5-2014

Greening Louisville's East Market District : a comparative assessment of sustainability.

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GREENING LOUISVILLE'S EAST MARKET DISTRICT: A COMPARATIVE ASSESSMENT OF SUSTAINABILITY

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A Thesis
Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

Master of Science

Department of Geography and Geoscience
University of Louisville
Louisville, Kentucky

May 2014

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A Thesis Approved on

April 23, 2014

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ACKNOWLEDGEMENTS

I would like to thank my major professor, Dr. Margath Walker, for her guidance and patience. I would also like to thank the other committee members, Dr. Jafar Hadizadeh and Brent Fryrear, for their comments and assistance over the past years. I would also like to thank Dr. Hanchette, for all her assistance throughout my time in the program. I would also like to express my thanks to my family for their encouragement and assistance during those times when there was no light at the end of anything. Especially to my Dad, who would sit with me in the lab and practiced my presentations with time and time again. Without them I would not have been able to do it. Also, many thanks to my fellow graduate students within the department, we truly always worked together as a team and push each other to our best.

ABSTRACT

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The East Market District located in Louisville, KY is currently undergoing a multi-million dollar urban regeneration. This transformation is being marketed as a primer sustainable neighborhood with the goal of serving as a model for other cities in the United States. As result of these changes, it is imperative to analyze the concept of sustainability from a variety of stakeholder perspectives utilizing content analysis on interviews and LEED Neighborhood Scorecard. Utilizing these methods, the central goal of this study is to understand the various interpretation of sustainability within this neighborhood. The findings observed via the critical assessment of the LEED Neighborhood Scorecard, showed that the criterion for which neighborhood sustainable development is judged is socially focused. This paralleled with the occupant's vision of a socially-based sustainable environment, which is in conflict with that of the constructors. These disparate findings reveal issues underlying sustainable development.

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INTRODUCTION

The current discipline of urban renewal is taking a large step towards the inclusion of sustainable initiatives in various capacities including energy consumption, transportation, renewable resources, and city/building construction in the completion of green-conscious spaces. The outcome of this revolution in thinking has resulted in the widespread use of sustainable initiatives whether significant or trivial in countless capacities. For the purposes of this study, I will strictly concentrate on sustainable neighborhoods, in particular the East Market District. The current enterprise of establishing sustainability and Leadership in Energy and Environmental Design (LEED) certified neighborhoods is a nationwide initiative supported and promoted by the United States Green Building Council (United States Green Building Council 2014) and the Environmental Protection Agency (Environmental Protection Agency 2014). The term 'sustainability development' is utilized in a variety of disciplines and for various means; this as a result, aids in various interpretation of what sustainability is as tool and concept (Komiyama). A resident may believe that being sustainable is the equivalent to recycling, which is a sustainable activity on some level; however, a city official may focus on the economic growth gained from using solar panels. Sustainable development is thus a very subjective and broad concept. The varying degrees of living sustainably or the adaptation of sustainable initiatives is largely dependent on the choices of the individual, the LEED certification regulations, and/or what is viable for a location. This new awareness that is sustainability has propelled the need to assess, fix, and otherwise change the damaging

trajectory we are on. Currently, the focus is geared toward fixing issues such as pollution, loss of trees, and resource management, this is of course a step in the right direction. But how can we prove that these new sustainable initiatives are adequate and meet the needs of the inhabitants? Likewise how does one determined what needs to be fixed or assessed, and what are the consequences of these choices in a community?

Through the use of sustainable development, the East Market District is undergoing an urban regeneration, while offering a case study to assess the different interpretations of sustainability as a concept. The main objective of this study is to evaluate the concept of sustainability as deployed through the East Market District and understand sustainability as a concept through the lens of actors involved in the planning, construction, and lived environment.

It is important to understand what is proposed for the district, it is necessary to understand the state of the neighborhood to truly gain a comprehensive view of the study area. Before any analysis could be done, it is imperative to know the historical usage of the area, those who inhabit it, and what demographic factors contribute to the characteristics of the population.

Study Area

This East Market District neighborhood has had many identities, but has continuously had a strong presence within Downtown Louisville. This presence, though drastically changing through the years, has provided those interested and invested in the area a canvas in which to create another unique and marketable image.

Established from the antiquated commercial grounds of 1950's, the East Market District, is undergoing a transition, which is slowly being developed into a center of

commercial, artistic, sustainable progression for Louisville. This theme of renewal is a constant for this area. Historical analysis of the area reveals numerous revitalizations since the mid 1800's, when the district was classified as the Woodland Gardens City Park. As a result of the increased traffic within the park, Market Street gradually became a pillar of Louisville economic development with the inclusion of housing the first market and innovative brick house. This market served as place for traveling merchants and city patrons a like to buy food and livestock, with various animals being sold at auction along the market street corridor (NULU Business Association 2012).

As the city grew, it became necessary to widen the streets to manage the increased activity on the streets. This new feature became the catalyst for the street to become a center of market commerce. By the late 1800's the area was repurposed for industrial and commercial land use and as a result the area thrived as the center of Louisville's commerce, with the inclusion of stockyards, markets, and tanners. Referenced in the 1852 city directory as "the entire extent of this street is given up to retail grocers, provisions dealers, and clothiers"; any products obtained by citizens were mostly purchased on this street (NULU Business Association 2012). The activity only grew with the addition of trolleys, as consequently almost everything purchased in Louisville was either produced or sold on Market Street. As we entered into the 20th century Market Street made a gradually move to embrace more mainstream shops including Bacon's, Levy Brothers, and Loevenharts (NULU Business Association 2012). Though the inclusion of more mainstream shops were desired by local patrons, it is the need for the latest modern products that would eventually ruin the economic marketplace within East Market Street. As more and more residents moved away from the city in favor of the suburban dream,

this caused a wrinkle in the profitability of shops within the downtown area, with the most affected being the East Market area. Consumers gradually had no need to come to the city to purchase goods as the trendier and more convenient shops were now located within a short distant of suburbia. As time passed, the area preserved the name of the once thriving market district, but quickly dispelled into a refuge for the homeless and gang activity (Boyd 2008). By the 1970's the activity and economic promise of the street slowly faded away.

Liberty Green

One of the major changes for the area that added to the transformation was the redevelopment of Clarksdale, housing project in the 1940's. This form of subsidized housing developed under President Roosevelt's Work Projects Administration was established in an effort assist individuals, many who had financial trouble as a result of the Great Depression (Bordo, Goldin, and White 1998). With little upkeep of the property as seen in Figure 1 and 2 and an increase in crime activity it became obvious that something needed to change. The Department of Housing and Urban Development's establishment of the HOPE VI program provided a revitalization effort to improving the conditions discovered within Clarksdale.

Figure 1. Clarksdale Housing Unit

Figure 2. Clarksdale Housing Unit

The transformation into Liberty Green, Figure 3, included the relocation of 700 residents to a variety of housing options within Louisville and the construction of mixed use housing to steer away from stigma of crime and drug ridden housing.

Figure 3. Liberty Green

Clarksdale residents were given the following choices:

1. to stay in new on-site units
2. other Louisville Metro Housing scattered sites
3. Section 8 vouchers.

This change was developed to not isolate low income individuals in various composed housing units, but rather to intermix various socio-economic levels of the population within the housing units, with 25% of the units being rented at market rate (Eigelbach 2011). The new units would also give residents the opportunity to own homes within the new housing development, which served as an incentive for many residents. In addition, all the housing units were equipped with energy star appliances and as a result, Liberty Green received the energy star award. This award is presented on behalf of the U.S. Environmental Protection Agency (2014) and the Department of Energy (2014) to organizations that protect the environment by the employment of energy efficiency

products (U.S. Environmental Protection Agency 1998). This push towards sustainable methods within housing neighborhoods will be further emphasized for other buildings and units in the NuLu area

(City of Louisville 2011). In addition to the development of Liberty Green, various other housing developments have become part of the NuLu district including the Edge at Liberty Green, as seen in Figure 4. This unit features 250-350 townhouses with mixed used occupancy on the lower levels and single family row houses. A large amount of the population within the Edge will be designated for Medical and Dental students in the University of Louisville (Eigelbach 2011). During this time, various business and organization experienced a transformation either planned or not.

Figure 4. The Edge

Wayside Christian Mission Ministries

During the decline of the once profitable Market Street, the neighborhood began to take on a different transformation with the inclusion of the Wayside Mission Christian Ministries, which served as the women's and children's shelter. This area for many citizens was not an area of leisure or commerce, but rather took on the identity of a dwelling for the homeless, drug addicted, and undesirables of the city. Much to the effect of 9th street, this perceived image created a form of isolation from other prominent

Figure 5. The former Wayside Christian Mission block on E. Market St

streets, like Main Street, and became a cut off for many upper middle class city dwellers. Market Street became a place you just did not go. Much talk existed about the possibility of transforming the area into an arts community in the early nineties; however this consistently was overlooked as that vision and the identity of the shelter could not coexist in the eyes of developers and government officials alike. However in 2008, the opportunity arose when Wayside considered bulldozing the current site to rebuild their women and children's shelter; this set in motion a possible solution to developer's problem. Wayside's plans were met with great apprehension as community leaders fought to preserve the building site as historical landmarks to the once prosperous Market Street. Strangely, neighborhood leaders were on board and supported the transition and restructuring of Wayside mission. However it appears that when East Market Street had more potential as a vehicle for economic development, many neighborhood leaders began to have a different opinion of Wayside Christian Ministries. Gil Holland, one of the leading investors and developers for East Market Street, was among those who became interested in the area. Holland, noted "Something was happening in the neighborhood, and then people [neighborhood leaders] were like, 'You know what, maybe this is not the highest use' "of the property" (Otts, 2009, 3). Bill Marzian, Head of East Market Neighborhood association, emphasized that "the goal was not to kick the homeless shelter out. " It was more (about) keeping the scale of the neighborhood and the original buildings" (Otts, 2009, 3). These finding are very convenient. The conclusion resulted in Gil Holland buying out Wayside Mission Christian Ministries for $5 million dollars on the 800 Block of East Market Street. This new transformation served the needs for both organizations, with Nina Moseley, Wayside Chief Operating Officer speaking to the

benefits of such arrangement in 2008, as it would simplify the delivery of services for their target population (WDRB 2009). However, in 2012 Moseley, presented another concern not previously made to public that "East Market Street didn't want homeless men walking up and down the street, as they feared it would deter their customers" to the newly reinstated built commercial area (Shafer 2012).This tension is highly visual as the once debunked location is now a gentrified corridor for art, social engagement, and activity or as one neighborhood leaders says "gentrification with justice" (Otts, 2009, 4).

Demographics

The East Market District is quickly transforming and this is nowhere more apparent than in the demographic changes for the area. As mentioned earlier, the area was once a dwelling for the homeless and gangs, however, now with the new sustainable neighborhood initiatives, it is obvious that the demographics will keep changing as more construction is completed for the area. With the removal of Wayside Christian Ministries and development of Liberty Green and The Edge, the audience has transformed to attract the interest of upper middle class individuals. However, as Liberty Green has not completely made the transition into mixed income housing, the demographics still show a mixed socio-economic neighborhood. This data should greatly change with the increase of development in and around East Market District.

According to Eigelbach (2011) the barrier to investment for the East Market District was the Clarksdale project, which attracted a criminal element and created a concern in terms of developing the district. However, with end of Clarksdale, it is obvious that the neighborhood currently is extremely diverse.

Race and gender is a key player in the construction of the district, with 53.2% of the population being Black, 38.7% White, 4% other or two or more races, 3% Asian, and 1.1% Hispanic. The gender population is extremely interesting with 67.6% of the population being male, and 32.4% being female. The area is very diverse, mainly as a result of the destruction of the large African American populated Clarksdale Project and the displacement of its residents into the Liberty Green Housing Development. As the development is technically apart of the proposed East Market District as seen in Figure 6, this can justify the large African American population of the area (United States Census Bureau 2010).

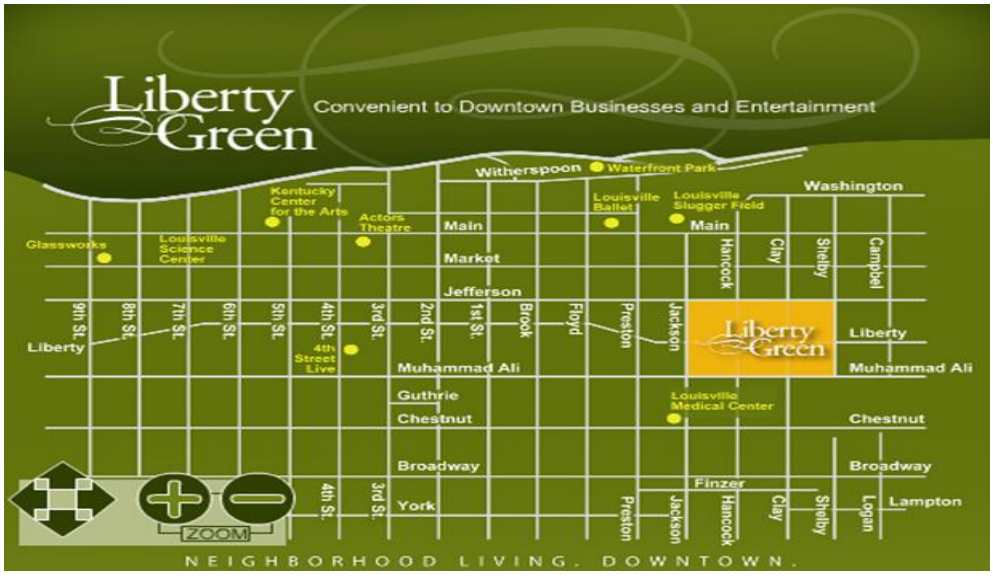


Figure 6. East Market District proximity to Liberty Green Housing Development

Though some demographics point to the previous state of the neighborhoods, data such as house value, average salary, and median age, all point to the growth and appeal to younger generations. The average home value has grown from $118, 929 to $145,262,

while the average salary is $75,585 and average age of residents is 32.4 years of age. This not only can be explained by the economic growth of the area, but also the trendy nature that would be a huge selling points to the younger demographic. These figures also support the global drive to build more sustainable neighborhoods, cities, and the community's encouragement (United States Census Bureau 2010).

Master Plan

The initial master plan, Figure 7, developed by the East Market District Association's reestablishment of stores, galleries, and coffee shops, shows the move to commercialize the area, which can elicit economic growth, but also incorporates sustainable initiatives including storm water planters, tree wells, parks, and pedestrian friendly layout. In terms of industry, the majority of companies occupying East Market district, as illustrated in the master plan, are open and prosperous, however major companies such as Creation Gardens, have yet to open. Art galleries, bars, restaurants, and shops occupy the first development phase of the East Market neighborhood transformation. The overt goal to turn this neighborhood into an artistic and thriving locale of commerce is materializing at great speed. With the addition of a grant received from the United States Green Building Council (United States Green Building Council 2012) to obtain LEED Neighborhood certification, the area is fully on its way to be the first Green neighborhood in Kentucky (Peterson 2012).

Investors William Mapother, Tim Peters, Gill Holland, and Augusta Brown Holland have financed majority of the projects in the amount of twenty-five million dollars (Boyd 2008); in addition to their investments, through further ingenuity the investors were also able to secure ten million for construction of the streetscape through

the Kentucky Legislature state highway budget (Shafer 2012) and twenty-five thousand from the United States Green Building Council to pursue LEED neighborhood certification (Peterson 2012).

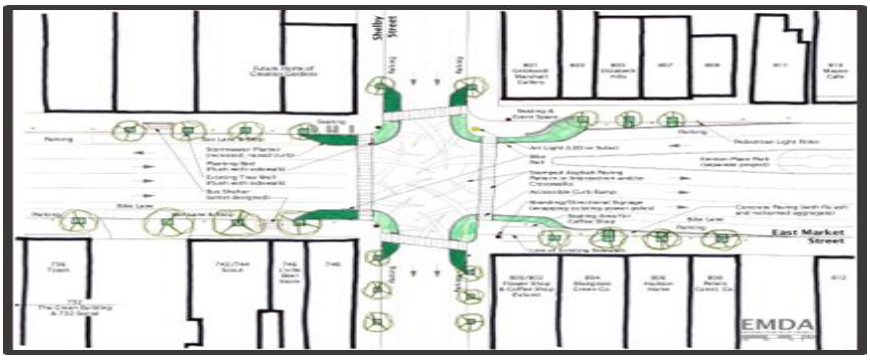


Figure 7. Master Plan for East Market District

The drive to have the first "green" neighborhood for Kentucky is a primary goal for the East Market District Association (Insider Louisville 2012). The initial feasibility assessment of the area conducted by the Project for Public Space, a nonprofit consulting firm, evaluated the land before any construction was completed to see if there was even a possibility to construct a sustainable neighborhood and to examined any enhancement the construction would provide (Boyd 2008). Once deemed a feasible venture, by the Project for Public Space, and the preliminary construction of some businesses, Global Green, a professional design consultant agency, conducted environmental analyst that isolated the strengths and weaknesses of the area and also identified ways to meet the standards of LEED neighborhood certification (Boyd 2008).

Among these standards, the area was judged on the location, amount of development, and connectivity/walkability; these main standards are what the U.S. Green

Building Council will judge the neighborhood on when applying for LEED Neighborhood certification (Boyd 2008). From these assessments, the master plan, Figure 7, was devised by the East Market District Association. These assessments determining the sustainable standards and feasibility are crucial to the development of a green neighborhood. Through this study, the positive and negative consequences of redeveloping the future green neighborhood of the East Market District can construct the developer's goal of creating a truly holistic sustainable neighborhood, which can be properly acknowledged both as environmentally and socially impactful (Impact Assessment and Project Appraisal 2003). How can assess sustainability? One method that is extremely applicable to this study is the use of interviews and personal communication.

LITERATURE REVIEW

To begin, it is vital to understand previous studies that are vital to the composition of this research. Three themes have demonstrated a great significance within the realm of sustainable development at the neighborhood level, sustainable assessments, gentrification, and interviewing. Under this rubric, the value of green space and land cover all are key indicators for assessing sustainability within urban environments. The assessment of sustainability can be difficult as there is a constant continuation of analysis whether it is within the preliminary stages or after completion of project. Variability and forms of assessment are contingent on the environment being study. For the purpose of this study, the variation of sustainable assessments utilized in literature will be explored here.

The second literature gentrification will focus on the process, effects, and outcomes of this concept upon urban neighborhoods similar to East Market District. This understanding will serve to understand the bigger concept of sustainability. As creating a sustainable environment does not always create positive results. The final literatures will focus on interviewing and the application of this method on various sustainability studies. This addition will provide the necessary information for understanding the advantages of this method when analyzing sustainable development. These three themes all serve the vision, production, and development of sustainable at the neighborhood scale; as such it is necessary to understanding these topics before analyzing the study area and assessing sustainability within the East Market District.

According to the World Commission on the Environment and Development/Brundtland Commission (1987), sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This comprehensive definition can be applied to almost every situation without overlooking specific attributes of the discipline. The outcome of this definition encouraged the widespread use of sustainable initiatives on various scales ranging from projects that provide a large impact on our environment to those that yield minor alterations.

The current sustainable revitalization of Louisville through the proposal of Louisville Downtown Development Plan is quite vast and entails redeveloping multiple areas of the city (Louisville Downtown Development Plan 2012). However, one neighborhood serves as a model, the East Market District. Unlike many neighborhoods under the Louisville Downtown Development Plan, East Market's distinctive approach and organization, led by business owners, private investors, and residents, by their own determination are facilitating the renewal of the once viable locality (Boyd 2008). Through analysis of the changes occurring and understanding the perspectives of those involved the clarification and understanding will identify if the impact of sustainable development is in fact a comprehensive, neighborhood-building enterprise. As such, the primary goal of this study is to identify various perceptions of sustainability, while operationalizing the theme as a concept within the East Market District. As a result of the various actors connected to the district, with different roles and experiences, it is important to see if the vision of sustainable development for the area is truly a holistic approach.

Sustainability

Sustainability as a whole is a broad topic, but how has this subject fit within the context of city development, urban renewal, and those who are affected? In addition, what is measured to establish a successful sustainable environment? Currently various sustainable initiatives, including LEED Neighborhood Certification and Environmental Protection Agency have given guidelines of how to achieve sustainability. However to understand the context of how a culture can get to this environmental focused level of existence it is important to understand what has pushed us to this level of awareness. With that said, does the environment have an effect on human social development in facilitating sustainable living, which can be seen as a social construct? Furthermore, once a community has developed sustainable living practices how is it assessed and what effect does this have on the human environment within this construct and fit within the realm of geographic thought? When analyzing the following themes within an environmentally focused viewpoint, it is important to observe previous studies on the subject matter.

First, what do these sustainable urban environments look like and aspire to be within this goal of creating sustainable environments? The current enterprise of establishing sustainability and LEED certified neighborhoods, buildings, and cities is supported and promoted by the United States Green Building Council (2014) and Environmental Protection Agency (2014). This program, the Partnership for Sustainable Communities serves as a resource because cities are able to obtain grants via an interagency partnership with the U.S. Department of Housing and Urban Development (HUD), U.S. Department of Transportation (DOT), and the U.S. Environmental

Protection Agency (2014). The sustainable redevelopment of the commercial Lloyd Crossing of Portland, Oregon presents an ideal representation of what the grants and programs provide. The location is composed of thirty-five blocks of undeveloped land that focuses on implementing storm water management techniques, green urbanism, and green roofs. Like many redeveloped neighborhoods, Lloyd Crossing was a depleted and contaminated space that was under-utilized. With the grant, Lloyd Crossing has the possibility of becoming a commercial and business commodity, in addition to being environmentally responsible (Hayter 2005).

As described by Hewitt and Barrat (2008), an additional model of sustainable development can be observed through Cypress Hills and East New York Neighborhood in Brooklyn. This model for sustainable growth in communities is focusing primarily on building energy consumption and cutting the carbon footprint for the city. These different approaches of what constitutes a sustainable environment and the primarily steps needed to achieve a sustainable community vary from person to person. In the case of Cypress Hills, an East New York Neighborhood**,** transportation, pedestrian accessibility, and employment are key features in the transformation of their neighborhood into a viable and productive space (New York-Connecticut Sustainable Communities Consortium 2012). Much like the definition of sustainability, it is problematic to address all the concerns within the spectrum of sustainable initiatives. Furthermore it is far more important to tailor the needs of a community or city to various environmental assessments that can be applied. For Lloyd Crossing and Cypress Hill both situations are oriented to the needs of the neighborhood or district, however, they had different deliverables. The needs of an urban environment can greatly vary and as such it

is important to understand not only what varieties of assessments are used but also why they were chosen for that specific environment. In addition what does that process look like? The various degrees of sustainability assessment within a location are explored to understand the role of environmentalism of urban spaces.

When constructing sustainable/environmentally sound areas, preliminary testing must occur to gauge the condition of the area and to determine what needs to be done. Once that process is completed and sustainable initiatives put in place to utilize, it is crucial to understand how these newly added strategies are affecting the surrounding environment. In an effort to understand these strategies, the relationship between various mechanisms to obtain the data needed whether qualitative, quantitative, or fieldwork will be explored: the goal being to construct a process for which assessments can be utilized in the sustainable and environmental conservation realm within urban environments.

During this process of preliminary research, three major areas of examination are usually explored: green spaces and land cover. This process can be observed in Dahdouh-Guebas's article (2003) where he assesses sustainable development within the application of remote sensing mechanisms, but also to create a predictive model that could be utilized for future studies to better predict environmental deprivation or accomplishments. Looking at various case studies in Southeast Asia, Africa, and South America, the objective is to understand the human-environment relationship to the changes of tropical costal ecosystems, in particular mangrove forest, coral reefs, and sea grass beds. Changes in land cover and land use via spatial-temporal data were assessed with the goal of producing a model to predict environmental changes. This again supports the need to operationalize sustainable development.

There is an overwhelming amount of drive towards vertical growth and locations for possible urban revitalizations in an effort to move populations back into the urban centers. For Louisville, KY the downtown urban center features a lower number of inhabitants and is currently not a social mecca. This issue is one that is propelling the need for growth within Downtown Louisville, and East Market District serves as an initial starting place in the development of sustainable neighborhoods. Crucial to sustainable development is the notion of green space and land cover changes.

In Senanayake et al. (2013), assessing coverage of green space prior to sustainable planning demonstrates the benefits that remote sensing can provide. In this study, the authors focus on the redevelopment of Colombo, Sri Lanka and establishing and assessing the environmental quality and green space within the area. Green space provides numerous benefits to an area including health, property value increases, and emission absorption. Utilizing the THEO satellite data and performing NDVI analysis, green space was assessed and observed further when applying these results to other environmental indicators such as population density and air quality. The outcome of the study presented a low amount of green space within the study area, but presented a usable model of how to easily assess green space. For many sustainable environments the production of public spaces such as parks and tree-lined streets are vital in the production of sustainable neighborhoods, not only do these additions support the appearance and atmosphere of urban environments, but also brings people together in welcoming open areas.

When analyzing the past research in sustainable development it is clear the advantages that operationalization can have for any initial research to be completed. To

operationalize means to have set parameters in the transformation of neighborhood, city, or other location. As such, analysis should be conducted on the physical and social environment to prevent damage and conserve the location's condition. The benefit that operationalizing sustainability provides is it isolates key concern per environment; some concerns that are especially important to preliminary research within urban environments include identifying green spaces, controlling urban sprawl, and detecting changes in land cover. However, what other concerns can be assessed in an already developed sustainable environment?

After understanding various means in which to analyze environmental damage or growth, it can become problematic to isolate key sustainable indicators to assess effective sustainable urban environments. This again presents the issue of how does one weigh one indicator against another when it comes to environmental impact, whether social or physical? Various applications provide the opportunity to evaluate an area to identify current environmental damage, isolate reoccurring issues, and assess the efficiently of enabled sustainable initiatives. This analysis can serve various deliverables; an example can be seen in the following.

In Shuman et al. (2003), wetlands were restored to previous land cover; the goal of this study was to assess wetland restoration and vegetation. In an effort to understand these processes, three vegetation indices were used to understand the composition of species and land cover of the restored wetland. Through field sampling, it was observed that though the data did identify accurate land cover, it was still extremely difficult to detect the varying vegetation. This contribution in understanding that one assessment may not give you all your answers; multiple tests have to be run to prove the validity.

Though this assessment differs from what can be offered in an urban environment, it stresses the importance to validate your findings using a variety of mechanism to create sustainable environments.

Another study that observes changes in land cover via changes in new development can be seen in Kaiser's work (2009). His study examines changes in land cover as a result of the East Port Said Harbor during 1984–1991 and 1991–2003. The East Port Said Harbor was created so ships could easily fuel their vessels; however this newly constructed port has caused more problems than originally planned. This newly added infrastructure aided in the dilapidation of the surrounding landscape. After their completion of research it was found that the coastline was decreasing at a rate of 13 m a year from 1984 to 1991, and 15m from 1991 to 2003. Further research is planned to investigate additional harm as a result of urban development. Alternative analysis of environmental damage can be understood within the field of hazards via Arnous and Green (2011) exploration of the application of GIS, within the Gulf of Aqaba, Egypt. GIS techniques are imperative as the large amount of land use and land cover change is the direct result of flash flooding, seismic activity, landslides, and urban activities, prompting the need to analyze the geo-hazards. The location can be broken down into three categories: mountainous basement, terrain, flat-topped limestone plateau, and alluvial fans. The results were in line with the application of GIS as a strong tool to analyzing geomorphic and geo-hazard environmental damage.

Though land cover changes are highly important to the maintenance of sustaining our environment, water is another area in which it is imperative to maintain a natural resource. The increase of pollution, contaminated, urban sprawl, and other pollutants

within an urban environment is detrimental to our water quality. As such, water is consistently introduced as a key issue of concerns when applying sustainable practices within any environment. In theory the ability to create urban sustainable environments are important, but in an effort to create these "green" environments it becomes clear that more harm can be done.

In Kucukmehmetoglu et al. (2008), the study provides a case study of resource management and land use classification. According to Kucukmehmetoglu et al. (2008), Istanbul's growth has resulted in the illegal encroachment of various populations near/within the water basins, resulting in damage to the resource as a result of poor sewage systems; this is of concern, because the city receives most of its water via dams and reservoirs. In order to understand not only the temporal changes that have occurred as the city has grown, but also to identify land use changes, with the goal of identifying key areas of concern for water resources within the water basins.

In a supplementary study by Jat et al. (2009) the research explores urbanizations effects on the spatial and temporal changes, specifically in the aquifer in Ajmer City, India. After various concerns, specifically groundwater deprivation, many environmental concerns have developed. This article looks at degradation as the result of human-environment interaction and the effects of such a relationship, including the perceived imbalance. As surface water usage has steadily become scarce, groundwater has become more of the primarily source of water for many urban communities, however, the output has greatly exceeded the input of such a resource. The results of the study suggest a gradual change in water degradation purely as a result of urbanization.

After understanding the influence of urbanization on water, a model to quantify water availability is increasingly important. In Chang et al. (2010) this advancement of a model is developed. Global climate change affects multiple processes and natural resources in the world. For this study, the focus is on the effects on water processes, specifically evapotranspiration, precipitation, runoff, and snowmelt within a metropolitan area. This article seeks to develop a Metropolitan Water Availability Index, as result of the changes that can occur. Looking specifically at the quality and quantity of the portable water received within a metropolitan area, researchers produced a model that could be used to assess hydrological cycle and availability.

How do these new techniques compare to fieldwork or other qualitative methods of assessment? In Rhew et al. (2011), a comparative assessment was conducted to understand which method, qualitative or quantitative, produced the most accurate degree of neighborhood greenness. Three neighborhoods within Seattle are assessed via environmental psychology and utilizing NDVI for greenness, this classification is of importance as a result of the health benefits that occupy green spaces. Using NDVI, the researchers are able to gauge the vegetation levels in agriculture and forestry. The goal of this study was to identify if there was any connection between the environmental psychology assessment of green space and that of the NDVI assessment. The result was closely correlated between both the qualitative method (environmental psychology) and the quantitative method (NDVI), and NDVI was deemed a reliable source for assessment of green space. With these analysis producing favorable outcomes, it becomes necessary to explore how beneficial fieldwork is when assessing sustainability at the neighborhood or city level.

This can be explored in Hartz et al. (2006) study which focuses on establishing if field work produces the most favorable outcome within the Phoenix, Arizona study area. In this article the researchers examine the intricate issues that occur when assessing an urban heat island. When analyzing heat islands, the temperature can vary among different locales within a community; the goal of this research is to see if a thermograph can effectively and efficiency estimate the climate conditions within an urban environment when viewing various population densities, time of day, and vegetation levels. The result of this study presented small fluctuations with the use of a thermograph. Fieldwork delivered a strong result for assessing sustainability. If fieldwork and qualitative methods are reliable sources for identifying sustainability, are quantified measures always reliable?

Through numerous quantitated results assessing environment damage is it possible to fully calculate sustainability? In Guindon and Zhang's article (2007), they focus on the objective of sustainability in which many governments gauge their socio-economic and environmental strengths. While in any sustainable study, key indicators are needed to assess a particular location, it can be difficult to quantify the findings; in this study the researcher's focus on the following indicators: population, density, compactness, travel mode index, and probability of travel distance. Looking through the lens of energy usage within an urban transportation system, the objective is to identify density, compactness, land use mix and its land use impact, within an area whose ecosystem and/or agricultural land is threatened by the increase of population and transportation. The outcome of the research suggests difficultly in quantifying sustainability as many results pose a conflict with other major pillars of sustainability: the

social and economic. In addition, it became progressively difficult to place a numerical value to sustainable outcomes.

Overall, these studies utilizing qualitative, quantitative, and fieldwork are all key methods in analyzing sustainability. The various data and methods enable the researcher to observe various conditions, which helps in operationalizing sustainability. However, it is also important to note that one method is not comprehensive. Furthermore, the use of data for particular environmental issues, will aid in defining sustainability and assessing a locations areas of improvement.

The various means that sustainability can be assessed can be immeasurable as numerous methods are conceived on a daily basis, however, how can sustainability be operationalized in a thoughtful and systematic way to fully undertake the containment of sustainable built environment. In Ben-Josephs (2009) study, the idea of codifying an environmental area has much to do with the entrepreneurial private urbanism, which focuses on the privatization and subsequent establishment of mixed-use units including residential, commercial, office, and research facilities within urban locations. This transformation is extremely different from that of the yesteryear, as the privatization brings more capital and freedom that otherwise may constrain public agencies. The change, according to Ben-Joseph gives cities the opportunity to transform into a fresh and innovative community for the growing world.

East Market Street is a perfect example of this phenomenon as there continues to be a conflict between the private and public agencies. Each with a new interpretation of how to transform the area, but all are held under the strict governance that is held under the code system, in this circumstance the LEED neighborhood green certification

process. This code system as identified by Ben Josephs (2009) can be observed in the newly stated standards placed upon environmental and urban development. One of the most widely known standards is demonstrated with the Leadership in Energy and Environmental Design or LEED. These standards are heavily utilized in both the private and public sectors; however it is the checklist, which calculates and rates sustainability initiatives, that has served as a major benefit. It is this checklist of sustainable qualifying communities that is of unique importance for this study.

One drawback that Ben-Joseph (2009) recognized was that though the LEED checklist for Neighborhoods did appear to be a valuable tool, however, its method had yet to be seen and assessed. As education and interest in promoting LEED certified neighborhoods grows, Ben-Joseph (2009) did see the significance of such a tool as it would help illuminate barriers in increasing sustainable development, structural incentives, and would promote financial incentives. It is these benefits that outwardly serve as the basis for implementing environmentally responsible neighborhoods; however, it is also these benefits that promote negatively supported outcomes too, for example gentrification.

Gentrification

According to Zoltan Kovacs et al. (2012), the concept of gentrification began as the process of transferring old housing units or residential areas, predominately inhabited by underprivileged individuals, gentry or upper middle class educated individuals. The results of this transformation on paper produced increasingly higher property values and economic development opportunities. On one side of the coin, you have poor residents displaced, but on the other we see thriving metropolitan cities with residents who are

willing to add to the economic growth. Since the beginnings of gentrification in the 1990's the goals of re-envisioning a neighborhood or city have taken on a slightly less sustainable viewpoint. According to Newman and Ashton (2004, 1168), "the removal of concentrations of very-low-income people of color allows a reimaging of urban spaces critical to the national and international competition for private investment."

This approach is discreetly applied with the HOPE VI program, which dismantles public housing to create the opportunity for mixed-income communities. The appeal of mixed-income neighborhoods proves to abolish previous public housing residents according to Goetz (2011). Goetz (2011) states that 14% to 25% return to the newly redeveloped area not because of lack of desire but rather the deficiency of public housing units, difficulty passing tenant screening standards, and large amount of time from displacement to the newly reimaged neighborhood. As such, these obstacles to resettlement for former residents aids the agenda of housing developers in keeping the former residents out, while also keeping the illusion of a mixed-income community. Nevertheless, according to Goetz (2011), these obstacles can be positioned as a necessity by developers rather than classified as displacement, as the previous neighborhoods exhibited higher crime rates, which enables public and private agencies the consent to restore these communities to a safer environment.

Within the East Market Neighborhood, Liberty Green, a HOPE VI project, housed on the previous Section 8 neighborhood of Clarksdale, will be reclassified and hence aid in the dislocation of residents as had previously occurred with the Clarksdale neighborhood. However, these predominately African American and low income individuals are not a priority when developing the green neighborhoods rather they are

treated as problems that must be exterminated, to obtain a goal of an ideal sustainable neighborhood. This brings us to our first problem, what is deemed as an ideal sustainable neighborhood, commercially thriving and predominately Caucasian? Furthermore, why do certain residences and inhabitants need to be altered for a sustainable neighborhood to exist? In addition, the impact of any sustainable enhancements can be determined by the degree in which an individual or community fully commits. So it must be questioned, is it still sustainable if no one fully commits to this new perspective or even feels these initiatives benefiting their everyday life? The needs of a community may differ greatly from that of an individual, especially when it comes to creating a sustainable environment and/or community; as such it is vital to understand the prospective of those establishing businesses within a sustainable environment. Who is being affected by these changes, for the Liberty Green Neighborhood, those most affected will be the dislocated. With the drive to green and commercialize the East Market District, this underrepresented and low-income community may be extracted in effect for the betterment of the district. It is important to note which community this is helping, it is clear that the inhabitants of Liberty Green are vastly overlooked.

It is conceivable to acknowledge these statements as an optimistic vision of city growth; however, if this mechanism of removal and deconstruction of housing is becoming commonplace, doesn't this woefully go against the vision of sustaining what is already in place. Rather is this practice of gentrification a lesser evil then not installing solar panels? More appropriately, how is this judged?

In Zoltan Kovacs et al. study, gentrification produces negative effects such as segregation, social polarization, and displacement if the transformation occurs in socially

homogeneous low-income areas. For areas such as Liberty Green, the population is mostly African American's receiving Section 8 housing. What is interesting to note is that prior to the Liberty Green transformation from the Clarksdale projects, the housing units were in a unattractive condition, but coincidently with the growth of the East Market District into an upper middle class arts community, Clarksdale was rebuilt into Liberty Green, with modern spacious apartments. This begs one to consider if the transformation into the modern Liberty Green was just a precursor to gentrifying the area.

The effects of gentrification also affect the businesses within the area, as locally own small business are now pushed out in favor of mainstream chain establishments. These new businesses or agents of change encourage gentrification as they tailor their goods to the trendy and contemporary new inhabits. These changes are not only products, but services for the inhabiting population, which can result in problems according to Zukin (2009), as the previous stores are more specialized to the needs of the more traditional and less mobile patrons. Currently, this can also be observed in the East Market District, that contains several locally owned small business catered to the inhabits nearby, as such you have African American apparel, hair stores, and discount grocery stores all within the Liberty Green residences. With the infiltration of the gentry, these businesses may slowly diminish as a result of the conversion of demographics; however this presents a progressive result for developers as this presents the opportunity to convert these specialized businesses into chain establishments targeted for the newly education upper middle class inhabitants. An example of this transition can be observed in Zukin's Study (2009) where the Harlem neighborhood in New York undergoes

transitions from mom and pop stores to chain businesses like Whole Foods and Starbucks.

In the case where pre-gentrified residents stay and some remnants of previous business still remain, what relationship develops between the new inhabits and old? How is this invasion of space and environment affecting the goals of the new communities? According to Baelanger, these circumstances can result in conflicts and a sense of instability within the neighborhood. As mentioned earlier in the Goetz study (2011) those who remain in the neighborhoods find they are involuntarily forced out by discriminating tenant examinations. This is again supported by Baelanger, who also suggest a decrease in support system for the remaining residents as their prior community is no more and they are now in habited by the gentry. For former residents, their presence is now an inconvenience, essentially a change in social geography.

A major issue that accompanies the themes of sustainability and gentrification is the debate around ownership, perception, and availability of public space. This is inherent and foundational to Human Geography and as such this study has potential to contribute to this discussion through a local example.

Public apace is an important theme when exploring the dynamics of a neighborhood and social geography, not only in a physical way, but rather the psychological mechanisms that grow within the confines of place. The earlier processes discussed, including gentrification and urban renewal modify, not only the physical environment, but also those residing within the perceive space. This subject is analyzed in depth by Baelanger (2011), in her analysis of public space and gentrification. First, it is important to define public space as the public sphere or the actual physical spaces. The

transformation and influx of these public spaces by new residents (gentry) causes the old residents to perceive the space as something very distorted. The new inhabitants become regarded as intruders developing a threat to old residents. As noted in Harvey (1996), "populations settle in areas where people with whom they share some similarities including interest, socio-economic profile already live." Baelanger goes on to note that spaces "condition a person's actions, perceptions, and exchange with others, as well as affect competence and performance in these functions." It's important to identify how historically the two groups have viewed public space. Historically in neighborhoods affected by gentrification, old residents see public spaces including streets and parks as social places, however the perception of the street for new residents is that the street is a mode of transport only and not for consistent social activity. These two values systems have difficulty in co-existence and create conflict.

What goal does transforming these spaces serve? As with many urban renewal projects it is focused toward generating interest, profitability, in addition to creating a communal environment. However, with the elimination of old residents or undesirables, it presents the idea that these public spaces are only public for an elite few. In the process of creating the dream city, it seems that it is necessary to homogenize public spaces (Baelanger 2011). This type of thinking is explored by David Harvey (1996), as what is deemed right for the city, should in essence be right for society. However, it is this top thinking that creates more disturbance for individuals as it is a very self-absorbed mode of rationalization. To support this claim is to support a form of social imperialism and metropolitan colonialism in which new residents hold a form of manifest destiny, while the old residents are the uneducated Native Americans. This relationship between

environment and culture is a central theme in Harvey's work, as he states that "environment may initially shape the range of choices available to people at a given moment but then culture reshapes environment responding to those choices" (1996, 67).This understanding is in parallel with sustainable development, as the state of our environment influenced us to make changes of how we live producing the need for more environmentally sound neighborhoods. When looking at the effects of these choices it is extremely clear that our culture has greatly molded our environment as well, resulting in a distorted image of our initial dreams.

Interviewing

Interviewing serves an ideal epistemology for this study, as the method provides the researcher the opportunity to gain knowledge from what is communicated, concealed, and also via the occurrence of themes. As such, this process is a crucial method; this section provides an overview of studies that have employed this technique.

The process of interviewing can be explored in various avenues for which, the integration of sustainability in the lived environment is the topic. With the use of interviews and other secondary methods, many researchers highlight the simple ways in which sustainability could and should be present in our changing society. So what is the appropriate approach with the current objective?

An example of interviewing can be seen in Mitchell's article *Sustaining Change on a Canadian Campus* is focused on the need and the cost reduction associate with introducing further sustainable elements to a university (2011). Brock University is known for maintaining the highest standards in Sustainable Environments, however to

maintain their sustainability rating, an audit of all sustainable items and actions needed to be conducted to ensure further growth in this area. In an effort to gain appropriate information regarding auditing a campus, the author, Richard Mitchell, using a qualitative framework, interviewed key stakeholders, reviewed literature regarding the subject matter, and became well versed in the sustainability initiative on campus thus far. Before the study began it was crucial to formulate a central definition of sustainability as many define sustainability in various ways, as seen in the interview sessions. According to the United Nations General Assembly Report of the World Commission on Environment and Development, sustainability is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs (Mitchell 10)." It was crucial for the author to constantly refer to this definition in his studies. This audit of sustainable efforts at Brock University adopted the United Nations Decade of Education for Sustainable Development to increase awareness and "green" resources throughout the campus. This initiative would not only appease the United Nations standards, but would be beneficial to the environment and encourage the student population to be environmental informed. However, as with most companies, universities, etc., Mitchell is aware of the environmental movement as it adds to economic wealth and social responsibility for stakeholders. Ongoing audits of the campus increase economic gains in the future, which is a major incentive for stakeholders.

Whatever the motive, maintaining sustainability efforts also drives research opportunities and social advocating for the campus community. Brock University partnership with the Sierra Youth Coalitions (SYC) directed and guided the University to prepare for the audit. SYC's aim is to reduce the ecological footprint for institutions to

further introduce and expand the student population's knowledge regarding environmental, political, and social issues relating to sustainability. Campus Sustainability Assessment Framework (CSAF) takes campus sustainability efforts one step further by using the campus sustainability efforts to further influence the regional communities to the benefits of sustainable living and practices. Using the guidelines and ideas presented by the SYC and CSAF, it became easier for Mitchell to focus on the areas that needed development and concepts that could be introduced into Brock's sustainable campus.

Mitchell's methodology required the use of Grounded Theory in which he would collect data for four months to development Brock's sustainability audit framework. To begin the process, Mitchell used open-ended interviewing techniques and interviewed individuals from various sectors of the University. Each interviewee was invited for 20 to 30 audio taped person to person or telephone interviews. Mitchell gave every interviewee the option to remain anonymous or to include their names, because of the sensitive nature of the study. Ten individuals agree to participate in the study; three interviewees choose to remain anonymous. However, each participant had the opportunity to review their responses before publication to the public and the University community. Those who decided to participate were the University President, Vice President, Sustainable Campus Coordinator, Environmental Professors, and the Student Union President. During this study; Mitchell purposely included questions that were unanswerable to elicit interest or projects being conducted. Mitchell composed twenty interview questions, with the assumption that not all participates were going to be asked the same questions. Question ranged from sustainability accomplishments, initiatives, number of resources

consumed/purchased, important issues of sustainability, and steps for growing sustainability for the campus. Most answers explained new incentives that were in progress in regards to sustainability and the constraints that prevented continued growth. Among those was the lack of money to add to current projects and few incentives for students/faculty to participate fully in sustainability efforts. Mitchell's findings did discover that the campus used various resources including, green bins for recycling, lowering thermostats, and using greener materials for construction and renovations. What could be improved based upon the interviews, was with a reduction of solid waste and an addition of more recycling bins in high traffic areas. In terms of technology for the campus, all computers and printers should be turned off at the end of the day, electric and hybrid vehicles should be employed more, and bicycle friendly lanes should be constructed. Mitchell's work helped to establish other audits that could be used for the campus. Though an institution maintaining their sustainability efforts are crucial, many institutions have trouble integrating sustainable education into their degree programs.

In Lee Liu's article, *Where in the World of Sustainability Education is US Geography?*, the issues associated with sustainable education integration are explored. With the declaration of the United Nations' Decade of Education for Sustainable Development (ESD), incorporating sustainability in existing degree programs and promoting the emergence of sustainable degree programs began to quickly rise. This article supports the claim that sustainable education should be contained within a geography program, as a result of close relationship of the both disciplines with nature and society. However, according to Liu (2011), this emerging field is slow at best of being incorporated within Geography degree programs. Before divulging into why this is

such a disservice, Liu examines the role sustainability has had on other degree, such as Engineering, Environmental, Business, and Agriculture programs. Historically, these programs have been open to including sustainable studies into existing classes. This process does not redesign the course, but rather presents an interdisciplinary way to learning. Most course materials/resources such as the National Science Digital Library, Facing the Future, Journal of STEM Education are from Engineering and Mathematical courses. Why is this?

According to Liu's interviewing of twenty-nine program staff and faculty members of these programs, they all reference the strong support of university administration as the secret for program development (2011). Among those interviewed, one school continuously appears in conversation, Arizona State University. Liu used the growth at Arizona State's School of Sustainability as the benchmark for the study with eight-one faculty members and the large amount of degrees offered within sustainability. However, Liu is quick to note that not all schools have the resources to develop sustainability departments, however many department including those previously noted and geography, have a direct relation to the subject matter. According to Liu's findings (2011), sustainability programs have not fully embraced geography either, with small numbers of programs requiring geography courses within their programs. Liu's main arguments focus on the future of programs that do not adopt sustainability within their courses. For example environmental degree programs have faded as a result of newly stated sustainability programs incorporating environmental, social, and economical issues into one degree; as a result there becomes less of a need for stand-alone environmental degree programs.

From Liu's interviews with staff and faculty members, the courses that are offered in sustainability programs have key geographic themes that could easily be incorporated, meaning that for geography programs the transition to adding sustainable courses would be easy. So why the apprehension? Liu's research uncovered the internal conflict between physical and human geographers as the culprit, as a result of the interdisciplinary nature that is sustainability. Where would it fit in geography? Both, according to Liu, as it is apparent by the large amount of international geography program in Russia and the United Kingdom that embrace sustainability within their curriculum (2011). As sustainability is not limited to being energy conscience, human geographers can focus on the economic and social concerns, while physical geographers can focus on the physical environmental properties. Fortunately, not all hope is lost as we are still in the developing phases of adapting sustainability in various curriculums. Liu sums up his argument by adding, "Geographers have the opportunity to make an important contribution by assessing the critical importance of space and geographical scale in understanding sustainability (Liu 258)."

The merger of sustainability with other disciplines is also examined in the work environment. In Calista Tsai and Andrew Chang's article, *Framework for developing construction sustainability items: the example of highway design*, the authors focus is on merging engineering and design principles with sustainable methods in a user friendly way . As design engineers, many understood the methods and ways to design a highway, however how would you incorporate sustainability into their designing principles? Through the use of interviews with designers, constructors, and maintenance owners, the authors researched which items were already being used in engineering practices and

what Leadership in Energy and Environmental Design (LEED) and Global Reporting Initiative (GRI) articles should be included to make Highway engineering LEED and GRI certified. What was discovered was that sustainability efforts had to be made from the preliminary stages of design to be eligible for sustainability certification. Following numerous interviews sessions, the items were put in a checklist to be tested by four projects, in the beginning stages of design. The checklist consisted of sustainable items (items that could be incorporated into the design), times, and man-hours of considerations. The study incorporated various types of projects to see how adaptable the checklist could be. The findings were favorable as design engineers felt the checklist was easy to understand and not a hindrance to their workload. One of the main sustainable items used across the board was landscape and ecology, which for design engineers was closely connected to sustainable themes. The findings from this study produced a terrific example of how to merge independent disciplines for the greater good.

These articles represented the true interdisciplinary nature of sustainability in various ways, however what can be gained about these three interview research projects? In Mitchell's article it is clear what steps he took to ensure ethical and comprehensive interviews with participates, from how he determined which methods would be best suited for the study to the ways in which he gathered data. Mitchell's use of grounded theory was appropriate as he first had to identify were Brock University stood in terms of sustainable efforts thus far and then compare that again literature reviews, previous audit studies, and staff plans for the future.

Liu's article was highly informative, however his procedure in deciding which individuals to interview and the questions he ask were not mentioned. Liu's argument

supporting his position was extremely strong; however the techniques and processes that were used to prove his findings were at times absent. The use of interviewing for his methods was vague and seemed to produce only information on why sustainability was incorporated at certain institutions. It would of been informative to know the specific questions asked and if he asked the participates what their thoughts were on geography departments incorporating sustainability within their course curriculum. The charts of sustainability courses in relation to geography, growth of sustainability programs, and number of sustainability programs with no connection to geography were beneficial, as it proved his research question.

Tsai and Chang used multiple qualitative methods for their study and each one was extremely appropriate for the research questions. As their study was so extensive, it was amazing to see how each method was examined thoroughly so that another researcher could possible perform the study with the contents in the article.

All articles are consistently defining sustainability to begin their argument, as sustainability topics can be very subjective. During Mitchell's interviewing process, all ten participates were not asked the same questions, however no explanation was given as to why this was done and how this would/had affected research outcomes. In addition, Mitchell's explained that he did a literature review, however, there was never a reference to his readings and if he used any of the techniques discovered to compose his interview questions. The addition of this missing information would have assisted the reader in understanding his motives for the interview, and understand the findings.

The author states that sustainability will never be achieved, as it is a process," this is very true as Brock University, though very much a forward thinker and practitioner of sustainability (Mitchell 13), still had to undergo audits to maintain their sustainable commitment. Mitchell interviewing individuals in various sectors broadens the study's findings as it included multiple perspectives.

The articles, though different, encountered the same issues and sought to understand what the results of this semiotic relationship would produce. Through the use of interviewing, each author was able to assert their reasoning behind interviewing and how interviewing as opposed to another method was more appropriate. After reading the articles, it is extremely obvious why they choose interviews and their main method of research as the subject matter was very personal. Many issues of not incorporating sustainability were the result of personal taste and how to make the subject matter personal to their respective sectors. In addition, because most studies were extremely extensive and required multiple people, the interviewers had to follow up on multiple occasions and probe for key information. Each interviewer seemed well-trained and experienced in obtaining key information from informants. These studies of integration of sustainability into other subject areas, is a subject that needs further exploration. As sustainability gains more popularity and awareness, the hope is that integration will not be a difficult undertaking to grasp, but a necessary one.

These three themes are issues that contribute to the development of sustainable development. Sustainability, gentrification, and interviewing will all be analyzed thoroughly for this study. Both sustainable assessments and gentrification are growing concepts within the district and it will be interesting to understand the themes through the

utilization of interviewing. The context of these themes will be explored within the East Market District just as previous studies have done. Are there instances of gentrification? What assessments are being conducted in the district? What is the sense of space? And finally, how is sustainable development evaluated via actors?

CASE STUDY

This section provides the opportunity to investigate these themes of gentrification and sustainable assessments within the East Market District. As noted the district features incidents of gentrification and is utilizing a variety of sustainable assessments, in order to understand these processes interviewing serves as a means to dive deeper into these themes. With the application of qualitative and quantitative techniques, the East Market District will be assessed on the various interpretation of sustainability via interviews and the standards delivered by the Brundtland Commission and the United States Green Building Council's LEED Neighborhood Certification. The perception of the actors will be measured qualitatively against the measured results from the LEED Neighborhood Certification.

As the East Market district is a very popular and growing location, this study focuses on the perceptions of sustainability through the eyes of the actors involved. One constraint of this research is that the district is still under construction, which requires the analysis to focus on the current state and not on the perceptions after the district is identified as a LEED certified sustainable neighborhood. However, the responses received from these actors will aid in identifying if the district in fact a sustainable neighborhood.

Scale and Three Pillars of Sustainability

During the literature review, major themes of sustainable development were addressed. In order to properly understand the case study it is vital to further define sustainability and outline the process through which themes are developed to be utilized for field research. Sustainability as a framework provides us with many scales in which to categorize sustainable development. When analyzing the Brundtland commission's definition of sustainability, it can be difficult to narrow the idea into a working model that is universally applicable. Many dispute the claim that a universal definition can even be constructed as the goals, focus, and locations are inherently unique (Kates, Parris, and Leiserowitz 2005). The development of sustainability focused resources, including the LEED certifications and the sustainable development Venn diagram, as seen in Figure 8, serves to operationalize and structure the concept and application of sustainability. The Venn diagram is composed of three pillars: social, environmental, and economic. In the universal model of the Venn diagram each pillar is weighted evenly and equal in importance. However, this model can and has been adjusted depending upon the user. For example, developers may value the economic pillar which results in that pillar weighing stronger in significance as seen in Figure 9. The disproportion pillars increases the complexity, as everyone may have their own agendas and believe one pillar to be

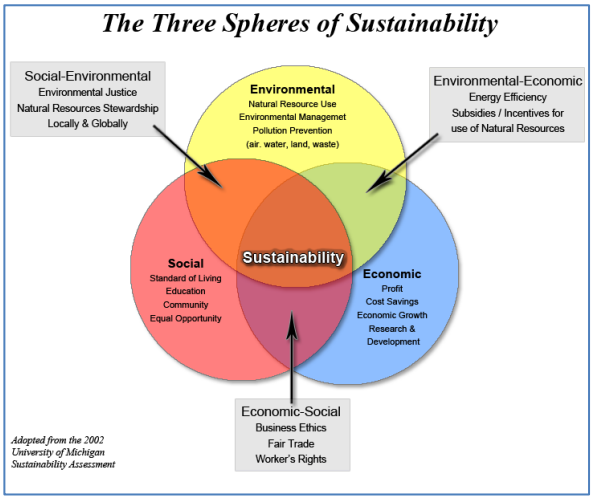


Figure 8. Three Pillars of Sustainability

stronger than the other. For the purposes of this study, the evenly distributed pillars version will be utilized.

The three pillars of sustainable development provide the themes and focus of what is contained within the sustainable development arena. After exploring this content, how do these pillars function together to form a systematic and operational method for assessing sustainability? In addition, what themes are apparent within these pillars? As the focus of this study is on neighborhoods, it is important to understand the social context.

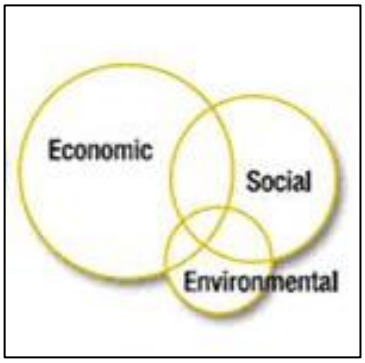


Figure 9. Biased Pillars Of Sustainability

The social pillar is focused on the needs of the individuals and groups; this can include access to water, healthcare, education, transportation, jobs, and sanitation. Underlining it all are consistent themes including: education, equity, nutrition, poverty, wellness, safety, and inclusion (Sustainable Kingston Corporation 2014). This pillar typically is unofficially the least popular by economic developers and business leaders, as it presents challenges in quantifying the data. How do you quantify a very subjective topic? It is important to note that without the social pillar, the other pillars will not function properly as they all serve as an intertwined concept of ideas functioning as a whole. Alternatively, economic growth can stall as individuals are not interested in living in socially strained environments. Generally, focused toward the wellbeing of the community, this awareness creates a higher collaboration between the other pillars.

The environmental pillar can easily be seen as the basis for sustainable development as its emphasis is on maintaining the environment. Limiting environmental

degradation and conservation are high within this pillar; the process for analysis environmental problems typically this can be solved via systemic means, making these topics more prescriptively solved. On some level, this is process is straightforward and clearly supports the cause of protecting the environment; however, assessing environmental dilapidation and preservation do not repair all problems. The main themes interpreted from this pillar are as follows: energy, climate change, water, pollution, solid waste, natural gas, and land use.

The economic pillar focuses on encouraging profit, economic growth, and developing cost saving measures. Of any pillar, economic is most dependent on social and environmental pillars, as in order to facilitate revenue you must have community support, individuals willing to support new sustainable initiatives, companies, stores, and/or products. In addition, the environmental assessments have to provide enough incentives and results to warrant economic growth. Unfortunately, this pillar is what appeals to investors and/or developers when it comes to neighborhood redevelopment. From this pillar various themes can be observed including: economic development, labor market development, infrastructure, and tourism.

The best option is to weigh each pillar equally in able to obtain a comprehensive view of a neighborhood These pillars help organize sustainable development in distinct areas this in return enables the identified themes to be assessed in a meaningful way.. One option that exemplifies this method is the United States Green Building Council (USGBC), Leadership in Energy and Environmental Design (LEED).

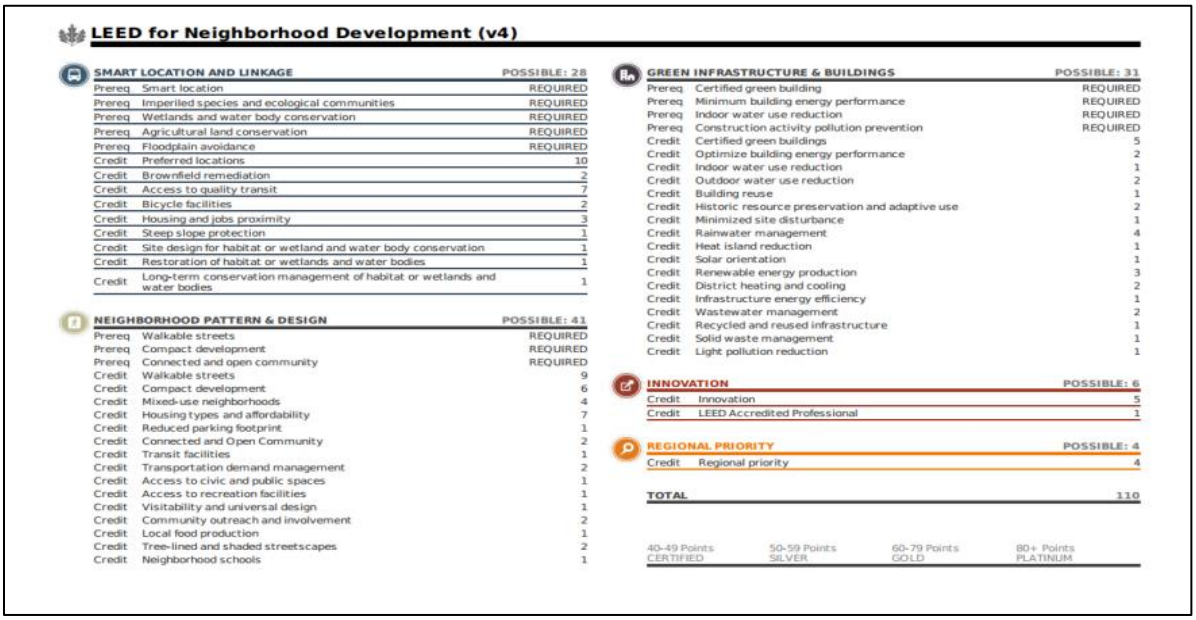
LEED: Leadership in Energy and Environmental Design

Recently, the East Market District was the recipient of a $25,000 grant from the USGBC's LEED. With this grant, the district has the opportunity to gain LEED Neighborhood certification. The pursuit of green certification is growing in popularity, what once began as green building certification gradually expanded to include certification for interior design and construction, homes, and now neighborhood development. The prestige and status that the certification provides contributes to the achievement and goals of the East Market District. In addition, to funding, the grant includes the following materials to assist in the obtainment of certification (Peterson 2012):

- A refunded LEED-ND project registration fee by GBCI
- $300 discount on national membership to the U.S. Green Building Council
- One LEED-ND Reference Guide
- One registration for a LEED-ND online training/webinar
- Registration for one LEED-ND workshop
- Access to USGBC technical assistance and monthly conference calls
- One registration for the National Affordable Green Homes & Sustainable Communities Summit in San Francisco, CA

The process in obtaining certification is extremely specific and requires that companies, individuals, or governments go thru a series of prerequisites and credits (USGBC 2014). This system provides a systemic, consistent, and thoughtful technique to operationalize sustainable development. The structure is exactly what is needed as it is

important to understand how this credit system is devised and weighted under the sustainable lens. This again feeds into the problem of how to label sustainability and broadcast this system across a general market that is connected to the needs of a specific location or building. Each segment of LEED Certification contains its own credit system. The scorecard works for a variety of developments ranging from pre-construction to competed projects. As seen in Figure 10, Neighborhood Development, the sections are divided into five categories: Smart Location and Linkage, Neighborhood Pattern and Design, Green Infrastructure and Buildings, Innovation, and Regional Priority.



LEED for Neighborhood Development (v4)

SMART LOCATION AND LINKAGE		POSSIBLE: 28
Prereq	Smart location	REQUIRED
Prereq	Imperiled species and ecological communities	REQUIRED
Prereq	Wetlands and water body conservation	REQUIRED
Prereq	Agricultural land conservation	REQUIRED
Prereq	Floodplain avoidance	REQUIRED
Credit	Preferred locations	10
Credit	Brownfield remediation	2
Credit	Access to quality transit	7
Credit	Bicycle facilities	2
Credit	Housing and jobs proximity	3
Credit	Steep slope protection	1
Credit	Site design for habitat or wetland and water body conservation	1
Credit	Restoration of habitat or wetlands and water bodies	1
Credit	Long-term conservation management of habitat or wetlands and water bodies	1

NEIGHBORHOOD PATTERN & DESIGN		POSSIBLE: 41
Prereq	Walkable streets	REQUIRED
Prereq	Compact development	REQUIRED
Prereq	Connected and open community	REQUIRED
Credit	Walkable streets	9
Credit	Compact development	6
Credit	Mixed-use neighborhoods	4
Credit	Housing types and affordability	7
Credit	Reduced parking footprint	1
Credit	Connected and Open Community	2
Credit	Transit facilities	1
Credit	Transportation demand management	2
Credit	Access to civic and public spaces	1
Credit	Access to recreation facilities	1
Credit	Visitability and universal design	1
Credit	Community outreach and involvement	2
Credit	Local food production	1
Credit	Tree-lined and shaded streetscapes	2
Credit	Neighborhood schools	1

GREEN INFRASTRUCTURE & BUILDINGS		POSSIBLE: 31
Prereq	Certified green building	REQUIRED
Prereq	Minimum building energy performance	REQUIRED
Prereq	Indoor water use reduction	REQUIRED
Prereq	Construction activity pollution prevention	REQUIRED
Credit	Certified green buildings	5
Credit	Optimize building energy performance	2
Credit	Indoor water use reduction	1
Credit	Outdoor water use reduction	2
Credit	Building reuse	1
Credit	Historic resource preservation and adaptive use	2
Credit	Minimized site disturbance	1
Credit	Rainwater management	4
Credit	Heat island reduction	1
Credit	Solar orientation	1
Credit	Renewable energy production	3
Credit	District heating and cooling	2
Credit	Infrastructure energy efficiency	1
Credit	Wastewater management	2
Credit	Recycled and reused infrastructure	1
Credit	Solid waste management	1
Credit	Light pollution reduction	1

INNOVATION		POSSIBLE: 6
Credit	Innovation	5
Credit	LEED Accredited Professional	1

REGIONAL PRIORITY		POSSIBLE: 4
Credit	Regional priority	4

TOTAL	110

40-49 Points	50-59 Points	60-79 Points	80+ Points
CERTIFIED	SILVER	GOLD	PLATINUM

Figure 10. LEED Neighborhood Development Scorecard

Neighborhood Pattern and Design Scorecard

The Neighborhood Pattern and Design category with regional priority is devoted to accessibility to public healthcare, social equitable environments, transportation, housing, and location to jobs; obviously more focused in the social field. The second highest credit category is Green Infrastructure follows next with 31 points as it is focuses

on sustainable application introduced to the area including green buildings, solar panels, renewable energy, and water reduction. The mid-range category, Smart Location and Linkage is very much geared to the physical aspects of the location including floodplain, land conservation, wetlands, and slope protection. As such this category is more focused within the environmental pillar, with the physical focus. This section holds a complete credit value of 28. The lowest categories are innovation and regional priority at 6 and 4 points. These credits are utilized as means for creatively and practicality relevant to the user's neighborhood.

Overall, these credits provide the opportunity to analyze not only sustainable development practices, but also serves as the chance to understand how the text (scorecard) works. Categories such as Smart Location and Linkage, Neighborhood Pattern and Design, and Green Infrastructure and Buildings contain prerequisite and required credits. Each project applying for LEED certification has to obtain these items before attempting certification. Which is why to fully grasp an understanding of the scorecard it is vital to perform a textual analysis on such credits.

METHODS

Through the use of content and textual analysis, analysis will be performed on the LEED Neighborhood Scorecard Credit System and actor interviews. Textual analysis will provide the opportunity to isolate key features of the text; while content analysis serves as an opportunity to make inferences about the big picture from the physical text (LEED Neighborhood Scorecard Credit System) and also by data gathered via interviews. From here, the data gathered via these techniques will expose hidden meanings and details within the communication and text. Each process will be analyzed for themes as observed and noted from the three pillars of sustainable development: social, economics, and environmental.

Interviews

The central goal of this study is to understand the various interpretation of sustainability within a neighborhood; with the possibility of various interpretations this presents the challenge of gathering the data of those actors who are within the East Market District. As such, interviewing provides the opportunity to illuminate the underpinnings, themes, and small nuances within the responses of those involved. This method also supplies the study with the personal feelings and inner conflicts occurring within the district. When conducting qualitative research, interviews will provide the opportunity to not only identify factual information but also information on the meaningful level of what those being interviewed say (Valenzuela and Shrivastava 2014). As the East Market District is composed of various individuals with varying concerns, this provides the opportunity to get a thorough and diverse view of what's happening in

the location, while also providing the chance to understand the different complexes involved in the varying perspectives.

With the terrific benefits that interviewing provides, it also generates problems with the inclusion of more controversial subject matter. With East Market's history and movement of certain businesses and individuals, this can create fear for the interviewee and may inhabit honest discussion of their experiences. However, it is this fear, truth, and underlying issues that this study seeks to identify to further understand the true transformation of the East Market District into a sustainable environment.

After analyzing previous studies, the most effective way to approach this subject matter is to perform a quasi-informal, conversation interview with some prepared questions in anticipation of lulls in the conversation. This approach would allow for adaptable questioning based upon the interviewee's personality and priorities. To get a true analysis of the neighborhood, city officials, business owners/employees, contractors, real estate developers, residents, and patrons were interviewed using standardized open-ended questions; however, the participant's responses will lead the majority of questions. In addition, the demographics will be summarized to get a diverse set of actors to participate in the interview. The interviews will be conducted in a central locality chosen by the participant to ensure their comfort.

An objective for this analysis is to identify sustainable definitions from various actors' perspectives, as such, it is also crucial to understand the differences between the actor's responses. Those who are instrumental to the creation and development of the neighborhood may have different viewpoints then those who are living, visiting, or

working in the area. As such, the actors must be categorized into subgroups. The first subgroup labeled constructors included investors, city officials, and real estate developers; the individuals in this group have a direct connection to the physical and social construction of the neighborhood. On the other hand the second subgroup labeled, occupants, were those who inhabit the space created by the constructors, this will include business owners and/or employees, residents, and patrons. This is to account for developing an overview of residential opinions, in relation to other subgroups.

The interviews were conducted after significant observation of the key players within the East Market District. Through the internship and archival research, a socioeconomic typology of actors based mainly on profession and income class was generated with one representative from each category. The typology was deemed emblematic of the changing district and was used in place of sampling. The use of this design aids in validating the significance of findings, as it is representative of the population of the study area. These groups of actors came from a variety of backgrounds with differing positions, roles, and economic status in the neighborhoods. The following typical actors were involved in the interview process.

The subgroup of 'constructor' consisted of a real estate developer, an investor, and a city official. As a result I had one real estate developer with a large amount of experience integrating mixed-use housing in downtown area. This actor does come from a privileged background and grew up in Louisville, so their experiences were vital to my analysis. The next actor worked exclusively with the Louisville Metro Housing Department and was not native to Louisville. As a result, her experience was limited within HOPE VI projects. She is typical of Housing and Urban Development employees,

who typically come to town to implement projects across the country. Her role dealt more with the government impact within these transforming environments. The next constructor was a major investor to the East Market District. This individual was from a position of privilege and he had a long history of investing in neighborhoods.

For the 'occupant' category residents, business owners/workers, and patrons were identified. The residents were also small business owners within the area, and they both came from working class backgrounds. One resident had lived on the East Market District since the 1980s, and had seen the major transformation the area had gone through. Another resident had made a major transition from small rural town to city living. Currently, these residents may be considered of upper middle class income level, but through their time in the district had experienced massive transition in their own socio-economic class. However, as the demographics have changed, in terms of property values at $245,262 and the average salary of residents being$75,585, these residents are reflective of the new district. The final occupant was a principal architect from a business located on the East Market District. This individual had worked in the district for 10 years and had also experience the transformation occurring in the district. This individual had also come from an upper middle class background. Obtaining the perspective of those actors within the typology was beneficial, but it is also important to understand the issues of those being affected most by this urban renewal.

To understand the perceptions of gentrification by the low income residents in the area, literature played a significance role in explicitly detailing the experience of those being most affected by gentrification. As seen in Newman and Wyly's article (2006), original residents feelings of severe disinvestment until the arrival of gentry generates

feelings of fear, displacement, and monetary pressure. This can also be expressed in Doucet's article (2009) in which residents originally felt the new construction was to their benefit, until they realized the new housing was not intended for local people, but instead for those moving into the developing ~~up and coming~~ neighborhood. This in effect changed their image of the community, as many had strong historical ties to the area. The neighborhood was now sold to the highest bidder. This presents the understanding that public housing residents have been very anti-gentrification. So, although for reasons of time and access, this study does not treat the underprivileged specifically, it is possible based on past studies to theorize the impacts of gentrification. Furthermore, this class is no longer represented in the East Market District and would not have been generated through the typology method due to changing demographics.

The focus of the questions being asked for constructors will focus on the following: building water efficiency, wastewater reduction, on-site renewable energy efficiency, certified green building, solar orientation, and existing building use. While occupant's questions were focused on walkable streets, street networks, connected and open community, mixed income neighborhood, housing and jobs proximity, community outreach, and involvement. These themes are based upon the same criteria that the USGBC LEED Neighborhood scorecard requires for LEED-certified sustainable neighborhoods. Questions were focused on external and internal features of the neighborhood, experiences, neighborhood culture, products, etc.

The interviews were produced exclusively within an internship the East Market District. The process of interviewing was broken down into four central objectives: first an assessment of sustainable knowledge will need to be identified to gain an established

baseline of understanding for questioning. This was a key phase for analysis as it gave some basis to frame subsequent questions. This included supplemental questions such as the following:

- What did you know about the East Market District prior to moving/opening a business, or investing?
- What comes to mind when you think of sustainability?
- What makes this district observant of environmentally friendly practices?

These questions served as proxies for measuring the participants understanding of sustainable practices and the goals of the neighborhood. The next step of interviewing analysis focused completely on understanding the experiences of sustainability across the various actors. As most actors were from different walks of life, it was interesting to see the disparities and what they deem as sustainable encounters. Questions such as

- Describe your experience living/working in this neighborhood?
- Would you describe this neighbor as sustainable, and why did you choose to move/open a business/investment into the East Market District?

These questions dependent on the responses of the participants served as leads into comparison question about past work/living experiences, and as key signifies of their own definitions of what sustainability is. The third step consisted of informing participates of the future plans of the district. The goal being to enlighten participants of the goals for the East Market District and to understand their responses to the new plan. The final step consisted of juxtaposing the interview responses to that of Brundtland's definition of sustainability. To sum up the interview, the definition was read to all

participates and then subsequently asked what their perceptions of the definition are and if the East Market District is fulfilling what the definition illustrates. Though much information regarding the participant's experiences, knowledge, and understanding of sustainability will be established through the interview process- to quantify the information the data will then be weighted via content analysis.

Content Analysis Process for Interviews

As expressed early, interviews provide an unmeasurable benefit to understanding sustainability via the actors that are within the district. The actors within the subgroups proved to be extremely useful in understanding sustainability as a concept.

Constructors were composed of developers, government housing officials, and investors. The content of the interviews were assessed and placed within the three pillar codes. The same was addressed for Occupants, which was composed of residents and business owners. Once the data was obtained, it was imperative to analyze the information via coding mechanics. The benefits of such a methodology aided in revealing conflicts, themes, isolated attitudinal and behavioral responses, and identifying the focus of the individual groups.

Through the use of interpretative approaches the social action and human communication can be treated as text for which to interpret. This system provided validation in the absence of quantifying the data, as the text provided the opportunity to categorize the themes, words, etc. thus providing a basis to understand how the various actors define sustainability. What becomes difficult is deciding whether the manifest or latent content holds more benefits for the purposes of this study; as manifest content is

focused more on the calculating the total occurrences of physical words and themes. Once the latent content focused on the deeper meaning discovered within the overall message of the individual interviews. For the purposes of this study, blending of the two content styles occurred to obtain a holistic view of the interviewee's responses. The combination of the styles further validates the results, as it includes quantifiable results as well.

So how is the communication received via interviews structured to further understand the overall statement? The text can be broken down into two components, the message and sender. The message or what the participant says can be analyzed via themes. For instance, if the individual continually emphasizes walkability, this presents a theme. The sender or the method for which the message is delivered can illuminate thoughtful pauses, nonverbal nuances, and other slang terms which are significant to the overall message. It is also important to note the audience reception of the message.

The initial step was to identify the units of analysis to discover in the interview via inductive and deductive processes. Themes will serve as the primarily units of analysis, as sustainable subject matter inherently has self-contained themes of the environmental, social, and economic categories. The sustainable development categories, environmental, economic, and social, work well as these categories for which themes will be place should be closely connected to the data from which they emerge and be derived via inductive methods. This process also connects to analysis of the LEED scorecard for which the same categories were used. The character counts quantify the significant topics per the interviewee and again support their own individual idea of what sustainability is.

Once the data was collected, the data was assessed via the aims of this research, how do these individual actors define sustainability from their own lived experience? The initial stages included broad categories found within the data, but as a result of the two methods of using manifest and latent content, the narrowing of the categories/ themes can become more narrowly focused. Through this process, the true meaning of the text was illuminated much easier.

The findings were then placed in coding frames; frames assist in the categorization of sustainable development themes. After reading and listening to the participant's interviews, the occurrences of themes relevant to the unique sustainable development codes were categorized. When items were address that fit in multiple categories, the context for which the participant was speaking was taken in consideration in the classification process. Once each response was categorized, the themes with the highest concentration of responses are analyzed in terms of solidifying that individual's definition of sustainability.

ANALYSIS OF RESULTS

Scorecard Results

It is important to note that Neighborhood Pattern and Design has the highest credit value at 41. It is interesting that Neighborhood Pattern and Design credits are more focused on the items that impact humans directly. This leads one to believe that social aspects hold a greater weight than environmental and economic themes within the LEED credit system. The second highest credit category is Green Infrastructure, which illustrate what the LEED score values the most in creating sustainable neighborhoods. The category, Smart Location and Linkage has a credit value of 28. However this mid-range value is interesting as it would be easy to believe that an assessment interested in environmental issues would place a higher value on a section with environmentally distinctive items. The Innovation and Regional Priority categories focused on creatively and practicality relevant to the user's neighborhood, have the lowest credit value allowing for individualization and promotes new ideas and innovative thought. Through this initial textual analysis, overall, the text demonstrates an extensive regard for user friendliness; this can be observed in the wording and application of how to utilize and understand these techniques, as found in Table 1, 2, and 3.

To fully comprehend the text the required credits were analyzed regarding the purpose or message as designed for the scorecard audience. This category would serve two purposes: to validate the unique credit and describe why this credit was applicable and necessary for the neighborhoods. Each item had a unique purpose and was explained

thoroughly but also in a detailed manner with various options for achieving the required element in order to implement the project.

The second category of analysis was designated clarity, which focused on the means in which the producer of the scorecard conveyed the message. This was conducted primarily through words, expressions, and most importantly references. Each required credit had a plethora of references related to the application and usability of the desired credit. It was obvious that the text was geared to the everyday person with options for glossaries, forums, additional resources, and contacts for implementation of task. This benefit increases the appeal for those who want to have their neighborhood green-certified. The options were also easily defined and formatted as a task list for various options. For the items where options were not available, more detail was included such as website and sources.

The third category, significance, demonstrated to the reader why these credits were a required items and necessary for LEED neighborhood developments. The benefits of the credit were thoroughly explained and again provided ample detail for various understandings.

The last area of textual analysis focused on the appeal to the audience. How the scorecard displayed and positioned the credit was extremely important part of the methodology hence there needed to be some incentive within the credit for the user. To tackle this issue, the producer of the scorecard clearly presents the material and includes the most effective means with which to implement the project. The producer could have easily adjusted the materials to the knowledge level of LEED professional or those within

the sustainable development industry, but instead takes a simplistic approach. For the purposes of informing the public on how to go about constructing a sustainable environment the text greatly simulates this with the delivery, ease of use, and understanding.

Prerequisite REQUIRED Items-LEED Neighborhood Development					
Neighborhood Pattern and Design	ITEM	PURPOSE/MESSAGE [for audience]	CLARITY [including words, expressions, and references]	SIGNIFICANCE [within sustainable environments]	APPEAL [to audience]
	Walkable streets	To promote transportation efficiency and reduce vehicle distance traveled. To improve public health by providing safe, appealing, and comfortable street environments that encourage daily physical activity and avoid pedestrian injuries	Includes glossary for uncommon terminologies Gives audience 4 guidelines to follow, does not allow for options or mistakes Includes resources, guides, and forums for audience	Reduction in vehicle distance travel and pollution	Safe, encourage daily physical activity and avoid pedestrian injuries
	Compact development	To conserve land	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	Promote livability, walkability, and transportation efficiency and reduce vehicle miles distance traveled. To leverage and support transit investments. To improve public health by encouraging daily physical activity.	Comfortable and space saving density within the development
	Connected and open community	To promote projects that have high levels of internal connectivity and are well connected to the community at large.	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	To encourage development within existing communities that promote transportation efficiency through multimodal transportation. To improve public health by encouraging daily physical activity.	Two options with very detailed guidelines of how to achieve a connected and open community

Table 1. Neighborhood Pattern and Design: Required Items Textual Analysis

Prerequisite REQUIRED Items-LEED Neighborhood Development					
Green Infrastructure and Buildings	**ITEM**	**PURPOSE/MESSAGE** [for audience]	**CLARITY** [including words, expressions, and references]	**SIGNIFICANCE** [within sustainable environments]	**APPEAL** [to audience]
	Certified green building	To encourage the design, construction, and retrofit of buildings using green building practices.	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	Sets the stage for further green growth and serves as an example of possible gains of green development	Visual and environmental gains, in addition to serves as figurehead to new development
	Minimum building energy performance	To encourage the design and construction of energy-efficient buildings	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	reduce air, water, and land pollution and environmental damage from energy production and consumption.	Provides three options about how to achieve this item
	Indoor water use reduction	To reduce indoor water consumption.	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	To reduce indoor water consumption.	Demonstrates how to calculate water consumption and how to lower it for the various types of units
	Construction activity pollution prevention	To reduce pollution from construction activities	Includes glossary for uncommon terminologies Includes resources, guides, and forums for audience	Controlling soil erosion, waterway sedimentation, and airborne dust.	Create and implement an erosion and sedimentation control plan Gives list of items that must be preserved and how to preserve them making it very user friendly

Table 2. Green Infrastructure and Buildings: Required Items Textual Analysis

Prerequisite REQUIRED Items-LEED Neighborhood Development					
	ITEM	PURPOSE/MESSAGE [for audience]	CLARITY [including words, expressions, references]	SIGNIFICANCE [within sustainable environment]	APPEAL [to audience]
Smart Location and Linkage	Smart location	To encourage development within and near existing communities and public transit infrastructure, while limiting the expansion of the development footprint in the region	Includes glossary for uncommon terminologies Provides resources, a guide, and forum in which to understand how to apply this requirement	To reduce vehicle trips and vehicle distance traveled.	Provides options to audience about how to obtain this items
	Imperiled species and ecological communities	To conserve imperiled species and ecological communities.	Includes glossary for uncommon terminologies Provides resources, a guide, and forum in which to understand how to apply this requirement Consult with the state Natural Heritage Program	If there is a presence of imperiled species and an ecological community, a Habitat Conservation Plan must be developed with the help of specialist	Maintain and locate species within
	Wetlands and water body conservation	To preserve water quality, natural hydrology, habitat, and biodiversity through conservation of wetlands and water bodies.	Includes glossary for uncommon terminologies Provides resources, a guide, and forum in which to understand how to apply this requirement	Limit development effects on wetlands, water bodies, and surrounding buffer land	Provides options how to handle various situations with wetlands with attainable measures
	Agricultural land conservation	To preserve irreplaceable agricultural resources by protecting prime and unique soils on farmland and forestland from development.	Includes glossary for uncommon terminologies Provides resources, a guide, and forum in which to understand how to apply this requirement	Project not on a site that is within a state or locally designated agricultural preservation district	Provides 5 descriptive options for handling soil and farmlands
	Floodplain avoidance	To protect life and property, promote open space and habitat conservation, and enhance water quality and natural hydrological systems	Includes glossary for uncommon terminologies Provides resources, a guide, and forum in which to understand how to apply this requirement	To have a site that is entirely outside any flood hazard area shown on a legally adopted flood hazard map or otherwise legally designated by the local jurisdiction or the state.	Provides the contacts, American Coops of Engineers, to ensure this requirement is met. Multiple options are also included

Table 3. Smart Location and Linkage: Required Items Textual Analysis

The next step in analysis demonstrated how each credit/item fits within the sustainability development conceptual Venn diagram. As this model (Venn diagram) serves as the basis for sustainable development, it was important to apply themes per credit. Each item had a purpose and message that the producer created; as such theme classification became the next focus. Each credit was assessed in relation to the three themes, social, environmental, and economical; this was completed first using the textual analysis of the required/prerequisite items and secondly by analyzing the description of each additional credit within the confines of the social, environmental, and economical

themes. As seen in Table 4, the credits were maintained within LEED categories of Smart Location and Linkage, Neighborhood Pattern and Design, Green Infrastructure and Buildings, Innovation, and Regional Priority with the corresponding value per credit.

SMART LOCATION AND LINKAGE POSSIBLE: 28	Value	Social, Economic, Environmental	Highest Theme
Preferred locations	10	Environmental	Environmental
Access to quality transit	7	Social	
Housing and jobs proximity	3	Social	
Brownfield remediation	2	Environmental	
Bicycle facilities	2	Social	
Site design for habitat or wetland and water body conservation	1	Environmental	
Steep slope protection	1	Environmental	
Long-term conservation management of habitat or wetlands and water bodies	1	Environmental	
Restoration of habitat or wetlands and water bodies	1	Environmental	
NEIGHBORHOOD PATTERN & DESIGN POSSIBLE: 41	Value	Social, Economic, Environmental	Highest Theme
Walkable streets	9	Social	Social
Housing types and affordability	7	Social	
Compact development	6	ALL	
Mixed-use neighborhoods	4	Social and Economic	
Connected and Open Community	2	Social	
Transportation demand management	2	ALL	
Community outreach and involvement	2	Social	
Tree-lined and shaded streetscapes	2	ALL	
Reduced parking footprint	1	Environmental	
Transit facilities	1	Social	
Access to civic and public spaces	1	Social	
Access to recreation facilities	1	Social	
Visitability and universal design	1	Social and Economic	
Local food production	1	Environmental	
Neighborhood schools	1	Social	
GREEN INFRASTRUCTURE & BUILDINGS POSSIBLE: 31	Value	Social, Economic, Environmental	Highest Theme
Certified green buildings 5	5	Environmental	Environmental
Rainwater management 4	4	Environmental	
Renewable energy production 3	3	Environmental and Economic	
Optimize building energy performance 2	2	Environmental	
Outdoor water use reduction 2	2	Environmental	
Historic resource preservation and adaptive use 2	2	Economic	
District heating and cooling 2	2	Environmental	
Wastewater management 2	2	Environmental	
Indoor water use reduction 1	1	Environmental	
Building reuse 1	1	Economic	
Minimized site disturbance 1	1	Environmental	
Heat island reduction 1	1	Environmental	
Solar orientation 1	1	Environmental	
Infrastructure energy efficiency 1	1	Economic	
Recycled and reused infrastructure 1	1	Environmental and Economic	
Solid waste management 1	1	Environmental	
Light pollution reduction 1	1	Environmental	
INNOVATION POSSIBLE: 6	Value	Social, Economic, Environmental	Highest Theme
Innovation 5	5	ALL	All
LEED Ac ed Professional 1	1	ALL	
REGIONAL PRIORITY POSSIBLE: 4	Value	Social, Economic, Environmental	Highest Theme
Regional priority	4	Social	Social

Table 4. Themes within LEED Neighborhood Scorecard

Each item was categorized via textual analysis of the description per LEED certification website. Once the most frequent themes were labeled, Venn diagram themes, were documented per LEED category to understand the relationship between the LEED

category and that obtained via textual analysis. Within the smart location and linkage category, the environmental theme was dominant, with the highest value credits situated in environmental and social themes. This result was not a surprising, as large amount of the credits in the category were based on the physical realm of a location and maintenance of an area. Although many credits were based in the environmental sector, the values of these credits were lower than 1, with the high values of 7 and 3 being relevant to accessibility for the community.

The Neighborhood Pattern and Design LEED category were classified within the social theme, as many credits were relevant to the feel, design, and accessibility for inhabitants. All the highest credits values involved social aspects including walkable streets, housing types and affordability, and compact development. Walkable streets, which would greatly benefit the community, received the highest values with 9 points.

Within Green Infrastructure and Buildings, the themes fell predominately in the environmental sector as most credits were deemed environmental assessments of application or processes. The highest values were as follows:

- Certified Green Buildings-5
- Rainwater Management-4
- Renewable Energy Production-3

The credits within the innovation category focused on all the three themes listed above since the purpose of the category was to seek respondents who creatively develop a new sustainable initiative for their neighborhood. This item had the freedom to be focused in any area of sustainability deemed favorable by those seeking certification; as

such this credit was categorized in all themes. The same categorization was given to the LEED professional credit as this role would provide guidance for those seeking certification in all areas of sustainable development.

The regional priority served as an incentivized credit for stakeholders in the selection of a location that would address both social and public health accessibility, resulting in a social theme. This credit was rather high at four, with the highest theme being social.

The final analysis of all the credits with values and their corresponding theme was extremely enlightening. Credits with values > 3 showed an overwhelming preference towards the social theme of sustainable development. This is extremely interesting considering the Venn diagram, where the social can be deemed as the less important pillar; however through this analysis the credits with the higher values were closely associated with the social, as seen in Table 5.

Credit	Value	Themes	Highest Overall Theme
Preferred locations	10	Environmental	Social
Walkable streets	9	Social	
Access to quality transit	7	Social	
Housing types and affordability	7	Social	
Compact development	6	ALL	
Certified green buildings 5	5	Environmental	
Innovation 5	5	ALL	
Mixed-use neighborhoods	4	Social and Economic	
Rainwater management 4	4	Environmental	
Regional priority	4	Social	
Housing and jobs proximity	3	Social	
Renewable energy production 3	3	Environmental and Economic	
Brownfield remediation	2	Environmental	
Bicycle facilities	2	Social	
Connected and Open Community	2	Social	
Transportation demand management	2	ALL	
Community outreach and involvement	2	Social	
Tree-lined and shaded streetscapes	2	ALL	
Optimize building energy performance 2	2	Environmental	
Outdoor water use reduction 2	2	Environmental	
Historic resource preservation and adaptive use 2	2	Economic	
District heating and cooling 2	2	Environmental	
Wastewater management 2	2	Environmental	
Site design for habitat or wetland and water body conservation	1	Environmental	
Steep slope protection	1	Environmental	
Long-term conservation management of habitat or wetlands and water bodies	1	Environmental	
Restoration of habitat or wetlands and water bodies	1	Environmental	
Reduced parking footprint	1	Environmental	
Transit facilities	1	Social	
Access to civic and public spaces	1	Social	
Access to recreation facilities	1	Social	
Visitability and universal design	1	Social and Economic	
Local food production	1	Environmental	
Neighborhood schools	1	Social	
Indoor water use reduction 1	1	Environmental	
Building reuse 1	1	Economic	
Minimized site disturbance 1	1	Environmental	
Heat island reduction 1	1	Environmental	
Solar orientation 1	1	Environmental	
Infrastructure energy efficiency 1	1	Economic	
Recycled and reused infrastructure 1	1	Environmental and Economic	
Solid waste management 1	1	Environmental	
Light pollution reduction 1	1	Environmental	
LEED Ac ed Professional 1	1	ALL	

Table 5. Credits in Order of Value with Overall Theme

Though the highest credit, preferred locations, was environmentally themed, the remaining higher value credits including walkable streets, access to quality transit, housing types, and affordability all were more geared toward the social. What is interesting to note is that in earlier analysis of the Venn diagram, environmental was seen as the most important pillar but as also noted, was unable to function completely without the buy in of the community. According to the LEED analysis of the scoreboard, what the social initiates within a neighborhood also what defines and initiates sustainability for a neighborhood. What does this mean in the grand scheme of things? For this study this

illuminates a prior thought that money ruled all, however, it is clearly not the case as none of the LEED categories were predominately focused in the economic realm. In addition, the high value credits all fell primarily within the social and environmental. As the neighborhood credit scorecard, social rightfully should be the focus, however, for other certification programs perhaps the opposite is true, with profit and economic development being the overwhelming theme. In creating a neighborhood, one wants a cohesive and branded neighborhood, with the new identification of NuLu and the drive toward LEED certification, it is perhaps the best outcome for East Market District to focus on the community; especially knowing the historical changes the area has gone through. The identity was lost and a new one is found. Through observing the neighborhood, patrons, business owners, everyone outwardly seems united under the goals of creating this space of sustainable development. This would manifest as participation in community events, commerce, and increased interest in the area. After examining the LEED Neighborhood scoreboard and identifying how they define sustainability, it becomes necessary to see if this point of view is shared by those actors within this space. Are they more economically focused, does their role and experience within NuLu affect their definition?

Interview Results

Within the Constructors subgroup as seen in Table 6, the economic development category had the highest occurrence of relevant themes.

CONSTRUCTORS			
Name	Company	Role	Theme
Norma Ward	Louisville Metro Housing Authority		Social
THEMES			
Economic	Social	Environmental	
Growth	Clarksdale	EPA as reference	
Dispute with Economic Developers	The Edge	Carbon Accounting	
	Liberty Green	Enterprise Green Community	
	Feel of the Neighborhoods	Design of Bridge and Road Overpass	
	Cohesive Neighborhood Look	Charging Station	
	Fit the needs of residents	Housing to be equipped with Energy Star Awards	
	Proximity of Schools	EPA Energy Star Portfolio Manager	
	Publics knowledge about the district		
Name	Company	Role	Theme
Gil Holland	Co-Developer of the Green Building		Economic
THEMES			
Economic	Social	Environmental	
Visions of new Commerce-Bontique Hotel	Bike Path to Big Four Bridge	Change in streetscape-2 way streets	
Retail shops	Increase in residential houses		
Replace old small businesses to make room for new development	New Street Signs to increase the design of the street		
New business: 500 cab music venue	Year round farmers market		
increase in bars	Activate alleys to incrase pedestrian activity		
Add distillery			
new development			
Name	Company	Role	Theme
Bill Weyland	Economic Development		Economic
THEMES			
Economic	Social	Environmental	
Jobs	Trolley System	Ecodistrict	
Increase in property Values	Increase in housing -multi-story	Reduce cars usage in area	
Tax Credit		Parks	
Cost saving of heat island incentives			
Increase in commerical property			
The Edge			

Table 6. Constructors Interviews responses by Theme

However, not all constructors identified sustainability with the economic development function; this was unexpected as their economic support would tie more closely to the economic category. The overwhelming focus for the Constructors was the need for compact development, modern shops, growth within the commercial realm, and attractions, while the Occupants were fervently against making the district in their words "too trendy". In addition to the new developments, the Constructors focused on the benefit these new initiatives would bring to their own cause including tax cuts and increase in property values, while Occupants focused more on the problems that the new developments and property values would cause, including effects on socio-economic homogeneity of the resident population and an increase in their own cost of living.

Occupant's responses as shown in Table 7, responses focused primarily on accessibility to grocery stores, lit streets, need for mixed income residents, maintaining small family owned businesses and the hope for more sustainable minded individuals within the area.

Name	Company	Role	Theme
Tom Gnaginer	Business Owner/Resident		Social
THEMES			
Economic	Social	Environmental	
cheap commerical/small business space	feel of neighborhood:	Compact Development	
Tourism	wide streets	walkability	
Shops and thing to do in the neighborhood	good visibility	streetscape	
	good potential	resource manangement	
	need for housing		
	lack of Large amount of space per single family /availability of space		
	Single people and elderly		
	Safety		
	Lite streets		
	Friendly		
	Small Town Feel		
	Low noise pollution		
	larger neighborhood		
	Mixed socioeconomic residents		
	Density		
	Visible appealing		
Name	Company	Role	Theme
Patrick Null	Principial Architecture Firm -works in first LEAD building in Central Market District		Social
THEMES			
Economic	Social	Environmental	
Attract Tourist	investment to him: designing hangouts of the district-garage bar, etc.	LEED building	
Help business with the increase of tourist	Accessibility to transportation/Transit	historic mixed with contemporary structures	
Tax Incentives	Feedback from neighborhood to design streetscape	Business clients request LEED	
Development Incentives	Neighborhood character continent on feedback from neighborhood	Walkable pedestrian friendly community	
	Safe Neighborhood	Streetscape projects	
	Mixed Use Neighborhood: Liberty Green and The Edge	Sustainable design	
	Public Transportation	Ecodistrict	
	Convience for patrons		
OCCUPANTS			
Name	Company	Role	Theme
Michael Brohm	Business Owner/Resident		Social
THEMES			
Economic	Social	Environmental	
Move here because of economics	lack of Large amount of space per single family /availability of space	Maintaining buildings	
cheap commerical/small business space	availability of the arts to community	pedestrian life	
Easy to build office spaces as opposed to residential	good neighborhood	self sustaining community	
Buildings built for mixed use	quiet	decrease in carbon footprint	
oil	emphasis of mixed used	wind farms	
environmental initatives are expensive to implement	preference for more hands on services-plummer's supply, small business	solar	
lack of incentive to be green	Blue collar neighborhood-wants to maintain characteristics	infill	
	The Edge is positive because of Higher income housing , but still mixed use		
	Food Dessert		
	Wellness		
	Healthy Food		
	Not enough residents to support businesses		
	Trolley		
	Walkability		
	Lack of grocery store		
	Driver based neighborhood		
	No rules of residency in neighborhood		
	cohesion and commondity of owners and businesses		
	Build a community		
	a living space		
	feel of neighborhood		
	noise pollution		
	overpass-liviable and as public space		

Table 7. Occupants Interviews responses by Theme

This disparity is interesting as it is clear those with the power to change the community definition of a sustainable environment are not in line with those who occupy the space. This in its self is cause for concern, as the LEED Neighborhood assessment had a focus within the social category.

Inevitably, the highest category for the Occupants was all socially categorized across the board. Every occupant felt extremely passionate about the feeling of the environment and wanted to have a cohesive neighborhood with accessibility to services and needs. Rarely, did the occupants focus on the environmental or economic aspects other than in relation to how these economic initiatives would ease their accessibility.

As this study will be a broad synopsis, specifics divisions of sustainability are of no consequence, as those participating in the interview will also be from different areas of work, position, and focus. These disparities further enriched the study and thus will assist in the determining a well-formulated definition for sustainable development of East Market District. This initial step of acknowledge the diversity of participates provided the framework to analyze the response of actors within the East Market District.

Through analysis, LEED scorecard the actor's responses, and Brundtland Commission's sustainability definition were juxtaposed to compile the perceptions of what sustainability is for the East Market District. The analysis revealed a range of interpretations for sustainability depending on the socioeconomic roles of the respondents. We showed that the perceptions of actors involved in sustainable development projects may not always be the central concern in developing a comprehensive sustainable neighborhood. The methodology used in this study is useful

for analyzing neighborhoods that appear to be good candidates for sustainable development.

CONCLUSION

The East Market District current transformation into a sustainable environment served a significant case study of how to operationalize sustainability and assess the results of the process. With the central goal focused on understanding the various interpretations of sustainability within a neighborhood, the synopsis of research including extensive interviews, LEED Neighborhood Scorecard analysis, and previous study has produced three broad findings. First, there is a wide discrepancy between what the occupants and constructors believe to constitute a sustainable environment. Occupants are very socially focused, while constructs are more economically focused. This presents a challenge as those who are investing and developing the area have a different value system being applied to the neighborhood. Since the constructors have more control of the development of the neighborhood, this presents a major problem. In opposition, the Occupants value system is focused on a different vision, the only problem is they have to live in the environment developed by the Constructors.

The second finding of the interviews was the effect that gentrification was perceived as an apolitical process by many of the respondents. This is interesting as gentrification serves a major purpose, but it was often inferred to be a small detail when discussed in interviews. Everyone knew it existed, but felt as though they had no control of the issue or were indifferent. Within the literature, the process of gentrification was expressed as gentrification with justice. This ideology has negative connotations and asserts that gentrification is inherently righteous. Understanding the literatures on

gentrification, it is obvious that this is highly naïve and can only exist in a righteous environment for those who are gaining from the process.

The third finding observed via the critical assessment of the LEED Neighborhood Scorecard, showed that the criterion for which neighborhood sustainable development is judged is socially focused. This parallel with the occupants vision of a socially-based sustainable environment, which is in conflict with that of the Constructors.

These disparate findings reveal issues underlying sustainable development. It is obvious there are strong connections between what the government and other assessments determine to be sustainable environments and the beliefs of inhabiting actors. However, those constructing the neighborhoods have an entirely different agenda, which is economic development. It is true that sustainable development improves neighborhoods, and helps the environment, but it also provides the opportunity to grow economically. Sustainability as a concept is indicative of creating harmonious environments, with a merger of economic, social, and environmental visions; however, there is a major problem when those constructing the neighborhood do not share the same views. This is significant as these views needs to be more closely defined, as seen in the three pillars of sustainable development.

Although, this study was limited to the East Market District, it indicated flaws within the system as whole. The scorecard helps assisted in operationalizing sustainable development at the neighborhood level but it also showed that a neighborhood can obtain all the credits but still have those whose mind is not in line with the philosophy of the system. However, since the neighborhood is still under construction, our study only

presents a limited understanding of the completed process of sustainable development. If developers add in more socially based activities or spaces, then that changes their vision of sustainable environments and shows that they too are focused on social aspects. An analysis of the finished neighborhood would be extremely enlightening. The comparative assessment highlighted previously unknown disparities within the neighborhood and showed the effects that creating these environments can have both positive and negative. The Brundtland Commission definition defines it best, that sustainable development must meet the needs of the present as well as the future. Based upon interviews with the East Market District participates in this study, the projected needs are not being appropriately. As such, this study provides the opportunity to change the course of action to ensure a fully holistic sustainable environment in which everyone's needs are met.

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SUMMARY OF QUALIFICATIONS

- Competencies in GIS, ESRI ArcMap, ArcCatalog, ArcGIS Online, ArcScene, spatial and non-spatial database management, familiarity with Python programming language, planning theory, and urban design
- Collecting, translating and inputting tabular, field, and graphic data(vector and raster) to create topographic maps
- Experience working with LOJIC, Census, and GPS data
- Ability to develop a needs assessment for specific populations, implement new strategies, and follow thru on program initiatives
- Working knowledge of green infrastructure and planning
- Strong leadership, strategic planning, programming, event planning, report writing, statistical analysis and recruitment strategies skills and experience

EDUCATION

University of Louisville: Louisville, KY — May 2014

Masters of Science: Applied Geography with emphasis in Sustainability and Geographic Information Systems

Thesis: Greening Louisville's East Market District: A Comparative Assessment on Sustainability

GPA: 3.4

University of Louisville: Louisville, KY — May 2009

Masters of Arts: Humanities with Concentration in Art History and Theatre Arts

GPA: 3.4

University of Louisville: Louisville, KY — May 2007

Bachelors of Arts: Humanities with Concentration in Art History and Music History

GPA: 3.7

RELATED EXPERIENCE

ParkerLane LLC. Louisville, KY Jan. 2013-Present
Sustainability Intern

- Developed and translated environmental build out map for Downtown Louisville focusing on possible vision for East Market Street and Green Corridors
- Constructed geocoded map detailing proximity of media and arts companies to new construction project for Louisville Palace
- Interviewed residents, stakeholders, city officials, and business owners regarding sustainability initiatives for the East Market District

University of Louisville: Louisville, KY Aug. 2013-Present
Adjunct Instructor, Career Decision Making (GEN 201)

- Utilized various instructional strategies and technology when constructing course content
- Discuss the processes in understanding, deciding, and implementing career decisions
- Assess students personality, interest, skills, and values, and relate these to how we view and decide on career choices
- Trained students on a variety of research methods to gather information needed to make career decisions
- Lecture on career development process and major selection

U of L Geography and Geoscience Department: Louisville, KY Jan. 2012- Aug. 2012
Sustainability Course Development/ Research and Independent Study for Thesis

- Identified appropriate content, learning objectives, literatures, and learning activities for undergraduate course
- Acquired differentiated teaching methods from various teachers and professors to develop the course for various learning styles
- Developed assessment materials, journal articles, and technological based activities for undergraduate and graduate level students

University of Louisville: Louisville, KY Aug. 2011 to Present
Career Counselor for School of Music and College of Education and Human Development

- Developed Center Assessment strategy for appointments, presentations, and events
- Recruiting and maintaining the UL School of Music Gig services by screening and identifying top candidates (student musicians) for employment
- Responsible for consolidating, executing, and analyzing the data for the Annual report for the entire Center's including obtaining center appointment, presentation, events, and services data
- Develop, evaluate and implement programming and informational presentations for the College of Education and School of Music
- Coordinated and managed the College of Education Teacher Recruitment Fair and College of Education Graduate Studies Recruitment Fair
- Partnered with university representatives, student groups, faculty, administration, and Deans to ensure maximum exposure to student population
- Provided services to students including career counseling, resume assistance, and mock interviews
- Coach students and alumni to seek desired employment opportunities or entry into an

appropriate educational, graduate or professional program
- Establish and maintain effective communication with students, alumni, faculty and administration
- Served as a liaison between Universities faculty, departments, administration, agencies, and students

Jefferson Community and Technical College: Louisville, KY Oct. 2009 to Jul. 2011
Coordinator of Career Services

- Recruiting, marketing , enrolling, and advising students for College educational program
- Performed daily informational presentations about Workforce Investment Act program at Office of Employment and Training offices, Universities, City Organizations, Career Fairs, and Companies
- Served as a liaison between Universities faculty, departments, administration, agencies, and students
- Provided services to customers including career counseling, resume assistance, and mock interviews
- Responsible for 60+ students and customers(file management) including database management, communication, and organization of program documents
- Managed and maintained the order and activities for office, while providing excellent customer services to clients, students, and employers
- Maintained comprehensive data records
- Managed/reconciled the financial accounts for students tuition and books and record keeping

University of Louisville: Louisville, KY Aug. 2007 to May 2009
Graduate Student Assistant for Resources for Academic Achievement (REACH)

- Oversaw and managed the recruiting, screening, and hiring of 50 top quality applicants for educational, mentoring, and professional development programs and delivering orientation materials for new hires
- Managed 50 students leaders, while organizing, performing, and maintaining performance reviews and exit interviews
- Planned and coordinated college events for entrance into the Mentoring program and held meetings with student organizations to further recruitment into the program
- Organized and administrated fifteen academic and special events and program management for academic/mentoring program including REACHout events for the Welcome Center and facilitated Time Management Seminars for University Population
- Analyzed and maintained applications and interviewed prospective students for entrance into the leadership program and trained them on new software
- Promoted and advertised mentor and campus events such as Lunch with the Provost, and Alumni Dinner
- Designed, developed, and distributed bi-monthly publications including e-newsletter and flyers to university community to market events and disseminate information
- Designed, developed, and maintained social networking sites such as Facebook and Twitter to keep students informed events and programs/organization on University of Louisville's campus
- Database administration including record keeping and data entry
- Managed and maintain select procurement card purchases and managed 50 student staff members

- Facilitated and organized Cardinal Leadership Conference

Solid Light, LLC.: Louisville, KY Feb. 2008 to May 2008
Intern

- Assisted in image selection for exhibitions for art and historical museums, organizations, and businesses
- Scanned and developed images for Farmington Historic Home exhibition and an assortment of exhibitions
- Researched subjects and locations to be used for exhibition and for image selection
- Cataloged and prepared vital subject and exhibition images

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Professional Development Committee: Chair of Professional Development Conference/Summer Academy
University of Louisville Division of Student Affairs
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University of Louisville College of Education and Human Development
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Vibrations Publications Committee: Student Affairs Newsletter
University of Louisville Division of Student Affairs
Active Committee Member

Assessment Committee
University of Louisville: Career Development Center
Active Committee Member

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Microsoft Office: Word, Publisher, Excel, and PowerPoint, Prezi, Antimoto, Glinker, Google Moderator, PeopleSoft, SPSS: Statistical Software, Sage Fundraiser, EKOS, Social Networking Sites: Facebook, Twitter, and Instagram, Basic knowledge of Photoshop, AutoCAD, Geographic Information Systems (GIS)

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Dean's Scholar, Dean's List, African American Theatre Program, ICOMM Communication/Marketing Club, Actors Theatre of Louisville Volunteer for Humana Festival, Student International Association of Business Communicators, Humanities Undergraduate and Graduate Organization, Governor's Scholar, **,** Phi Eta Sigma Honor Society**,** Association of Black Students**,** Farley Scholar, and Girl Scouts of American Volunteer

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