

4-29-2016

Small Houses, Big Ideas

Caroline Jean Winn
Wofford College

Follow this and additional works at: <http://digitalcommons.wofford.edu/studentpubs>

 Part of the [American Popular Culture Commons](#), [Architectural History and Criticism Commons](#), and the [Art and Design Commons](#)

Recommended Citation

Winn, Caroline Jean, "Small Houses, Big Ideas" (2016). *Student Scholarship*. Paper 14.
<http://digitalcommons.wofford.edu/studentpubs/14>

This Honors Thesis is brought to you for free and open access by Digital Commons @ Wofford. It has been accepted for inclusion in Student Scholarship by an authorized administrator of Digital Commons @ Wofford. For more information, please contact stonerp@wofford.edu.

SMALL HOUSES, BIG IDEAS

by
Caroline Winn

Dr. Peter Schmunk, Advisor

A thesis submitted in partial fulfillment
of the requirements for the
Degree of Bachelor of Arts with Honors
in Art History

WOFFORD COLLEGE
Spartanburg, South Carolina

29 April 2016

Introduction

Architecture is the unavoidable art form. It permeates everyday life and wholly shapes lifestyle; it reflects culture and location as well as the economic power of a region. At its core, architecture is a testament to its surroundings, its design naturally requiring a series of decisions regarding space, form, and use – decisions born within a crucial and telling social context, decisions that quickly reveal the social climate of an era. Indisputably, architecture serves as a lens through which scholars can peer into a time past.

Domestic architecture, as perhaps the most personal and necessary of all architectural types, is particularly telling of cultural values and sociopolitical phenomena. Domestic architecture presents itself, rather uniquely, as both a means through which social values are displayed and also as an opportunity to solve deeply rooted social challenges. Residential architecture may answer questions such as: *What role does the family play within society? How does the individual relate to the natural environment? What value do we place upon community?* Due to the highly personal nature of domestic architecture, as well as its necessarily frequent rate of development, residential structures are catalysts within the design world, silently shaping lives and social attitudes.

In his book *Why We Build*, critic Rowan Moore writes,

Architecture starts with desire on the part of its makers, whether for security, or grandeur, or shelter, or rootedness. Built, it influences the emotions of those who experience and use it, whose desires continue to shape and change it. Desire and emotion are overlapping concepts, but if ‘desire’ is active, directed towards real and imagined ends, and if ‘emotion’ implies greater passivity, describing the ways in which we are moved, architecture is engaged with both. ¹

¹ Rowan Moore, *Why We Build: Power and Desire in Architecture* (London: Picador, 2012), 16.

Architecture, then, is both influenced and influential. Good architecture absorbs its surrounding environment – social values, needs, or desires as well as any natural or geographic factors – during its creation, and continues to project these dynamics as it stands inhabited.

While the architecture of individual residences often reflects a desire for an improved standard of living (a standard that is relative, highly subjective, and not discussed in my research), the architectural designs of neighborhoods, or the groupings of these individual homes, passively shape inhabitants' collective opinions regarding the importance of community and social interaction. In the course of this thesis, I will examine how the designs of half a dozen residential complexes, built in the United States within the last one hundred years, are influenced during construction or creation by external factors (pre-existing phenomena) and the ability of these designs to provide a framework for neighborly relations and community development. I will reference – as a secondary basis for study – the economic and environmental factors related to the development of these six residential projects, focusing largely on the spatial layouts and design elements that contribute to each project's ultimate success or failure. I will prove that the most successful neighborhood developments share three key elements: a conscientious regard for the experience of the individual, an attempt to address pressing financial concerns in tandem with the resident's connection to nature, and a harmonious balance between public and private space.

Chapter One

A Brief Biography of the American House

What does it mean for architecture to reveal social values? How can architecture, salient and tangible, speak to any transient, invisible ideal? The embodiment of specific values through architectural form is perhaps best exemplified through the construction of public buildings. Government offices and monuments often employ grand forms, such as the classical orders, to suggest ideals of justice, harmony, and power. The buildings themselves imply – through symmetry, beautiful materials, or architectural detail – equality, honesty, and a promising future. Architectural elements of such grandiose public buildings may include domes, pediments, and porticoes. The exteriors of theaters and museums, in a comparable fashion, are often built to hint at the creative and cultural expressions that lie inside. These trends in architectural expression are true internationally – consider the opera houses of Oslo or Sydney, the Walt Disney Concert Hall, the Guggenheim Museums of New York or Bilbao, or the Louvre. Public buildings are not only emblematic of a nation, but also indicative of the values and activities that are upheld by that same populace.

Similarly, residential exteriors frequently reflect interior activities, and the design of a whole neighborhood informs community behavior. The design of domestic structures and the development of their larger community context is in this way meaningful; however, the messages professed through domestic architecture are much more nuanced than those declared by a monument or concert hall. Large art movements and styles are tempered, budgets are significantly smaller, and homogeneity is often favored above

innovative or unusual designs. Yet this is the environment in which social values are perhaps the most evident.

Historically, houses have reflected the spirit of the era. In the 1920s, following the shattering violence and distress of World War I, many architects and designers opted to fashion buildings, particularly houses, with light-heartedness: “rational, functional or intellectual justifications for designs were not found.”² Instead, domestic architecture made an appeal to “childlike delight in playfulness and visual stimulation.”³ Residential designs of the 1920s mirrored the release of wartime anxiety and stress. Architecture, in this respect, was a direct response to a particular social climate.

In this era, as in others, large art movements and architectural styles “filter[ed] down the social scale and into the builders’ vernacular, eventually shaping a number of modest building types from inexpensive apartment buildings to diners. The same masses of Americans who lived a glamorous life vicariously through Hollywood movie stars could also attain some of that glamour through living in Art Deco apartment buildings.”⁴

Though oft-forgot in light of the United States’ more recent housing catastrophe, the Great Depression produced a severe residential mortgage crisis in the 1930s – a crisis that scholars have described as “the worst in a series of booms and busts that shaped the development of the mortgage market in the U.S. during the nineteenth and early twentieth centuries.”⁵ Reform in home financing allowed the industry to recover relatively quickly: the U.S. government passed various legislative acts to this effect, and created new

² Mark Gelernter, *A History of American Architecture* (Hanover: New England University Press, 1999), 234.

³ Ibid.

⁴ Ibid.

⁵ Kenneth A. Snowden, “The Anatomy of a Residential Mortgage Crisis: A Look Back to the 1930s” (2010, July). *Working Paper 16244*. The National Bureau of Economic Research.

organizations such as the Federal Housing Administration, the Federal National Mortgage Association, the Home Owners' Loan Corporation, and the Federal Savings and Loan Insurance Corporation in order to improve the economic and financial conditions of the American housing market.⁶ Nevertheless, the economic crisis of the 1930s had serious implications for the attitudes of many American homeowners, thus producing a frugality in architectural design that mimicked the conservative mindset of many consumers.

Notable too is the profound influence of the automobile on neighborhood design. With the introduction and popularization of the car as a mode of transportation, the American people began to build in accord with their newfound mobility. Suburban sprawl began in earnest, with families moving out of cities to be closer to nature and closer to the American Dream. The car made this change possible, allowing those who worked in a large city to live within a radius that was now defined by its commute time. The suburbs, car-based in their inception, were often car-based in their construction, and an increasing dependence on the car was fueled by diminished access to shops and neighbors. After a while, some suburbs even stopped building sidewalks.

It is into this social fabric that Frank Lloyd Wright first introduced his holistic residential plan, “summing up popular American desire for autonomy and for a connection with land.”⁷ Wright dubbed his new system the Broadacre City Plan.

⁶ James L. Butkiewicz “Fixing the Housing Crisis” *Forbes*. [Online] Available: <http://www.forbes.com/2009/04/30/1930s-mortgage-reform-business-butkiewicz.html> [2016, April].

⁷ Gelernter, 255.

Chapter Two Frank Lloyd Wright

Frank Lloyd Wright first advanced a summary of his Broadacre City Plan at Princeton University in 1930. Two years later, he would publish his alternative urban plan in a book entitled *The Disappearing City*; five years later, in April 1935, a meticulously detailed scale model of the design was exhibited at an industrial arts exposition held in Rockefeller Center (Figure 1). The comprehensive community plan, designed as a four-by-four mile complex, was central to Wright's life work; it embodied social and humanitarian concerns that would become emblematic of all of Wright's architectural projects.

Wright's design was intended to replace traditional cities with a more integrated natural landscape. Residential areas were evenly placed between commercial, industrial, and agricultural spaces (Figure 2). Broadacre City Plan was a "complete alternative society,"⁸ a carefully designed complex of public and private buildings laid out to fully exemplify Wright's ideal: affordable, decentralized urban expansion. In Wright's Broadacre City Plan, cities spread out across the countryside but retained cohesion and efficiency.

Wright planned holistically. He imagined that rural and urban spaces would co-exist, that the built environment would merge seamlessly with its organic counterpart and hollow out healthy, natural spaces in which people could work and dwell (Figure 3). Giving special attention to farmers and proprietors, Wright based his urban plan on

⁸ Robert Fishman, *Urban Utopias in the Twentieth Century* (Cambridge, Mass.: MIT Press, 1982), 122.

principles of good design and conscientious architecture, envisioning an egalitarian society that would “necessarily” strengthen family life.⁹ Each family was to be allotted one acre – Wright explained that this even spacing would allow Americans enough isolation to reacquire virtues of individual freedom and self-reliance, necessarily developing a stronger relationship with the environment, while modern advancements (namely, the car and the telephone) would allow communities to remain in social harmony and fellowship.¹⁰

The most important component of the Broadacre City Plan was the home – or more specifically, the family. Wright hoped that his design, implemented on a large scale, would mark the return of the family as a basic social unit and support small communities. One source notes that “in an urban society, the home was merely the locus of one of the disconnected fragments of modern life”;⁵ Wright fought to change this in the Broadacre plan, and more fully integrate domestic life with all other aspects of society.

Wright noted that “Form and function are one in Broadacres... The model shows four square miles of a typical countryside developed on the acre as unit according to conditions in the temperate zone and accommodating some 1,400 families. It would swing north or swing south in type as conditions, climate and topography of the region changed.”¹¹ Any monotony that results from this organization is to be broken up by rhythm in the landscape. Housing designs of this new city plan are varied, and Wright briefly addresses logistical concerns regarding fuel, lighting, and materials.

⁹ Ibid, 129.

¹⁰ Frank Lloyd Wright “Broadacre City: A New Community Plan” *Architectural Record* (1935). [Online] Available: <http://courses.washington.edu/gmforum/Readings/Wright.pdf> [2016, April].

¹¹ Ibid.

The ideals of Broadacre City are reasonable and thoughtful – admirable, even. But some specifics of Wright’s Broadacre Plan are curious. The plan rejects any use of the airplane, substituting instead “the self-contained mechanical unit that is sure to come: an aerator capable of rising straight up” (Figure 4). Broadacre’s transportation schema relies heavily on the car – apart from the “aerator”, the only other form of transportation mentioned by Wright is a 220-mile-per-hour passenger train that he insists has already been developed in Germany.¹² Wright mandates that all Broadacre residents own a car. No curbs or ditches are to be part of the Broadacre City Plan; all lampposts and signs are to be hidden.

Wright’s design was developed as a direct response to social needs and economic factors. With the introduction of the automobile and the subsequent, increased mobility of the American people, Wright saw “that the personal car provide[d] a new mastery of time and space on which a new kind of city [could] be built”.¹³ The Broadacre City Plan attempted to provide more adequate and intentional space for buildings and their inhabitants; this new, larger layout – boldly intended to replace traditional urbanism – was only possible, only conceivable, because of the automobile. The design of Wright’s Broadacre City plan was a response to a specific industrial advancement and its widespread social consequences. Broadacre City merged the development of the automobile, an innovation arguably both economic and social in nature, with a deep concern for community and the human experience.

¹² Ibid.

¹³ Fishman, 93.

From Wright's Broadacre City plan emerged the Usonian home. "Usonia" is a term derived from the "United States of America", a name coined by Wright to describe affordable American architecture that freed itself from traditional conventions and acknowledged the environment in a meaningful way.¹⁴ The Usonian residential design was intended to promote simplicity and beauty. Descriptions of these homes often criticize the poor storage space but herald the building's natural harmony with the surrounding landscape. Wright's architecture, both in its simplicity and in its ability to synchronize with the environment, imparts a distinct sense of space, light, and freedom. "The Usonian house," wrote Wright, "aims to be a *natural* performance, one that is integral to site, to environment, to the life of the inhabitants, integral with the nature of the materials...Into this new integrity, once there, those who live in it will take root and grow."¹⁵ Wright scholar and activist Bruce Brookes Pfeiffer has counted fifty-eight built Usonian designs, as well as over one hundred designs that were never realized.¹⁶

Although subject to slight variation in floor plan, the designs of Wright's Usonian homes are all fully geared towards the achievement of specific humanitarian ideals. The residences are characterized by their intimate connection to site, informal living spaces, and by a low, horizontal configuration that is decidedly unpretentious in nature. After the 1940s, these features were adapted into ranch houses – yet the modern ranch cannot capture the essence of Usonian architecture.

Wright imagined a home that was both economical and also deeply connected to the environment and the lives of its inhabitant. He was vested in the underlying cost of

¹⁴ Frank Lloyd Wright Foundation. "Herbert Jacobs House" [Online] Available: <http://www.franklloydwright.org/work/index.html> [2016, March].

¹⁵ Frank Lloyd Wright, *The Natural House* (New York: Horizon Press, 1954)

¹⁶ Dennis Doordan, *Twentieth Century Architecture* (New York: Henry N. Abrams, Inc., 2002), 175.

his plan, astutely noting that affordable housing “is not only America’s major architectural problem but the problem most difficult for her major architects.”¹⁷

Lowering the costs of a Usonian home was a consideration that gave way to creative design features, such as natural floor heating, but Wright never sacrificed quality of his overarching domestic design for the sake of the project’s price. With regard to the general feel of a Usonian home, Wright wrote,

Strong, well-built but light and appropriate houses would be good “housing,” perhaps prefabricated but spacious workplaces, all of which would be convenient, each sympathetically built out of materials native to the Time, the Place, and the Man¹⁸

To fully understand the design of a Usonian residence, it is perhaps useful to first examine what Wright believes is *not* necessary to the dwelling’s design. His list of unnecessary architectural features includes: visible roofs; a garage (the carport will do); interior trim; a basement (too damp and unhygienic); any protruding or obvious radiators and light fixtures; furniture, pictures, bric-a-brac (all of these can be built into a cohesive design); any wood painting, plastering, and any gutters or spouts.¹⁹ These extraneous components would not work *with* the Usonian style, as Wright intended. They would work against the essential and inherent harmony of his new domestic space, which emphasized – above all – the human scale and the human connection to the surrounding landscape. Wright realized that previously, “small houses were usually large houses writ small; that is, they usually retained the same spatial arrangements and imagery of large and expensive houses built for the aristocracy of upper classes, and then were simply

¹⁷ Wright, 70.

¹⁸ Wright, 132.

¹⁹ Wright, 82.

reduced in size to fit the available budget.”²⁰ Wright worked to defeat this inappropriate scale by introducing a more anthropomorphic scale of his own design. Wright described this in detail. He wrote,

Taking a human being for my scale, I brought the whole house down in height to fit a normal one... Believing in no other scale than the human being I broadened the mass out all I possibly could to bring it down into spaciousness. It has been said that were I three inches taller than 5’8½” all my houses would have been quite different in proportion. Probably...²¹

This passage exemplifies Wright’s vision – a home that would be comforting and almost empathetic in design, one that spoke to its environment and was well suited to a diverse group of inhabitants. Wright’s design, in short, combines an acute sensitivity to environment with an unusual awareness of economic limitations and social factors.

Wright demonstrated an understanding of the American psyche, writes one source, for “while few Americans or their architects built Usonian houses after the war, millions of Americans bought and raised families in the ubiquitous suburban ranch houses which the Usonian ideas partly inspired.”²²

Although his Broadacre City Plan was never wholly implemented, in the light of its influence the plan may be called a great success. The design has, after all, achieved its ultimate goal: an awareness of appropriate and adequate living environments, housing of a scale and a price that would suit a varied and large populace. The American people, in the wake of the Great Depression and the terror of world wars, required a new form of housing – a modest, affordable, comfortable space that accommodated the industrial,

²⁰ Gelernter, 259.

²¹ Wright, 37-38.

²² Gelernter, 259.

automotive changes of the era but maintained a clear connection to nature. The Usonian home was all of these things. It was humble, Wright argued, “a dwelling place that has no feeling at all for the ‘grand’ except as the house extends itself in the flat parallel to the ground. It will be a companion to the horizon.”²³

The Usonian Home: Jacobs House

Built in 1936 near Madison, Wisconsin, the Jacobs House is considered to be the first of Frank Lloyd Wright’s Usonian homes (Figure 5). This house, the first of two homes designed by Wright for the Jacobs family, is described as “the purest and most famous application of Wright’s Usonian concepts.”²⁴ Employing a planning grid based on a two-by-four module, Wright created an L-shaped floor plan for the residence. Herbert Jacobs had challenged Wright to design a “decent home” for \$5,000 – Wright was determined to design more than decency, and so he applied the idealism manifested in his Broadacre City Plan.²⁵

The 1550-square-foot house, which lacks a front porch, visible chimney, and gutters, maintains a low horizontal configuration and an open relationship to the landscape (Figure 6). The house rests on a concrete pad, poured over sand, and lacks a basement (excepting the small area underneath the kitchen and bathroom, which houses a steam furnace). In order to preserve a clear architectural form, no detracting shrubbery has been added to the yard surrounding the house; the building itself uses natural materials like wood, stone, and brick on its exterior. Exterior wood is unpainted, and

²³ Wright, 89.

²⁴ Usonian1, Jacobs House. “Historical Background” [Online] Available: http://www.usonia1.com/01_hist.html [2016, March].

²⁵ Wright Foundation, “Herbert Jacobs House”

large glass windows further serve to connect the house to its surroundings.²⁶

The floor of the house is a concrete slab with radiant heating, or heating that travels naturally upwards from a sublevel source. This heating mechanism is a distinct feature of Wright's Usonian homes, taken from Wright's earlier travels to Japan. In his book *The Living City*, Wright described this process, which he discovered while visiting a 'Korean room'. He wrote,

The heat of a fire outside at one corner of the floor drawn back and forth underneath the floor in and between tile ducts, the floor forming the top of the flues (or ducts) made by the partitions, the smoke and heat going up and out of a tall chimney at the corner opposite the corner where the fire was burning²⁷

He borrowed this concept for the design of his Usonian homes. "Concerning floor heating," he continued, "the air naturally rises." Wrought iron pipes were laid in the sand – arranged in concentric circles, these pipes were warmed with steam and used to naturally confer heat to the foundational concrete slab and floors above. This natural process is intended to efficiently lower costs for homeowners, saving money that would typically be spent on basements, foundations, flooring and floor joists, and radiators.

The open plan of the Jacobs House – the connectivity between the living room, dining room, and kitchen – was remarkable for residential designs of the early twentieth century. One source notes that "Wright refused to follow the historic styles and insisted upon his own,"²⁸ integrating geometric forms and new, cost-effective modes of construction. With respect to the walls of the house, Wright's aim was to eliminate traditional framing. The same source explains,

²⁶ Paul Sprague, 2003. US Department of Interior, National Park Service. "National Historic Landmark Nomination" [Online] Available: <https://www.nps.gov/nhl/find/statelists/wi/Jacobs1.pdf> [2016, February].

²⁷ Frank Lloyd Wright, *The Living City* (New York: Horizon Press, 1958), 98-99.

²⁸ Sprague, 4.

Wright also invented a simple thin sandwich wall for the Usonian house, much used by him in later Usonian houses. These walls were exactly the same on both sides, inside and out. In the Jacobs house it consisted of pine boards laid horizontally over a core of vertical boards and fixed to those boards by redwood battens, thus producing a thin but colorful wall. Where Wright used brick, the interior surface was also the same as the exterior. In this way Wright eliminated siding, painting, plastering and wallpapering. Wherever possible he specified built-in and free standing furniture of simple design, often made by the owners or by amateurs in order to hold down cost while assuring that the furniture would echo visually the style of his architecture. The owners also got a flat roof, usually several layers of them, that drained simply by elevating the center section of each roof and letting rain run off the edges. By using flat roofs in this fashion, Wright eliminated the complex framing of pitched roofs and also did away with gutters and down spouts. Finally, the architect sought to save money by eliminating several walls of the enclosed garage and thereby inventing the “carport.”²⁹

The open floor plan of the Jacobs House would later be adopted for ranch-style houses “that populated post-war American suburbs.”³⁰ This antecedence is part of the significance behind the Jacobs House. The first of Wright’s Usonian homes, the Jacobs House was heralded for its clean lines and simple aesthetic. It is notable for exemplifying the ideals put forth by Wright in his Broadacre City Plan.

Together, Wright’s Broadacre City Plan and Usonian designs demonstrate what an ideal residential complex should be – attentive to the human scale, conscious of the natural environment, affordable, in harmony with a larger community, and integrated with respect to public and private spaces.

Chapter Three Kentlands

²⁹ Sprague, 11.

³⁰ Wright Foundation, “Herbert Jacobs House”

Frank Lloyd Wright hoped for architecture that was socially and fiscally responsible, architecture that understood its pivotal role in its inhabitants' quality of life and actively worked to foster connections between nature and individuals. His evident interest in nature and the environment, for "organic architecture: architecture sure to react upon every practical homemaker's sense of himself",³¹ was equally mixed with his economic and social concerns.

Wright imagined that urban and rural architecture would co-exist – his Broadacre City Plan attempted the holistic development of urban space. "Normally," Wright wrote, "the factory, farm, office, store or dwelling, church or theater would be within a ten-minute radius of vast, variegated wayside markets and schools."³² This mixed-development ideal, proposed by Wright in the mid-1930's, was lost to masses of suburban neighborhoods and urban sprawl but recovered sixty years later, in the Neotraditional movement that bemoaned as a "lost art"³³ the design of socially integrated neighborhoods. Kentlands is one such neighborhood – a Neotraditional development that draws on ideas of social integration to create a cohesive community in keeping with many of the Broadacre ideals put forth by Frank Lloyd Wright.

In June of 1988, the Great Seneca Limited Partnership, a division of Joseph Alfandre & Co., bought nearly 352 acres of land in southern Maryland. The price paid for this land remains to this day rather unclear, but the undeveloped property was valuable for its location in Montgomery County and estimates of the price fall between \$41 – 64 million dollars. Some of this land was sold to a shopping center developer, but the bulk of

³¹ Wright, *The Living City*, 241.

³² Wright, *The Living City*, 132.

³³ Philip Langdon, *A Better Place to Live: Reshaping the American Suburb*. (Amherst: University of Massachusetts Press, 1994), 148.

the terrain was developed into a community, dubbed Kentlands for the old farm that previously occupied the space (Figure 7). The new development was conceived by Florida-based firm DPZ. Planners Andres Duany and Elizabeth Plater-Zyberk, a husband-wife duo “then best known for their recently completed project at Seaside on the Florida panhandle, a neotraditional resort village”, were given the task of developing Kentlands into a community reminiscent of an twentieth century village, one that inspired community and social interaction.³⁴

Like Frank Lloyd Wright in his Broadacre City proposal, Andre Duany and Elizabeth Plater-Zyberk advocated the complete integration of public and private life. In an article published by the *Wall Street Journal* in 1993, writer Eric Morgenthaler explains, “At the heart of the couple’s thinking is that the traditional American neighborhood is a “panacea” – a word they both like to use – for social ills ranging from traffic, pollution and commuting problems to the ill-housing of the elderly and the poor.”³⁵ Frank Lloyd Wright would likely agree with this view of architecture – architecture as a means for ameliorating small but common social dilemmas.

While both Wright and Duany-Plater-Zyberk desire architecture that improves inhabitants’ everyday lives and deliberately creates a sense of community or togetherness, their designs have one key difference: the treatment of the American automobile. While Wright’s designs relied upon – and indeed would not be possible without – the sort of sprawl that was synonymous with industrialized transportation, Duany and Plater-Zyberk find the car to be a wholly undesirable component of residential

³⁴ Kentlands, “History” [Online] Available:

http://www.kentlandsusa.com/sub_category_list.asp?category=19&title=History [2016, February].

³⁵ Eric Morgenthaler, “Old-Style Towns Where People Walk Have Modern Backers,” *Wall Street Journal*, February 1, 1993.

living. Most Neotraditionalist practitioners, writes Morgenthaler, have this view, tracing “many of society’s current problems to changes in living patterns that took place after World War II, as America became a suburban society and the car became central.”³⁶ The two Kentlands architects believe that a good society is not possible if a large portion of the population relies upon the car as a tool; instead, they design their neighborhoods so that the majority of dwellers were only a five-minute walk, or quarter mile, from the center.³⁷ Although the car is tolerated as a necessary aspect of modern life and accommodated in the neighborhood design, the five-neighborhood complex is chiefly geared towards the individual. Streets are built hierarchically (Figure 8), in a modified grid that is intended to encourage “compact, pedestrian-oriented, transit-friendly communities that encourage people to interact and with their built and natural surroundings.”³⁸

The design of the Kentlands community remains true to the architects’ desire for total social integration. Outdoor and recreational areas are within walking distance of homes (Figure 9); houses are placed close to the street and close to each other to encourage communication between neighbors. Philip Langdon, author of *A Better Place to Live*, describes these new traditionalist communities as seeming “more gregarious than conventional suburbs,” noting the deliberate and effective organization of the Kentlands community.³⁹ Composed of buildings of different sizes and types, for families both small and large, Kentlands works to “help make a more interdependent neighborhood – one that

³⁶ Ibid.

³⁷ Ibid.

³⁸ Karen Norris, “DPZ Wins International Award for the Kentlands Design” *The Kentlands Town Crier*, November 2015. [Online] Available: [http://kentlandsusa.com/picture/823ktc_nov_2015_web_\(1\).pdf](http://kentlandsusa.com/picture/823ktc_nov_2015_web_(1).pdf) [2016, April].

³⁹ Langdon, 126.

is more apt to develop a vigorous public life.”⁴⁰ Indeed, the inside of a promotional booklet for the Kentlands neighborhood proudly declares, “Old-fashioned urban planning is back in style. Cul-de-sacs are out. Grids of streets are in. Parking lots are out. Sidewalks are in. Suburban sprawl is out. Small-town charm is in.”⁴¹

Individual residences are also designed to encourage community. Front porches are at least six to eight feet deep and ten to twelve feet wide, designed for practical use instead of mere appearance. The main entrance for most houses is located in a prominent, central location – not in the garage or on the side of the edifice – and facing the street, allowing passerby to see light and life from the home’s façade. These entrances often have some sort of protection to shield visitors from unpleasant weather. Side entrances, intended for informal visits and friends, are also easily accessible and *not* a connection between the carport and the home. All homes are complementary in their design, with compatible colors, similar proportions, and like materials – thus furthering a sense of community and shared space.⁴²

Kentlands is a project that proves form does, indeed, affect behavior. By all accounts, the sidewalks and the intimate alignment of homes are organizational factors – design tools – that have led to an increase in friendly neighbor relations and, in turn, a collective fondness for Neotraditional neighborhood planning. People greet one another on the street. The residents have formed a governing board for Kentlands and organized an active community newsletter. Duany and Plater-Zyberk purposefully placed important buildings – such as the local convenience store, child care center, and meeting hall –

⁴⁰ Langdon, 167.

⁴¹ Kentlands promotional booklet

⁴² Langdon, 159.

around a park, strategically encouraging socialization between residents.⁴³ Bus stops, part of Kentlands’ obliging transportation network, serve as gathering places for homeowners. The architectural duo intended people from a variety of socioeconomic classes and from all walks of life to mix, and they succeeded in this endeavor. The Kentlands homes are condominiums and colonials and townhouses (Figure 10) – this variety in building type matches the variety of Kentlands’ inhabitants. The Kentlands charter perhaps best demonstrates the deeply-rooted humanitarianism of the neighborhood, noting that the aim of the Kentlands community is “to provide opportunities for individual personal growth to better enable each person to more fully fulfill his or her human potential.”⁴⁴

This philosophy of individual self-realization is closely related to the theories that underlie and bolster Neotraditionalist developments. Neotraditionalism acknowledges the worth of the individual while simultaneously developing the community at large, most notably through an integrated mix of public and private space. Henry Turley, the mastermind behind the Neotraditional Harbor Town in Memphis, Tennessee, once said,

We [Neotraditionalist architects] think that there is an imbalance growing between our commitment to sumptuous private buildings – our homes – and spare public and community facilities – our parks, town squares, and such. And we believe that this parallels an imbalance between our private lives and our civic or public lives that is not good for our country

The philosophy behind Turley’s Harbor Town development, created in the early 1980s, mirrors the attitudes of Duany and Plater-Zyberk in their approach to Kentlands. The Harbor Town website proudly boasts of the community’s commitment to the human scale

⁴³ *A Better Place to Live*, page 138

⁴⁴ Langdon, 164.

– as opposed to a scale based on the automobile – as well as Harbor Town’s community-focused design, as evidenced through its characteristic front porches, sidewalks, closely set homes, and connection to the greater city of Memphis.⁴⁵

The success of communities such as Harbor Town and Kentlands is rooted in the belief that interplay between architecture and urban design – what author Philip Langdon calls the *intentional interrelationship* between aspects of architectural control and urban design control – balances neighborhood design and increases the livability of a community. While architectural control relates specifically to design factors such as color, material, size, and scale – elements that work to create intentional physical coherence – urban design control focuses on the three-dimensional relationship of buildings, open spaces, and streets of the community. The latter received little attention from planners until the birth of the Neotraditionalist movement.

The success of the Neotraditionalist movement can be attributed to principles of good neighborhood development. Kentlands blends public and private spaces, professes a mission of “self-realization” while simultaneously encouraging a connection to the greater community, and addresses the financial concerns of homeowners by providing a variety of housing types and alternative, cost-effective transportation methods (Figure 11).

Chapter Four The Greater Context

⁴⁵ Henry Turley Company, “Harbor Town” [Online] Available: <http://www.henryturley.com/harbor-town/> [2015, November].

Having introduced the Usonian homes of Frank Lloyd Wright and the Kentlands project of Duany and Plater-Zyberk, perhaps it is best to step back and examine the greater context of these residential developments. Domestic architecture is intricately connected to its context and its user; this chapter will explain in greater detail how and in what ways architecture can reflect broader ideals of community, economy, and environmentalism.

In his book *A Better Place to Live*, author Philip Langdon notes that “comforts and amenities in new houses’ interiors have grown enormously since the Second World War.”⁴⁶ In support of this statement, Langdon cites technological advancements alongside fundamental shifts in residential design. He explains that the number of bathrooms in a home has doubled. Family rooms – unusual in the 1940s – are now common. Technology has increased exponentially within a dwelling, and the percentage of American homes with central air conditioning systems has risen from zero to eighty-three percent – a number that has almost certainly increased since the publication of Langdon’s book in 1994.

But these are not the only changes that followed World War II. Houses expanded and became more luxurious – as they did so, residential life moved away from the public sphere and into greater privacy. Before the war and prior to the introduction of affordable air conditioning, many families and individuals spent time on their porches and in their front yards. Outdoor life was spent in companionship with the general community. This changed after the war. Family leisure and outdoor activity shifted towards back yards,

⁴⁶ Langdon, 148.

areas that grew in both size and importance. The emphasis placed on street life and sidewalks diminished.

The streets themselves, however, did not shrink in size. The rapid development of suburban residential complexes – with their sprawling streets and webs of tributary roads – followed on the heels of the integration of the automobile into the daily life of many Americans. The introduction of this new transportation tool fundamentally altered the designs of most residential neighborhoods, often with respect to the community's overall synthesis and the spacing between individual dwellings. The garage became a prominent feature in many suburban homes. Philip Langdon explains this phenomenon eloquently:

Before the war, the garage – usually big enough for just one automobile – was almost always a free-standing structure in the back yard. After the war the garage moved forward and was attached to the side of the house. Where lots were small, garages frequently became protuberances on the houses' façade. From 1969 to 1990, the number of cars, trucks, and other automobiles shot up 105 percent, to 165 million... In 1990, for the first time in American history, the number of household vehicles exceed the number of individuals [in the household] licensed to drive them ⁴⁷

The increasing prominence of garages implies a greater social or perhaps economic context, one that goes beyond any single home. While garages sometimes show signs of life – leftover toys, a lawn chair, a construction project – garages are generally uninviting and lifeless. Their prominence within any residential design stifles social activity. Similarly, as public front porches were exchanged for private backyard decks, individual residences manifested a collective shift within the neighborhood as a whole – a movement away from inter-residential socialization and a decrease in neighborly

⁴⁷ Langdon, 149.

relations. While these changes in carports and porches were undoubtedly shaped by external forces – the introduction of the car and post-wartime attitudes – the community designs made possible and perpetuated antisocial behaviors. The strength of any given community suffered when faced with these seemingly innocuous changes in design.

Frank Lloyd Wright embraced the automobile; his designs and planning schemes were more expansive because of the increased potential for individual mobility. Nevertheless, Wright valued a human connection to the surrounding environment – his homes had no garage. Instead, Wright incorporated a rather inconspicuous carport into the larger architectural design. Although the entrance of Wright’s homes are often adjacent to or through the carport, Wright denies this space any singular importance in the façade. Elizabeth Plater-Zyberk and Andre Duany, comparatively, tolerate the car; their plans purposefully separate the garage from the home. Indeed, the duo once stated, “No architect is skillful enough to make human life project itself on the façade of a house when sixty percent of it is given over to garage doors.”⁴⁸ Garages are physical barriers to neighborly interaction. After the popularization of the car, many community planners bemoaned the heightened status given to these spaces and the American automobile.

Langdon notes that a standard three-car garage today is approximately 700 square feet – almost as large as the entire interior of the first Levittown houses built in 1947 (see Chapter Five).⁴⁹ The huge amounts of space given to modern day garages may hint at the consumerism embedded in American culture. “The American ‘dream house’ promoted for the past couple of decades,” writes Langdon, “is so costly – so stuffed with

⁴⁸ Langdon, 155.

⁴⁹ Langdon, 150.

‘conveniences,’ comforts, and expensive goods – that its occupants place themselves on a financial treadmill.”⁵⁰ As residents become more concerned with material acquisitions and personal finances, Langdon notes that connections to the residents’ greater community often slip away.⁵¹ In the past, economic prosperity bloated American houses, sometimes at the expense of community and frequently at the expense of a connection to the natural environment.

Domestic designs do not change arbitrarily. The popularization of large, private backyard spaces and the increasing prominence of garages in mid-century American homes are two design elements that exemplify, quite arguably, the attitudes of homeowners towards their communities. What is unclear, however, is whether homeowners exact these changes on architectural design (if the design solely *reflects* shifts in sociocultural, economic, and environmental perspectives) – or whether the designs themselves are agents of change, both reflecting and contributing to certain attitudes and behaviors. Many architects would argue the latter, arguing that good design can positively shape everyday life and encourage desired social values. In *Vernacular Architecture in the Twentieth Century*, a compilation of essays edited by Lindsay Asquith and Marcel Vellinga, author and distinguished professor Simon J. Bronner writes, “Often the inquiry about artistic structures centers on the individuals who created them, but questions persist about the connections of the forms to place and society.”⁵² More thorough research on vernacular architecture – architecture that is inherently “local” in materials, construction, and design – might yield a deeper understanding of the

⁵⁰ Langdon, 153.

⁵¹ Ibid.

⁵² Lindsay Asquith and Marcel Vellinga, eds., *Vernacular Architecture in the Twentieth Century: Theory, Education, and Practice*. (New York: Taylor & Francis, 2006), 43.

relationship between society and architectural form. Bronner explains, “The understanding is that the vernacular, being rooted in tradition, is less apt to change, and therefore when significant change occurs, it implies major social structural shifts”.⁵³ In this way, vernacular architecture is a sort of ‘mapping’ that traces social phenomena through progressions within architectural designs.

Another contributor to *Vernacular Architecture in the Twentieth Century*, Turkish architect and professor Süha Özkan, notes that “Architectural theory, which encompasses all the factors that surround the art of building, is embedded within society and is passed on from one generation to the next by means of tradition.”⁵⁴ Marcel Vellinga concurs: “Throughout history, architecture has informed its practice simultaneously in terms of values and aesthetics, which have been recognized as the mission of the profession, and in terms of safe and correct building methods. Therefore the theory of architecture is a collection of disparate contributions that combine the ideas, missions, assertions and approaches of many individuals.”⁵⁵ If we accept that architecture is a field shaped by the practices and theories of a large pool of individuals, that architecture encompasses both historic and modern approaches to building forms, it follows that our study of domestic architecture, while perhaps not clearly vernacular in nature, can certainly provide a lens through which we can examine collective social, economic, or environmental concerns.

Mark Gelernter, Dean of the College of Architecture and Planning at the University of Colorado, Denver, explores the connection between architecture and social change in detail. In discussing the social upheavals that occurred in the middle of the

⁵³ Ibid, 27.

⁵⁴ Ibid, 108.

⁵⁵ Ibid, 98.

twentieth century – the “broad mood of rebellion in the 1960s, which eventually found its way into ideas about architecture” – he highlights resistance to the Modernist Movement, which

had attempted to reshape the built environment without consulting those whose lives would be transformed in consequence, all the while claiming that the design professionals knew best. As the professions in general came under attack, the resistance to this paternalistic attitude mounted both within the architectural profession and in society at large.⁵⁶

In the 1970s, Gelernter continues, architectural movements were marked by a renewed interest in a building’s immediate surroundings. The natural environment became a key concern for the American people, “derived in part from the environmental movement of the late 1960s, and in part from the energy crisis of 1973.”⁵⁷ Architects paid closer attention to the position of the sun and the tendencies of the wind. Solar panels were introduced to home designs. The pit house, a residence buried partially underground or nestled within a hillside so only the façade is exposed, was developed as an attempt to increase energy efficiency in the home. Environmental concerns worked their way into architectural designs – designs that solidified and perpetuated a common concern for the natural world.

Mark Gelernter adds, “Others in the 1960s responded more fully to the energy and revolutionary spirit of the counterculture movement, which deeply distrusted elitism and fashion...the participants in the counterculture movement wished to heal ruptures in contemporary life between man and nature, and between individuals and society. They also espoused social egalitarianism.”⁵⁸

⁵⁶ Gelernter, 281.

⁵⁷ Gelernter, 306.

⁵⁸ Gelernter, 289.

Other architectural movements underlined the relationship between design and society. The Deconstructionist movement – which began earlier than Neotraditionalism but gained public attention in the 1980s – admits our human tendency to impose order on an inherently chaotic environment *and* rejects this control, choosing instead to reflect a turbulent reality in architectural form.

The aggressive Deconstructivist forms paralleled increasing aggression in the broader culture, as seen in the decline of traditional manners, in the increased class hostility, in more violent television programming, and in the rise of frightening street crimes like drive-by shootings. Since no Deconstructivists advocated violence, we might see these forms as expressing the general cultural angst that accompanied these unsettling times.⁵⁹

Projects like Zaha Hadid's *The Peak* and Frank Gehry's *Gehry House* were featured in the 1988 MoMA exhibition *Deconstructivist architecture*, organized principally by architect Philip Johnson. The exhibition presented seven international architects who "recognize the imperfectibility [sic] of the modern world and seek to address, in Johnson's words, the "pleasures of unease.""⁶⁰

Architecture is inextricably tied to social concerns – this much is clear. It is no stretch to examine individual homes and neighborhood designs for subtle signs of social and economic change. As such, America's longstanding affair with suburbia is particularly relevant to this study. By the 1990s most Americans had tired of sprawling, indistinguishable suburban homes – the New Urbanism movement, synonymous with Neotraditionalism, was popular – yet for many years these ubiquitous suburban developments were common.

⁵⁹ Gelernter, 313.

⁶⁰ "Fact Sheet" *The Museum of Modern Art*, March 1988. [Online] Available: https://www.moma.org/momaorg/shared/pdfs/docs/press_archives/6526/releases/MOMA_1988_0029_29.pdf?2010 [2016, April].

Chapter Five Levittown

In the building boom that followed swiftly on the heels of World War II, the field of domestic architecture witnessed a new sort of community: suburbia. Pre-planned and mass-produced housing complexes, generally consistent in both form and aesthetic, became popular in the middle of the twentieth century. These sprawling suburban neighborhoods, built rapidly and abundantly in the 1950s and 1960s, were made possible by building practices developed by the firm Levitt & Sons, Inc. Abraham Levitt founded the company in 1929; his two sons William and Alfred served as the developer and architect, respectively, for the company's projects. Today, William Levitt is widely regarded to be the father of the modern American suburb; the name "Levittown" is synonymous with American suburbs.

The first Levittown suburb surfaced in 1947, about fifty miles east of Manhattan in Nassau County, New York (Figure 12). It was there that the firm Levitt & Sons, Inc. began construction on the first mass-produced housing development in the United States. Composed of mostly Cape Cod and ranch-style single-family detached houses, Levittown ultimately housed more than 82,000 residents in more than 17,400 separate homes. One source notes that the first 1,800 homes in Levittown were only available as rentals with an option to buy after a year's residence.⁶¹ Most residents, notes the source, chose to buy their homes, happy to live in what many considered to be a fine, congenial community.

⁶¹ Barbara M. Kelly "Levittowns." *Encyclopedia of American Studies*. (Johns Hopkins University Press, 2016.) *Credo Reference*.

Each home was composed of one bath, two bedrooms, a 12-by-16 foot living room with a fireplace, and room for expansion upstairs or out into the yard. Levittown was carefully organized along curvilinear drives off the parkways leading from New York City. Houses were meticulously aligned to echo these roads; although sidewalks and front yards were still generously allotted to each residence, a new, certain importance was granted to the roads and pathways, made wide to accommodate the ever and increasingly popular American automobile (Figure 13).

This repetitive community organization may indicate certain social and economic values. Perhaps the strict layout of the Levittown community, paired with the development's uniformity in architectural design, points to an emerging desire for a singular, collective American identity. In the wake of World War II and its widespread, industrialized global conflict, surely many Americans longed for a familiar, secure place to call home. The devastating war unified the country socially and solidified the importance of democratic values in the minds of many of its citizens. Levittown, with its dependable architectural aesthetic and clear planning, would provide this security and homogeneity. Levittown was a neighborhood of equality – not with respect to its inhabitants of color, who were highly subject to racial prejudices of the time, but rather in terms of individual space and architectural aesthetic. Levittown was accessible by car and accompanied in its development by several shopping centers, which were placed on the outskirts of the neighborhood. Although social factors most certainly contributed to Levittown's success, just as probable an explanation for the neighborhood's popularity is the likely frugality of mid-century American homeowners. Those old enough to purchase a home at the end of the 1940s would have remembered the Great Depression; these

consumers would likely appreciate the economic efficiency of the building processes used to create Levittown as well as the simplicity of its design.

Sociologist and scholar Chad Kimmel wrote his dissertation on the second Levittown, built in Pennsylvania in 1954 (Figures 14 & 15). Twin to Levittown, New York, in both name and design, Levittown, Pennsylvania, is another interesting subject of suburban study. Kimmel writes, “Levitt and Sons knew very well that most of their new homebuyers lacked large incomes and substantial savings. What the Levitts built, then, was a “ready-to-eat-house... into which the new owner can move and start living at once.”⁶² Kimmel notes that within a month’s time of the formal birth of Levittown, residents created community newspapers and civic associations to manage their affairs (Figure 16). Kimmel interviewed original Levittown inhabitants that do mention challenges associated with living in such a methodical and sterile community, but it is worth noting that aspects of community togetherness prevailed despite the homogeneous and repetitive architectural design of all Levittown homes.

Postwar conditions and needs were ideal for a large-scale housing project such as Levittown. In *A History of American Architecture*, author Mark Gelernter writes,

Large-scale tract house developers like Levitt and Sons perfected methods of mass production in post-war years, in which prefabricated building components and materials were shipped to the site and assembled like in a factory into rows of similar houses. So efficient was the construction method, and so great was the demand...⁶³

Notable here is Gelernter’s use of economic terminology. The *demand* for mass-produced houses was great, he writes. Yet we should also consider the supply of such “cookie-

⁶² Chad M. Kimmel, "Levittown, Pennsylvania: A Sociological History" (2004). *Dissertations*. Paper 1240.

⁶³ Gelernter, 270.

cutter” homes. In microeconomic terms, a technological improvement in construction methods that decreases production costs will result in a rightwards shift of the supply curve. The supply for the good (in this case, homes) will increase. As Levitt and Sons developed more efficient production methods and offered a cheaper alternative to traditionally constructed homes, the economic market responded.

Levittown is doubly interesting when considered from an entrepreneurial perspective. In business, the *project management triangle* is used to explain diagrammatically the production of a good or the procurement of a service (Figure 16). The triangle is colloquially defined as: fast, good, cheap. In more formal terms, the triangle demonstrates visually that all projects are limited by time, quality, and cost constraints. Two of these factors can be reasonably prioritized – for example, food that is fast and cheap is often not of high quality, or priority shipping of goods by a trustworthy company is often costly. These three constraints limit the scope of any project. In the case of Levittown, cheap houses were quickly developed – some of the project’s quality was quite arguably sacrificed, both physically (in construction materials) and intangibly (in architectural variety and sophistication). In order to keep construction costs down, the design of Levittown homes was simplified. The aesthetic elements and architectural forms that survived the streamlined construction process of suburbia are telling. Natural landscaping – a necessary component in most Wright designs – is traded for apportioned lots of land, square spaces of individual property that are delineated only by the repetition of equally spaced and undistinguishable architectural units. While Levittown denies its inhabitants an intimate connection to the landscape, the very staples of home design

remain intact – all basic needs are met. Small, compact residences dot the community in a rational and adequate fashion.

Conversations about the underlying values of these suburban complexes can vary widely. While many critics lament the homogeneity and blandness of Levittowns, decrying the community's initial racial exclusivity alongside the homes' identical, sanitized architectural design, there are others who defend the suburban communities. In "Much to Like About Levittown", an article featured in the 2002 *Journal of Planning History*, scholar Michael J. Birkner gives a brief history of the development of Levittown, vigorously describing the socioeconomic context that gave rise to this suburban lifestyle. Birkner writes, "Levittown was imperfect. The conformity issue has been overstated, but there was a kernel of truth to it, as in the "keeping up with the Joneses" syndrome. But as d'Tocqueville noted long ago, conformism and egalitarianism are linked. There is little point blaming Levittown, or suburbia in general, for a generally benign affliction."⁶⁴ It is arguable to what degree American conformity is generally benign. But Birkner does present a fresh perspective, one that defers from the common core of critics. He notes that conformity within a community is tied to ideals of equality – and equality, one might conjecture, could only serve to bring a community into greater communion with one another. In his article, Birkner touches on a variety of social concerns regarding suburbia, not only egalitarianism but also the role of the automobile:

Levittown has also been blamed for environmental desecration and for fostering an automobile-dominated culture, as though this planned suburban community was the engine of the downtown's demise. It is undeniable that Levittown displaced farms, though it is not clear, as Herbert Gans once observed, what is morally superior about raising corn compared to raising families. Moreover, the schema for Levittown, with its sixty-by one-hundred-foot lots and space

⁶⁴ M. J. Birkner, "Much to Like About Levittown," *Journal of Planning History*. (November 2002), 327.

reserved for recreation and community buildings, seems in retrospect to be a model of planning—certainly superior to the accelerating phenomenon of five- and six-bedroom homes built on large (sometimes five to ten acres or more) lots in exurbia. It is true that Levittown fostered an automobile culture. But it was also a pedestrian-and bicycle-friendly culture. The culprit in downtown’s demise, if there is a single culprit, is the auto, not the suburb.⁶⁵

Here Brikner places the blame for community disintegration on the automobile. Like Duany and Plater-Zyberk, Briker found the popularization of cars to be the culprit behind poor residential design. Critics, writes Briker, should not focus on the Levittowns of suburban America, but rather on examples of the conspicuous consumption of resources in projects like the so-called McMansions – a new model for housing that flooded “exurbia” America.

One might speculate that the motivations fueling the developments of Levittowns and the production of McMansions were similar in nature – surely residents of both communities desired a better way of life, and hoped that the design of their home (or perhaps more importantly, the design of the greater community) could lead to an improved quality of living.

While the architectural design of any singular residence likely reflects an imposed desire for an improved standard of living (a standard that is relative, highly subjective, and not measured in my research), the architectural designs of neighborhoods – the groupings of these individual homes – necessarily informs inhabitants’ community and social interaction– even if this design is accepted passively. As discussed in Chapter Four, community designs are influenced by phenomena such as technological advancements, economic turmoil, or social unrest. Yet community designs also create

⁶⁵ Ibid, 328.

and construct a framework for neighborly relations. Developed in response to hard times and post-war values, the Levittowns of New York and Pennsylvania are prime examples of how economic factors affect residential structures and how architectural designs can inform residents' sense of community. Popular for their economic efficiency, which may have allowed residents greater financial freedom and a relatively higher standard of living, Levittown neighborhoods were designed – even if unintentionally or for purposes of efficiency – so as to emphasize the automobile and limit individual expression in architectural form. Residents were part of a community defined by its homogeneous appearance; the aesthetic similarities of Levittown residences likely served to preserve a sense of unity in a war-shocked populace. The creation of community centers, civic buildings, and shared recreational spaces would have raised housing costs significantly, and for this reason were likely excluded from the neighborhood design. However, the failure to include these facilities in Levittown developments minimized the potential growth of the community.

Levittowns, on the whole, failed to recognize the importance of the individual within a community. Architectural designs were not personalized; the human scale was perhaps employed but certainly not emphasized. Levittowns lacked the social integration present in the Neotraditionalist Kentlands project as well as the environmental harmony achieved in Wright's Usonian homes. Levittowns *did* successfully address residents' financial concerns – but the mid-century project ultimately disappoints as an example of “good” neighborhood design for its inattention to non-economic factors.

Chapter Six

Paul Rudolph's Oriental Masonic Gardens

Economic factors drove the development of Levittowns and other suburban neighborhoods. Cheaper manufacturing processes led to streamlined architectural designs and repetitive community layouts; these design elements and their characteristic uniformity achieved success in a populace that craved dependability and felt an acute need for affordable housing.

Prefabricated housing, similarly, emerged as a movement chiefly concerned with affordability. Developers and agencies were pleased with the sharp reductions in labor and construction costs brought by the implementation of prefabricated housing elements, and advocacy groups supported prefabricated housing because it expanded the housing market, making shelter more readily available for needy populations.

Certain elements of houses lend themselves to prefabrication – roofs, floors, and framing can be made off-site easily. Most of these elements can be transported with relatively little trouble as well – as engineering practices advanced and new composites or material combinations were revealed, prefabricated housing parts increased in popularity. Bathrooms and kitchens are “the most technically complex and the most expensive rooms in a dwelling,” mostly due to these rooms’ particular characteristics (all surface areas must be easily cleaned and impervious to water, for example), but because kitchens and bathrooms are small and costly, they provided exciting opportunities for prefabrication. Sam Davis describes factory-produced kitchens and bathrooms as the “one of the most enduring images of industrialized housing.”⁶⁶

⁶⁶ Sam Davis, *The Architecture of Affordable Housing*. (Berkeley and Los Angeles: University of California, 1995), 67.

Prefab projects are notably limited by logistical constraints – as Sam Davis notes in *The Architecture of Affordable Housing*, houses are not easily shipped once built. Unlike cars, he writes, “the product is large, and in many ways each one is unique, fitting into its individual site differently than the next. Codes and restrictions, while becoming more universal, are subject to local variation and application. Moreover, the very nature of housing construction industry in the United States precludes treating houses like other consumer products.”⁶⁷ Builders are localized, as is the labor force – and construction itself is subject to dramatic fluctuations in weather, materials, financing, etc.

Sam Davis discusses the prefab phenomenon within the architectural field in detail. When residential buildings began to be industrialized through the prefab movement, many hoped that well-designed housing would be accessible to all. Affordable housing was then – and continues to be today – a concern for those within the field of residential development, but involvement from bureaucratic organizations, such as the Department of Housing and Urban Development (HUD) and the Federal Housing Administration complicates most efforts, which are ultimately riddled by rules, regulations, standards, and legislation such as the 1949 Housing Act and the Housing Act of 1968. Davis writes, “There was optimism in the belief that technology could answer all needs, particularly those that called for quick repetitive, high-quality production, like housing.”⁶⁸ Yet this theory was quickly disproven, as evidenced by Paul Rudolph’s little known but highly significant housing project, the Oriental Masonic Gardens.

⁶⁷ Ibid, 26.

⁶⁸ Ibid, 25.

Paul Rudolph, born in 1918 to a southern Methodist preacher, was a prominent American architect in the 1950s and 1960s. He served for six years as the Chair of Yale University's Department of Architecture, and in the course of his career designed several notable buildings, including the Art & Architecture Building at Yale University. Several of his architectural projects addressed affordable housing through means of prefabrication, including the Oriental Masonic Gardens. Author Belmont Freeman writes,

Rudolph's fascination with prefabrication – not an uncommon interest among progressive architects of the day – is illustrated by the sad tale of Oriental Masonic Gardens (1962-66), a large, low-rise cooperative housing project erected on the outskirts of New Haven. Enabled by a relaxation of building codes that the mayor's office negotiated, Rudolph composed the complex using factory-fabricated modules the size of mobile homes ("the twentieth-century brick," Rudolph like to call them). Although heralded at the time as a breakthrough for affordable housing, Oriental Masonic Gardens suffered from construction flaws and poor maintenance and was demolished in 1981.⁶⁹

Rudolph designed a complex created through "stacked" trailer-like boxes – what were essentially mobile units arranged in a geometric patterns (Figures 18-20). Mobile units had been a popular solution to affordable housing – the Department of Housing and Urban Development put forth Manufactured Home Construction and Safety Standards in 1976; in 2008, over 82,000 HUD-code homes were sold⁷⁰ – yet Rudolph's particular arrangement was novel.

Paul Rudolph hoped that by increasing building density, residential developments could meet pressing housing needs. In his Oriental Masonic Gardens, four prefabricated

⁶⁹ Belmont Freeman, Review of Timothy Rohan, *Model City: Buildings and Projects by Paul Rudolph for Yale and New Haven* (Exhibition, Yale University School of Architecture, 2008) in *Journal of the Society of Architectural Historians*, 69, 1 (March 2010), 134-136.

⁷⁰ Ryan E. Smith, *Prefab Architecture: A Guide to Modular Design and Construction*. (Hoboken: John Wiley & Sons, 2010)

units are pivoted in “pinwheel formation.”⁷¹ Each unit was equipped with both a private entrance and private outdoor space – an unusual feature for housing of a rather low socioeconomic level (Figure 21).

Arguably, Rudolph embraces vernacular architecture in this project – local needs, familiar architectural forms, and traditional designs are present in the Oriental Masonic Garden. Yet his project was ultimately deemed unsuccessful, both for its poor construction and for a lack of adequate maintenance. Perhaps the close-knit housing configuration that Rudolph had so hoped would be revolutionary in the world of residential design had failed to foster a sufficiently strong sense of community.

In *The Architecture of Affordable Housing*, Sam Davis notes that “In the United States the detached house is an obsession, and home ownership, now at 64 percent, is an essential piece of the American Dream. Given this social context, no multifamily housing can be totally satisfactory.”⁷² Davis argues effectively for architecture that mimics natural patterns of inhabitation – sensitivity to these, he writes, “may yield different plans, even within the conventional unit type”. It is possible that the Oriental Masonic Gardens failed to achieve a pleasant residential living environment because of its high density; it is also possible that the community suffered from a lack of recreational opportunities and a dearth of natural landscaping. Unlike the Neotraditionalist work of Duany and Plater-Zyberk, the layout of the Oriental Masonic Gardens still prominently features the car through large, central parking lots. These parking spaces encroach upon the natural landscape – the design makes no compensatory effort to promote neighborly

⁷¹ Barry Bergdoll and Peter Christensen, eds., *Home Delivery: Fabricating the Modern Dwelling*. (New York: MoMA, 2000)

⁷² Davis, 83.

relations through sidewalks or common spaces such as parks or community centers.

Unlike Wright's projects, no relationship to the environment is emphasized. Or, more simply, perhaps Rudolph's project was unsuccessful for failing to recognize basic human nature.

Davis writes,

People invest much of their identity in their dwelling, and the individuality of their house reinforces their own self-worth. Houses also serve as a retreat; they separate the public domain from the personal one and reinforce both the connections between the two domains and the sanctity of the individual within the collective. The archetypal house, with its sidewalk, yard, porch, front door, and foyer, clearly defines the territory of the individual, as well as the transition from public to private space. Moreover, a house is flexible and expandable, and can survive generations of use as families change.⁷³

With respect to this definition, Paul Rudolph's project seems insufficient and inadequate – as does, it is important to note, the homogeneous Levittown projects. Is there a clear distinction between collective and individual space, if four houses are pinned together? Is the house “flexible and expandable”, if space is so limited? Do these mobile units allow for any sort of individual identity or personal expression?

The answer – to all of the above – is no. The neighborhood was torn down before Rudolph's design could be remodeled and put to any further test of durability, but it seems likely that if asked to survive “generations of use” the Oriental Masonic Gardens would have, again, been found lacking.

The Oriental Masonic Gardens project is one (of many) that demonstrates which design ideals are important within residential developments. Residents of all eras seem to value some individuality in their dwellings – but more importantly, inhabitants of

⁷³ Davis, 85.

suburban developments tend to desire a connection to their community, a connection to the landscape, and a socially integrated design in which residents can move freely and easily between public and private space. In all of these regards, the Oriental Masonic Gardens project is found to be wanting.

Chapter Seven Prefabrication & the Green Movement: LEED + ND

In an essay written for *Vernacular Architecture in the Twentieth Century*, author Sūha Özkan wrote “Among the new environmental ethics of the twenty-first century, sustainability has emerged as one of the most important and internationally endorsed principles, especially in the world of architecture and in terms of appropriate building practices.”⁷⁴ The “green movement” is worthy of mention within this research paper; emerging and increasingly popular ideas of sustainability and environmentalism have had many implications in the field of domestic architecture, as they have had in the field of architecture as a whole. Prefab housing, in many ways, has become synonymous with the green movement – by simplifying construction, prefab has allowed for some sustainable practices to be streamlined and consolidated. Although a majority of residential projects incorporate some prefabricated elements into their construction and design, some more recent architectural works have relied almost wholly on prefab and, therefore, are noteworthy subjects of study.

In 2002, California-based architect Michelle Kaufmann began searching for a home with her husband Kevin Cullen, a carpenter and contractor. The two were frustrated

⁷⁴ Asquith and Vellinga, eds., 108.

by high prices and lack of options in the San Francisco Bay Area – so they built their house themselves. In an article published by the Smithsonian Magazine, author William Booth explains that “Cullen went to work on a Kaufmann design with a simple but beguiling floor plan of connected rectangles, just 1,560 square feet, with an easy flow from space to space – a curtain of glass doors under a shed roof covered with solar panels. They called it the Glidehouse”.⁷⁵ (Figures 21-22) The design for their two-bedroom, two-bathroom home was a hit with friends and seemed open to mass production – Kaufmann, long interested in matters of sustainability and housing, dedicated her architecture firm to prefab housing with the goal of making green living affordable and accessible for all. She began mass-producing these modular green homes, advocating factory production while maintaining individuality within her residential designs by allowing consumers to input their preferences. Kaufmann fully believes that the Internet is the key to custom prefab designs, allowing architects to interface with homeowners and identify needs in an efficient and organized way.⁷⁶ She is not alone in this endeavor, but her work has been seminal and widely recognized in the field of prefab and residential architecture.

Kaufmann specializes in off-site, modular construction. Built in manufacturing facilities that boast built-in quality control monitors, her projects are constructed using three-dimensional boxes or “modules”. Modular homes are the highest quality of prefabricated homes available, followed in decreasing quality by manufactured homes and then mobile homes. The term “mobile home” technically refers to homes built prior

⁷⁵ William Booth, “House Proud” *Smithsonian Magazine*. (January 2007)

⁷⁶ Ibid.

to 1976, when the HUD code governing building standards for factory-built homes was instituted, greatly improving quality standards – all homes built after this date are officially described as “manufactured homes”, although the two labels are used rather interchangeably.⁷⁷ Modular homes are still factory-produced, prefabricated and assembled on-site – however, modular homes are immovable, permanently attached to their location by means of a concrete foundation. Modular homes are the most readily accepted prefabricated housing form; many city and county zoning codes restrict manufactured/mobile homes to limited areas.⁷⁸

Kaufmann describes the prefabrication process for her projects on her website, writing,

The home is built to site-built code, but created in a factory. Interior and exterior sheathing, utility lines, interior partitions and stairs are all completed in the factory. The modules are 90-95% complete when they come off the assembly line in the factory. After completion in the factory, a modular home is shipped to the site, then attached to a permanent foundation at the building site. Several modules can be connected side-by-side or stacked to create a finished home. When completed, modular homes are composed of several modules fastened together. Once the home is attached, it is considered real estate and appraised against other custom site-built homes.

Michelle Kaufmann’s Glidehouse was featured in an exhibition at the National Building Museum in Washington, D.C., entitled *The Green House*. The museum describes Kaufmann’s work as “a prefabricated, green house ready to go anywhere.”⁷⁹ Kaufmann’s Glidehouse produces very little waste, particularly on the building site. Its design

⁷⁷ Jennifer Mitchell, “The difference between mobile homes vs. manufactured homes vs. modular homes”, 2015. [Online] Available:

<http://www.drysideproperty.com/mobile%20vs%20manuf%20vs%20modular.html> [2016, April].

⁷⁸ Michelle Kaufmann Studio, “Modular Construction” [Online] Available:

<http://www.michellekaufmann.com/prefab/> [2015, November].

⁷⁹ National Building Museum, “The Green House: New Directions in Sustainable Design”, 2006. [Online] Available: <http://www.nbm.org/exhibitions-collections/exhibitions/the-green-house/> [2016, February].

emphasizes harmony with the landscape – windows are well positioned to receive solar rays and provide some natural ventilation, and the roof is sloped to allow natural light into the home and to make room for solar panels. The interior appliances conform to the home’s high environmental standard: lightweight concrete countertops are made from recycled newspaper and ash; kitchen and bathroom fixtures are energy efficient; walls are covered in non-toxic paint; floors are made from bamboo, a plentiful and easily renewable material; energy-efficient lighting is used throughout the home; and all walls and joints, including the roofing structure, are carefully insulated and sealed. ⁸⁰

Kaufmann’s website notes the various benefits of modular construction:

- Integrated, pre-packaged green solutions.
- Modular factories can achieve 50% to 75% less waste than the equivalent site-built home through precision cutting and storage capacity.
- Exceeds structural requirements, creating a stronger, solid home.
- More predictability in time and cost.
- Assembly line construction means higher quality.
- Worker repetition means worker specialization.
- Time frame is greatly reduced.
- A climate-controlled factory environment means no moisture and minimizes mold.
- Less impact on the building site.
- Less risk of time lost and theft on site.
- Homes are 90% – 95% complete upon arrival to the site.
- Built to all state and local codes, for any climate and any season. ⁸¹

These characteristics of prefab housing reflect a sort of consciousness and care that was previously absent from many residential projects; the sustainability movement has asked – and indeed, pressured – architects to pay greater attention to green building. The Environmental Protection Agency has identified several components of green

⁸⁰ Ibid.

⁸¹ Kaufmann, “Modular Construction”

building: energy efficiency, the use of renewable energy, water efficiency, “environmentally preferable building materials”, waste and toxics reduction, indoor air quality, and smart growth and sustainable development. ⁸² *Dwell* magazine, in a featured issue on environmental prefab, noted that the typical “green” home includes tankless water heaters, low-flush toilets, Energy Star kitchen appliances, high-efficiency HVAC (heating, ventilation, & air conditioning), solar-ready wiring and roof jacks for owners who chose solar energy, and passive measures like light ventilation from expansive, dual-glazed, low-emissivity operable windows and skylights. ⁸³

Green homes have grown in popularity since the 1970s, but environmentally conscious practices, materials, and fixtures are often more expensive than their typical residential counterparts. This high cost factor is part of the reason why the efforts of architects such as Michelle Kaufmann are so important. Many architects have attempted to bring environmental ideals into domestic architecture with varying levels of success – Michelle Kaufmann is a notable star within her field. Her designs are both appealing to clients and environmentally friendly – a hard balance to strike. “One of the crucial issues [within this movement],” said Kaufmann, “is to have designers [work] with the people creating the technology to make it more appealing to put on buildings. So material that looks like what we already use to create buildings, but that is actually more energy efficient – smart bricks, smart concrete, smart metal. Then it would be a lot easier to incorporate it into buildings without having to redesign the entire structure.” ⁸⁴

⁸² Environmental Protection Agency, “Components of Green Building” [Online] Available: <https://archive.epa.gov/greenbuilding/web/html/components.html> [2016, February].

⁸³ *Dwell*

⁸⁴ Booth, “House Proud”

In 2009, the assets of Kaufmann’s design/build company, mkDesigns, were acquired by Blu Homes, another leader in the prefabricated green homes industry. “We are proud to advance the sustainable clean living model that Michelle Kaufmann so courageously began,” said Bill Haney, Blu Homes president. “The addition of Michelle to Blu’s team strengthens our design abilities and adds mkDesigns to the homes we offer, giving consumers a broad range of luxury in the most economical, green and convenient way.”⁸⁵ Both Blu Homes and Kaufmann, who still practices through her private architecture firm, are committed to the ideals of environmentalism and would like to see green living offered at an affordable price. Many prefab projects are currently considered “eco-luxury” products.

Despite the steep prices currently associated with these high-end prefab homes, the green sentiments that shaped Kaufman’s modular designs are echoed around the world in thousands of prefab housing projects. Architects and designers within the field of residential architecture are challenged to be increasingly creative and resourceful – one happy result of this pressure is thoughtful and unusual prefab projects. Adam Kalkin’s Quik House Variations, a New Jersey-based operation begun in 2000, is a good example of inventive prefab housing – Kalkin’s company delivers a prefabricated kit house, designed from recycled shipping containers, to the client. The three-bedroom dwelling can be arranged as clients see fit; the shell of the structure assembles within one day on site and the entire process of creation takes less than three months.⁸⁶ Dozens of

⁸⁵ Blu Homes, “Blu Homes Acquires Assets of mkDesigns, Home Designs by Green Prefab Pioneer Michelle Kaufmann” 2009. [Online] Available: <https://www.bluhomes.com/news/press-release/blu-homes-acquires-assets-mkdesigns-home-designs-green-prefab-pioneer-michelle> [2016, April].

⁸⁶ Quik Build, “Quik House” [Online] Available: http://www.quik-build.com/quikHouse/QH_whatIsQH.htm [2015, November].

companies engage in prefab or modular housing – notable for further research are companies like Alchemy Architects (responsible for weeHouses) and Davis Studio A+D (creators of pieceHomes). Truly, modular housing merits a thorough investigation of its own.

I am most concerned with the social movements and economic concerns that have swayed public interest in the green movement, and how these factors have influenced residents' understanding of community. Prefab specialty houses, like Michelle Kaufmann's Glidehouse home, are rarely produced as complete neighborhood designs. It is much more common for these high-end units to be produced for consumers on an individual, as-needed basis. It is largely the decision of the resident, then, although perhaps in conjunction with the lead architect, how these dwellings fit into their surrounding landscape and affect the neighborhoods in which they reside. However, the principles that fuel the construction of individual prefab homes can be examined for their effect on communities. Green communities and communities of modular homes do exist, albeit in small number.

In his book *100 Ideas that Changed Architecture*, author Richard Weston writes “Global concern about the capacity of the planet to sustain a rapidly rising population without drastic environmental degradation came into sharp focus in 1987 with the publication of “Our Common Future,” the report of the World Commission on Environment and Development (now generally referred to as the Brundtland Commission.”⁸⁷ Most recently, architects have begun to focus on a “cradle to grave” lifecycle for buildings, acknowledging that buildings are currently estimated to use about

⁸⁷ Richard Weston, *100 Ideas that Changed Architecture*. (London : Lauren King Publishing, 2005), 196.

half of the world's total energy.⁸⁸ Weston acknowledges the connection between social ideals and green architecture, but disparages what he considers to be low levels of involvement from the American government. "It is now widely recognized," he writes, "that ecological sustainability needs to be married to social and economic sustainability, although the tension between the advocacy of sustainable development and the belief in free-market economics predicated on unlimited growth is rarely discussed, let alone addressed, by the government."⁸⁹

The American government is a subtle but important force. Founded in 1993, the U.S. Green Building Council (USGBC) is dedicated to prosperous and sustainable building. This organization holds great power in the green movement. In 2000, the USGBC unveiled a rating system that has become "an international standard for environmentally sound buildings, certifying hundreds of thousands of square feet per day."⁹⁰ These USGBC ratings, abbreviated as LEED for Leadership in Energy and Environmental Design, are applied to residential projects as well as neighborhood developments, building operations and maintenance, interior design and construction, and building design and construction.

While LEED for Homes is applied to single family homes and multi-family homes up to eight stories, LEED for Neighborhood Development (LEED-ND) is a rating system that incorporates the principles of smart growth, New Urbanism, and green building into a national standard for green neighborhood design.⁹¹ The rating system is

⁸⁸ Ibid.

⁸⁹ Ibid, 197.

⁹⁰ US Green Building Council [Online] Available: <http://www.usgbc.org/about> [2016, March].

⁹¹ USGBC, "Leed for Neighborhood Development" [Online] Available: <http://www.usgbc.org/Docs/Archive/General/Docs6423.pdf> [2016, February].

concerned with modern economic and environmental problems – the organization notes that vehicle use nearly tripled between 1970 and 2006, raising vehicular emissions to more than 20% of U.S. greenhouse gas emissions. Buildings in the United States account for 39.7% of energy consumption and 10.1% of water use.⁹² With these statistics in mind, the USGBC actively works to minimize barriers to green construction. These barriers may include high required parking ratios, zoning codes that require a separation of land uses, and laws barring the use of green technologies such as solar panels. The government, to varying degrees of success, offers development incentives for sustainable building practices.

Raimi + Associates and the Natural Resources Defense Council (NRDC), with help from national advisory committee of experts in smart growth and LEED-ND, has put forth a “Citizen’s Guide to LEED for Neighborhood Development”. The guide is intended to explain, in plain English, the ideals and requirements of LEED-ND certification. The certification contains “a set of measurable standards that collectively identify whether a development or proposed development... can be deemed environmentally superior, considering the development’s location and access, its internal pattern and design, and its use of green technology and building techniques.”⁹³ LEED-NC defines prerequisites, or baseline criteria used to establish sustainable neighborhood development, as well as additional best-practice standards. The guide states, “The most sustainable neighborhoods tend to exhibit high levels of walkability, a sense of place,

⁹² USGBC, “Going Beyond Buildings: Benchmarking Green Neighborhoods with LEED for Neighborhood Development” [Online] Available: <http://www.usgbc.org/Docs/Archive/General/Docs9528.pdf> [2016, February].

⁹³ National Resources Defense Council, “A Citizen’s Guide to LEED for Neighborhood Development: How to Tell if Development is Smart and Green” [Online] Available: https://www.nrdc.org/sites/default/files/citizens_guide_LEED-ND.pdf [2016, March].

social cohesion and stability, and neighborhood resiliency amidst changing economic and sociopolitical conditions.”⁹⁴

LEED-ND certification is closely linked to the Neotraditionalist views held by Andres Duany and Elizabeth Plater-Zyberk, the architects responsible for Kentlands. The “Citizen’s Guide to LEED-ND” emphasizes this relationship, defining a good, traditional neighborhood by the same principles put forth by the architect duo:

- A discernible center
- Housing within a five minute walk of the center
- A variety of dwelling types
- A variety of stores and commercial activity
- Flexible backyard “ancillary” buildings for working or living
- A school within walking distance
- Playgrounds near all dwellings
- Connected streets
- Narrow, shaded streets conducive to pedestrians and cyclists
- Buildings close to the street at a pedestrian scale
- Parking or garages placed behind buildings and away from street frontages
- Prominent civic and public buildings
- A community decision process for maintenance, security, and neighborhood development⁹⁵

The LEED-ND certification addresses where to build a community, what to build, and how to build. The guide stresses the importance of building in harmony with the landscape; good street connections and pathways; blended neighborhoods with a variety of housing types, so as to accommodate a range of ages, abilities, and economic classes; and an awareness of (and response to) transportation needs. Parks or other ecological spaces are necessary in the development of green neighborhoods, and efficiency in

⁹⁴ Ibid, 4.

⁹⁵ Ibid.

materials is equally significant. LEED-ND rewards the reuse of old buildings or structures as well as the effective stewardship of water and energy, waste minimization, and pollution prevention.

I argue that the profound impact of the sustainability movement upon the field of architecture goes beyond new construction techniques, improved material use, and energy-efficient designs – but that this social and economic phenomenon has also shaped residents’ understanding of community. The issue of sustainability within the field of residential architecture, which may at first seem to concern solely those who build and construct houses, is also of great import to those who live in these dwellings, for sustainability is inextricably connected to community development. Even in singular prefab projects, like those of Michelle Kauffman, sustainable or “green” practices can provide residents with a personal connection to their immediate location, neighborhood, and landscape, thus enabling a larger sense of togetherness and community responsibility. Whole “green” communities – especially those that adhere to LEED-ND certification criteria – recognize and encourage pedestrian activity through good street connections and bicycle paths, providing a forum for regular social interaction between neighbors. Mixed housing types provide variety and individuality within an otherwise united group of homeowners; socially integrated designs invite residents to share and interact in public spaces such as parks, playgrounds, and small stores. In these ways, LEED-ND neighborhoods serve as successful examples of good neighborhood design.

If the prefabricated green housing movement is to be totally successful, it must pay greater attention to the financial concerns of the average American homeowner. As it

stands, green housing efforts have only the *potential* – and not yet the capacity – to be applied to neighborhood designs on a large and meaningful scale.

Chapter Eight Samuel Mockbee and Rural Studio

Residential architecture of the green movement has a clear social and economic ethos. Architects and designers often cite a personal concern for the environment as the catalyst for their involvement in sustainable building and environmentally responsible construction. In rural Alabama, a similar creed of social responsibility is present. Rural Studio is an undergraduate program of the School of Architecture, Planning and Landscape Architecture at Auburn University. The program has been working in Hale County – a rural, low-income area of central Alabama – since 1993, when the program was established by D.K. Ruth and Samuel Mockbee.

The program is intended to give architecture students “a more hands-on educational experience whilst assisting an underserved population in West Alabama's Black Belt region.” The Rural Studio website notes the program’s original commitment to recycling, reusing, and remaking materials in service to the needs of the local community; founder Sam Mockbee was heavily influenced by Southern vernacular forms and created the Rural Studio program with an intent to infuse local communities with “resourceful construction solutions and unique applications of salvaged, recycled, or reapplied materials.”⁹⁶ Even today, after the passing of Samuel Mockbee in 2001 and his

⁹⁶ David Moos, ed. *Samuel Mockbee and the Rural Studio: Community Architecture*. (Birmingham: Birmingham Museum of Art, 2003), 1.

replacement by current director Andrew Freear, Rural Studio focuses largely on community-oriented work of an environmentally friendly nature. The website states,

The Rural Studio philosophy suggests that everyone, both rich [and] poor, deserves the benefit of good design. To fulfill this ethic, the Studio has evolved towards more community-oriented projects. Projects have become multi-year, multi-phase efforts traveling across three counties. The students work within the community to define solutions, fundraise, design and, ultimately, build remarkable projects. The Studio continually questions what should be built, rather than what can be built, both for the performance and operation of the projects. To date, Rural Studio has built more than 150 projects and educated more than 600 "Citizen Architects."⁹⁷

Rural Studio is comprised of three key components: design projects done by 3rd year students, which historically were charitable residential designs; projects from 5th year students, which are typically community-based initiatives in which students work alongside local municipalities; and outreach projects offered to non-Auburn students and collaborators. Over time, these outreach projects have taken the form of the "\$20K House." Participants design a home for \$20,000 or less, allocating roughly \$12,000 for materials and the remaining \$8,000 to labor costs and contracting.⁹⁸ This figure is intentional; \$20,000 is roughly the amount of money a person on Social Security can receive through the Department of Agriculture Rural Housing Service's Direct Loan program.⁹⁹

Students use the studio as a means to apply architectural learning. Projects require that students actively determine client needs, create designs that are aesthetically pleasing

⁹⁷ Rural Studio, "Purpose & History" [Online] Available: <http://www.ruralstudio.org/about/purpose-history> [2015, November].

⁹⁸ Rural Studio, "Outreach" [Online] Available: <http://www.ruralstudio.org/programs/outreach> [2015, November].

⁹⁹ Nick Kaye, "The Rural Studio Turns 20", *The Bitter Southerner*. [Online] Available: <http://bittersoutherner.com/rural-studio-turns-20/#.VxfsfnigqG9> [2016, April].

as well as structurally sound, and organize the construction process. Steve Badanes, a professor at the University of Washington and a well-recognized expert on design-build projects, wrote that “Sambo [Samuel Mockbee] taught his students not only to be visionary designers, but to be social, political and environmental visionaries as well.”¹⁰⁰ Mockbee’s approach to architecture through Rural Studio has been heralded by critics as a holistic methodology that promotes architecture as pedagogy and social activism, and his practices have been compared to those of Walter Segal, a twentieth-century architect who developed a system of self-build housing, thus enabling relatively unskilled people to build their own homes.¹⁰¹

In the past, Rural Studio has been responsible for the design and construction of individual homes as well as several community buildings. No neighborhood developments have emerged from Auburn’s student program; however, Rural Studio is a program rather uniquely dedicated to community development, and is therefore worthy of attention in this research paper. All projects reflect an acute sensitivity to location and the needs of the resident; ideals of sustainability and affordability are of top consideration as students design appropriate and low-cost housing structures.

Past housing projects have been both creative and wondrously effective. The Lucy Carpet House, for example, was constructed from 72,000 individual stacked carpet tiles, held together in compression by a heavy wooden ring-beam (Figures 23-25). The residence, which was part of a 2002 Rural Studio outreach project, is inventive in its design – a faceted tower incorporates both a bedroom (above) and a tornado shelter

¹⁰⁰ Moos, ed., 17.

¹⁰¹ Moos, ed., 1.

(below) into the design of the home.¹⁰² The use of unusual materials is common in Rural Studio projects. The Music Man house, a 2003 project completed by second-year students, incorporates “a menagerie of donated and found materials” – road signs, bits of metal, license plates – into its design to reflect the eclectic style of the man named Music Man.¹⁰³ Rural Studio homes are distinctly local. In a 2000 *TIME* article that discussed the Bryant House project, writer Daniel S. Levy noted that “Mockbee is an advocate of what is called “site specific” architecture, so he made sure that the [Bryant] home picked up qualities from the area’s cultural heritage, from its antebellum porches to the curves of silos. And in keeping with the studio’s philosophy of building with local and inexpensive materials, the students scavenged for supplies, gathering bales of hay for the walls and sheets of acrylic for the roof.”¹⁰⁴

The Christine Papercrete House, a 2005 thesis project located in Mason’s Bend, Alabama, incorporates two walls constructed from bricks of a specific mix (Figures 26 & 27). The mix is composed of local red clay/earth (70%), pulped newspaper (25%), and Portland cement (5%). After its creation, the mix was poured into cardboard boxes and dried to make “papercrete” bricks. As Amy Bullington, one of the student architects, explains: “This hybrid adobe mix, a simple modification to traditional brick making, requires few special skills and little equipment, and its high insulation value (R33 for a 30.5 cm wall) is attractive in terms of long-term client cost.”¹⁰⁵ The papercrete mix was

¹⁰² Rural Studio, “Lucy Carpet House” [Online] Available: <http://www.ruralstudio.org/projects/lucy-carpet-house> [2016, April].

¹⁰³ Rural Studio, “Music Man House” [Online] Available: <http://www.ruralstudio.org/projects/music-man-house> [2016, April].

¹⁰⁴ Daniel S. Levy “Alabama Modern: Samuel Mockbee creates homes for the poor that are cheap, practical – and unconventionally beautiful.” *TIME* 2 Oct 2000.

¹⁰⁵ Philip Jodidio *Green Architecture Now!* (Los Angeles: Taschen America LLC, 2009), 310.

developed around 1920 but is rarely used, and remains largely untested by builders. For this reason, the two papercrete walls of the Christine House are non-load bearing and protected by an overhanging roof.

The plan for the Christine House places a large front room immediately behind the dwelling's main entrance and porch (Figure 28). A narrow hallway runs through back end of the house, connecting bedrooms, bathrooms, and adjoining rooms (Figure 29). The home is decidedly modest and its design is economical in nature – a wind tower, for example, based off Middle Eastern designs, was placed over the kitchen of the house to encourage a natural airflow (Figure 30).¹⁰⁶

The Christine House is both sustainable and cost-effective in terms of its construction – but even more importantly, students studied the social patterns of Mason's Bend in an attempt to determine how the house could best fit in with its surroundings.¹⁰⁷ The dwelling is a study in purposeful community development, a goal that remains at the heart of all Rural Studio projects. Writer Nick Kaye, in an article celebrating the twentieth anniversary of Rural Studio, writes, “As the Studio has expanded, so has its ambition. Now, instead of doing things like building houses out of carpet tiles, [students] take on public-use projects like parks and Boys & Girls Clubs, the sort of work that can lift up entire communities.”¹⁰⁸ Much-needed civic spaces are constructed through the program – structures such as libraries, skate parks, chapels, baseball fields, and fire stations.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Kaye, “The Rural Studio Turns 20”

The Rural Studio website humbly submits, “We hope we have been a good neighbor and friend to the community.”¹⁰⁹ This statement from any other source would be both exclamatory and definitive. By all accounts, the Rural Studio program has had a profound and lasting impact on its local community. As Levy writes in his TIME article, “Rural Studio structures have transformed Hale County.”¹¹⁰

Residential community development is, as demonstrated in these Rural Studio projects, intimately tied to economic and environmental concerns. In Hale County, “green” construction is synonymous with low-cost building practices; affordable housing is defined by the low-income level of the community. Social challenges faced by residents of Mason’s Bend dissolve into questions of cost and sustainability.

The Rural Studio program demonstrates great sensitivity towards issues of economy, environmentalism, and – most importantly – community. The program’s projects serve as an ongoing and evolving response to community development in Hale County; as such, Rural Studio’s comprehensive approach to residential architectural is telling of what factors are important and effective in residents’ understanding of community. Although no singular neighborhood is available for evaluation, it is clear from past Rural Studio projects that residents value housing that fits their financial needs and demonstrates some sort of connection with the immediate landscape. The rural Alabama community is strengthened when individual housing projects are assessed and built in relation to site-specific social factors, such as the home’s proximity to community centers or other residents. Rural Studio projects like the Christine House accomplish

¹⁰⁹ Rural Studio, “Outreach”

¹¹⁰ Levy, “Alabama Modern: Samuel Mockbee creates homes for the poor that are cheap, practical – and unconventionally beautiful”

these goals by setting reasonable budgets, using local materials and forms, and evaluating housing sites for both social and environmental factors.

Chapter Nine Conclusion

Architects who engage in residential projects constantly grapple with environmental and economic concerns. Although these factors sometimes take precedence over community development, the most successful neighborhoods – the neighborhoods that produce the greatest resident satisfaction – incorporate ideals of sustainability, affordability, and community into one holistic design. While there is no single formula for effective neighborhood design, “good” neighborhoods have three elements in common.

Firstly, well-designed residential complexes recognize the importance of the individual. Frank Lloyd Wright employed a human scale in his structures, basing many measurements off the height of an average individual and thereby fostering an atmosphere within the home that was comfortable, intimate, and conducive to self-reflection. The Kentlands project of Andres Duany and Elizabeth Plater-Zyberk espouses a mission of “self-realization” – a goal that is achieved through mixed housing types and the cultivation of a vibrant social scene within the Kentlands community. Socialization between residents is encouraged through the use of pedestrian pathways, architectural features such as front porches and central entrances, and integrated civic or public buildings with semi-private spaces. The robust Neotraditional design leads to an individual sense of personal importance and purpose. Various exterior finish options are

available for homes within a unifying architectural code; Kentlands allows for individual expression while maintaining a strong sense of community. Similarly, Rural Studio projects are designed specifically to suit the needs of their client; the personalized homes recognize that no two families are alike.

The Levittown and Oriental Masonic Gardens projects fail to acknowledge individuality within the community – although unity is absolutely and unequivocally important in building a cohesive and happy community, a total lack of personalization is alienating for residents. Sterile homogeneity ultimately discourages residents and leads to general dissatisfaction.

Secondly, effective neighborhoods attempt to improve residents' quality of life by addressing financial concerns in conjunction with the dwelling's connection to nature. These two elements – environment and cost – are closely related, although they appear to require special consideration. Wright employed natural methods for heating and cooling his Usonian homes. He paid attention to solar pathways in order to maximize natural light and used materials that were sustainable. These design choices were made in an attempt to connect residents with their surrounding environment, and – it should be noted – were not necessarily fueled by concerns for sustainability. Nevertheless, these measures were inadvertently “green” and lowered the overall cost of the Jacobs house. Similarly, the Neotraditionalist approach to the car and community transportation is both economical and sustainable – by walking to nearby shops and community centers, homeowners save money, go green, and generate opportunities to build social relationships. Other transportation methods, like buses, are considered and integrated into the neighborhood design. Prefab projects recognize that sustainability and affordability go hand in hand; the

Rural Studio program, by virtue of the projects' limited budget, produces innovative houses that reuse, repurpose, or recycle materials in a notably sustainable manner.

All consumers appreciate a good deal – and consumers within the housing market are no different. Houses in the Levittown and Oriental Masonic Gardens developments were initially attractive for their low price. New production techniques and genuine concern for needy populations fueled these affordable housing complexes; however, these neighborhoods did not emphasize a connection to nature. The Levittowns were developed broadly and in response to automotive mobility; little to no attention was given to landscape and the overwhelming presence of cars did nothing to encourage residents' relationship with nature. Rudolph's project, comparatively, allowed homeowners little space. With limited space to experience nature, I conjecture that the residents of the Oriental Masonic Gardens were unsatisfied and frustrated.

Finally, the most successful residential developments strike a balance between public and private space. Neotraditionalist projects like Kentlands are designed to create socially integrated communities, where mixed-use buildings and a variety of housing types are intentionally laid out in a thoughtful and logical manner. Neighborhoods, when designed well, take into consideration the behavior, movement, and activities of residents – and are planned accordingly. Wright hoped for holistic community development and the integration of rural and urban spaces in his Broadacre City Plan, from which emerged his Usonian homes; DPZ implemented ideas of social integration on a smaller, more manageable scale. Rural Studio works tirelessly to develop community buildings alongside residential projects. While prefab homes are not commonly developed as

complete neighborhoods, prefab techniques and construction methods readily lend themselves to holistic community development.

Levittown and the Oriental Masonic Gardens, yet again, fail to meet this final requirement for “good” neighborhood design. Levittown residents are removed from immediate access to any shops or community centers; OMG homeowners are likewise isolated, as no building type other than residential is present in Rudolph’s plan.

Residential structures and their larger neighborhood plans respond to social, environmental, and economic factors that are both local and immediate in nature – in doing so, these architectural designs in turn shape residents’ sense of community. The design elements that most significantly affect this understanding address the importance of balance between individualization and cohesion in a community, the interplay between cost and sustainability, and the necessary mix of public and private space.