confusion with the term 'organisation' was noted in Chapter Two, the natural meaning of the expression appears to cover two quite distinct meanings. The role of organisations in promoting transience and durability will be dealt with in the following section. Here I want to consider the term in the sense of Giddens' definition of "practices which have the greatest time-space extension within societal totalities" (1984:17) and Berger and Luckman's definition of "patterns and conventions of social order and cooperation governing the behaviour of a set of individuals" (p.34), in other words as a reference to concepts such as 'marriage', 'money', 'education', 'property' and the social dimensions of 'family'. Even within this more limited context I don't believe that in the framework of this study the term 'institution' proved to be a particularly clear or useful concept. Giddens considers institutions as 'practices' promoting stability, pointing to the underlying structures of signification, domination and legitimation, but as such they correspond to a 'set' of wide membership with little in common. Seen from the perspective of process they correspond to the fourth characteristic defined in Table 2.3 – corresponding to a pattern, function or template. By definition institutions should be practices reproduced primarily through those events and processes associated with daily routine and biography which both strongly promote and demonstrate durability. But on closer examination in practice they metamorphose almost as rapidly as the constructed environment itself. For example, apart from the fact that the specific basis of the Japanese currency has been completely changed twice during the period of study (1871 and 1934) the wider concept of 'money' as a means of exchange has been transformed in terms of the role of credit, convertibility and as one of a range of mechanisms of

transaction. 'Marriage' in late Meiji Japan was as much a contract between families as it was between individuals and perceived as the introduction of a daughter-in-law (sometimes an adoptive son-in-law) into an existing household. But now marriage is nearly always associated with new household formation involving primarily two people, although it remains a purely civil contract.

Concepts of 'property' were completely revised during the Meiji era (Eisenstadt 1995:25-27) to legalise the private (as opposed to patrilineal family and collective) ownership of land and property, but their subsequent stability has made possible the development of a form of capitalist system that has largely endured unchanged since - apart from the impact of the agricultural land reforms of 1947. Insofar as 'title' might be considered a form of legal institution it has had an extremely powerful and durable influence on the evolving geometry of urban space and the State has only been prepared to consider to compulsory purchase as a matter of absolute last resort. In my opinion this is a striking example of an 'institution' influencing the character of urban space, and other social institutions have not been central in terms of maintaining enduring forms within the city.

Some institutions important in East Asian culture but not in Britain – for example the importance of *sempai* 'seniority' relations – have persisted in Japan and do play an important part in the promoting the durability of many social and working relationships and so indirectly influence enduring use of space.

3. Organisations. The scope and function of organisations has transformed remarkably over the period covered by this study. Even at the beginning of the Taisho era in 1911 most people living in a provincial town or village only encountered organisations in the context of either the expanding agencies of the state – schools, public and town offices, police and security services and inspectors – or in the form of local temples and shrines. There were few voluntary associations apart from registered political parties not run by the state. Apart from this almost every other form of small enterprise was run not by organisations but by families.

Since then the role of organisations in the form of incorporated enterprises, joint stock companies, limited companies, partnerships, public agencies and voluntary associations

has expanded to both create and strongly mediate in the individual's relationship with urban space and his or her capacity for maintaining daily routines. Dodgshon (1998:134-137) contrasts the 'geographical inertia of organizational forms' that arises from 'the strategic or hard programmed information that defines their roles, relations and routines' with the growth stage of organisations in which they elaborate structure and behaviour through 'processes of differentiation, specialisation, incorporation, hierarchization, linearization and centralization'. This second aspect is certainly a catalyst for change within the city. The transformation from the central role of family capital towards a more dynamic requirement to secure a return on corporate or bank capital employed should be seen as a powerful agent of transformation. It is at the heart of both directly promoting change through creating new construction and introducing new technologies and demand for goods and services, and also indirectly sponsoring innovation through constantly demanding the institution of new processes and routines within the biography of the individual.

However there are also two contexts in which organisations in Japan have remained relatively stable and these are both related to establishments constituted as process. While the function and scope of organisations might have been transformed out of all recognition those legal forms of enterprises that survived the post-war reforms have endured over a long period as concepts in commercial law. Enterprises not structured simply as individual proprietorships are generally incorporated as companies (joint stock, limited liability, partnerships), non-company corporations (juridical persons, cooperative associations and foundations) or unincorporated associations (social and political groups and trade unions). Some legal categories of association common in the UK (e.g. registered charities) are unknown in Japan. The administrative form of organisations and their relationship with the biographical time of individuals – management structure, forms of accounting, terms of contract and employment – might also be considered as relatively stable processes across consecutive regimes of accumulation (Fujita, 1991; 2003).

4. Households. Although the majority of households still consist of biologically related families or married couples there has never been a time when this has been exclusively the case and that there has been a long term trend throughout the whole period of study for the proportion of solitary households to increase to the extent that one person

households are now the modal class form within Chiba's urban space. This will inevitably lead to a transformation of both the form and function of processes associated with households. Solitary households are a significantly different 'subset' - they typically involve only six of the nine functions identified in Fig. 3.2

As the proportion of children within the community declines (and in Chiba under 15's have declined from 33.5% of the resident population in 1950 to 13.8% in 2005), and grandparents become more remote spatially and socially, the role of the household in terms of transmitting enduring values must also be changing. This is clear from the kinds of issues such as the growth of bullying, the growing phenomena of *hikikomori* and 'parasite singles' discussed in Chapter Nine. What kind of *habitus* (Bourdieu, 1977) or socialisation does pre-school and formal education provide in respect of the transmission of cultural values?

Nevertheless the persistence of the household as an almost universal standard mode of dwelling relationship and the enduring nature of household functions and the processes by which these are achieved has to be identified as a core area of durability. The household is the key social space and it is within this space that biological and social reproduction and the transmission of core cultural values takes place. As we have seen, in Chapter Four, the physical layout of dwellings strongly reflects this.

5. The individual biography

I argued in section 10.2 that the physical character and content of biographies has been transformed dramatically during the period covered by this study. Typically life spans have increased by a half, childhood and formal education now account for around two decades and most people can look forward to around two decades of active life after retirement. The opportunity offered by education in early stages of biography to access and adopt new life courses is self-evidently an important catalyst for both social and also geographical mobility. In this sense the changing format of biography very significantly promotes change, creates new forms of consumption and demands alternative uses of space and the use of more space.

However the nature of biography is also essentially conservative, it represents opportunity increasingly spent, an investment of 'potential' transformed into habits, understanding and skills that for most becomes more 'set in concrete' with passing time and manifested in a fixed use of space – especially so in a community where people tend not to move after retirement. This is very evident in the relative average age of local communities within *chōme* in Chiba-*shi*. It is also true at the practical level of older generations retaining in their own lives forms and conventions that reflect passing modes of living. The constant informal use of vacant lots in the city for allotments and growing flowers for example, is a manifestation of practical skills learned during childhood in farming families by older residents. Like household, while the form of biographies often promotes change, the content enduring within the life traces of the individual equally promotes stability within the use of space.

6. The rhythms and routines of daily life.

The relationships between people and the processes of households and institutions are effectively defined and actualised by rhythms and routine – now primarily daily and weekly but other cycles persist. When I began this study, influenced by Lefebvre (2004), one of my working hypotheses was that an understanding of rhythm would play a large element in understanding why things endure within urban space. Stereotypes such as the commuter's daily routine appear to encapsulate and typify enduring behaviours.

And to a point this is true. The evidence for the extent of commuting in the substantive chapters for example underlines the degree to which such rhythm and routine is crucial to the maintaining the operation of all enterprises. In the short to medium term, the part they play in larger processes can be enduring and inflexible – catching the same train to work in the morning, being at school by 8:20, cooking the evening meal by 7:00. To this extent rhythm and routine are crucial in perpetuating some of the more complex enduring patterns – waged employment, formal education, the role of households.

But specific rhythms and routines are short term building blocks, they are for the management of the nearer horizons of duration, operate primarily in 'practical consciousness' (Giddens 1984:41-45), and rarely persist for anything approaching the

rule of thumb of 'a lifetime or two generations' even in the context of organisations. Actually they are usually the very point at which processes can be observed to change by one of the taxonomies of change suggested in Fig. 2.4 We catch one train until we catch another (substitution, $a \rightarrow b$), we go to school each morning by 8:20 until we go to university (evolution, $a \rightarrow a^1$). Adaptation to and evolution of routines are the main mechanisms through which transformations are achieved, new situations and technologies absorbed. I want to argue that daily routine might be considered at best neutral in terms of promoting enduring use of urban space.

10.9 So - what does endure and what is transient within the city?

In Chapter Three I suggested that any answer to my research question "What is transient and what endures within Japanese urban space?" was unlikely to identify a few specific and direct causal relationships. The complexity and scale of processes that create and function within urban forms are simply too diverse to be the outcome of any one single pattern of cause and effect. But there are also clearly several constant themes that run consistently through the many different strands of evidence that have been assembled here.

Physical objects and structures do not generally endure, there is very little that can be accounted as physically durable in Japanese urban space. I have perhaps investigated this issue insufficiently here - is it really simply the case that technologies associated with using wood as a primary building material result in more vulnerable and shorter lived structures compared with those built in other cultures in brick or stone? Or does the choice of wood as a material itself reveal something more subtle about priorities, some preference for making again 'clean and new' in each generation (Ohnuki-Tierney, 1984:19-46) rather than expressing qualities of permanence, solidity and affluence in other more durable materials? Until the 1950's most Japanese lived in cheap wooden houses because they were poor, and simple wooden dwellings were both the 'norm' and all that was available. Meiji-era Japanese dwellings (Morse, 1886) were the physical equivalent of seventeenth century English worker's cottages and few of those survive in any kind of authentic form. Much of the urban environment described here was renewed within a human lifespan because, like an old car, it was worn out. What hadn't burned in 1945 had reached the end of its own useful lifespan. Mechanical and chemical decay had set in, it was infested with insects and mould; old, dirty and simply too small. To

physically survive old buildings need some kind of a special value, some notable historical use or an association like a temple. Or, like a Shimōsa farmhouse, be strongly built and representative of the continuing *ie* – the family that dwells there.

Relationships of possession do endure. What certainly strongly endures within the form of the built environment are relations of possession, legal title to land, definitions of boundaries and the distinctions between private space and public circulation. Harvey (1985:43) offers an explanation for this aspect of durability when he observes that “Capital ... must represent itself in the form of a physical landscape created in its own image, as use values created through human labour and embedded in the land to facilitate the further accumulation”. Lefebvre (1984:364) points to the role that the fragmentation of space through dispersal of title and ‘the subdivision of space for the purposes of buying and selling’ ultimately ensuring homogeneity and inertia. The ongoing subdivision of title is also an enduring urban process, in the case of condominiums taken to a position in which what is effectively traded is volumes of space. This is an aspect of urban space that proved so enduring that even the complete physical destruction of the entire built form of the city by napalm bombing in 1945 failed to erase any of the detail of the underlying geometries of ownership.

To endure implies use value. One strong personal insight that was an outcome of this study was the understanding that a tendency ‘to endure’ is generally an outcome of active relationships; things endure because they are important and have a clear perceived use value. *To endure requires persistence.* Things which are marginal, neglected and have little value might linger unnoticed for a while but are soon destroyed, recycled, demolished, overgrown, forgotten. In the course of completing the field survey I sometimes came across areas where a small section of the built environment had just fallen out of use - in fact it became rather easy to predict these sites simply from the way in which that corner of a *banchi* might be represented on a Zenrin map. On the ground the area would already be overgrown with young bamboo and willow, a former tradesman’s yard perhaps with rusting scaffolding and corrugated tin roofs, or small workshop, or sometimes a dwelling (see Fig.2.1). This was urban space that had lost all use value, probably most commonly through the death of a proprietor. All processual relationships involving ownership had ceased, there was no enterprise or household making use of the space. Within a few years nothing would endure of those redundant

premises or dwellings, the site would be recycled. By contrast, built environments with a substantial residual use value tend to persist.

The infrastructure of reproduction endures. I want to suggest that the most prevalent formats of the enduring use of urban spaces are those associated with biological and social reproduction of families within households. The nature of intimate family and social spaces are both the context and product of family membership, and their quality and detail is involved in the direct and intimate transmission of values across generations. Conventions about the use of space learned in early childhood (Berger and Luckmann, 1966:149-57) persist through a lifetime. This theme was explored in Chapter Four but I want to reiterate the extent to which we internalise values as children as 'spatial values'; part of 'growing up' is to learn to conform in respect of the 'right use' of spaces - where we may and may not go and what we may or must not do there, even how closely we should stand to each other (Hall, 1966).

Non-negotiable space is durable. I also want to suggest that the most enduring social forms related to spatial use are often those conventions of interaction in conditions of co-presence in which no one party has the capacity to change the 'rules of engagement'. We conform to a large repertoire of conventional uses of space because others share that same expectation of us in the context of 'going on' within daily life, and we in return share these expectations of others. This is an important dimension of Giddens' structuration theory (1984:64) and of Goffman's (1959) observations. Some of these conventions – not jaywalking against a red light, trespassing on private land or entering buildings without permission, have the sanction of law. But most – in Japan for example taking off our shoes on entering living spaces, welcoming customers into shops, standing behind the yellow line on station platforms and on the left on escalators, wearing a face mask if one has a cold, entering the supermarket by the door marked 'entrance' - only have the sanction of the unspoken approval or approbation of other parties involved. However they share the characteristic of being 'non-negotiable', there is no unilateral option available to us to disengage from these very durable socio-spatial practices. Such encounters are endlessly replicated in practical consciousness in the form of daily routines throughout a lifetime.

My conclusions regarding 'transience' are much more tentative. At the level of experience

comprising individual biography transience is apparent in the *transience inherent in impermanence* – the changing context of *events and consequences*. Part of this is inherently processual or biological - for example the completion of defined life stages in terms of education and career. However the most naked experiences of transience are those that are unforeseen, often painful – a change of circumstances suddenly resulting in living elsewhere, the birth of children and the death of family and friends. They raise ontological questions, offer evidence of the illusory nature of 'security'. In life in the city direct sensory experience of transience is pervasive but often low key – the sound of splintering wood and of bulldozers busy at work or the sight of cranes erecting new steelwork on lots that last month were still being used by shoppers for parking.

Transience as volition. One common factor behind the transient forms and changing uses of the built urban environment is volition – the exercise of choice. Referring to the taxonomies of change outlined in Fig.2.5, transformations might be triggered by dissociation – a house fire or a death. But subsequent significant links in the consequential causal chain of events are volitional acts often involving integration, incorporation or substitution– drawing of plans, service of notice to quit, commitment of capital, the decision to live there and not here, to invest in this technology.

Transience as an 'innovative fix'. Volition is exercised by individuals in the context of both households (which dwelling and car to buy, which school to attend, which employer to work for) and as consumers. However the really important choices and decisions that have influenced the development of Chiba-*shi* in are those made by state institutions and an ever expanding universe of organisations. Choices exercised by the state establish dimensions and directions of change, and influence the production of new urban space and the use of space for state functions. But the main impetus for transformation comes from enterprises whose existence depends on it and especially those which exist to cycle their resources within the primary circuits of capital to produce commodities and services. The effective use of capital requires not merely a spatial and temporal fix, but constant innovation (Harvey 1990:105-6) in the range of products and services on offer and the means of manufacturing, delivering and consuming these. 'Steady states' profit nobody.

So my still tentative and provisional answer to the question pursued throughout this thesis is this. Taking the form and function of the built environment as a text, I want to

suggest that what endures in Japanese urban space is the capacity to conserve the framework and processes within which biological and social reproduction continue, and the capacity to conserve and transmit the patterns of relationships and behaviour that protect the resources that enable this. The main 'templates' involved are those concerned with recursive patterns of social reproduction found in the functioning of households and situations of encounter, and in relations of possession of space and resources.

What is transient is the underlying impermanence of individuals, objects and relationships: iterations, biographies and events. But transience is also an outcome of volition, the choices people make and especially of the agendas of organisations, establishments and enterprises which exist to promote profit, innovation and change.

These two dynamics are contrasting, but they are not polar opposites. Their relationship is essentially dialectic. Seekers of future 'utopias' might do worse than to look for a healthy balance between the two.

Appendix 1: Sample Point Survey and Database Design

1. Introduction

The design of the Sample Point Survey developed to formally sample and provide a consolidated view of the changing use of urban space since 1960 is described in Sections 3.6 to 3.9, and the high level data model adopted is illustrated in Fig. 3.4. This Appendix documents the detailed categories and attributes employed for recording information for each of the main entities.

2. Sample Point

A sample point is a *physical point whose location is specified by co-ordinates*. The co-ordinates are theoretically defined to the nearest metre based on Tokyo Datum (see page 70). Sample points have two primary attributes, surface type and function.

Table A1.1: SAMPLE POINT SURFACE TYPES	
category	description and examples
coniferous woodland	Planting either for the timber crop (<i>tsugi</i>) or utility value especially as a windbreak. Occasionally amenity
broadleaf and bamboo	climax vegetation on slopes and unused land, ranging from tall perennials to broadleaf woodland.
amenity planting	maintained areas of ornamental trees, shrubs and bedding plants in gardens, parks and around buildings
grass	Amenity grass areas including lawns and verges, grass in parks and sports pitches (few homes have sufficiently large gardens for lawns). Maintained vacant land cut seasonally, building plots and slopes
<i>hatake</i>	unirrigated fields and allotments including associated glasshouses and polytents
orchard	fruit trees
<i>tanbo</i>	irrigatable pans for rice cultivation with associated channels and drains
metalled	road and other impermeable paved surfaces
aggregate	Gravel, sand and shale surfaces in car parks, sports pitches and unmetalled roads. Subsoil exposure
railway track	tracks, sleepers and ballast and permanent way structures
structure surface	the roof of any building or the surface of fixed plant and equipment. Retaining walls and civil engineering structures
water	rivers, <i>ike</i> ponds, lakes, sea and foreshore

TABLE A1.2: SAMPLE POINT FUNCTIONS	
<i>category</i>	<i>description and notes</i>
road surface	all public roads. Roads on private sites
parking for cars	residential car ports and parking spaces. Contract parking. Parking at shops and in public parking spaces. Unofficial parking
cycles and motorcycle parking	Designated parking for cycles and motorcycles at stations and in public parking sites.
commercial parking	Parking for commercial vehicles and plant at depots and in leased parking areas.
residential structure	Houses and apartment blocks with no adapted spaces for carrying out business or trade
retail structure ¹	Open to the public and incorporating space reserved for the retail sale of goods
service structure ¹	Either structures in which a services are provided (e.g. hairdressing, restaurants) or from which an off-site service business is run (builder, plumber)
office structure ¹	Structures used for managerial, administrative clerical and accounting functions
storage or distribution structure	primary storage, warehousing, cold storage, distribution chain and logistics (but not post production storage at manufacturing sites which is impossible to identify externally)
education structure ¹	kindergartens, elementary schools, junior high and high schools, special schools, colleges, universities, vocational and specialist skill training. <i>Juku</i> and specialist teachers
health and welfare structure ¹	Doctor's and dentist's offices, community health, traditional medicine, private and public hospitals, specialist, day and residential care for disabled and elderly.
public administration and services	city and Prefectural offices, <i>kominkan</i> , libraries, public halls and centres, museums
public transportation structure	stations, bus stations, depots, taxi ranks
manufacturing structure	factories, outdoor fabrication sites, workshops
<i>(structure containing multiple functions)</i>	<i>(many contain two or more of 6,7,8,11 or multiple residences. For example a building with shop or service units below and offices or apartments above)</i>
outdoor fixed plant and equipment	refinery storage, gas and electricity distribution equipment, chemical process plant
open air storage and distribution	dockside storage of timber. Outdoor storage of steel and concrete. New and used car storage
utility area	loading and unloading areas. temporary storage of waste. Location of maintenance equipment.
amenity	Shrubbery, plant beds and areas planted for amenity. Public parks and private amenity space
children's play area	area with play equipment but not neighbourhood parks included above
sports locations	stadia, sports halls, pitches and courts (not school gymnasias which also serve as halls)
railway tracks	JR, Keisei and Chiba Monorail
private garden	private gardens - houses and <i>ie</i> (but see below)
house surround	small areas around dwellings containing planters and tubs, garden equipment storage, childrens toys etc. Most house plots are too small to possess a meaningful 'private garden'
footpath or pavement	adjacent to roads where they exist. Pedestrian routes, paths in parks etc. Off-highway access
slope	embankments and <i>yato</i> margins. Usually wooded. May have concrete earthquake protection
area under construction	sites where contractors are currently actively at work
vacant lot	unused building plots especially in <i>danchi</i> . Usually maintained grass but may have secondary use as an allotment, or for unofficial parking.
cultivated area	land either fallow, under crops or allotments and orchards
commercial or amenity woodland	all concentrated 'stands' of timber
unused land	land on slopes or liable to flooding with scrub vegetation or bamboo. May include neglected 'vacant lots'
engineering project	structure not otherwise classified. For example dam, levees
water and foreshore	rivers, lakes, sea and foreshore
Note ¹ In the Chiba built environment these functions may include residential space above or behind the functional area. This is ignored in the analysis of sample point function but is addressed in the analysis of structure category in site function	

Sample points also have five positional attributes derived from co-ordinates. They are:

<i>Attribute</i>	<i>Description</i>	<i>Format</i>
1960 DID	located within the area defined as DID in the 1960 Population Census	logical
1975 DID	located within the area defined as DID in the 1975 Population Census	logical
1990 DID	located within the area defined as DID in the 1990 Population Census	logical
ku	location within the <i>ku</i> ward structure defined in 1992	code
cho	location within the current administrative <i>cho</i> or <i>chome</i>	code

3. Sampled Site

A sampled site is an instance of a mode of use of a site containing one or more sample points. A primary sampled site is the one which best identifies the primary purpose of the function of the complete site. Both sampled sites and primary sampled sites are categorised using the attributes in Tables A1.4 – A1.11. A number of secondary attributes are also held in relational tables within the database (e.g. for multiple housing, number of storeys) but these are not documented here.

<i>category</i>	<i>descriptions and examples</i>	<i>length</i> ¹	<i>metalled area</i> ¹
INDIVIDUAL MOVEMENT			
motorway	Higashi-Kanto Expressway and Keio Road. Togane Toll Highway	75 km	1.53 km ²
national highway	All toll free trunk roads maintained by the National Highways Agency		
Prefectural highway	Prefectural highways (equivalent of most 'A' roads in the UK)	116 km	1.52 km ²
main distributor	Primary local distributor highway links within the city. Marked in yellow on 1:10,000 City 'Mapple' Atlas plans and similar detailed published atlases	2609 km	17.79 km ²
white distributor	Secondary local distributor highway links within the city. Marked in white on 1:10,000 City 'Mapple' Atlas plans and similar detailed published atlases		
old lane network	Former main rights of way joining villages prior to urbanisation (apart from those now upgraded to distributors)		
<i>danchi</i> access	access roads within private housing <i>jûtaku danchi</i>		
estate access	access roads in public multiple dwelling <i>danchi</i> and industrial estates		
lane access	access from old lane networks into <i>mini-kaihatsu</i> housing development		
other highway link	links to detached buildings and private roads		
footpath	short pedestrian and cycle links between highways (but not pavements)	*	*
walking or cycle way	'spine' pedestrian and cycle access in 'new town' areas and long distance routes (e.g. Hanamigawa River route)		
plazas	outdoor pedestrian precincts and circulation areas		
GROUP MOVEMENT			
rail line	JR routes (53.2 km) Keisei routes (22 km) including depots and sidings	*	*
monorail	Chiba Monorail routes (15.2 km). Primarily above highway median strips		
station	All station areas including platforms		
bus depots and <i>noriba</i>	central and area bus terminals, bus depots, bays and shelters		
public quay	port areas not restricted to a single enterprise		
taxi service	includes ranks and taxi waiting and parking areas and taxi company sites		

¹ 2005 data from *Chiba-shi Tokei* Table 72. Whole *shi* and metalled area excludes embankments and earthworks etc

TABLE A1.5: MODES OF USE: SOLELY RESIDENTIAL	
<i>category</i>	<i>description and examples</i>
INDIVIDUAL OCCUPANCY	
detached dwelling	on own plot and intended for single household occupancy (but not in next category)
prefab	single storey dwelling to standard 'austerity' designs not exceeding 60m ² floor area. Almost always originally erected in a group between 1955 and 1965
<i>ie</i> cluster	traditional single storey farmhouse design originally with buildings on three sides of a courtyard and a gate on the fourth. Often now very desirable residences with multiple generation site occupancy
shared site	site with two or more separate structures used as dwellings (typically an older single storey house and a newer two storey building). Usually evidence of multi-generation site occupancy although one dwelling might have been sold or rented.
terrace house	uncommon format in Japan sometimes used in 1950s and 1960s public housing and occasionally in modern developments for rent.
semi-detached	uncommon format in Japan. Used occasionally in 1960's public housing <i>maisonetto</i> and very rarely to develop a private site in which case the notes on 'shared site' usually apply
MULTIPLE OCCUPANCY	
exterior staircase	common format of cheap rented <i>aparto</i> accommodation (down to 35m ² with one dwelling room). Usually two storey timber frame with 2 to 4 apartments per storey. Each tenant has separate exterior door with access to upper floor by external iron staircase and balcony. Occasionally bigger steel framed versions have up to four floors.
exterior stair well	ubiquitous format for 1960's and 1970's steel framed public apartment buildings. Unenclosed stair well (usually five storeys) gives access at each landing to two apartments, typically of 60-75m ² . Smaller 2F*2apt versions exist.
interior stair well	primary format for higher rise steel framed buildings containing public and private rented apartments, and where the first storey may be used for retailing. Elevators common - very similar to UK practice.
condominium	often large residential projects in which a developer constructs and offers for sale apartments after which title in the building is dispersed amongst many resident owners who pay management fees. Apartments similar in area to detached houses 85-130 m ² . Owners usually have one designated parking place on site. Controlled access to building.
condominium cluster	Condominium developments involving multiple buildings with surrounding amenity areas. Parking often involves complex technology to achieve density. Increasingly an intensive regime of security involving controlled access to the whole site.
SHARED AMENITIES	
employee hostel	rooms in supervised buildings for young employees either working away from their usual base or starting careers away from parental home. Food preparation normally resident's responsibility in shared kitchen.
student hostel	rooms on supervised sites mainly for foreign students (Japanese students usually live at home). Food preparation normally resident's responsibility in shared kitchen.
nurses hostel	residential blocks at training hospitals operating as per employees hostels.

TABLE A1.6: MODES OF USE: RETAIL, SERVICES, COMMERCIAL RETAILING, ON-SITE AND OFF SITE SERVICES and BANKING AND FINANCE

<i>structure category</i>	<i>characteristics</i>	<i>examples</i>
dwelling	Living earned within standard dwelling space	On-site: piano or calligraphy teacher
domestic extension	dedicated commercial space either on first storey below an apartment or, very commonly, in a structure built forward of the original dwelling.	Retail: older family businesses On-site: hairdresser, dry cleaner
kiosk	small pavement structure with one retail counter or service	Retail: lottery tickets On-site: ramen noodle stall Bank: cash point
leased space	commercial use of a part of a structure. For example an office using one floor of a building.	Retail: most new small businesses
outdoor space	retailing or service provided outdoors	Retail: market stall
custom built unit	shop units for lease within a multiple use structure or small purpose built units such as convenience stores	Retail and on-site. Most recent independent businesses
detached unit	single large 'shed' dedicated to retail or service or a freestanding office block	Retail: supermarket, DIY, clothing chain. Office: Offsite: printing shop
department store	very similar to contemporary British practice with extensive spaces leased to franchises. Usually a supermarket in the basement and upper floor parking	Retailing: key businesses in Chiba are Sogo, JusCo, Seiyu Saty and Daiei
mall	Shopping venues incorporating a range of retail outlets in sheds and custom built units with common parking.	Retail: There are no large enclosed malls in Chiba. Most malls take a format of groups of detached units around central parking.
special build	Large specialist commercial structures not easily converted to alternative uses	Retail: car showroom Bank: data or training centre
workshop	structure adapted for service and maintenance	On-site: car repairs Off-site: contract laundry
yard or depot	structures and/or outdoor space for storage usually with space for office functions	Off site: Builders yard

TABLE A1.7: MODES OF USE: MANUFACTURING, DISTRIBUTION, UTILITIES		
<i>category</i>	<i>characteristics</i>	<i>examples</i>
MANUFACTURING		
workshop	small contractors, often of components, or fabricators. Also craft based workshops (e.g. pottery, joinery)	circuit boards, lens grinding, welding pottery, furniture
detached unit	a process range involving few production lines or fabrication Typically operating in one production area in a single structure	bakery, tofu factory, plastic mouldings, steel fabrication
specialist site	usually a large site with several processes covering a whole manufacturing sector in several process sheds	building components, machine tools, electrical equipment, steel finishing
DISTRIBUTION		
outdoor	typically storage of raw materials such as timber but also finished goods such as vehicle distribution	timber yard, containers, used cars for export, concrete pipes and sections
detached unit	traditional 'shed' warehouse storage with loading and unloading bays and forklift handling of palletted goods	retailer group depot, stationery goods distributor
special build	major logistics centres. Primary distribution with mechanised warehousing or specialist functions such as cold storage.	DHL depot, Chiba Frozen foods. Chiba Wholesale Markets
UTILITIES		
recycling point	points for the collection or concentration of recyclable materials	street 'unburnables' collection point, scrap yard, recycled paper depot
treatment plants	filtration of water supply and treatment of effluent. Incineration of burnable refuse	sewerage treatment works
distribution infrastructure	water towers and pumping stations. Gas storage	Tokyo Gas primary site
transmission infrastructure	electrical transmission and switching. Telecommunications towers equipment and exchanges. Broadcasting	NTT operational buildings, NHK buildings, Toden sub-stations
public office	utility and telephone offices and showrooms used by the public	NTT account centres, DoCoMo phone shops
depot	material and vehicle storage for off-site working by utilities or contractors. Loading of gas cylinders	water company plant depots, cesspit contractors
management centre	strategic management of utilities	offices and data processing centres for utilities

TABLE A1.8: MODES OF USE: SOCIAL PROVISION	
EDUCATION HEALTH and WELFARE	
<i>category</i>	<i>comments</i>
EDUCATION	
kindergarten	facilities for children up to six years old, typically 1F sites. City or private provision
elementary schools	public and private schools for elementary grades 1-6 (ages 6-11)
junior high	public and private schools for junior high grades 1-3 (age 11-14)
high schools	public and private schools for high school grades 1-3 (15-18)
special school	special educational needs
specialist training	two year technical colleges
universities	public and private university campuses and associated facilities. medical schools
specialist research	Research institutes and laboratories
vocational training	nursing, company training centres
driving schools	driving skills in Japan are initially taught in large 'off-road' specialist facilities
HEALTH and WELFARE	
doctors office	general practitioners practising primarily as individuals or partnerships and often providing minor procedures on site. Commonly a 'family business'.
dentists office	dentists practising usually as individuals, sometimes in partnerships
eye clinic	eye treatment usually offered by specialist service groups (e.g. Takase)
community health centre	primarily 'woman and child' clinics, facilities for handicapped, health check-up for 50+
women's clinic	gynecological services
public hospital	university, foundation and local authority hospitals
private hospital	either operated by insurance companies and related contractors or as adjuncts to community doctor practices
elderly home	residential services for the elderly. Typically provided in much larger institutions than in the UK. Includes residential respite
day respite service	day care services for elderly and handicapped
children home	residential childrens home
children's services	buildings functioning within the child welfare services

TABLE A1.9: MODES OF USE: LEISURE ENTERTAINMENT, VENUES, RECREATION	
<i>category</i>	<i>description and examples</i>
ENTERTAINMENT	
leased unit	smaller pachinko parlours and amusements arcades or karaoke suites in multiple use buildings in central areas. Street access
leased space	as above but contained in a department store or mall development
detached unit	large group managed parlours and gaming or amusement arcades in separate 'sheds' with dedicated parking- e.g. Tomoe, MGM
special build	multi-screen cinema complexes, bespoke gaming structures, skittle alleys
stadia	spectator sports including baseball and soccer stadia and athletics and sumo
VENUES	
<i>kominkan</i>	public community rooms rented for meetings, classes and local events
public halls	city concert hall, area theatres
libraries	city and ward libraries
museums	museums and galleries, natural history museum, Chiba castle, botanic garden
exhibition venues	Makuhari Messe
RECREATION	
play area	equipped playgrounds not located in public parks or educational facilities
neighbourhood parks	small parks (typically <0.2 ha) with gravel play zones and amenity planting
public open space	large urban parks with extensive open spaces , including Aomori Park and the coastal parks in Mihama-ku
sports parks	Parks with a primary focus managed sports facilities such as tennis courts and gymnasium and training facilities
team sports facilities	areas of baseball, soccer and other pitches not associated with educational facilities
individual sports facilities	swimming pools, golf courses

TABLE A1.10: MODES OF USE: GOVERNMENT STATE and PUBLIC AGENCIES	
<i>category</i>	<i>description and examples</i>
STATE	
public offices	national government and city and ward administrative and finance offices
police <i>koban</i>	street policing and observation. Area police offices
police administration	Divisional and Prefectural police headquarters
police training	police training schools and facilities
courts	court buildings and judicial administration
prisons	Chiba national prison
military	military bases and training areas. Arms and equipment stores
AGENCIES etc.	
agency leased unit	JHC local housing information office
agency detached unit	Prefectural industrial innovation unit in Tendai-cho
agency special build	UN ESCAP Asia Pacific Statistical Institute Makuhari

TABLE 1.11: OTHER MODES OF USE	
SACRED ,CULTIVATION and OTHER USES NOT USUALLY REQUIRING STRUCTURES	
<i>category</i>	<i>description</i>
SACRED	
temples	Buddhist temples with surrounding grave areas
shrines	Shinto shrine buildings and grounds, roadside shrine boxes
churches	Christian churches
cemeteries	civil cemeteries and crematoria
religious organisations	offices and buildings of religious organisations (e.g. Sokka Gakkai)
CULTIVATED	
<i>tanbo</i>	irrigatable rice fields
<i>hatake</i>	dry field' cultivation, primarily horticulture with small areas of grain and rape
allotment	areas used for recreational gardening, mainly vegetables
timber	all areas planted with mature trees
glass and polytent	<i>hatake</i> being cultivated under hoop polytents (sometimes glass)
NOT USUALLY REQUIRING STRUCTURES	
building site	any building structure or road construction with a contractor on site
unused land	Areas of ground with no productive use, usually overgrown with perennials or bamboo. May be a steep slope or abandoned built site.
project	civil engineering investment, usually a levee or dam
vacant lot	area of ground maintained for sale and usually signed as such
parking contract	spaces rented, usually on a monthly basis, from a real estate agency or individual
parking residential	designated parking bays in (usually public) multiple residence areas
parking public	spaces for public use either in shop car parks or at pay per time unit sites
parking bicycle	spaces, usually near stations, for leaving cycles and motorcycles subject to a daily charge (or season ticket)
parking multistorey	spaces for public use, usually on a metered charge in a built structure
parking commercial	leased sites away from manufacturing or distribution sites to hold additional vehicles out of business working hours
OTHER	
fresh water	rivers and ponds
sea and foreshore	land within the DID in 2000 but previously not reclaimed

Appendix 2: Glossary of Japanese terms used

amae	to depend and presume on another's benevolence.
arubaito	casual low paid work
buke-yashiki	style of samurai house common in rural areas
bunjō-manshon	apartment building where title of ownership is divided
cho	district of a town (<i>See Appendix 3</i>)
chome	subdivision of a <i>cho</i> (<i>See Chapter 2, Table 2-2 and related text</i>)
daimyo	hereditary ruler of a han in prior to the Meiji Restoration
daizu	soy beans
danchi	area of housing. 'Estate' captures most of the Japanese meanings
fudai	families with close personal or blood ties with the Tokogawa family
fukoku-kyōhei	"Rich country – strong military" (early Meiji Era slogan)
furusato	place where one was born or raised. Home town or village.
futoko	refusal by a student to attend school.
gun	county (<i>See Chapter 2, Table 2-2 and related text</i>)
gunto	designated military city
gyoson	fishing village
hai han chi ken	abolish 'han' and install 'ken'. (early Meiji Era slogan)
han	domain ruled by a daimyo
hatake	dry fields cultivated with crops such as daizu, barley, vegetables
hikikomori	"pulling away, being confined". A sufferer of acute social withdrawal
honseki	record of family registration with the local authority
irimoya	style of roof design (see JAANUS)
jōkamachi	castle town, seat of a daimyo administration
jūtaku danchi	housing estate (might be public or private)
kasō	principles of geomancy governing house orientation
keisanrin	three wheeled road vehicle
ken	prefecture
kirizuma	roof design common on vernacular buildings around Chiba (see JAANUS)
kizontakuchi	The right to build houses on land parcels within a village envelope
kokutai	national polity
kominkan	local community centre
koseki	modern family registration maintained by local authority
kukakuseiri	process of land readjustment
kuni	old province of Japan – 'country'
machi	town (<i>See Chapter 2, Table 2-2 and related text</i>)
machiya	merchant's town house with shop below and living space above
minikaihatsu	small scale development (typically less than a tenth of a hectare)
minka	farmhouse
minkatsu	private sector initiative
miso	daizu paste used as a base for soup and to add protein to meals
mokuzo chintai apātō	small apartments, equiv. to 'bedsitters', in 2 storey wooden buildings
mura	farming village (<i>See Chapter 2, Table 2-2 and related text</i>)
parasaito shinguru	'parasite single' – adult child still living within the parental home
roji	narrow access lane in towns (usually a <i>cul de sac</i>)
sakariba	amusement quarter, in large cities comprising bars, restaurants, brothels.
sanrin	lit. 'mountain and wood'. Uncultivated land
seiōfu	'Western' style

seiza	a form of sitting where you sit on your heels
sempai-kohai	formal relationships of seniority within any social group
shi	city (<i>See Chapter 2, Table 2-2 and related text</i>)
shiro	castle keep
shinōkōshō	The 'four estates' of Edo Japan. Samurai, farmers, artisans, merchants
shizoku	post-1870 registered 'gentry' family, usually former samurai
shoyu	soy sauce
shukuba-machi	post town providing transport facilities – horses, food, inns
son	hamlet
take	bamboo grove
takuji	land for building
tanbo	irrigated fields for rice cultivation
yakenohara	scorched fields. Used by the Japanese to describe their cities in 1945.
yato	narrow sinuous valley characteristic of southern Kanto
yōfu	(see seiyōfu)
yosemume	style of roof design
zaibatsu	industrial, trading and banking combine
zensō	<i>Zenkoku Sōgō Kaihatsu Keikaku</i> . Comprehensive National Development Plan.

The JAANUS Japanese architectural dictionary site, which contains a comprehensive list of terms related to vernacular architecture, is located at <http://www.aisf.or.jp/~jaanus/>

Appendix 3: Japanese terms for geographical and administrative areas

Although Japanese terms for geographical and administrative area have an accepted approximate translation (see Table A3-1) I have attempted as far as practicable to retain terms like '*ken*', '*shi*' and '*machi*' in the main text because they all have significantly different nuances compared with their counterpart English nouns. The *kanji* (Japanese characters) used to write them down are usually taken from old Chinese usage but over centuries these have come to have a separate and specific Japanese definition (and pronunciation).

A3-1: Terms used for types of geographical and administrative areas			
<i>term</i>	<i>level</i>	<i>approximate English meaning</i>	<i>notes</i>
<i>kuni</i>	1	country, province	cf. use of names like 'Wessex' in the UK. No official usage.
<i>han</i>	1	domain	cf. use of 'County' in feudal England. Abolished 1871
<i>ken</i>	1	prefecture	primary sub-national administrative tier (for Tokyo ' <i>to</i> ')
<i>gun</i>	2	county (US) – UK 'hundred'	No longer used for local administration but for reporting
<i>machi</i>	3	town	similar to UK use of the term 'Urban District' before 1974
<i>mura</i>	3	village	After 1884 usually a consolidation of hamlets
<i>shi</i>	2	city	Similar to UK use of the term 'County Borough' before 1974
<i>ku</i>	3	city ward	Used only in large 'designated shi' – in Chiba since 1992
<i>cho</i>	3	city area	Smaller than UK urban wards.
<i>chome</i>	4	cho subdivision	Lowest level of published population data
<i>banchi</i>	5	city block	Used only in addressing
<i>DID</i>	(*)	'densely inhabited district'	A census term. See Chapter 3 for full definition.

Before 1871 the primary sub-national unit of civil administration was the '*han*' or feudal domain. The use of the term '*kuni*' ('country' or 'province') is also common in source literature, and there were marked regional styles in vernacular architecture, diet and of

'ways of life' in general associated with *kuni*. Chiba-*machi* was in the ancient *kuni* of Shimōsa.

Ken ('Prefectures') were introduced as the primary sub-national unit of civil administration in 1871, based on the contemporary French model. For Tokyo 'To' (Capital District) is used and there are other variants. The 47 designated modern *ken* and equivalent areas have had generally stable boundaries, with only marginal adjustments since 1882. The Chiba-*ken* boundary is unchanged, apart from marginal adjustment around Urayasu-*shi*, since 1873 although the area contained has expanded by 77 km² (1.5%) since 1920 because of landfill¹ in Tokyo Bay. In this text *ken* statistics are used frequently, either because more local data isn't published or - and especially prior to 1960 - as a basis of wider comparison. Data for migration and commuting to and from Tokyo-*to* and other prefectures is also presented at this level.

The *Sanshimpō* ('Three New Laws') of 1878 defined common national standards for administrative units, although most of the terms used have a much longer history. The lowest level of administration in rural areas became the *mura* ('village') which was often an amalgamation of earlier small hamlets (*'son'*). The practical day to day work of family registration, public record keeping and tax assessment and collection was the responsibility of a 'headman' at this level. Larger settlements which often had some central function such as markets were called *machi*. By the 1930's many *machi* in Chiba-*ken* had expanded into substantial urban districts.

¹I avoided using the term 'land reclamation' here, which has a rather positive connotation in English. This never was previously land and so is not being reclaimed. It was previously sea bed onto which silt and other material was dumped. The Japanese term '*umetate*' means 'buried area' and the English equivalent 'landfill' expresses the often environmentally damaging process much better.

A larger unit of local administration was restored in 1878 – the '*gun*' which corresponds approximately to a rural American 'county'. The areas often conformed to feudal units of administration which were the equivalent in size and purpose to English 'hundreds'. In Chiba-*ken* 21 were designated in 1878, and had been consolidated into 10 by 1940. However Chiba-*gun* remained unchanged apart from the separation of Chiba-*shi* in 1921 (see below).

The boundaries of *machi* and *mura* were revised again in April 1889, following a further reorganisation of local administration which created the *Chihō Jichi Seido* (New Local Autonomy System). The earliest Chiba-*machi* was consolidated with four surrounding villages (Chibadera, Samugawa, Nobuto and Kurosuna) (Cs-*shi*; 1:40) to form an enlarged Chiba-*machi* covering 15.2 km² eventually enlarged to 15.9 km² by landfill. This is a very important unit within this text, the boundaries of which remained stable until 1937.

The term '*shi*' is usually translated as 'city' in the American sense and originally referred to a larger urbanised area with around 50,000 or more population. In a UK local government the former 'County Borough' would be a good analogy. In pre-war census reports '*all shi*' was effectively coterminous with '*urban Japan*' but from the 1950's reform and amalgamation in local government devalued this usage with the emergence through consolidation of many large but primarily rural *shi*, designated as such purely on the basis of total population. In census reports from 1960 the concept of DID ('Densely

Inhabited District' – *jinkō shūchū chiku*) was introduced (see Table 3.8) to offer some definition of the extent of 'real' urban areas.

Designated *shi* are subdivided into smaller units usually called '*chō*' for routine administration such as household registration and voting (although local elections are based on multi-member seats covering a wide area). In turn *cho* with more than about 2000 households are divided into *chōme* which is usually the smallest unit of data collection. Since 1995 small area statistics for each quinquennial census have been sold as databases at *banchi* ('city block') level but only limited use of 2000 data has been made here.

In 1992 Chiba-shi was designated as the thirteenth '*major shi*' in Japan and was accordingly subdivided into six '*ku*' ('wards') the equivalent of US Metropolitan Boroughs each with a population of about 150,000. This vastly increased the volume of published statistics available and also facilitates comparison with other major *shi* such as Yokohama, Kawasaki, Kobe and Hiroshima but very limited use is made here of this level of data, other than to use '*ku*' to define sections of the urban area.

One common feature of local Japanese boundary changes is that new areas often 'overlaid' previous ones with no attempt being made to integrate the two. For example a large new housing area may be added to the administrative map as a group of new *chōme* that literally 'overlay' former *mura* boundaries leaving *mura* fragments as detached areas. On a similar basis *shi* are treated in public statistics as quite distinct from *gun*. Once a place is designated a *shi* it is reported as a distinct object, there is no

concept equivalent to the UK 'Historical County'. Where possible all tables in this text attempt to recreate consistent comparisons of area but many metrics, and especially information on employment by secondary group or population count by age group which are summarised to 'total' *shi* or *gun* basis usually can't be 'retro-fitted' to conform to earlier or later boundaries.

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Chiba-ken Bunshokan: 7.1, 7.3, 7.8, 7.13

Chiba-shi Sōmu-kyoku: 5.4, 5.6, 6.1, 7.2, 7.4, 7.7, 7.9

Google Earth: 8.1, 8.3, 8.7

Katabami Mitsuhiko: 5.8, 6.2, 6.7, 7.6

Matsumoto-shi City Office: 4.1

Sōichirō Toriumu: 5.5, 5.9, 6.3, 6.6

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