Kentlands:
A Case Study

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The theoretical foundation of the New Urbanism movement is based on a combination of *formal/aesthetic, environmental,* and *social* considerations. This case study identifies 22 objectives that dominate the existing literature on the New Urbanism and uses them to evaluate the *success* of one the largest and most comprehensive *New Urbanist* projects: Kentlands, in Gaithersburg, Maryland. The purpose of this study is not to criticize the validity of the objectives as represented in the literature; but rather to investigate the degree to which these design principles have been successfully implemented.

The results of this investigation indicate that the objectives most closely concerned with formal/aesthetic issues were implemented with the greatest success; while those most relevant to environmental and social issues have not been successfully implemented at Kentlands (see Figure 2). In most cases this is due to the weak relationships between residential districts of various densities and commercial uses; as well as the limited access to public transportation. Thus, the question must be asked: *is the New Urbanism genre just a utopian ideal or is it achievable???*

INTRODUCTION

Over the last decade the design principles and guidelines championed by the New Urbanism movement have gained increasingly wider acceptance among design professionals, home builders, and local governments throughout the nation. It seems that the wide appeal of the New Urbanism is that, *in theory,* it combines *formal/aesthetic, environmental,* and *social* considerations into one ideology. This politically correct *triad* has gained wide support based on its promise to cure the ills of our *isolated, automobile crazed, consumer culture.*

The impetus for this study was simply to see to what degree these design principles were being successfully implemented in general, and whether or not the environmental and social concerns, which are so strong in the rhetoric of the literature, were being successfully addressed. Through a review of literature written by leaders of the New Urbanist movement such as Andres Duany, Elizabeth Plater-Zyberk, Peter Calthorpe, Peter Katz and others, I identified 22 dominate design objectives. I evaluated the intent of these objectives and placed them in one of three theoretical categories: 1) formal/aesthetic, 2) environmental, and 3) social discussed above. The implementation of each of these 22 objectives at Kentlands was evaluated qualitatively and rated as *low, medium,* or *high* relative to the *typical* or *medium* condition. The medium condition was simply considered to be any condition which was clearly better than a typical suburban development in the study area region.

Kentlands was selected for this *post-construction* evaluation because it is one of the largest and most complete (constructed) example of a Traditional Neighborhood Development (TND). Construction of the 352 acre project began in 1989 and is nearing completion. The general design program at the Kentlands consists of approximately 1,500 residential units and 800,000 square feet of retail and office space as well as other community amenities such as an elementary school, a day care center, recreational center, and an arts center.

FORMAL/AESTHETIC CONSIDERATIONS

Eleven of the 22 objectives identified in the literature have the greatest significance relative to *formal/aesthetic* considerations. That is, while they may have environmental social aspects, they primary control formal concerns. They include: neighborhoods, green edges, corridors, spatial reinforcement, public and private domain, street network, alleys, building setbacks, street widths, on-street parking, and visual prominence of pedestrian routes. Each of these objectives is discussed below.

Neighborhoods

Neighborhood units should be created that are structured around defined centers and have clearly defined boundaries. Additionally, neighborhoods should be limited in size (approximately 1,300 - 2,000 feet from center to edge) to enable pedestrians to conveniently access community services and transit. Kentlands is said to be comprised of six neighbor-

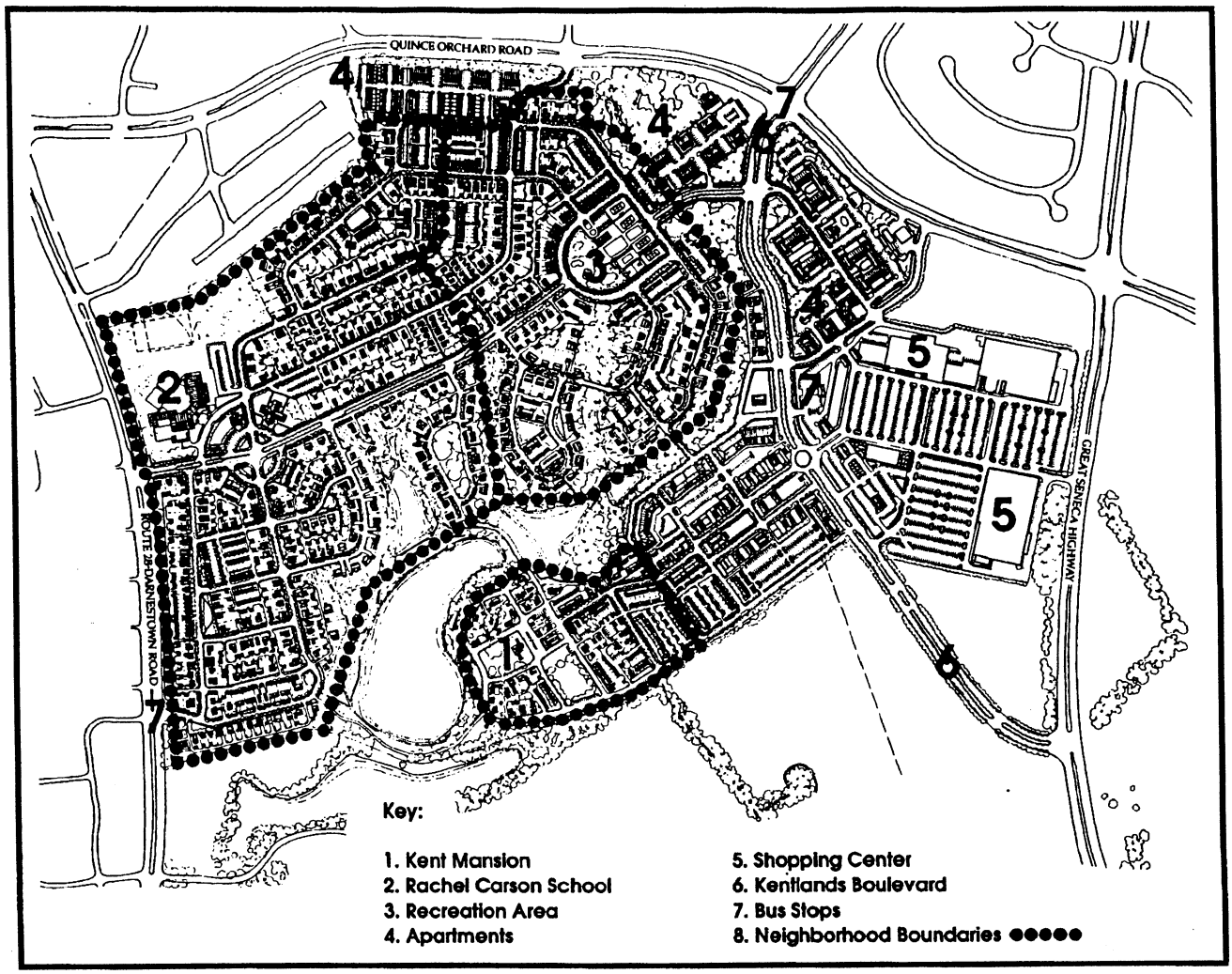

Fig. 1. Key Elements of Kentlands Project.

hoods, but effectively it seems to be more like three neighborhoods with some *leftover stuff:* apartments and a typical *big box* shopping center on the fringe (see Figure 1).

The three discernible neighborhoods areas are bounded by a mix of residential types and have fairly well defined edges that are appropriately scaled for the pedestrian. However, if these three areas are to be considered as distinct neighborhoods, then there are many apartments, referred to as *Beacon Place*, that are isolated from all of the neighborhood amenities. The Beacon Place apartments are *sandwiched* between a busy four-lane, divided boulevard and a 335,000-square-foot shopping center. Thus, the overall degree of successful implementation of this objective is *medium.*

Green Edges

Publicly accessible, green neighborhood edges or boundaries should be created throughout the community. These green spaces should be an integrated part of the neighborhood design, not residual space that is unusable. The edge conditions located near the roadways to the west of the Kentlands site have a questionable degree success; however, the remaining mixture of edge conditions throughout the neighborhoods are very strong. While the three distinct neighborhoods which exist have relatively successful *green edges*, the Beacon Place apartments and the shopping center have no relationship to the system of edges that exist throughout the rest of the site. Thus, the degree of success of this design objective is *low.*

Corridors

When corridors, such as highways and rail-lines, exist, they should not only be used to define neighborhoods, but to simultaneously connect them. This can be achieved by reinforcing corridors with elements that are pedestrian in scale and speed (sidewalks with shops or reinforced vistas) as well as that of cars, the dominant mode of transportation. Kentlands is isolated by three busy roadway corridors on its perimeter (Route 28, Route 124, and Great Seneca) and is divided internally by Kentlands Boulevard. While these four roadway corridors create strong boundaries, they are not points at which anything new, such as a pedestrian connection, begins. These corridors, although they have sidewalks, are only for automobiles and have no pedestrian relationship of any kind. Therefore, the degree of successful implementation of this

objective is *low*.

Spatial Reinforcement

Once boundaries and edges have been established to define spaces within the community, they should be reinforced with architectural and landscape elements such as: buildings, trees, walls, and fences. The implementation of this objective must be evaluated at a variety of scales which range from the overall site to that of the individual lot. At the macro scale, the reinforcement of spatial boundaries at Kentlands has been addressed fairly successfully. Most of the streets at Kentlands have been heavily planted with street trees and most of the buildings have shallow setbacks from the street line to strengthen its form. At a more private scale, front porches, stockade fences, and picket fences, as well as other architectural treatments, have been liberally employed throughout the entire site. These devices are used primarily in two ways: to establish a clear distinction between public and private space, and to create a privacy gradient between the street and adjacent properties. These treatments have been very successful and the overall degree of successful implementation of this objective is *high*.

Public and Private Domain

Neighborhoods should be created which are structured by, and give priority to, public (civic) space. This should result in a condition where all civic buildings are powerful statements that make a unique contribution to the neighborhood. All other buildings should simply become part of the community fabric. The three neighborhoods that are centered around the Rachel Carson Elementary School, recreation center, and cultural center (the Old Kent Mansion) have in most cases done a fine job of creating fabric. The density, scale, and rhythm of the neighborhoods creates inhabitable space. If the three neighborhoods were evaluated independently they would be *exceptionally successful*. However, the apartments and the shopping center at the periphery are so out of scale with the rest of the community that the overall degree of successful implementation of this objective is *medium*.

Street Network

A hierarchical network of fine-grained interconnecting streets which disperse neighborhood vehicular traffic and shorten pedestrian routes should be created. Kentlands has a hierarchical street network that ranges in scale and character from tree lined boulevards to small one-lane service alleys. This hierarchy in conjunction with the creation of private and public domains orders the community. In most of the neighborhoods, this system has created a regular pattern of streets and alleys. This enables the separation of public and service spaces which further reinforces the neighborhood hierarchy of spaces. Once again, the apartments and shopping centers are aberrations that have not been treated with the same degree of care as the rest of the community. Nonetheless, even these areas fall within an overall hierarchical order that works toward the goal of diffusing traffic congestion. Therefore, the degree of successful implementation of this objective is *high*.

Alleys

Neighborhoods should be serviced by alleys with curb-lines uninterrupted by driveways. The neighborhoods at Kentlands are serviced by a street and alley system. Not only does this system transform the street edge into an uninterrupted pedestrian corridor, the alleys themselves create very intimately scaled, semi-private spaces where automobiles are tamed by the narrow cartways (10'-12'). These alley spaces become the domain of the immediate area which they service and are utilized as paved extensions of backyards. They are places where young children skip rope while parents do chores in the garage. The alleys are not employed in the areas of the community where the apartments and shopping center are located. Nevertheless, their employment throughout the balance of the site is so effective that the overall degree of successful implementation of this objective remains *high*.

Building Setbacks

Setback distances between the street-lines and the fronts of buildings should be reduced to create a well defined public corridor. The residential fabric that has been created at Kentlands is based primarily on shallow building setbacks from the street-line. Shallow setbacks are not employed in the areas of the community where the apartments and shopping center are located. Nevertheless, their employment throughout the balance of the site is effective. The overall degree of successful implementation of this objective is *high*.

Street Width

Narrow street widths should be used to reduce the speed at which automobiles travel and their subsequent dominance of public corridors. In many cases, two-way streets at Kentlands that do not have on-street parking are less than 20 feet wide. The only street that is wide and designed to allow faster moving traffic is Kentlands Boulevard which separates the three neighborhoods from the apartments and the shopping center. This creates a barrier for pedestrian movement between these respective areas of the site. The overall degree of successful implementation of this objective is *high*.

On-Street Parking

On-street parking should be utilized to create an effective buffer along street edges between pedestrians and automobiles. On-street parking is used very effectively throughout the three neighborhoods. However, the majority of the parking that exists at Kentlands is associated with the apartments and the shopping center. These parking areas are very large and do not provide any buffer between pedestrians and automobiles. They are dominated by automobile traffic and are not conducive to pedestrian movement. Therefore, the degree of successful implementation of this objective is *low*.

Visual Prominence of Pedestrian Routes

Pedestrian routes should be established which are visible from all streets. Sidewalks are located along every street at Kentlands. In addition there are pedestrian easements between houses in some areas which traverse steep slopes where streets could not be built. Pedestrian easements are also used in some areas to make intermediate connections between alleys and streets. These easements are usually visually reinforced with fences and lighting. The overall degree of successful implementation of this objective is *high*.

ENVIRONMENTAL CONSIDERATIONS

Six of the 22 objectives identified in the literature have the greatest potential to impact to environmental concerns. They include: urban growth boundaries, growth and form, permanence, water conservation, energy conservation, and habitat protection. Each of these objectives is discussed below.

Urban Growth Boundaries

Communities should establish boundaries within which all growth will occur. These boundaries should protect significant natural resources by planning for long-term growth and discouraging sprawl. The end result should be a framework in which an efficient urban fabric can grow and be serviced by transit without compromising the environment. The long-term preservation strategy for culturally and historically important buildings and the landscape of the old Kent Farm (Kentlands site) is strong. But the lack of consideration with regards to transit in the design taints the overall success of the project; thus, reducing the otherwise high degree of successful implementation of this objective to *medium*.

Growth and Form

Community growth policies should be coordinated with the design of transit systems so that development occurs only in potentially serviceable areas. Kentlands is located within the Interstate 270 corridor that links Frederick, Maryland to Washington, D.C. This intensely suburbanized region has developed due to its proximity to the capital and the presence of the interstate highway system. Although a commuter rail system parallels many stretches of I-270, it is not integrated into the suburban communities. Kentlands has no true link to transit. With the metro system within striking distance, this would have been an excellent opportunity to create a satellite station surrounded by commercial and civic uses. Instead, Kentlands is relegated to the role of a large suburban residential community (1,500 units of housing) that is accessed almost exclusively by automobile commuter traffic. Successful implementation of this objective is *low*.

Permanence

An urban framework should be created that is designed and constructed to endure many generations; thus, establishing a basis to record the history and *meaning* of a place. This not only means that buildings should be constructed of durable materials, it also means that they must be designed such that they are capable of evolving and accommodating a variety of uses over time. The design of the commercial space (shopping center) at Kentlands is designed to be generic *flex-space*. This approach is reasonable with regards to leased spaces under 10,000 square feet; however, the shopping center at Kentlands is comprised of four *big-box* anchor spaces, such as K-Mart, that may not be reusable due to their immense size. Additionally, the materials and techniques used to construct both residential and commercial buildings at Kentlands are, in general, not of a quality that is capable of enduring generations of use; perhaps not even a single generation.

While a great deal of money, materials, and effort have been put into creating residential facades, the remainder of the construction, in most cases, is not of high quality. The typical single-family detached homes have well crafted and detailed facades, but as soon the corner is turned away from the street the quality of materials, craftsmanship, and detailing decrease dramatically. Therefore, the degree of successful implementation of this objective is *low*.

Water Conservation

Maximizing both the efficient use and recharge potential of groundwater are central to effective water conservation. Buildings should utilize water saving fixtures such as toilets with smaller tank reservoirs and efficient shower heads. Additionally, measures such as the use of down-spout seepage beds and the reuse of household gray-water should be utilized to reduce surface water runoff and increase the recharge the site's water table. There are seven construction companies that built homes at Kentlands. The standard *units* built by these companies do not have water saving fixtures or devices. The buildings at Kentlands do not utilize gray-water recycling, nor do they use seepage beds for the disposal of roof drain runoff. All wastewater goes into a single public sewer system and leaves the site. The degree of successful implementation of this objective is *low*.

Energy Conservation

The design of the community should decrease energy dependence by reducing the need for automobile transportation creating opportunities for people to walk. Buildings should incorporate at least two building systems that consciously utilize techniques for daylighting, solar heat/energy, shading for peak heat gain, natural ventilation, and/or secondary use of waste heat, water, etc.

The Traditional Neighborhood concept utilized to design Kentlands is supposed to increase pedestrian opportunities; thus, saving energy among other things. Unfortunately, the concept has not been well implemented. The only real destinations that are within *neighborhood boundaries* are the school, recreation center, and cultural center; and even these are not convenient for many residents. However, the greatest problem is lack of convenient access to retail uses. Additionally, there is a lack of access to transit. There is only one transit (bus) stop that is even marginally within Kentlands, the other two bus stops are located on the perimeter of the community.

The buildings at Kentlands do not consciously utilize systems and techniques which take advantage of daylighting, solar heat/energy, shading for peak heat gain, ventilation, and/or secondary use of waste heat, water, etc. Although most of the residences have large, operable windows that create benefits such as natural light and ventilation, these features are utilized for aesthetic purposes and have not been implemented in a manner that maximizes their performance. The condition is the same for other features such as front porches and window shutters which have incorporated as a stylistic component and not to protect fenestration from the elements. These kinds of *traditional* components could have been designed to maximize their traditional function instead of simply being used a symbol. The degree of successful implementation of this objective is *low*.

Habitat Protection

Neighborhood boundaries should be created to protect and preserve unique and high quality natural habitats. The neighborhood and community boundaries established at Kentlands have been very effective at preserving the most sensitive and unique natural habitats on the site such as the large ponds, wetlands, mature woodlands, and hedgerows. In addition to protecting the environment to promote natural diversity, the Kentlands master plan protects and respects the landscape that comprises the core of the Kent Farm estate. By respecting the space immediately surrounding the estate mansion and the adjacent pond, the master plan assures the preservation of this local cultural and historical monument. Therefore, the degree of successful implementation of this objective is *high*.

SOCIAL CONSIDERATIONS

Five of the 22 objectives identified in the literature have the greatest potential to impact to social considerations. They include: integrated use neighborhoods, residential mix, connections, transit location, and short walking distances. Each of these objectives is discussed below.

Integrated Use Neighborhoods

Neighborhoods should have a variety of institutional/civic, commercial, and residential uses that are integrated into a single fabric. The three distinct neighborhoods at Kentlands are comprised of a variety of single-family residential mixes. Unfortunately, these neighborhoods do not include any retail uses, professional services, or transit. As for the Beacon Place apartments and Kentlands Square shopping center situated outside the boundaries of the three neighborhoods, they are *monospecific* use zones and are the most dramatic missed opportunities at Kentlands. The degree of successful implementation of this *low*.

Residential Mix

The variety of housing types within a single neighborhood at Kentlands is much greater than that of a typical suburban neighborhood. However, the design of the community falls short of integrating apartments into the neighborhoods; they remain segregated on the periphery. Additionally, even when viewed as an entire community, Kentlands does not provide a full range of economic options. As of August 11, 1995, the ranges of prices for housing types at Kentlands were as follows: a) single-family detached = $221,900 - $535,000, b) townhouses = $226,900 -$289,900, and c) apartments = $845 - $1,415 (per month rent). This range of prices excludes many lower-middle to low-income socioeconomic groups. Therefore, the degree of successful implementation of this objective is *low*.

Connections

A network of transit, sidewalks, and public spaces should be created which unify the community. Kentlands has an extensive network of sidewalks and hiking/jogging trails that facilitate pedestrian movement throughout the entire site. Although, the pedestrian network does extend to the apartments and shopping center on the periphery, the project is dominated by the automobile is not pedestrian friendly. Additionally, the lack of convenient public transit make the degree of successful implementation of this objective *low*.

Transit Locations

Transit stops should be located in the center of neighborhoods near other community services that are within a convenient walking distance of all residential areas. The only transit system that serves Kentlands is the Montgomery County Ride-On Bus Line which has two stops on the perimeter of the community and another near the shopping center. The two stops on the perimeter are isolated from all other community services and have no amenities associated with them. The stop at Kentlands Boulevard and Booth Street, while being closer to services is not truly integrated within the retail district of the site. All three stops are simply designated by the use of small signs with posts embedded in the sidewalk. Transit's lack of identity and recognition within the community decreases its effectiveness. The degree of successful implementation of this objective is *low*.

Short Walking Distances

A variety of services should be available to pedestrians within a maximum walking time of five to ten minutes (1,300 to 2,000 feet). The services that are available to most of the community within a reasonable walking distance are very limited. This is especially true with respect to the availability of goods and services such as a food store or a dry cleaning/ laundry business. These kinds of services have not been incorporated into the neighborhoods and are only available at the Kentlands Square shopping center. This creates a situation where, due to the distance as well as the automobile dominated character of the shopping center, most residents will drive instead of walking. Transit stops are also located

Formal/Aesthetic	Environmental	Social
Neighborhoods *Medium*	Urban Growth Boundaries *Medium*	Integrated Use Neighborhoods *Low*
Green Edges *Low*	Growth and Form *Low*	Residential Mix *Low*
Corridors *Low*	Permanence *Low*	Connections *Low*
Spatial Reinforcement *High*	Water Conservation *Low*	Transit Locations *Low*
Public and Private Domain *Medium*	Energy Conservation *Low*	Short Walking Distances *Low*
Street Network *High*	Habitat Protection *High*	
Alleys *High*		
Building Setbacks *High*		
Street Width *High*		
On-Street Parking *Low*		
Visual Prominence of Pedestrian Routes *High*		

Figure 2. High, Medium, and Low Ratings of Objectives

too far away from most residences for convenient use. Therefore, the degree of successful implementation of this objective is *low*.

CONCLUSIONS

As shown in Figure 2, the design objectives which have been implemented the most successfully at Kentlands are those related to formal/aesthetic considerations; while those most relevant to environmental and social considerations have been least successfully implemented. In general, the success of the objectives that received low ratings could be improved by addressing the following issues: 1) integrating multi-family and single-family housing types; 2) integrating residential and commercial uses in each neighborhood; 3) integrating transit systems at both the regional and neighborhood scale; 4) providing truly affordable housing types; and 5) establishing resource and energy conservation design standards and strategies. Although these concerns are specific to the Kentlands project, they are characteristic of many of the TNDs designed by Andres Duany and Elizabeth Plater-Zyberk (DPZ).

One of the greatest impediments to creating more dynamic and integrated communities has been convincing local governments to amend their *1965ish* zoning ordinances. DPZ has been very effective and influential in this capacity; due primarily, I believe, to the promise of improving the environmental and social fabric of communities at large. Their TND model ordinance has gained its reputation as a progressive alternative *on the backs of gated, executive subdivisions.* Here lies the danger: the concepts forwarded by the New Urbanism movement offer great possibilities for improving the quality of our future communities. However, if environmental and social considerations are not really being addressed, the movement risks being classified as *utopian.* In order for local communities to continue to make progressive zoning reforms they need good examples. I believe that it is the responsibility of the design community to insist on a higher level of environmental and social performance, and to avoid simply making *good-looking sprawl*!!!

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