A Variation of the New Urbanism:  
Provision of a Public Realm for the City of Attleboro, Massachusetts

by

Jeong Jun Ju

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M.S. Architecture  
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Signature of Author: ________________________________  
Jeong Jun Ju
Department of Architecture  
May 1997

Certified by: ________________________________  
Roy Strickland
Associate Professor of Architecture  
Thesis Supervisor

Accepted by: ________________________________  
Roy Strickland
Associate Professor of Architecture  
Chairman, Department Committee on Graduate Students
Thesis Readers:  Michael Dennis, Professor of Architecture
               John de Monchaux, Professor of Architecture and Urban Planning
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Submitted to the Department of Architecture on May 9, 1997 in Partial Fulfillment of the Requirements 
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ABSTRACT

Born as a reaction to the large suburban development patterns, the New Urbanism has played a role in bringing reconsideration to our built environments for more than a decade. Its ideals and visions can have feasibility through various forms such as housing developments, town center developments, or redevelopment of existing downtown or deteriorating industrial, or commercial areas. However, its implementation has largely depended on new town developments. Through the new town developments, the New Urbanism has revealed some limits and been criticized for them. Under this circumstance, recognizing its values for our environments, this thesis attempts to apply the ideals to existing built environments, expecting that the incorporation of its ideals into reality can facilitate its ideals to be evaluated and modified. For its testing ground, Attleboro, Massachusetts, is selected because of its opportunities for the application of the New Urbanism and the needs of a revitalization of the downtown area of the city. Determining that the New Urbanism’s primary goal is to provide and enhance a public realm, this thesis examines how the New Urbanism has conveyed its ideals to establish public environments. From the examination, three models, “Networks, Spatial Sequence, and Activities,” are designed to facilitate the New Urbanism’s application to existing urban structures. Through the application process such as the models’ initial superimposition on the site and further development process from the initial experiments, possible ways to apply the New Urbanism to downtown Attleboro are detected. Based on the result of this process, feasible ways not only to reinforce public environments and improve public life for Attleboro but also to reexamine and remodel the New Urbanism can be determined. Thus, this thesis has attempted to answer the questions: What are the ways to apply the New Urbanism to existing built environments and how can the application facilitate the New Urbanism to be more applicable and viable?

This thesis is composed of seven chapters. The first chapter is an introduction of this thesis. The second chapter is a background of this thesis. The third chapter as a theoretical background discusses the thesis approach and methodology. In the fourth chapter, through case studies of New Urbanists’ projects, models are built to facilitate the New Urbanism’s application to existing built environments. The fifth chapter as an actual application phase shows experimental processes of applying the models to the site. In the sixth chapter, design proposals are discussed and guidelines to maintain the design intents are suggested. The seventh chapter as a conclusion discusses the ways to realize the ideals of the New Urbanism for our built environment and its feasibility as a paradigm, not a fashion.

Thesis Supervisor: Roy Strickland, Associate Professor of Architecture
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1. Introduction

1-1. Background of the Thesis

The suburbanization of American cities since World War II has meant the uncontrolled sprawl of a built environment, which was largely composed of low-density single-family detached houses. This phenomenon, encouraged by the cooperation between the government, real estate developers, and financial institutions, resulted in inefficient and largely automobile dependent spatial structures. The suburban spatial structures have caused various social, economic, and environmental problems.

In response to this circumstance, various alternatives have been proposed in an effort to transform the suburban built environment. With the necessity of more concentrated development, a group of architects and planners have developed several concepts such as Pedestrian Pocket, Transit-Oriented Development, and Traditional Neighborhood Development. These development types are generally regarded as Neo-traditional Development or New Urbanism. The goals of these development types are to establish the pedestrian-friendly environments through denser and mixed-
use, and other various building types, to recover the sense of community, to discourage the use of private automobiles, and to encourage the use of public transportation.

The New Urbanism has prevailed through more than a hundred developments in the United States since Seaside, Florida, designed by Duany and Plater-Zyberk in the early 1980s, first attracted national attention. Parallel to this popularity, the New Urbanism has also been criticized by various disciplinary groups. The criticisms or limits of the New Urbanism can be summarized as follows. First of all, the new towns or communities implemented by the New Urbanism do not solve the social issues as much as the New Urbanists claim because of the economic logic system of the practical world. Several built projects on green fields have shown less diverse housing types, difficulties to attract employment centers, businesses, or retail, and use of superficial architectural styles. In particular, one criticism is that this new movement tries to apply characteristics of streetcar suburbs to contemporary situations, even though social, economic, and physical aspects are obviously different. Thus, in terms of the New Urbanists' use of architectural style or spatial forms, their projects are mentioned as disguised suburbs. The other limit involves the issue of public transportation. That is, an installation of public transportation such as a light train needs considerable cost, and despite the investment, the range of use cannot be so wide and diverse as automobiles, so the effect could be limited. Especially, it has been agreed that the American preference for automobiles is so strong that they will not easily give way to public transportation without unavoidable reason. Like this, there are various problems that the New Urbanism has to overcome to realize its ideals.

1-2. Approach of the Thesis

Recognizing the New Urbanism's feasibility to become a paradigm for human environments, this thesis will re-examine the concepts of the New Urbanism and find how the New Urbanism can be embedded more practically into our built environment. Understanding that the primary goal of the New Urbanism is to foster a sense of community through the retrieval of the public realm, this thesis will focus more on its
ways to establish the public realm. That is, this thesis will search for ways of applying the New Urbanism to provide public life in existing spatial and physical structures.

Most developments of the New Urbanism have been a kind of isolated entities remote from existing built environment. This feature has played a negative role in the realization of the New Urbanism to build a community mostly because of the private developers' demand for marketability. In the course of the New Urbanists' pursuit for authenticity in an effort to establish identity, the marketability of development has led to the use of superficial architectural styles, which often causes homogeneous character rather than authenticity. For this reason, some projects have been criticized as a provision of packaged or instant image. In this respect, this thesis takes a different approach to suggest a way that the New Urbanism can be more valid and more applicable. That is, this thesis, through the application of the New Urbanism into existing spatial structures of suburban communities, explores the ways to reach the goal of the New Urbanism, establishment of the public realm and provision of the sense of community.

The application of the New Urbanism into existing built environment can be advantageous and effective in various ways. The first is exploiting the existing resources such as public transportation, memorable civic structures, existing commercials and businesses, underutilized lots and buildings, or not only existing physical structures but also various social structures. Besides, this application can introduce non-profit organizations such as a town planning committee or neighborhood organization, excluding, in some degree, private developers whose purpose is usually to make a profit by building a community. The other is that this application can provide an opportunity to explore how authenticity of a place can be materialized into physical and spatial forms in providing identity, which is crucial for the sense of community. With these opportunities, this thesis can find another way to reach the ideals of the New Urbanism.

In order to facilitate the application of the New Urbanism to existing urban structures, models will be built through case studies, which focus on the analyses of projects' strategies to structure the public realm. These models can be regarded as design principles. As a site for the application, Attleboro, Massachusetts is selected, which is an old, small industrial
city located 32 miles south from Boston, showing a combination of urban and suburban characters, and evidences of deterioration through underutilized lots and buildings in around the downtown area, and also relatively new, identifiable civic and public structures. Through a process of the application of the models to the site, design proposals to enhance the public realm and guidelines to maintain their intents are suggested. This process can be regarded as a basis to lead to a variation of the New Urbanism. Thus, finding a way to enhance the public domain through the application of the New Urbanism to existing urban structures is a main purpose of this thesis, and this can, at the same time, be a way to find how to make the New Urbanism, whose intention is to create a more viable community with identity and authenticity, more applicable and valid.

1-3. Scope of the Thesis

This thesis is composed of seven chapters. The first chapter is an introduction of this thesis. The second chapter as a background of this thesis describes why the New Urbanism was generated, what the New Urbanism is, and criticisms or limits of the New Urbanism in transforming the suburban development pattern. The third chapter as a theoretical background discusses the thesis approach and methodology. In the fourth chapter, through case studies of new urbanists’ projects, models are built to apply the strategies of the New Urbanism to establish the public realm into existing built environments. The fifth chapter as an actual application phase shows experimental processes of applying the models into the site and then, through re-examination of the first design, revised design is proposed. In the sixth chapter, final design proposals are discussed and guidelines to maintain the design intent are suggested. The seventh chapter as a conclusion discusses the ways to realize the ideals of the New Urbanism for our built environment and its feasibility as a paradigm, not a fashion.
Figure 1-1. Thesis Structure

Floors: Suburban Sprawl

Floors: The New Urbanism

Floors: Limits of the New Urbanism

Floors: Models: The New Urbanism's Strategies to Provide Public Environments

Floors: Application of the New Urbanism to Existing Built Environments

- Thesis Purpose:
  Through the application of the New Urbanism to existing built environments, this thesis attempts to find answers to questions: what are ways to apply the New Urbanism to existing urban structures and how the New Urbanism can be more applicable and viable.

Floors: Models: Design Principles

Floors: Application

Floors: Design Process

Floors: Guidelines

Floors: Site: Attleboro, MA.
In this thesis, the term, the New Urbanism, is regarded as the two development types—Transit-Oriented Development by Peter Calthorpe and Traditional Neighborhood development by Andres Duany and Elizabeth Plater-Zyberk.


Heidi Landecker, “Is New Urbanism good for America?” p68.
To understand suburbanization, values and beliefs deeply ingrained in Americans should first be discussed: Agrarianism. The roots of this ideal stem from the Jeffersonian democracy with its emphasis on the healthful farming life in the small agrarian community of equal participation and control over local government. Agrarianism, celebrating privacy of rural life, viewed cities as a symbol of inhumanity with class division, social inequity, and disorder.

Agrarianism undoubtedly dominated the early American urbanism. To eliminate social inequities and dignify the rights of man, according to Jefferson, every settler should be given acres of land. He strongly believed that the individual ownership of property provided the primary basis for American democracy. His belief was transferred into the world through the grid plan, which, to Jefferson, was regarded as the most effective and efficient way. On this grid plan, American social, cultural, political, and economic values...
have intertwined and been inherited by Americans. Thus, the
great majority of American towns of the nineteenth century
evolved and developed on the grid plan, being independent
and autonomous with their strong locality. Sometimes, the
grid was modified through physical transformation, but the
implications of the grid have existed under the built environ-
ments of America.

2-1-2. Suburban Sprawl

The main impetus to modern American suburbanization came
at the end of World War II, even though the outward expan-
sion of American cities has a much longer history. The
dramatic movement to the suburbs was encouraged by public
policy, financial assistance, and the response of the private
sector of the building industry and business in general to
these encouragements.²

In 1927, the constitutionalization of single-use zoning for
protection of the health and safety of a community justified
the separation of residential, commercial, and industrial-uses.

This single-use zoning became the basis of all comprehen-
sive zoning and planning in the United States, and this
Euclidean zoning is the prime land-use regulating character-
istic of sprawl.³ During the Depression of the 1930s, to
stimulate economic growth and building activity, the Na-
tional Housing Act was adopted in June, 1934. To facilitate
home financing, the FHA provided insurance for long-term
mortgages, up to 30 years. Due to the policies, the market for
home ownership was dramatically expanded. The FHA’s
minimum standards for home construction created uniform
housing patterns during unprecedented sprawl. In 1937, the
establishment of the Federal Highway Administration and the
subsidy from the Federal Government through a tax on
gasoline encouraged massive highway building programs.
Highways became a symbol of progress and development.
Parallel to the expansion of highways, suburban sprawl was
also accelerated.

After World War II, the return of veterans with accumulated
savings required huge amounts of new housing as well as the
return of women to the new homes as housewives from their
wartime working experiences. There was sustained propa-
ganda in favor of suburbs, focusing especially on the role of women as guardians of little suburban houses, rather than as members of the work force. The baby boom and growth of larger families also required new housings. Cheap land was rapidly turned to suburban bedroom communities everywhere. Industries after the war needed to maintain their production capacity, and the increase of new housings played a role for the industries in terms of consumption of products. In particular, the provision of television played a critical role to make suburban housewives most promising consumers. Thus, the growth-oriented economic principles created a high private-consumption society through suburbanization with the strengthened FHA programs. Meanwhile, as the cities deteriorated further, the move to the suburbs proceeded at an ever great rate. Living in the suburbs with one or two cars and a variety of new appliances became the definition of the good life.

Following the exodus to suburbs, the suburbanization of commerce and industry has accelerated since the mid-sixties and its intensification in the 1970s has reshaped the economic geography of the metropolis. The suburbanization of employment, not only in manufacturing but increasingly in office-based tertiary industries, has also played a considerable role in suburban sprawl.

2-1-3. Negative Effects of Suburban Sprawl

The suburban sprawl has meant an unprecedented consumption of land and energy. The prosperous economic growth in the 1950s made the high consumption level possible, and had a significant impact on built environment. The standard of living, based on the number of cars and the size of houses indeed increased dramatically during that period of time. The economic policies to create market demands since the New Deal Era caused serious social, economic, and environmental problems throughout the suburban as well as urban areas.

The sprawl pattern, in which goods and services are scattered throughout the region, requires millions of highway miles to link all areas. The highways built by the conventional hierarchical road-system have produced excessive congestion, waste, and air pollution. Furthermore, the spatial pattern
of suburbs has made the automobile necessary for even the most basic of daily requirements. The necessity of more than one automobile per a household and the cost to maintain them have been an economic burden on family budgets. This automobile-dependent spatial structure is also regarded as one of the major causes for losing the sense of neighborhood or community by reducing social interactions. The quality of not only public spaces but also public life has deteriorated physically, emotionally, and financially because of the automobile-dependent environment.

In sprawling suburbs, the lack of affordability of housings has been exacerbated by the increasing land prices from the diminishing supply of conveniently located land and the increasing cost for constructing and maintaining infrastructures such as highways, electricity or sewer lines. In addition, over the past two decades environmental concerns have also limited land use and increased its cost. The price of housing and cost of living have outpaced many personal incomes. The sprawled suburb has no longer responded to the needs of today’s households despite the changes of family structures to smaller and less traditional form. There have been more single parents and dual income families. During the last four decades bankers and builders have concentrated on building the single family detached house, despite the demographic shift to smaller households. As a result, many individuals and families are now experiencing serious difficulties in finding housing that meets their particular needs.

2-2. The New Urbanism

In reaction to the conventional suburban development pattern since World War II, a group of architects was formed in the 1980s, proposing alternatives to the suburban sprawl. They largely placed an emphasis on values of traditional small towns. Due to this attitude, their ideas were called Neo-Traditional Development or New Urbanism. However, their intent has been much more than the simple re-creation of traditional towns. Though the new urbanists have emphasized the application of the characters of traditional towns in current town design and planning, what they have really tried to do is to create a human built environment that satisfies a human scale, protects the natural environment, mitigates
traffic problems, and provides economic and social sustainability, so on.

One particular feature of this new trend is that design and planning of towns have been largely conducted by architects rather than planners. Criticizing existing regulations, they began to engage in writing codes or urban and architectural guidelines. This phenomenon can be understood as a reaction to their recognition that for more than five decades the neglect of urban environment by architects and the separation between design and planning disciplines have led to the problematic situation. Significantly, for the first time in the postwar era, a popular planning movement has been conceived, perpetuated, and proselytized by architects.6

As representatives of the New Urbanism, Duany and Plater-Zyberk’s Traditional Neighborhood Development and Peter Calthorpe’s Pedestrian Pocket or Transit-Oriented Development have attracted nation-wide attention. In spite of a little difference between these alternatives as the two different names indicate, these developments generally have: 1. higher than typical suburban density,

2. streets that are designed to encourage walking and street life while allowing a variety of path options to motorists and pedestrians,

3. a land-use mix that allows people to walk between residences, commercial businesses and employment areas,

4. a mixed-use core that may also serve as a public transit stop,

5. the establishment of a civic center,

6. a common open space intended for public use,

7. provision for socioeconomic diversification by including housing types for various income levels,

8. provision for a nearby employment center,

9. a distinct architectural character, and finally,

10. the fostering of a living community.7

With these ideals, the New Urbanism has been tested largely on the green fields across the country since the early 1980s. Some projects have developed successfully and some have not. Throughout this process for more than a decade, the New Urbanism has modified itself to be more applicable to the real world. The recent Congress of the New Urbanism shows a shift of interest from the new development on green fields
to the redevelopment of old, deteriorating downtowns, or industrial or commercial districts in suburbs.

2-3. **Limits of the New Urbanism**

The visions of the New Urbanism as a reaction against the conventional suburban development patterns have been acknowledged to be promising as an alternative for future growth and development by various groups such as traffic engineers, government officials, scholars, and developers. As the visions are realized through new towns or communities, limits of the New Urbanism in transferring its ideals into the practical world have emerged.

The first is lack of socio-economic diversity. It has been shown that the New Urbanists' projects have a homogeneous social composition because they are still bounded by the economic rules over housing and land price. Although new urbanists' efforts such as an introduction of diverse housing types, higher density, and mixed use attempt to rectify the segregation and encourage social interaction, they do not reach the satisfactory level of social diversity and integration, or affordability for more various classes of the American population. Some critics have argued that, far from solving race and class issues, the New Urbanism actually perpetuates social, economic, and racial divisions. Geographer Neil Smith has argued that Seaside, Florida, exemplifies a physical expulsion along lines of class, race, and gender that makes it quite impossible to indulge in the fantasy of resolving urban problems in this urbanized myth. 8

The second limit of the New Urbanism is about its architectural style or spatial form found in new urbanists' developments. One criticism is that their developments have shown rather rigid architectural visions that provide instant or superficial identity for a community through the control of built form. As a reaction to the anonymous sprawl of suburbia, the tendency has been for the designer to superimpose an image on a development to provide a scenographic setting that is fixed and unchangeable and that occupants and users cannot shape over time. 9 That is, pursuing the identity of a community produced an inclination of emphasis of the physical and spatial form over the social form. Critics of the
New Urbanism argue that new urbanists seem to understand the community as physical rather than social entities, as if community resulted from built form rather than from the people who inhabit it. In a way to seek and provide the identity of American suburban communities, the new urbanists regard the characteristics of streetcar suburban communities of the early twentieth century as a model for showing what a authentic community with its identity is. They try to transfer the image of the past model onto contemporary situations, even though social, economic, and physical differences are obvious. To developers, however, this image of a community could be attractive to ensure the financial success. Due to a developer’s demand for the marketability of the new development, some projects have shown the superficial use of architectural styles or spatial forms. For those reasons, new urbanists’ projects are, sometimes, denounced as disguised suburbs.\textsuperscript{10}

Another limit is about the regional issues such as public transportation or development patterns. For a success of the Transit-Oriented Development (TOD) concept, for instance, the linkage between TODs by the public transportation system is crucial. However, despite considerable investment in the installation of the public transportation, such as a light rail system, the range of use of the public transportation may not be so wide and diverse as that of automobiles, and the effect that designers or planners expect could be limited.\textsuperscript{11} Even though the public transportation system is built to make the connection between TODs possible, the use of the public transportation cannot simply increase. That is, in encouraging the wide use of the public transportation, there are various variables such as job and housing balance, distance between workplaces and homes. Before constructing public transportation, the question of how to make American’s implicit preference for automobiles give the way to the use of the public transportation should be first answered. In addition, the fact that most projects have largely been built on green fields as isolated entities with limited accessibility is one of the criticisms of the New Urbanism. That is, their development patterns have, in some cases, been understood as another sprawl.
Peter O. Muller, The Outer City. Temple University. p3.
3. A Variation of the New Urbanism

3-1. Public Realm of the New Urbanism

The New Urbanism’s ultimate goal is to establish a sense of community by providing public environments that can encourage casual social interaction and communication between neighbors. New urbanists believe that only the recovery of public environments can certainly generate a sense of community, which has been neglected and forgotten by the automobile-dependent suburban spatial patterns since World War II. In order to reach this goal, new urbanists have set forth various propositions or strategies in building a community such as denser and mixed use of land, and provision of public open space, civic center, commercial core, employment center and public transportation system. These strategies are designated to eventually encourage people to walk, rather than to use private automobiles by integrating diverse uses and activities. That is, what they try to do is encourage face-to-face contacts between neighbors by providing more chances to walk and walkable environments. Therefore, these various strategies can be regarded as key actors to improve public life, and then to facilitate the New Urbanism to reach its primary goal.
3-2. Application of the New Urbanism to Existing Communities

As an alternative to large scale suburban development, the New Urbanism has reminded us of the values of turn-of-the-century suburban towns. Even though there have been criticisms of the New Urbanism’s nostalgic tendency, the adaptation of the values of the past models is acknowledged to be instructive. Evaluating and applying those values require more careful attention to not only the real tradition but also contemporary physical, social, and cultural structures. That is, values of the tradition, such as scale, grain, the relation between buildings and streets, connectedness, and access to daily needs, should be analyzed, compared and transformed to satisfy contemporary needs, rather than merely trying to quote architectural styles. In this respect, an application of the New Urbanism to existing built environments can provide designers and planners with opportunities to rethink and deeply understand the traditional and contemporary physical or social characteristics. These understandings can make the New Urbanism more applicable and viable.

The application of the New Urbanism to the revitalization of existing built environments can lead to a collaboration of the public and private sectors. As long as new urbanists’ projects are controlled by private developers, the New Urbanism could be less successful to achieve its goals because its ideals can be thwarted by these private developers, whose purpose is usually to make a profit from building a community. In particular, in seeking an identity of a community, new urbanists’ critical attitudes of anonymous characteristics of the suburban built environments have led to an emphasis on architectural and spatial forms. However, new urbanists’ real purpose to use the architectural styles or spatial forms can be subverted when private developers try to use the concept for marketability of their developments. This universal use of architectural styles can cause a creation of a superficial image of a community, rather than an authentic image. In these respects, this application to the built environment can avoid these pitfalls by involving non-profit or public organizations such as a town planning committee or neighborhood organizations, excluding the private investment to some degree.
The shift from new town development to infill development can make strategies, which includes pedestrian oriented environments, more possible and effective by utilizing existing resources such as public transportation, memorable civic structure, and not only existing physical structures but also various social structures. That is, existing mixed socio-economic classes or retail and employment centers can be useful for new urbanists to realize their ideals of an integration of diverse uses and populations. Moreover, the application of the New Urbanism to redevelopment does not require considerable new residential or commercial developments. Therefore, outward expansion of the built environment can be lessened, and this application can achieve an optimum development status for towns or communities.

In addition, the concepts of the New Urbanism have been recognized by city planners or organizations interested in the revitalization of their communities. For instance, in revitalizing the downtown of the city of Attleboro, similar strategies have been used by a city planner and other organizations for the city’s physical and economic improvement. According to interviews with the planner of the city of Attleboro and a representative of an organization dealing with the revitalization of the downtown of Attleboro, they also try to provide more public environments to bring people to the streets and the downtown, and then they expect subsequent economic improvement through the creation of new businesses through expansion of retail or offices. This example shows that the ideas of the New Urbanism are acknowledged as necessary for transforming our built environments.

Thus, there are various advantageous points in applying the New Urbanism to built environments. This approach of the New Urbanism can be useful to realize its ideals, and make the New Urbanism more applicable and valid for human environments.

3-3. A Variation of the New Urbanism

Considering the various criticisms or limits of the New Urbanism, this thesis is attempting to find a way to reach the goal of the New Urbanism through the application to the existing built environment. In this thesis, the term “variation”
can have an implication of a process, which is determined by
an interactive relationship between the New Urbanism and
the selected site. (Figure 3-1)

In order to begin the process, models are built through case
studies on how New Urbanists have built a public realm in
their projects. These models can be regarded as initial
principles for establishing the public realm in the site. On the
other hand, the selected site itself has a meaning as a testing
ground to initiate the models’ transformations to be more
practical and applicable. For instance, the city of Attleboro
has characteristics of a traditional suburban city and a small
industrial city. The city’s own characteristics in terms of the
significance of its identity should be continuously respected,
while the application process of the models to the city is
going on. That is, reciprocal relationship between the ideas
and the city can provide a kind of middle ground, which can
satisfy ideas of the New Urbanism and the needs of the city.
Thus, through the interactive process interweaving the
models with the city’s existing social and physical structures,
the idealistic aspects of the New Urbanism can be alleviated
and the ideas of the New Urbanism can be imbedded.
Figure 3-1. Interactive Process between Models and Site

New Urbanism → Models

Site Analyses

Initial Design Concept

Alternatives

Design Proposals

Variation of the New Urbanism
4. Models of the New Urbanism

4-1. Case Studies

4-1-1. Traditional Neighborhood Development

Traditional Neighborhood Development (TND) has become an increasingly popular development strategy after the resort town of Seaside, Florida, was designed by Andres Duany and Elizabeth Plater-Zyberk (DPZ) in the early 1980s. Referring to their planning approach as Traditional Neighborhood Development (TND), DPZ drew their concept, TND, from the early 20th century American villages or streetcar suburban towns which were replete with architectural language, grid street pattern, formal public spaces, strategically sited public buildings and retail. Andres Duany said, “There is nothing radical about traditional developments,” and “The prototype is right under our noses and it is the traditional American towns of the early 20th century.”¹ That is, America’s nineteenth-century towns have been reborn as great models for today’s town planning by DPZ and their TND. The basic concept of TND is a rediscovery of values of American small-town urbanism. Thus, their projects are designated to provide people with more village-like atmo-
sphere and spatial and physical characteristics of the traditional towns.

This concept of TND is also generated as a reaction to the common and anonymous characteristics of the conventional suburban development patterns: suburban sprawl. DPZ are essentially radical critics of the suburban sprawl, and they see the sprawl was mostly caused by individualism and the private realm over the public realm. To them reintroducing the public domain within a community is a key to recovering the sense of community, which is a primary goal of TND. Their recognition that the suburban built environments discourage meaningful social interaction and encourage the spatial segregation of activities and social isolation spurred them to propose a different way of building suburbs. They assert that many of the ills of modern suburbs can be eliminated by returning to the kind of places -small towns-where people know one another and walk to the town center to buy a gallon of milk at the corner store.

The typical pattern of American towns can be described as an intimate scale, varied housing types, a mixed-use, geometrically defined center within walking distance, clearly defined public space, and an interconnected street network which adapts to existing conditions. In applying the concept of Traditional Neighborhood Development to a series of projects such as Seaside, Windsor, Kentlands, and a village near Annapolis, DPZ’s use of those urban components in various ways makes them distinguished. The street network modified by a radial and concentric pattern shows similar physical characteristics of American towns (Figure 4-1) and recalls the City Beautiful and Garden City Movements.

Figure 4-1. American Traditional Towns

2
In addition to the American traditional towns, Hampstead Garden Suburb (Figure 4-2) planned by Parker & Unwin and Letchworth (Figure 4-3), First Garden City, planned by Ebenezer Howard and Parker & Unwin, can be discussed as models for TND, in terms of physical and spatial characteristics.

In general, the geometrical configuration of centers and enclosed places, their spatial sequences, and the street networks diverging from the center are embedded in the TND projects’ spatial structure. Especially, Leon Krier and Raymond Unwin’s theories in designing towns have considerable influence on the DPZ’s work.
As design and implementation strategies, DPZ developed the Design Charrette and architectural and urban codes. The direct interaction amongst the collaborators such as engineers, consultants, planners, administrators, local officials, designers, and the public improves communication, veriﬁcations and results in a uniﬁed scheme. Recognizing that communities are complicated organic systems, DPZ has developed methodology for town planning to solve the inherent complexity. As a planner and designer, DPZ uses codes as a tool to regulate and manage not only the building types but also the consistency of the master plan. Throughout DPZ’s projects, the codes are intended to create urban quality, the public realm, through deﬁning building types and uses. The codes together with the charrette are designed to help the town to be a viable organization, and to encourage physical and social variety while ensuring harmony, which is required for the identity of a community.

Seaside

Seaside is built on eighty acres that fronts the Gulf of Mexico in the Florida panhandle. The location of Seaside (Figure 4-4) is fairly remote to large metropolitan areas. The closest urban area is New Orleans, and Miami can be regarded as a considerable driving distance. However, these locations are over hundreds of miles from Seaside. This remoteness worked as a critical part for Seaside’s successful implementation.

Seaside’s projected population is about 2000 with 350 houses and about 300 other dwelling units, including apartments, outbuildings and hotel rooms. About thirty mixed-use
rowhouses and fifty thousand square feet of commercial space will serve adjoining communities as well as Seaside. Its principal public facilities include a school, a town hall, an open air market, a tennis club, a tented amphitheater and a tiny post office. The homes, services, and beach can each be reached by a walk of less than ten minutes duration.

Seaside was developed by Robert Davis, who is owner of the land. After Robert Davis decided to develop the land, he and Andres Duany traveled old southern towns to find what makes them work so well. They made up a design approach for the new development based on what they observed in the travels and research on the traditional towns. Plater-Zyberk credits Seaside’s viability as a model for other new developments as a result of the extensive research undertaken in collaboration with the firm’s client, developer Robert Davis.  

Seaside can be regarded as the first representative for DPZ’s concept, which resulted from what they had observed in many aspects of contemporary suburban life. In Seaside, they place a priority on public space over private space. They define the town’s public spaces hierarchically. That is, from the town center, secondary public facilities are arranged radially throughout the town, which is intended as a series of public uses to provide continuous public activities. This publicness is the most critical role for the town’s viability by providing identity and sense of the community. Additionally, to encourage social interactions, Seaside is planned to satisfy a five-minute walk, or a quarter mile walking distance. Within the distance from the town center to individual homes, the town is to become a more pedestrian-friendly place, to reduce car dependence, and to encourage casual social encounters among neighbors. Seaside is composed of eight defined areas which prescribe house prototypes with
the various lots, height limits, buildable footprints, setbacks, parking requirements, etc. The various types are designed to accommodate different intended uses and to increase the various social or pedestrian activities from the central square to the edge of the town. In Seaside, architectural and spatial variety of a town whose buildings are designed by many different architects is based on the prescriptions of the codes and also plays a significant role in providing its identity as a resort town.

4-1-2. Transit-Oriented Development

As an alternative to the suburban growth pattern, the Pedestrian Pocket or Transit-Oriented Development (TOD) proposed by Peter Calthorpe deals with a wide range of environmental, economic, and social concerns. That is, Calthorpe claims the conventional suburban development pattern is no longer appropriate for the American economic and social changes and, furthermore, the sprawl is generating various problems such as traffic congestion, increasingly 

unaffordable housing, receding open space, and stressful social patterns. The concept of Pedestrian Pocket or Transit-Oriented Development (TOD) can be explained briefly and clearly as follows;

Figure 4-6. TOD Concept

"The Pedestrian Pocket is a simple cluster of housing, retail space, and offices within a quarter-mile or a five minute walking radius of a transit system. The concept blends the convenience of the car and the opportunity to walk in an environment in which the economic engine of new growth-jobs in the service and information industry- is balanced with affordable housing and local stores. It is a planning strategy that preserves open space and reduces automobile traffic without increasing density in existing neighborhoods. With new light rail lines, these Pockets reconnect an existing suburban fabric and its towns. The increments of growth are small, but the whole system accommodates regional expansion with minimal environmental impacts: less land consumed, less traffic generated, and less pollution produced."
Pedestrian Pocket or TOD is defined as mixed-use neighborhoods within a quarter mile of a transit station. In this quarter mile radius, a commercial core, a variety of housing types, offices, open spaces, and public facilities are located in a pedestrian-friendly environment. In a community, in particular, the organization of civic structures such as parks, public plazas, daycare centers, and community buildings are designated to play a role to strengthen the sense of community and pedestrian-friendly environment. Around the high-density concentration of uses, there is one more zone known as the Secondary Area, which is composed of lower density housing, schools, parks, and commercial or employment generating facilities. This Secondary Area is located within one mile of the transit station.

In the concept of TOD, there are two different forms of TOD, depending on the context and market demands: Urban TOD and Neighborhood TOD. Urban TOD is located along the primary transit line without requiring commuters to transfer. Due to the location, Urban TOD is suitable for higher com-
mercial and residential densities, and job-generating and high intensity uses. Neighborhood TOD, focusing primarily on residential uses, public facilities and parks, is located on a local or feeder bus line within 10 minutes transit travel time (no more than 3 miles) from a major transit line. This Neighborhood TOD, which has a variety of housing types in close proximity to retail, services, public amenities, and employment centers, is intended to address the needs of various households, improve affordability, reduce the private use of automobiles, and encourage walking, cycling and the use of public transportation.

The TOD concept is ultimately intended to produce the form of regional development characterized by a series of decentralized clusters linked by a regional transit system. This regional form produced by the regional application of the TODs is an alternative to the suburban sprawl supported by the enormous highway funds. This alternative sets reasonable boundaries and directs growth to infill and transit-accessible locations.

TODs are also intended to revitalize or intensify uses and densities in existing areas. This redevelopment in the TOD concepts would transform existing suburban low-intensity and auto-oriented use into a higher-density mixed-use and pedestrian-oriented environment. The potential of the TOD concept is to address regional issues such as job-housing balance, limitation of sprawl, relation of land use and transit, reduction of vehicle miles traveled, and protection of the natural environment.

Figure 4-9. Regional Form

[Diagram of regional form]
Laguna West

In 1990, as the first testing ground of the concept of TOD, the construction of Laguna West began on 800 acres of land. The developer of Laguna West is Phil Angelides, head of River West Development who was interested in Calthorpe’s ideas about more environmentally responsive development in the late 1980s. The Calthorpe’s new vision and Angelides’ environmental concern were developed in Laguna West.

Laguna West, 12 miles south of Sacramento, California, is expected to have a population of approximately 5,000 residents and 700 workers. Of the 5,000 residents, approximately 2000 will be housed within a 100-acre TOD or town center. The remaining 3,000 residents will occupy 2,100 single-family homes in surrounding lower-density residential neighborhoods known as the secondary area. The town center is to contain 1,200 multifamily units, 90,000 square feet of retail, and 150,000 square feet of office space. This development of an 800 acre site will have 200 acres zoned for industrial and commercial uses. In its first year and a half, the project completed over 200 homes, built the lake, village green, and town hall and attracted a major employer, Apple Computer Company. This major facility of 450,000 sq.ft helps encourage the job and housing balance in Laguna West.

The plan is composed of five neighborhoods of 2,300 units around community parks and a 65 acre lake, and a town center. The town center combines a higher density housing with shops, offices, a village green, and an urban park. In the town center, the retail is integrated with the civic use and a transit plaza, which is to encourage diverse activities with

Figure 4-10. Plan of Laguna West

[Image of Laguna West plan]
shop-lined Main Street. The overall community is designed to be linked with convenient and comfortable streets, which are narrowed, tree-lined, and connected to the town center, as well as to the arterial. The park system is interconnected, leading to a village green in the town center.

Laguna West contains a variety of housing types such as apartment buildings, townhouses, small-lot single-family homes, conventional single-family homes, and custom-built homes on large lots. At least 50 percent of the houses are to have front porches with garages in the rear. Some garages are placed five feet behind the front facade and some are on alley ways. In an attempt to increase the overall density of the development, ancillary units are encouraged over garages.

The secondary area in Laguna West, separated from the town center by a 65-acre man-made lake, contains two islands designated for townhouses. The lake provides a distinct identity of the town as well as a variety of public life with beaches for swimming and launching areas for sailing. The Secondary Area maintains many elements common to the conventional pattern such as cul-de-sacs and long curving streets. The Secondary Area is directly connected to the town center via a radial street system. In order to encourage walking and cycling, all homes in the secondary area are located in a maximum of one mile from the town center.

4-2. Spatial Sequence

This model, Spatial Sequence, means a series of connections of various spatial forms. Through the spatial variation, this sequence can provide diverse pedestrian experiences, which can be understood as visual, physical and psychological perceptions of pedestrians. Especially, along with the spatial variation, the utilization of the visual effects such as visual termination or focal points can facilitate the pedestrian experience to be more diverse and impressive. This spatial variation and sequence to provide pedestrians with spatial diversity can be regarded as a key urban component for a walkable environment.
This strategy for providing a walkable environment through providing diverse pedestrian experiences is found throughout the DPZ's projects. In particular, Seaside (Figure 4-11) can be a representative example showing how this strategy was implemented to provide the walkable environment for the town. The series of connections with various spatial forms throughout the town are establishing not only its physical characteristics but also its overall physical structure. In Seaside, from the town center to the edges of the town, three main axes with various spatial forms are radiating, combining various public uses. These various spatial forms with the connections to each public uses play a role to provide people with various perceptions of spaces, establishing walkable environment throughout the town.

Figure 4-11. Spatial Sequence of Seaside

Figure 4-12. Nancy's Spatial Sequence
This strategy seems to be an adaptation of the spatial characteristics of European cities, which were regarded as models by Raymond Unwin for designing and planning towns. For instance, the series of connections with various spatial forms can be found clearly in Nancy, France. Throughout the central area of the city, various spatial sequences play a critical role for establishing its major physical structures.

This application of the spatial characteristics of the Medieval cities can be regarded as a strategy in transforming the conventional suburban spatial patterns. However, this application to the American towns in suburbs may also require an effort to answer the following question: How can the spatial characteristics of the Medieval European cities be applied and adapted in spite of the significant difference of economic, social, and physical structures such as scale, density, significance of automobiles, and identities of the American small towns?

4-3. Networks

The second model, Networks, can be divided to several networks of urban components such as streets, public uses or building types. Through the case studies, a network of public uses and a street network can be regarded as primary networks, and these networks are usually working together to structure main spatial patterns of communities. These two networks are largely structured by the distribution of various public uses with systematic connections throughout a community. In particular, public uses can be regarded as an anchor to govern the overall physical structure of a community as well as to encourage pedestrian activities. That is, within walkable distance, the distribution of various public uses with convenient connections, such as transit station, commercial core, city hall, parks, plazas, post office, day care center, public library, can provide neighbors with more opportunities for walking and, subsequently, for socializing. When a community can be defined as a balanced mix of activities such as dwelling, shopping, working, schooling, worshiping, and recreating\textsuperscript{14}, this model can play a critical role for structuring a community and, especially, through the
networks of public uses and streets, public life can be expanded throughout a community.

Figure 4-13. Network of Public Uses in Seaside

In Seaside, public buildings, squares, and streets are organized and distributed to govern its physical structure and to encourage public life. The streets or avenues are designed to provide easy and convenient connections and to integrate the whole town. Secondary paths such as mid-block pedestrian alleys provide more various pedestrian routes throughout the town in addition to the street and sidewalk system. 15

Squares and parks distributed throughout the town with convenient connections play a role in encouraging social and pedestrian activities. Civic buildings, in coordination with public open spaces, play a significant role as anchors to serve as landmarks, terminating vistas and enclosing streets. 16

The network of public uses, such as town center, town hall, school, chapel, and tennis club, shows an axial composition. These axes, governing its whole area spatially and visually, provide its people with a sense of orientations and boundaries of the town.

In Laguna West, a network of streets and public uses can be defined as axes radiating from the town center to the secondary area. As the most conspicuous feature of Laguna West, the formal axial layout can be a primary network to govern its basic spatial structure and social activities. Two of these axes are vehicular streets that lead from the town center into neighborhood parks. The central civic axis is a greenway that contains daycare, elementary school, community recreation, pedestrian bridges, village green, town hall, transit plaza, retail, and the Apple Computer company. Throughout the axes, the pedestrian movement system linked to the public open space system provide its residents with more chances to walk and more casual social interactions among all age
groups. Thus, these axes play a major role in physically linking the town center area to the secondary area and, at the same time, socially providing public life through encouraging diverse community activities.

4-4. Activities

The third model, Activities, can be defined by understanding what makes places alive. That is, without generating various activities of its users, a built environment cannot be maintained as a socially active environment. For instance, people do not go to a park because the park is there. To bring people to the park and to make the park alive, there should be secondary attractions, if the park is a primary use. Thus, the park can be a real place when it has various functions. Through the interactive relationship between various uses (Figure 4-15), a place can be where people like to go, and the place itself can survive through time, providing a sense of place.
Throughout the case studies, cores such as commercial cores, or civic cores with various secondary facilities play a role for providing various activities in a place. Calthorpe, for instance, argues that the common be brought back to the center of communities and reintegrated into daily commercial life. Likewise, through his projects, he integrates the concept of the traditional common with various uses because of his recognition that most commons have been isolated from the daily uses of people. That is, his response to the fact that a lack of uses generates a lack of activities can be found in Village Green, a major park of Laguna West. Village Green, located in the town center, contains recreation and child care facilities, and a town hall. Moreover, retail, offices and a transit center located adjacent to Village Green provide it with various activities. In addition, the central axis also generates various activities with its mixture of various uses along the linear pedestrian pathway from the secondary area to the town center. In addition to the ideas of the core, on a smaller scale than the core, the mixed-use of the land or buildings can be another strategy to encourage the social activities in smaller and denser environments. Thus, the ideas of cores with diverse uses or mixed-use buildings are designed to generate various activities for people who have various purposes by incorporating various uses. Through the diverse activities of users, places can be given life, and this liveliness is closely related to the New Urbanism’s ultimate goal, a sense of community. Reminding us of Jane Jacobs’ argument about the significance of diverse uses for the human environment, this model can be a meaningful actor to encourage social interactions through a variety of activities and also to make a place alive and viable.
4-5. Synthesis

The primary goal of new urbanists is to increase social interaction and communication between neighbors by providing a walkable environment and finally to establish a sense of community. In understanding a public realm, a built environment perceived and experienced by pedestrians has a significant meaning. That is, the public realm can be incorporated more specifically with the term "walkable environment" or "walkability." The retrieval of the public domain cannot be realized without the walkability. Moreover, the walkability cannot be bounded by the physical walking distance to some degree if more diverse spatial devices, such as physical or visual connectedness, spatial enclosures, or a series of connections with various spatial forms, are provided. In this respect, the models show how new urbanists establish the public realm by providing the walkable environment. Through the case studies of new urbanists's projects, the strategies of new urbanists in creating the public realm can be extracted to three models, Spatial Sequence, Networks, and Activities. While the first two models, Spatial Sequence and Networks of Public Uses and Streets, are related to more spatial and physical aspects, the third model, Activities, is more about relationship between users and uses. That is, the first and second model are to bring people onto streets and to encourage them to walk in the environment by providing diverse pedestrian experiences and a walkable environment, and the third model is to create various activities that can bring a sense of place. Thus, the three models can be regarded as a key strategy not only to generate the public realm but also to determine the New Urbanism.
2 Ibid. p57.
3 Ibid. p42.
4 Ibid. p59.
6 Ibid. p4.
8 Ibid. p56.
9 Ibid. p56.
10 Ibid. p62.
11 Ibid. p71.
12 Calthorpe, Peter. The Next American Metropolis.
15 Alex Krieger, Towns and Town-making Principles. p22.
16 Ibid. p22.
17 Calthorpe, Peter. The Next American Metropolis. p23.
5. Application of the Models

5-1. The Site: Attleboro, Massachusetts.

5-1-1. Description of the City

Established on October 19, 1694 as a town and incorporated as a city on June 17, 1914, Attleboro is a small manufacturing city with a unique combination of urban and suburban characteristics. Having long history of industrial life from the late-18th century, the Town of Attleborough expanded rapidly after the Boston-Providence Railroad line was built through its center in 1836. The dramatic expansion of the town called for the necessity of a division of the town into separate two towns, and the Town of Attleborough was divided in 1887 into North Attleborough and Attleborough. When Attleborough received its city charter, the spelling of its name was modernized to Attleboro.

Attleboro is located 32 miles south of Boston and 12 miles northeast of Providence, Rhode Island. It covers an area of 27.51 square miles or 17,606 acres. It is bound on the north by the town of North Attleboro, on the east by the Towns of Norton and Mansfield, on the south by the towns of

Figure 5-1. Boston-Providence Railroad
Rehoboth and Seekonk and on the west and southwest by the state of Rhode Island.

Figure 5-2. Location of Attleboro

The city is served by the interstate highway system, with I-95 and I-295 passing within the city’s boundaries, and it also has easy accessibility to I-195 and I-495. In addition, the Boston-Providence railroad line has been playing a critical role in providing not only a great impetus for the development of industrial and commercial life of the city but also an attraction as place for commuters to live. Travel time of 45-56 min. to Boston by the commuter rail has been stimulus in encouraging the growth of residential areas.

Attleboro’s population was 32,907 in 1970 and 34,196 in 1980 and the current population is about 38,383. It ranks 29th in population of all the 351 cities and towns in Massachusetts. The city is now expecting that its population will reach 46,775 in 2010. This continuous increase in city’s population can be evidence of a thriving community; many old industrial towns have shown a decrease in their population because of the deterioration of their economies.

As the birth place of the jewelry industry in New England, a number of red brick mill buildings for jewelry and metal fabrication throughout the downtown area have been established and also commercial establishments, churches, schools, and residential areas have been well developed. Serving as an employment center not only for the city but also for regions around the city, the city ranks 10th in manu
Figure 5-3. City Map of Attleboro
facturing employment and 17th in total employment in state. From the jewelry industry, the city’s industries have been diversified into bleaching and dyeing, the manufacture of textiles, optical goods, paper, machinery, pressed steel, and automobile accessories. Thus, Attleboro has been a place for families to live and work.

5-1-2. Necessity of Revitalization for the Downtown of the City

Socially, physically, and economically, the city of Attleboro has been in transition. The most recent census data show that more than 15% of the city’s 38,000 residents live below the federal poverty level. Along with the dramatic growth of the Latino population, Asian population has rapidly expanded. Lack of affordability is a common housing problem in the city. Of all renters, 36 percent pay greater than 30% of their income for housing, and 14% pay more than 50%. For low-income households 64% renters and 53% of homeowners pay more than 30% of their income for housing. Changes in the economic condition of the city have made an impact on physical environments and social life.

The large scale development of typical strip malls has caused foreclosures of retail shops in the downtown, which in turn
have resulted in the loss of image of the main street. The deterioration of the main street, which once gave the city vividness and liveliness and brought people to the downtown, has been a main reason for its lack of attractiveness for pedestrians, hurting the remaining retail establishments. This decline has also been a major reason for the decrease of social interaction and for the loss of a sense of community. Large areas of vacant land and underutilized buildings around the downtown area have generated an atmosphere of bleakness.

necessity of a response to the social, economic, and physical changes of the city is obvious and already revitalization of the downtown area of the city has begun. Various groups of the city — political, social, economic, and cultural groups — have acknowledged the necessity of the revitalization of the downtown Attleboro.

5-1-3. Ongoing Projects of the City

To enrich the public environment, the city of Attleboro began new $1.2 million park project, Balfour Riverwalk, to draw the natural environment into the city and to improve its public life. This Balfour Riverwalk will have various functions in it, such as an outdoor theater, a four season skating link, jogging course, and resting or sitting places. The city also expects that this new park will bring new retail establishments around the park. Additional ideas for this new park project will be the incorporation of the public library and the YMCA into the new park to establish a kind of public complex in the city of Attleboro.
Figure 5-7. Ongoing Projects
The Attleboro YMCA, as a hub for public health and education for the area in around the city, has experienced dramatic growth in its use by various ranges of people from children to the elderly. Last year, for example, the YMCA recorded more than 27,600 participants in an area with only 53,000 people. To accommodate the increased needs of the community, the Attleboro YMCA needs to expand and renovate its overcrowded and 86-year old North Main Street facilities.

The public library is currently undergoing a $3 million renovation that will provide fully accessible space for community activities, as well as additional areas for the children’s and young people’s collections.

The new park project, the expansion of the public library and the YMCA have a significant meaning in terms of not only a kind of community complex for the public life of the city but also an impact on the city’s future physical, social, and economic appearance. In particular, the linear connection to the commuter rail station can be established through the transformation of two vacant buildings across from the station. Moreover, along with this linkage, further connection to the other side of the downtown of the city can be established to bring social, cultural, and economic activities to the entire downtown.

Figure 5-8. Site for Balfour Riverwalk

The YMCA is now planning to upgrade its facilities and add 17,000 sq.ft. at the cost of $2.6 million under the name of Project 2000. In addition to the expansion of the YMCA, the
5-2. Site Analyses

5-2-1. Block Configuration

In the diagram of block configuration (Figure 5-9), a partial shape of typical configuration of the traditional towns can be seen through a central block surrounded by a series of streets, intersections at the corner of the block, and overall an pattern of streets radiating from it. The second diagram of a block configuration without the rail road track (Figure 5-10) is certainly useful to show the typical configuration. In particular, the second diagram shows clearly how the rail road track has had a strong impact on the block configuration of the city in physically dividing the downtown area of the city into two parts. Without the rail road track, there could have been more connections between the two parts of the downtown.

5-2-2. Figure and Ground

The diagram (Figure 5-11) shows a pattern of approximate land use such as housing, commercial use, or industries, and especially, a pattern of open spaces by the contrast of buildings to vacant lands. The changing scales of buildings provided by this diagram can be significant in facilitating designers or planners to consider more adequate physical intervention to existing built environments. From the diagram, more empty spaces and physical discontinuity on the east side of the railroad track than the west side is clearly found, which means a necessity of physical intervention for defining streets and then establishing a walkable environment. Most empty lots in the east site are being used for surface parking spaces, which leads to another question of how to accommodate the needs of parking, while searching for the walkable environment with physical continuity. That is, parking lots should be integrated with the landscape of the built environment.
Figure 5-9. Block Configuration
Figure 5-10. Block Configuration without the Railroad Track
5-2-3. Building Types and Uses

Retail and office buildings are largely located on the west side of the railroad track, clearly defining streets. Around the intersection where North Main Street, Park Street, and County Street meet, the downtown of the city was formed and has developed as a retail and business center.

Along Union Street on the east side of the railroad track, some retail and offices have been established, but when compared to the west side, the buildings are showing some degree of physical and economic deterioration. However, this area, especially, three blocks between Union Street and Pine Street, has most of the city’s civic and cultural facilities such as the city hall, the police station, the old post office building, the art and industrial museums, the Attleboro Common, and the community recreation and daycare center. These social, civic and cultural facilities, along with the new park, the public library and the YMCA, can play a critical role to reinforce the public life of the city.

The major reason for a lack of urbanity is the distribution of surface parking spaces throughout the east side of the downtown of the city. In terms of a walkable environment, the large area of surface parking lots plays just a opposite role by depriving pedestrians of various activities and by providing a
Figure 5-14. Building Types

Industries

Public Uses and Civic Structures

Parking

Retail and office
physical discontinuity. Along with underutilized factory buildings on Union Street, these large surface parking lots also generate an atmosphere of desolation in the east side area.

Figure 5-15. Surface Parking Lot

5-2-4. Views

Because of the elevated railroad track, continuous views between the east and west sides of the track can hardly be obtained. However, old factories and their chimneys on the east side of the track or the Second Congressional Church next to the track dominate the skyline of the downtown of the city and provide a visual connection from both sides. These images can be regarded as one of desirable characteristics of the city when implementing physical intervention.

Figure 5-16. View of Railroad Track and Second Congressional Church

From the commuter rail station, a linear, continuous view corridor can be obtained. Due to the lower ground level of the new park area, a linear and long view can reach the public library from the commuter rail station. By demolishing the vacant buildings in front of the station and expanding a continuous greenway from the new park to the station, the visual linkage can be enhanced. (Figure 5-17) Then the view from the public library can be connected to the other side of...
Figure 5-17. View Analysis

Necessity of the demolish of the vacant buildings to get a view to the park.
the railroad track where a movie theater, a daycare and community center, and east neighborhoods are seen. The elevated railroad track also provides passengers with chances to look down to the Government Center area, the Attleboro Common, and the Cemetery and its surrounding neighborhoods. These views from the station and commuter trains to both sides can facilitate the city’s downtown to have its own characteristics.

5-3. Development Potentials

Through these analyses, a boundary of development can be established, determining specific districts throughout the downtown area and, moreover, providing initiatives in reinforcing a public realm for downtown Attleboro. The diagram (Figure 5-18) shows five districts largely derived from the existing resources: the new park complex, the station district, the central business district, the community center, and the government center. The central business district at the center of the development boundary and other districts on the edge of the development boundary can be a backbone to govern physical, social, and economic structures of the downtown. Specifically, connections between these districts should be regarded as critical for providing public life for downtown Attleboro. That is, recognizing public facilities in the districts, such as the public library, the YMCA, the new park, the commuter rail station, the daycare and community center, the city hall, the Attleboro museums, and the Attleboro Common, as a kind of catalyst that can encourage people to walk, a provision of various pedestrian connections can be a basic strategy for providing walkable environments and improving the public life of the city.

In addition, by filling up underutilized lots to complement existing uses, not only physical improvements but also social and economic improvements can be achieved. For instance, vacant lots, which is now used for parking, between the community center and the government center can be utilized for affordable housings because of the proximity to public amenities such as a daycare center, community center, and the commuter rail station. Additionally, a new connection can be designed to provide neighborhoods on east side of the railroad track with a more direct and easy link not only to the
Figure 5-18. Development Potentials
central business district but also to the new park complex. This new connection can play a critical role in integrating two parts of the downtown divided by the elevated railroad track. The railroad track itself should be regarded as a significant design and development strategy. The railroad track can play a role to connect the existing MBTA parking lot to the central business district by reinforcing functions of the existing platform. Moreover, the arched tunnels under the track can provide a distinct image for the city. Thus, development of the five districts and provision of more various pedestrian paths can play a critical role in improving social, economic, and cultural life of the city.

5-4. Incorporation of the Models into Initial Design Concept

5-4-1. Network of the Public Uses, and Street Network

Existing public facilities, such as the public library, the YMCA, the daycare and community centers, the museums, the government center, and the Attleboro Common, are basic components for the model, Network of Public Uses. (Figure 5-19) Major streets such as North Main and South Main Street, Park Street, and Union Street are regarded as main connections among the public uses. Although these public facilities have existed for the city, providing social and cultural activities, this model can be applied to reinforce their role for the downtown area and the city. That is, by providing new connections and improving existing streets, the public uses can be the network that can play a role to structure pedestrian movements, and, moreover, to enhance public life within walkable distance.
To improve more convenient connections between neighborhoods within the downtown area, streets can be experimentally extended or newly cut through blocks. The diagram (Figure 5-20) shows the possible or necessary connections throughout the downtown area. In particular, due to the railroad track, physically dividing the downtown area into two parts, the need to connect both sides through the blocks in which the railroad track is installed should be considered. In a way to provide effective connections and to mitigate the division in the downtown area, a new street running through the central blocks from the east side to the west side of the downtown area can be regarded as critical in enhancing the network of public uses and street.

5-4-2. Spatial Sequences

To provide various pedestrian perceptions, this model, Spatial Sequence, (Figure 5-21) can be applied to create a main pedestrian axis cutting through the central blocks and under the railroad track from the east neighborhood to the new park complex. This main pathway can extend into the east neighborhood by occupying the edges of two blocks. By providing tree lines and small sitting spaces between residential blocks, this tiny and linear space can play a role to draw residents and then to link them to the main axial pathway. Right after passing under the railroad track, the main pedestrian axis meets a building and, due to the building, the angle of the axis changes toward another open space, which is located by the intersection of North Main Street, South Main Street, and Park Street. Finally, the axis can reach the new park, providing various connections to the public library, YMCA or other neighborhoods. Thus, the main pedestrian axis is necessary in order to provide not only the linkage of the two parts of the downtown area, divided by the railroad track, but also various perceptions for pedestrians. In addition to the main pedestrian axis, there can be various minor spatial sequences, cutting through the main axis perpendicularly. These minor spatial sequences can be established by the linkages between courtyards of residential buildings, or inner open spaces of retail and office buildings. These spatial sequences are designed to provide diverse visual perceptions, to facilitate people to walk, and, finally, to establish pedestrian environments throughout the downtown of the city.
5-4-3. Activities

Along with the physical and spatial forms and patterns, the model, Activities,(Figure 5-22) is designed to determine livability of public environments. Without these activities taking place on streets or in small neighborhood parks or the new city park, a genuine public realm with a walkable environment cannot be achieved. For instance, the new park can provide its users with various activities and experiences by incorporating the public library and the YMCA and, in turn, these public uses can bring a variety of people who have various purposes. In addition, commercial facilities such as retail shops or restaurants that can serve people brought to the downtown by the public uses can be established.

Moreover, the expansion of renovated commercial facilities to Union Street from Park Street can be combined with several public uses such as the Attleboro Common, the Art and Industrial Museums and the Government Center. This combination can also provide various activities, and these activities can be continued through the main pedestrian axis, which is to move the activities to the central businesses district and the new park complex. Finally, diverse and incessant activities can be achieved by incorporating these various uses throughout the downtown area. In addition, streets defined by harmonious and continuous building fronts can provide ordinary street life as a place for communication between neighbors or for a playground for children. Thus, by gathering and mixing people who have various purposes, built environments can be used continuously without any limit of time or season, and this active use can make places alive and viable.
Figure 5-19. Network of Public Uses
Figure 5-21. Spatial Sequence
Figure 5-22. Activities
6. Design Proposals and Guidelines

6-1. Design Proposals

6-1-1. Development of the Design

Through site analyses and the process of conceptual application of the three models to the downtown area of Attleboro, feasibility of application and validity of developments have been determined. The two basic figure and ground plans (Figure 6-1 and Figure 6-2) show how the former processes are developed into the primary schemes. They can be regarded as part of a continuous process toward a final decision.

The difference between the two alternatives are basically a configuration of the central open space as a focal point for the downtown and an expansion of the main axis into neighborhoods on the east side. The first alternative (Figure 6-1) shows a creation of an open space at the intersection of North Main Street, South Main Street, and Park Street. The central open space, in this alternative, shows a typical configuration of a central place of small towns in the New England area.

Because of the introduction of these conventional character-
istic, the central open space can be regarded as a more intimate and memorable place. Moreover, this physical and symbolic central open space can be connected more closely into the neighborhoods on the east side by the main axis. That is, this central open space can broaden physically and psychologically an area of the downtown and reinforce functions of the main axis as well as provide a focal point for the downtown.

The second alternative (Figure 6-2) shows an expansion of the main axis into the inside of the neighborhoods, and a provision of the central plaza behind the building facing the major intersection. The expanded part of the axis can play a role to provide the neighborhoods with a physical connection to the main axis and a psychological connection to the existing downtown and the new park complex. In this alternative, the central plaza established on the main axis can enhance an effect of the spatial sequence of the axis from the neighborhoods on the east side to the new park complex. That is, this central plaza can be a focal point for the main axis. Thus, the different points of the two alternatives have different meanings in facilitating them to be effective and valid.

On the other hand, the alternatives can be described by disadvantageous points. That is, in the first alternative, a creation of the central open space needs the demolition of an existing building facing the major intersection. This commercial-use building, which has played a role as one of the main buildings, can be regarded as an asset for the downtown. In the second alternative, the expansion of the main axis also needs a demolition of three houses, and the central plaza can be less effective than the central open space of the first alternative to be a focal point for the downtown. That is, this alternative can maintain the building, which is defining an existing main street of the downtown, but the characteristics of the plaza as a focal point can be unclear because of its location behind the building. Because of the alternatives' two aspects, a careful consideration between ignoring and respecting existing physical structures is required.

Even though the alternatives are differentiated by the advantageous and disadvantageous points, major ideas in the schemes can be summarized as follows:

1. Establishment of a main axial connection from neighborhoods on the east side to the new park complex.
2. Single attached or row housing additions on the vacant lots between the community center and the government center and multifamily housing on the vacant lot across from the Attleboro Common.

3. Establishment of retail and its inner plaza on the block between the Attleboro Common and the main axis.

4. Development of offices, retail, housing, and a parking structure on the block between the commuter rail station and the main axis.

5. Provision of a focal point for the downtown.

Regarding the public facilities as an anchor in structuring a basic walkable environment, the addition of new connections and the provision of various uses and a focal point can be primary strategies to restructure public environments and to improve public life. In addition, reinforcing existing streets’ functions and integrating new developments with existing physical structures can be another strategy to rejuvenate the downtown area of Attleboro.
Central Open Space, Main Axis

Figure 6-1. Alternative 1
Figure 6-2. Alternative 2
1. Balfour Riverwalk
2. Public Library
3. YMCA
4. Commuter Rail Station
5. Bus Terminal
6. Movie Theater
7. Community Center
8. Housing Addition
9. Government Center
10. Mixed Use Complex
11. Retail Center
12. Attleboro Common
13. Housing Addition
14. Art Museum
15. Central Plaza
Figure 6-4. Spatial Structure of the Site Plan
6-1-3. Major Design Features

1. The New Park Complex

- Expansion of the park area toward North Main Street and Riverbank Rd. so that the park can be defined by facades of the public buildings on North Main Street such as the YMCA and religious buildings, and can be surrounded by the hill on Riverbank Rd.

- Provision of the library plaza between the existing park boundary and North Main Street.

- Renovation of the existing jewelry retail shop to accommodate various functions for park visitors.

- Connection to the commuter rail station by demolishing two vacant buildings.

1. The Public Library and the Library Plaza
2. Outdoor Theater
3. Renovation of Jewelry Retail
4. Connection to the Railroad Station
5. North Main Street
6. YMCA
2. The Commuter Rail Station

- Addition of a bus terminal and a gas station to be a hub of public transportation.
- Provision of physical linkage to the bus terminal.
- Provision of a connection to the main axis by utilizing a platform and the parking building.
3. The Community Center

- Addition of housing (22 units of single family attached housing)
- Addition of retail stores to the movie theater
- Provision of a new playground for children and a small park for its users and adjacent neighborhoods.

1. Daycare Center
2. Community Recreation Center
3. Neighborhood Park
4. Parking Lot
5. Playground
6. Movie Theater
7. Retail
8. Fire Department
9. Single Family Attached Housing
10. Pine Street
11. Dunham Street
4. The Government Center

- Multifamily housing addition on Union Street.
- Expansion of outdoor exhibition space.
- Expansion of government facilities and provision of government plaza.
- Provision of office building on Union Street.
- Expansion of Attleboro Common.
- Provision of continuous retail lines around the Common.

1. The City Hall
2. Police Department
3. Old Post Office
4. Office
5. Art Museum and its Open Space for Outdoor Exhibition
6. Multifamily Housing
7. Attleboro Common
8. Retail Center
9. Expansion of Attleboro Common
5. The Central Business District and Main Axis

- On Park Street and Union Street, establishment of retail center and its inner plaza that can be used for temporary outdoor markets or special events.

- On Union Street and Dunham Street, provision of new buildings for office, retail, residential, and parking.

- Make a straight connection between Bank Street and Railroad Avenue.

- Provision of a central plaza, which can be a focal point of the downtown from all directions and facilitate Railroad Avenue and the axis to be incorporated into main streets.

- Provision of an open space with commercial uses at the connecting point from the station.

- Housing addition on Pine Street and Dunham Street.

- Division of the block into two blocks and provision of a neighborhood park on Pine Street and linear open space for building a main axis.

- Creation of the neighborhood park as a place to provide various outdoor activities for neighborhoods on the east side.

- Provision of the rectangular open space with dense tree lines to play a role to reinforce the axial configuration and to provide a pedestrian pathway and sitting and resting place.
1. Central Plaza
2. Railroad Avenue
3. Retail Center
4. Parking Building
5. Mixed Use Buildings
6. Industrial Museum
7. Government Center
8. Housing Addition
9. Neighborhood Park
10. Office
11. Axis
12. Union Street
13. Pine Street
14. Connecting Point from the Station
Figure 6-11. Aerial View of Proposed Plan 2
6-2. Guidelines

Guidelines are designed to suggest and maintain a desirable direction of development. In terms of hierarchy, guidelines can be regarded as a complementary tool in realizing principles that deal with comprehensive and long-term goals. That is, guidelines are practical expression of principles in conveying principles’ ideas into more specific dimension. For instance, the three models--Spatial Sequence, Networks, and Activities-- can be regarded as design principles, and the guidelines can play a role to materialize the principles. In addition, guidelines should be a flexible in being applied to reality because of their roles as a middle ground that can incorporate ideals into the practical world. Guidelines can imply an acceptable range of exception. With these intentions, following guidelines (Figure 6-12 to 6-18) are designed to suggest desirable directions of redevelopment of downtown Attleboro.
<table>
<thead>
<tr>
<th>Housing</th>
<th>Building Use</th>
<th>Single Family Attached Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot Size</td>
<td>Width 25 - 30 ft. Depth 85 - 90 ft.</td>
<td></td>
</tr>
<tr>
<td>Building Placement</td>
<td>Setback 8 - 12 ft. Back yard D' min. 30 ft.</td>
<td></td>
</tr>
<tr>
<td>Building Height</td>
<td>min. 2 fl. max. 2 and 1/2 fl.</td>
<td></td>
</tr>
<tr>
<td>Specification</td>
<td>Buildings should reflect surrounding single family neighborhoods. Facades should be diverse and articulated to provide visual interest. Porches and balconies are encouraged. Alleys are required and garages should be sited in rear yards.</td>
<td></td>
</tr>
</tbody>
</table>
### Figure 6-13. Guideline-Multifamily Housing

<table>
<thead>
<tr>
<th>Building Use</th>
<th>Residential</th>
<th>Multifamily Housing</th>
</tr>
</thead>
</table>
| Lot Size     | ![Lot Size Diagram](image) | Width 45 ft.  
Depth 75 ft. |
| Building Placement | ![Building Placement Diagram](image) | Zero lot line  
Setback 6 ft.  
Sideyard W’ min. 15 ft.  
Backyard D’ min. 25 ft. |
| Building Height | ![Building Height Diagram](image) | max. 3 fl. |
| Specification | Buildings should reflect surrounding residential neighborhoods.  
Residential entries on the ground level should orient to streets.  
Garages should be sited away from the street or behind residential buildings.  
Sideyards should be provided to acquire a drive through area. |
### Mixed Use Buildings

<table>
<thead>
<tr>
<th>Building Use</th>
<th>Mixed use buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot Size</td>
<td>Width 30 ft Depth 100 ft</td>
</tr>
<tr>
<td>Building Placement</td>
<td>No setback required Backyard D’ min. 20ft.</td>
</tr>
<tr>
<td>Building Height</td>
<td>max. 3 fl.</td>
</tr>
<tr>
<td>Specification</td>
<td>The third floor is recommended for a residential unit. Special care should be provided for residential units to ensure privacy and security. The required amount of parking may be reduced to provide incentives for offices and retail use, and parking for residential units should be secured.</td>
</tr>
</tbody>
</table>
### Office Buildings

#### Building Use
- Office
- Office
- Office & Retail
- Office & Retail

#### Lot Size
- Width 118 ft
- Depth 100 ft

#### Building Placement
- No setback required
- $W = \text{min. } 80$ ft
- $W' = \text{min. } 18$ ft
- $D = \text{min. } 60$ ft

#### Building Height
- max. 72 ft.
- max. 6 fl.

#### Specification
- The building should be at least 5 stories to provide visual interest, varied skylines, and more urban character.
- On the ground floor, commercial uses such as retail or cafeteria are recommended to provide the open space with various activities.
- Bricks are recommended for exterior finish to respect existing mill or office buildings' finish.
### Retail Center

<table>
<thead>
<tr>
<th>Building Use</th>
<th>Retail, inner plaza and office</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices</td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lot Size</th>
<th>Width 210 ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth 300 ft</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Placement</th>
<th>Setback 8 - 15 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W = min. 60 ft.</td>
</tr>
<tr>
<td></td>
<td>W' = min. 10 ft.</td>
</tr>
<tr>
<td></td>
<td>D = min. 90 ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Building Height</th>
<th>max. 3 fl.</th>
</tr>
</thead>
</table>

| Specification         | The first floor should be used for only general retail stores and eating places. Frontage should be varied to provide visual interest for pedestrians and be continuous from the street sides to inner sides to draw pedestrian into the inner plaza. Glass curtain walls or reflective glass should not be used. Use of various materials such as brick, wood, and stone is recommended. Four sides facing the inner plaza should be designed to define the plaza by maintaining similarity in structuring inner facades. |

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### Building Use
- **Parking**
- **Parking**
- **Parking**
- Parking building with offices or retail

### Lot Size
- **W** Width 134 ft.
- **D** Depth 296 ft.

### Building Placement
- **W** No setback required
- **W'**\( W' = \min. 20 \text{ ft.} \)
- **W''**\( W'' = \min. 30 \text{ ft.} \)
- **W'''**\( W''' = \min. 18 \text{ ft.} \)
- **D**\( D = \max. 100 \text{ ft.} \)

### Building Height
- **H'** max. 3 fl.

### Specification
- The height (H') of the first floor should be considered to facilitate design of a connection between the commuter rail station and the main axis by utilizing the existing platform. On the second floor level, an 18 ft. setback from the platform is required to secure the space for a pedestrian path. Main entrances for users should be placed at the two corners facing the railroad. The entrance for automobiles should be placed on the street side. A min. 50% of exterior finish should be bricks.
### Streets

<table>
<thead>
<tr>
<th>Street Trees</th>
<th>max. W = 30 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alley</td>
<td>Width 22 ft</td>
</tr>
<tr>
<td></td>
<td>W' = 18 ft</td>
</tr>
<tr>
<td></td>
<td>W'' = 2 ft</td>
</tr>
</tbody>
</table>

- *One Way with On-Street Parking*

<table>
<thead>
<tr>
<th>Width 38 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tw (Traffic Lane) 8-10 ft.</td>
</tr>
<tr>
<td>Pw (Parking) 7-8 ft.</td>
</tr>
<tr>
<td>Sw (Sidewalk) min. 6 ft.</td>
</tr>
</tbody>
</table>

- **Street with On-Street Parking**

<table>
<thead>
<tr>
<th>Width 42 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Tw 16 ft.</td>
</tr>
<tr>
<td>Pw 8 ft.</td>
</tr>
<tr>
<td>Sw 9 ft.</td>
</tr>
</tbody>
</table>

- min. 3 ft. for tree bed
- min. 6 ft. for sidewalk

**Specification**

- Sidewalks are required on all streets.
- The traffic speed should not exceed 15 mile per hour on the main axis.

* and ** are physical guidelines of the main axis.
6-3. Implementation of the Design Proposals

6-3-1. Zoning Ordinance

Most area of the development boundary (Figure 6-19) is defined by the zoning ordinance of the city of Attleboro as Central Business Zone. According to the zoning ordinance of the city, permitted uses can be sorted as follows:

For residential use, mixed residential and business uses where all dwelling units are above the first floor level, and multifamily dwellings primarily for the elderly and handicapped are allowed by special permit, required to have a gross floor area of 2,400 sq.ft. or more. For community facilities, churches and religious purpose buildings, schools, colleges, universities, daycare and community centers, municipal buildings, hospitals and nursing homes, and commercial or public parking buildings or lots are permitted. Retail establishments selling general merchandise and convenience goods, eating and drinking places, and professional or business offices are permitted. Indoor theater or auditorium and bus, taxi, or railroad service facilities or terminal are also permitted. Funeral establishments, hotels or motels, and light manufacturing, assembling and processing of manufactured products require special permit.

According to the dimensional and density regulation, mixed residential and business uses are required to have minimum lot area of 6,000 sq.ft. and maximum building area, height, and FAR are respectively 80%, 6 story and 4. In the case of other permitted uses, maximum building area and height are regulated to 80% and 6 stories. Multifamily dwellings and multifamily dwellings for elderly and handicapped in this zone are required to have minimum lot area of 6,000 sq.ft., minimum lot frontage and width of 100 feet, minimum side and rear yard of 10 feet, maximum building area of 40%, and maximum building height of 6 stories. Hotels and motels’ regulations are almost the same as that for multifamily dwellings except for the minimum lot frontage and width, which are 200 feet.

Due to the similarity between the central business zone and the design boundary, most uses in the design proposal can be permitted except a few uses such as a hotel or motel, which
Figure 6-19. Existing Zoning
require a special permit process. However, in the case of the dimensional and density regulation, lot sizes of some uses of the proposal need to be modified. For instance, in the case of a mixed-use building, the minimum lot area is required to have 6,000 sq.ft. but in the proposal, most of the lot area of mixed-use buildings is 3,000 sq.ft. with 80% of building area and rearyard of 20 ft. depth. In particular, this rearyard is designed to acquire a space for enough sunlight and greenary, which can provide its users and residents with a private courtyard. To satisfy the zoning ordinance, a lot should be combined with another lot. In that land price is the most critical factor in determining the development cost, lot size can be regarded as another initiative that can bring developments. That is, a reconsideration of the lot size in existing regulations is needed in terms of affordability for owners, developers or renters.

In addition, the number of minimum parking spaces of mixed-use building needs to be adjusted. The zoning ordinance regulates to acquire the required parking space by summing each use's required parking space separately. For instance, the mixed-use building with retail, offices, and residential units on each floor and with a maximum floor area of each use of 2,400 sq.ft. is required to have 27 parking spaces of 4,000 sq.ft. according to the zoning ordinance that regulates one for each 150 sq.ft. of gross floor area for retail use, one for each 300 sq.ft. for offices, and two per unit for residential use. That is, the required parking space plays a critical role in not only reducing physical density but also generating reluctance for new development. Thus, to achieve a degree of urbanity and bring more businesses and subsequent developments to the downtown area, a reconsideration of the existing regulations should be proceeded and continuous efforts to seek alternatives to accommodate complicated needs of physical, social and economic structures should be made.

6-3-2. Implementation Phase

In implementing this plan for revitalizing the downtown area of Attleboro, priority can be determined according to the primary goal, which is to enhance a public environment and improve public life for the city.
The First Stage
First of all, new intervention of the main axis from the east neighborhood to the new park complex can be a primary implementation phase. This main axis can be regarded as a significant actor in restructuring the downtown area physically and economically. That is, along with the main streets such as North Main Street, South Main Street, and Park Street, this axis can play a role as another main street in establishing a circulation of these main streets and connecting a sense of main street to Union Street. Moreover, due to the new connection, the new mixed use complex on Union Street and Dunham Street can be more closely and directly incorporated into an existing central business district. In turn, a territory of the existing central business district can also be expanded. Thus, the main axis can be regarded as the first step in implementing the revitalization plan.

The Second Stage
Following the main axis, an implementation of two blocks on Union Street can be the next step. The mixed use complex of offices, retail, housing and a parking structure, and a retail center and its inner plaza can play a role in not only attracting people but also increasing the population during the daytime. Additionally, along with the implementation of the two blocks, an implementation of housing on Pine Street can be considered. In terms of a job and housing balance, these new housing additions can accommodate not only the existing housing demand but also the subsequent demand resulting from the addition of office and retail spaces.

The Third Stage
As an additional stage, an implementation of a central plaza on the intersection of North Main Street, South Main Street, and Park Street can be considered to reinforce physical characteristics and psychological aspects of the downtown. This central plaza surrounded by four to six story buildings can be literally a central place of Attleboro, radiating all main streets outward from the downtown. Another development on the current MBTA parking lot can also be regarded as an additional step. This development can be a kind of employment center by establishing more technolnized industries, in addition to offices, retail, and a parking structure. Due to the commuter rail, this employment center can play a significant role in providing more job opportunities for the region.
The implementation phase can be divided into these three steps according to the priority of physical and economic needs in revitalizing the downtown area of the city. The implementation phase can also be understood from another point of view. That is, the series of developments such as the main axis, retail and its plaza, mixed use complex and central plaza can play a critical role in bringing more people to the downtown, raising the daytime population and reinforcing existing characteristics of the downtown. These three strategies are acknowledged as crucial in socially, physically and economically rejuvenating downtowns or any built environment. Thus, the implementation phase imply these strategies and can play a significant role in revitalizing the downtown area of Attleboro.

6-3-3. Marketability

The revitalization plan for the downtown area of Attleboro is primarily designed to reinforce public life by improving a walkable environment that can facilitate social, economic, and cultural activities to be more diverse and accessible. Along with physical and spatial forms to facilitate pedestrian movements to be continuous, pedestrian-oriented physical structures should be incorporated by various private establishments, especially on the street level, which can define streetscapes and street life in downtown by providing pedestrians with diverse experiences. Thus, not only a physical intervention but also active social, cultural and economic environments simultaneously play a significant role in revitalizing urban structures and, moreover, establishing viable public environments. To create these socially, culturally, and economically active environments, a quantitative aspect of potential participants, who are both users and proprietors of the establishments necessary to the realization of these environments, should be considered.

Feasibility of the revitalization of the downtown area can be determined basically by analyzing the population characteristics of a surrounding region. (Table 6-1) Easy accessibility to the downtown area can be established by the Boston-Providence line and routes 152, 118, and 123, all of which are running through the downtown. The surrounding region, linked by the railroad and local traffic connectors, can be
regarded as potential market areas for creating and maintaining the downtown’s socially, culturally and economically active environments. That is, not only the city of Attleboro itself but also other cities or towns, such as Mansfield, Norton, North Attleboro, Plainville, Rehoboth, and Seekonk, can be regarded as critical actors in facilitating downtown Attleboro to be recreated. (Figure 6-20)

Figure 6-20. Map Showing the Region

Located within 15 min. drive time to these cities and connected by public transportation such as the commuter rail-

road and local bus lines, downtown Attleboro’s revitalization can play a significant role in serving the region by providing not only viable public environments but also active cultural and economic environments.

Table 6-1. Population of the Region

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<td>Total</td>
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<td>107,206</td>
<td>9.4%</td>
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<tr>
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<td>35,131</td>
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<tr>
<td>Median Household Income</td>
<td>19,178</td>
<td>$40,917</td>
<td>$48,554</td>
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1 Zoning Ordinance of the City of Attleboro. City of Attleboro, Massachusetts. 1996.

The Purpose of this Thesis

This thesis was initiated by the recognition of the New Urbanism’s values and limits, and in an effort to overcome its limits, the New Urbanism was applied to existing built environments. That is, it is believed that merging the New Urbanism with physical, social, and economic structures of existing communities can provide opportunities to re-examine its values and re-model it to be more viable. For its testing ground, Attleboro, Massachusetts, was selected because of its potentials for the application and its needs for restructuring the downtown area. Through the application of the New Urbanism to the downtown area of Attleboro, this thesis has attempted to answer the questions: What are the ways to apply the New Urbanism to existing built environments and how can the application facilitate the New Urbanism to be more applicable and viable?

This thesis understands that the New Urbanism’s primary goal is to recover a public realm by enhancing public environments and improving public life and, finally, to foster a sense of community. This primary goal is rooted in a reaction...
to conventional suburban development patterns that ignore values of human settlement. In this respect, the application of the New Urbanism to existing communities can mean a provision of motives that can improve public environments physically, socially, and economically. To proceed with the application, models—Spatial Sequence, Networks, and Activities—were built from case studies of New Urbanists’ projects. These models can be regarded as their main strategies for providing public environments throughout their projects. These models can play a practical role in facilitating implementation of the application of the New Urbanism and providing opportunities to evaluate the application. The process of an application of the models to existing urban structures can be regarded as a vehicle to generate a variation of the New Urbanism. This variation, visualized through the diagrams, plans, and guidelines, is a result of the process of an application of the New Urbanism to the downtown area of Attleboro.

Thus, the whole process of this thesis, resulting in the variation, can be an answer to the first question, “What are the ways to apply the New Urbanism to existing built environments?” and the variation can be another answer to the second question, “How can the application of the New Urbanism be useful for it to be more applicable and viable?” That is, the variation can be regarded as a result of modification of the models, which are an abstract reinterpretation of the New Urbanism and, moreover, the evaluation of the models can provide an opportunity to rethink and remodel the New Urbanism to be more viable.

Evaluations of the Models

Through the application of the models to downtown Attleboro, the models can be evaluated to see feasibility of the New Urbanism’s role in restructuring existing urban structures. The model “Spatial Sequence” is designed to provide diverse perceptions for pedestrians so that they can be encouraged to walk through various dimensions and forms of spaces continuously connected. In the revitalization plan of downtown Attleboro, the main axis can be regarded as a major element to show this model. Originally, this model can be found through Medieval cities’ physical structures and, especially, in Seaside, this spatial sequence is ingrained, structuring an overall organization of urban components.
However, when compared to densities of European cities, those of suburban cities or towns are so low that this model cannot be effective. That is, within highly densely built environments, this model can be effective to carry out its intention by continuous connections of enclosed spaces and narrow streets. Likewise, though this model can be less effective in being applied to suburban built environments than built environments in Europe, a fundamental intention of this model should be acknowledged in terms of its role to create a continuous pedestrian stream. Recognizing its value, necessary and feasible modifications of the model should be sought to accommodate the conditions of suburban built environments. That is, a utilization of tree lines, a provision of continuous street lines, a manipulation of setback dimensions and a provision of a focal point can be incorporated into concepts of the model. Thus, diversifying ordinary street structures, along with provision of focal points, can be added into this model to provide a continuous pedestrian stream and improve street life.

The second model, “Networks” is designed to structure an overall walkable environment and determine a walkable area. That is, public uses provide motives for people to come to them, and along with convenient connections, especially for pedestrians, the public uses can be a network that can govern a basic structure of a walkable environment. A distribution of public uses and connections between them can establish a larger area of a walkable boundary and provide a wider sense of public environments. In the downtown area of Attleboro, well identifiable public facilities have been established throughout the area. However, the role of the public facilities to structure a walkable environment has not fully been carried out because of the lack of pedestrian connections between them. That is, the intention of this network of public uses cannot be fulfilled without complementary connections between these facilities. In Attleboro, this model can be achieved by providing easy connections and reinforcing the roles of existing streets connecting those public facilities. Through the application of the model to downtown Attleboro, it is proved that the relationship between the network of public uses and the street network should be understood as a reciprocal complementary entity to structure the walkable environment. Additionally, an incorporation of the central commercial district in downtown Attleboro can play a
significant role to make this network more functional and effective. That is, this model can be expanded and reinforced by the incorporation of the commercial uses into public uses. This incorporation can also be understood in terms of a role of the third model, “Activities,” in encouraging people to walk through a provision of various activities.

The other model, “Activities,” intends to establish a continuous use of a place, which can lead to a generation of active and viable public environments. The notion of this model can be regarded as a critical role in providing livability of places by involving diverse activities of users. That is, a liveliness of places can be generated and maintained by incorporating various uses. Due to the characteristics of the downtown, downtown Attleboro has already had diverse institutional, public facilities and private commercial establishments. Accordingly, the application of this model might be less significant in creating diverse activities, but still can be valid and useful in terms of a diversification of uses to achieve an involvement of diverse users. That is, this model’s role in downtown Attleboro is to establish a mixture of uses that can create continuous users’ activities. Thus, in downtown Attleboro, the application of this model is implemented through a complement of existing uses, an expansion of existing uses, and an addition of new uses. By incorporating these three ways to implement the model, the model’s intention can be conveyed to create lively and viable public environments.

In addition, when roles of the downtown have been weakened because of development of large scale strip shopping malls and communication technologies, this model, “Activities,” can have another meaning in re-determining the role of the downtown for its livability. According to an interview with a representative of a non-profit organization of the city, named FAIR (Friends of Attleboro Interested in Revitalization), he expects that the downtown will be a place to provide more service-oriented businesses such as insurance, banks, and law offices rather than traditional retail establishments. Recognizing a significant role of the downtown as a place providing a sense of a community, he seeks ways that can bring people to the downtown and keep the downtown viable by establishing new functions compatible with the changes. In this respect, the model can prove its validity once
again. That is, due to the non-physical characteristic of this model’s intention, it can always be applicable to satisfy the changing needs of social, physical and economic environments to which it is applied. Thus, this model can play a role not only to facilitate public environments to be viable and livable but also to remind designers and planners of changing needs of users according to changing urban structures.

**Reflections**

Through the evaluation of three models, the needs of their modification can be determined and contents of the modification can be summarized as follows:

1) The model “Spatial Sequence” can be valid in creating continuous pedestrian streams by providing various spatial perceptions, but rather than a formalistic approach in designing the spatial forms, more careful considerations of ordinary street structures such as tree lines, setbacks, sidewalks, and visual or physical focal points can modify the model to be more applicable and useful to achieve its intentions.

2) The second model “Networks” can be critical in establishing a sense of walkable environments and determining a primary boundary of the walkable environment. The network of public uses and the street network should be incorporated to be a reciprocal complementary relationship, and an addition of a commercial center to the networks can facilitate them to be more functional.

3) The last model “Activities” can be regarded as crucial in creating livable and viable public environments, and, in particular, this model can play a role as a concept that can provide an opportunity to consider changing urban structures.

Thus, the evaluation and modification of the models can provide an answer to the second question of how to make the New Urbanism applicable. Even though the models cannot be all about the New Urbanism, the creation of models and their application to existing urban structures can be meaningful and valid when the New Urbanism’s primary goal is understood to be to recover a public realm. In particular, from the evaluations, what should be reconsidered is values of ordinary street structures. That is, what is the most necessary to complement the models, determined in the course of the application and evaluation, is respecting ordinary street life and structures. This lack of ordinariness of the models might result from the New Urbanism’s innate characteristics.
of formal rigidity. In particular, the codes of the New Urbanism can be a facet implying formality. That is, without careful considerations of existing physical, social, and economic structures, the codes can be a vehicle to lead to a universal application and a superficial emulation of physical forms. Moreover, the New Urbanism’s emphasis on the physical structures and an aspect of the universal application can be incorporated without its original intentions and this incorporation can cause the same mistake that Modernists made. Thus, the New Urbanism’s formality should be modified by existing urban structures to be a viable paradigm, recognizing that small and gradual changes have built and maintained our built environments. Its ideals can be remote to the real world but New Urbanists’ efforts to remind us of the values of human settlement should be acknowledged. This thesis has explored a way to narrow the gap between the New Urbanism’s ideals and the real world through the application of it to existing urban structures. Even though the result can be limited due to the lack of the models’ comprehensiveness and the application process’ completeness, this thesis may be a foundation that can initiate a continuous search for a viable paradigm for our built environment.
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