

ABSTRACT

Title of Document:

EXPLORING A TOWN/CAMPUS
INTERSECTION

Francis Brian Carroll, M.Arch/M.C.P., 2006

Directed By:

Professor Karl DuPuy

This thesis seeks to explore an edge condition created by the Southern boundary of the University of Maryland campus and 41 acres of privately held student housing and retail properties. The proximity of this land to the campus and the current local housing shortage make it a critical part of the solution. The University of Maryland has developed a master plan that describes a vision for its future with an eye toward efficient use of space. The area described above has not yet benefited from a comprehensive vision.

This thesis will focus on the development of a comprehensive plan for this site, and will culminate in the schematic design of a mixed use (retail and residential) building. This building sited at the intersection of Knox Road and Route 1 will seek to make tangible the vision for future development that will maximize the resources and potential of this site.

EXPLORING A TOWN CAMPUS INTERSECTION

By

Francis Brian Carroll

Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Master of
Architecture/Master of
Community Planning
2006

Advisory Committee:

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Professor James R. Cohen, PhD

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Dedication

To my wife Brooke who with grace and loving support made this thesis possible, and to and my children Molly and Andrew who always remind me what is truly important.

Acknowledgements

This thesis would not have been possible without the contributions and advice of a larger community. Professor Karl DuPuy as my committee chair served as father confessor, drill sergeant and cheerleader. His dedication to the school, and the students is remarkable, and his help over the last semester has been invaluable. My committee also included Jim Cohen, whose gracious direction was much appreciated and Steve Hurtt whose enthusiasm and frank critiques were always on target and genuinely appreciated. Finally my fellow students who helped directly or in terms of moral support made this whole process richer and more rewarding.

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City areas with flourishing diversity sprout strange and unpredictable uses and peculiar scenes. But this is not a drawback of diversity. This is the point ... of it.

Jane Jacobs

Chapter 1: Introduction



Figure 1 - Route 1 c 1960 (Images of America: College Park)

Introduction:

This thesis investigates the creation of a walkable, mixed-use community as a strategy for sustainable design, and asserts that off-campus housing and retail near the edges of The University of Maryland can be denser, better scaled, safer and more attractive than the present configuration.

We live in an age where inattention to our built environment is no longer an option for design professionals. Rising fuel prices and alarming signs of climate change create an increasing awareness of our responsibilities to design sustainable communities. In the introduction to *The Next American Metropolis*, Peter Calthorpe talks about “the ecology of communities” and the use of the ecological principles of diversity, interdependence and scale as they relate to modern communities. These principles are discussed as a refutation of the Euclidian zoning principles that we have relied upon in this country for decades.

It should be noted that this site derives its purpose from the university campus, but in no way represents the entirety of College Park. Within the city there are busy commercial corridors, industrial uses, office space, new and vintage residential fabric. The commercial core of the historic downtown lies within this thesis site, but need not carry all of the retail or commercial uses for the community. In fact this thesis will argue that this site is better suited to serving a limited number of specific uses.

There is pressure to redevelop this area, with suggestions of high rise apartment blocks. This is a strategy that may have merit, but we must also consider the unique nature of this tract as a historic commercial district. The City of College Park developed through the late 19th and into the early 20th century as an intimate pedestrian scaled village. In the latter half of the 20th century, improvements to Route 1 were made to accommodate traffic flow, ignoring the large volume of pedestrian traffic in the University area. This is an issue that may be rectified, returning the commercial center to a viable vibrant main street. In addition zoning regulations in the residential portion of the site dictated fairly low densities, and were not able to anticipate the growth in the college population.

The historic downtown of College Park should seek to emulate the best of what the College Town has to offer as evidenced in Princeton New Jersey, or State College, Pennsylvania. The characteristics of these towns that make them desirable are mixed-uses, walkability, pedestrian scale, and activity. The residential portion of the site must use the proximity to the campus and the land values as an impetus for greater

density. This thesis will develop a comprehensive master plan for this community, and culminate in the design of a mixed use block within this master plan. By proceeding with a vision of the small college town, and utilizing the principles of New Urbanism, this thesis will capture a vision of College park as an archetypal College town capable of attracting students and outsiders alike.

Architecture is a social act and the material theater of human activity.

Spiro Kostof, A History of Architecture

Chapter 2: The Site

History

College Park which lies in the northwestern portion of Prince Georges County Maryland began its history as a rural farming community. It was located along the stage coach route (c. 1820) between Washington and Baltimore. The Rossborough Inn (c. 1803) pictured below served as a stop along this route.

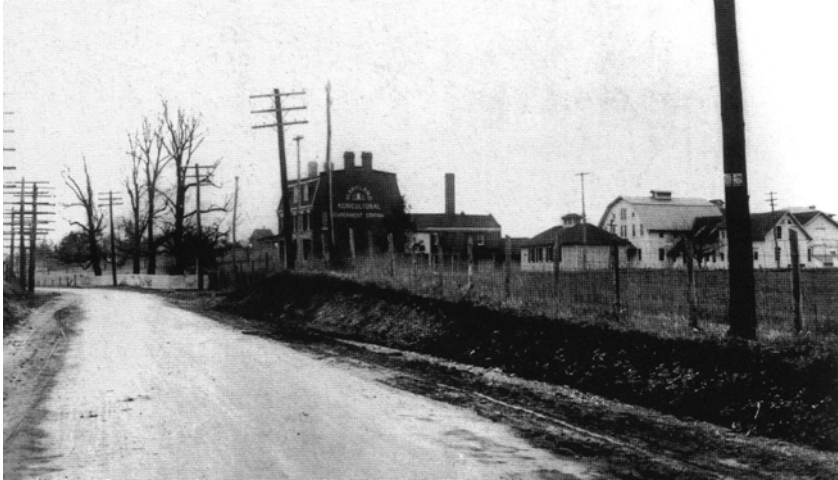


Figure 2 - Baltimore Washington Turnpike (Images of America: College Park)

In 1835 local stage coach service was overtaken by the B&O Railroad 1835 which extended its routes from Washington to Baltimore.

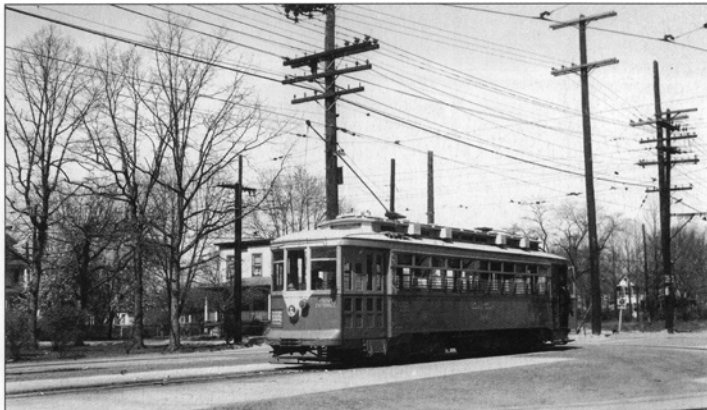


Figure 3 - Electric Trolley College Park (Images of America: College Park)

By the end of the 19th century electric streetcars had overtaken the railroad as the preferred means of transportation, making College Park a streetcar suburb of Washington DC.¹

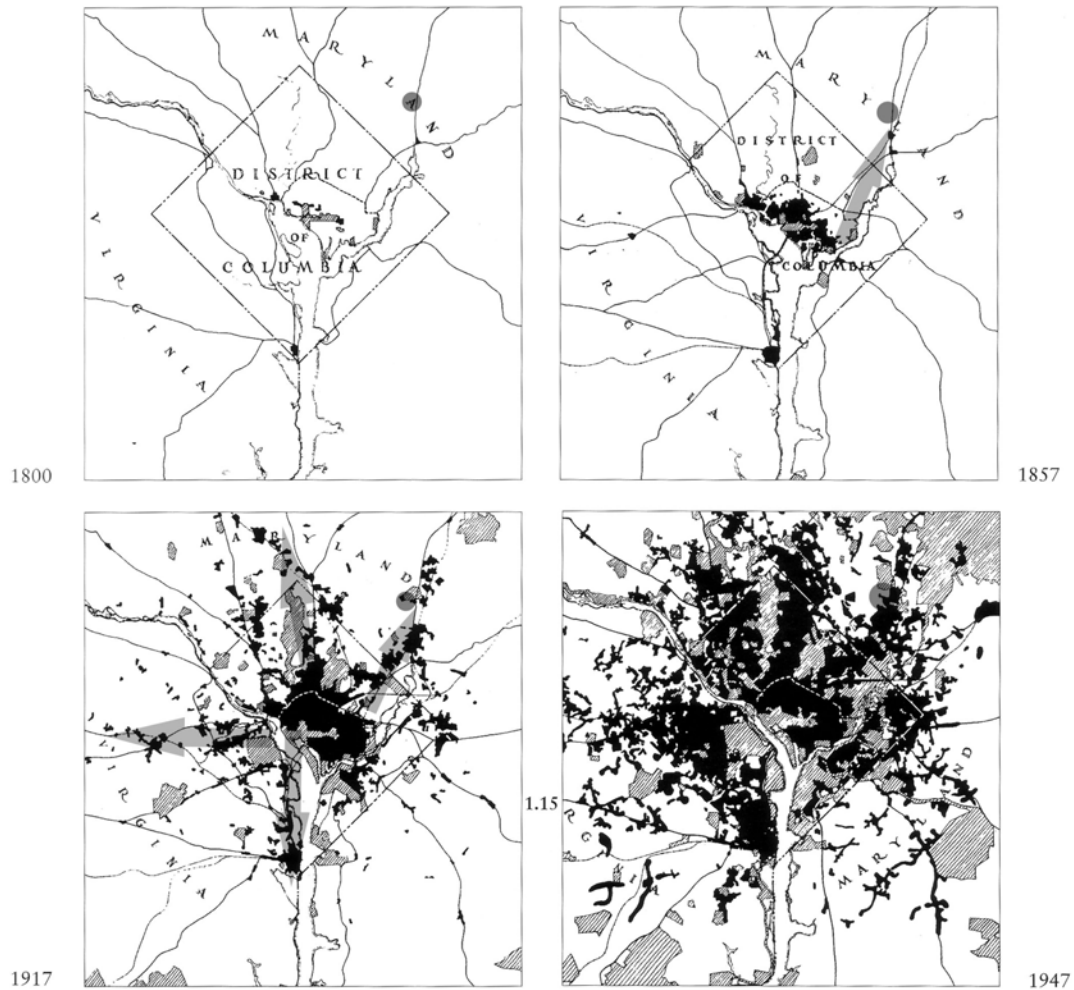


Figure 4 - Washington DC Urban Growth along railroad lines (New Civic Art: Elements of Town Planning)

Today College Park boasts a green line metro stop and a MARC rail stop, as well as Metro bus and University of Maryland Shuttle Service

The community now known as College Park was made up of Berwyn, Lakeland, Branchville and College Station (later College Lawn and Finally College Park).

The City of College Park as we know it was incorporated in 1945 bringing all of these communities together.²

There are two major factors that figure into the history of this small town.

The first is the College Park Airport. The history of College Park is inextricably tied up with the history of aviation. College Park Airport is the longest continuously operating airport in the world.



Figure 5 - Wilbur Wright and Lt Frederick Humphreys College Park Airfield October 1909 (Images of America: College Park)

Founded in 1909, the airport was established for the purpose of having Wilbur and Orville Wright to instruct the first military aviators in history. In 1911 the United States established its first military flight school in College Park. In 1918 the United States Postal Service inaugurated the first postal airmail service from College Park. For these reasons and many others College Park is known as The Cradle of Aviation.

The second and more germane factor is the University of Maryland. In 1856 The Maryland Agricultural College was founded on 150 acres of land donated from the Calvert family plantation. Two years later a further 420 acres of the Riverdale Plantation were purchased to add to the original parcel. In 1864 the school became a land grant college. The University was not immediately successful. In 1866 the state assumed 50% ownership pulling the school out of bankruptcy. The state of Maryland assumed complete control of the institution in 1916. Today the University of Maryland has been designated as the flagship institution of the University of Maryland system. It occupies 1250 acres of land and enrolls 35,000 students.³ The University dominates the town of College Park serving as its *raison d'être*.

The census lists the population of College Park as 24657 in an area of 5.44 sq miles⁴. The 2000 US Census states that 49% of the population of College Park is non-families and 51% of the population is 18-24 years of age.

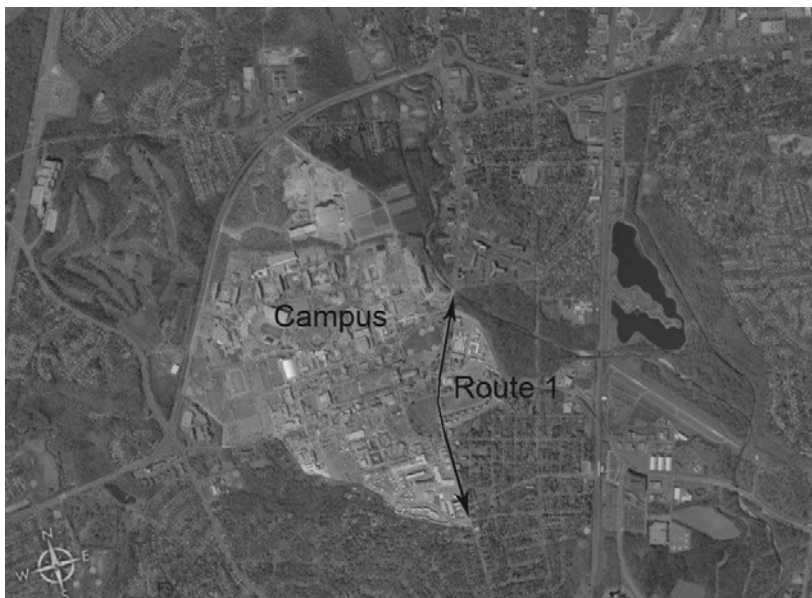


Figure 6 – University of Maryland Campus (Carroll)

Description

The site for this thesis occupies 41 acres along the southeast edge of the University of Maryland campus. The site is generally bordered by Knox road to the North, Guilford Road to the Southwest and US Route 1 to the east.



Figure 7 – Thesis site (Carroll)

This site was chosen for several reasons. The first is the fact that it functions as an extension of the University campus, while not directly under the University's control. To the north the site occupies the edge of the University Campus. Here there is an arbitrary division based on ownership, but not on function. The second reason is that it is an under exploited and badly built region of student housing in an area of increasing population and land values. On the Northern edge just off of the site South

Campus Commons, (completed in July of 2000) is a public/private partnership between the university and Capstone Development Corporation a private development company. This complex of buildings house 1825 students in 498 apartments among six buildings. The third reason for choosing this site is that the eastern edge of the site bounds US Route 1 and is the heart of the historic College Park retail district. This area fronts Route 1 with large surface parking lots and low lying commercial buildings. There is a mix of historic brick buildings in the retail district of up to 3 stories, and new 1-2 story retail buildings. To the Southwest the site shares an edge with residential fabric typified by single family homes. This edge is impervious with no vehicular access between the site and the residential fabric of College Heights Estates.

Analysis

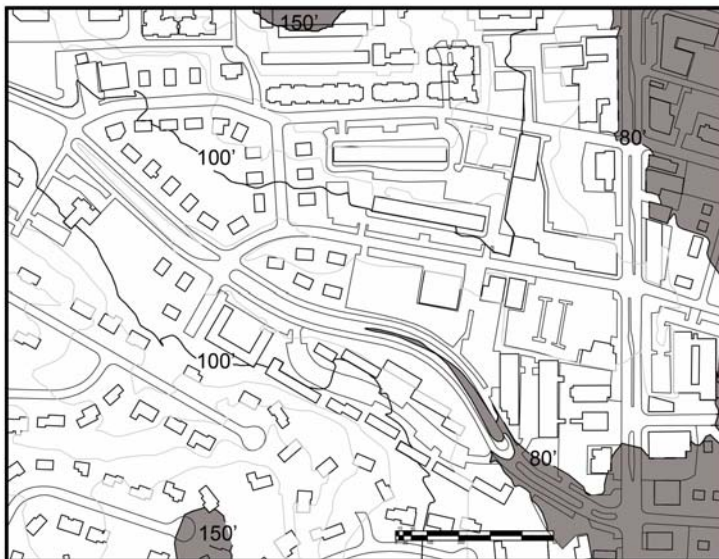


Figure 8 – Thesis site with topography (Carroll)

The site rises just over 100 feet from a low point in the southeast to high points to the Northwest and Southwest. A small stream (Guilford Run) crosses the site from the

Northwest to the Southeast. This stream is currently running in the median of Guilford Road.

Current Zoning

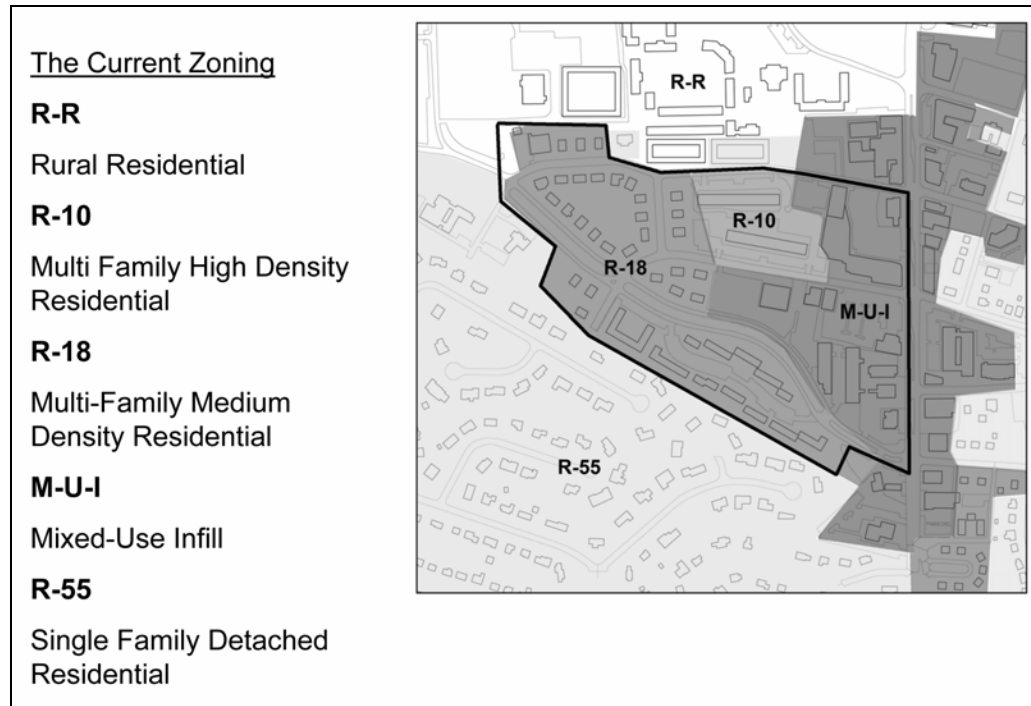


Figure 9 – Current zoning on the thesis site (Carroll)

The current zoning on the site encompasses 3 categories. The area to the east along Route 1 is an

M-U-I (or Mixed-Use Infill) zone. This designation was designed to encourage mixed use infill development. The regulation states:

These regulations are intended to create community environments enhanced by a mix of residential, commercial, recreational, open space, employment and institutional uses in accordance with approved plans.

(2002 Sector Plan p 23-24)

R-18: Multifamily Medium Density Residential – Allows multiple family development ,single-family detached; single-family attached, two-family and three-family dwellings. The maximum densities are, 12 Garden apartments per net acre or 20 Mid-rise apartments per net acre with detached homes at even lower densities.

R-10: Multifamily High Density Residential – This designation allows high density residential in proximity to commercial development; and also allows single family detached homes. This zoning category allows a maximum of 48 dwelling units per net acre .

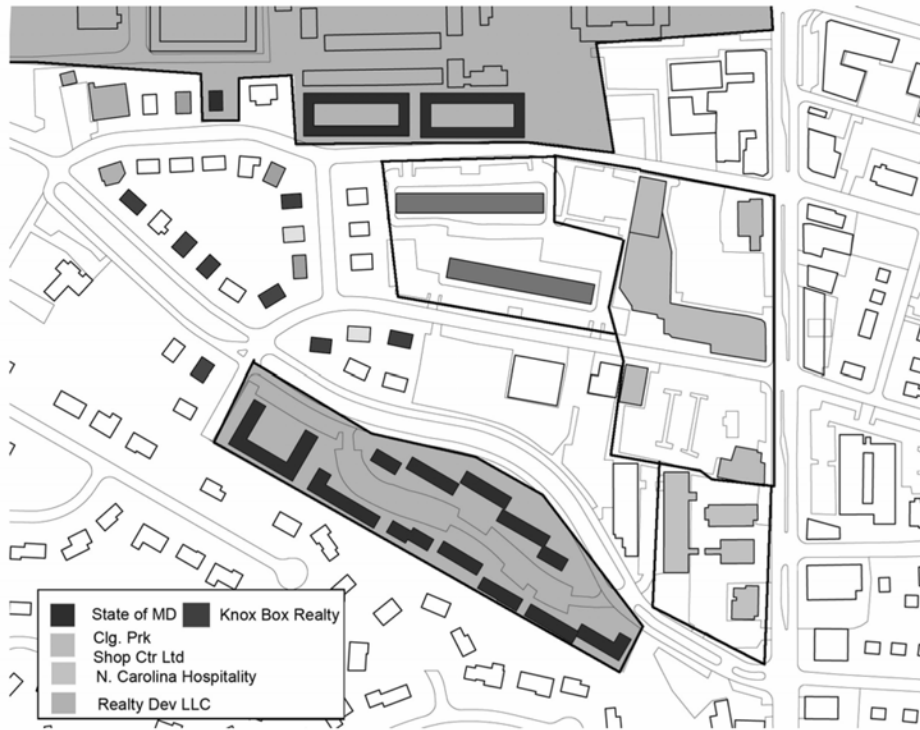


Figure 10 – Ownership of parcels (Carroll)

The area is divided into two segments. Along Route 1, 11 acres of this total site is occupied by retail, restaurants office, and a small hotel.



Figure 11 – Retail properties along Route 1 (Carroll)

Beyond these businesses and adjoining the College Park Campus is 28 acres of privately held apartments, housing University of Maryland students. This residential area consists of 178 units of multi-family housing, College Park Towers a 204 unit condominium project in two towers, and Graduate Gardens a 145 unit rental complex in 12 3-4 story buildings. This represents a density of 24 dwelling units per acre on the 22 acre portion that is currently residential. Looked at in another way this is a density of 13.5 dwelling units per gross acre for the entire site.

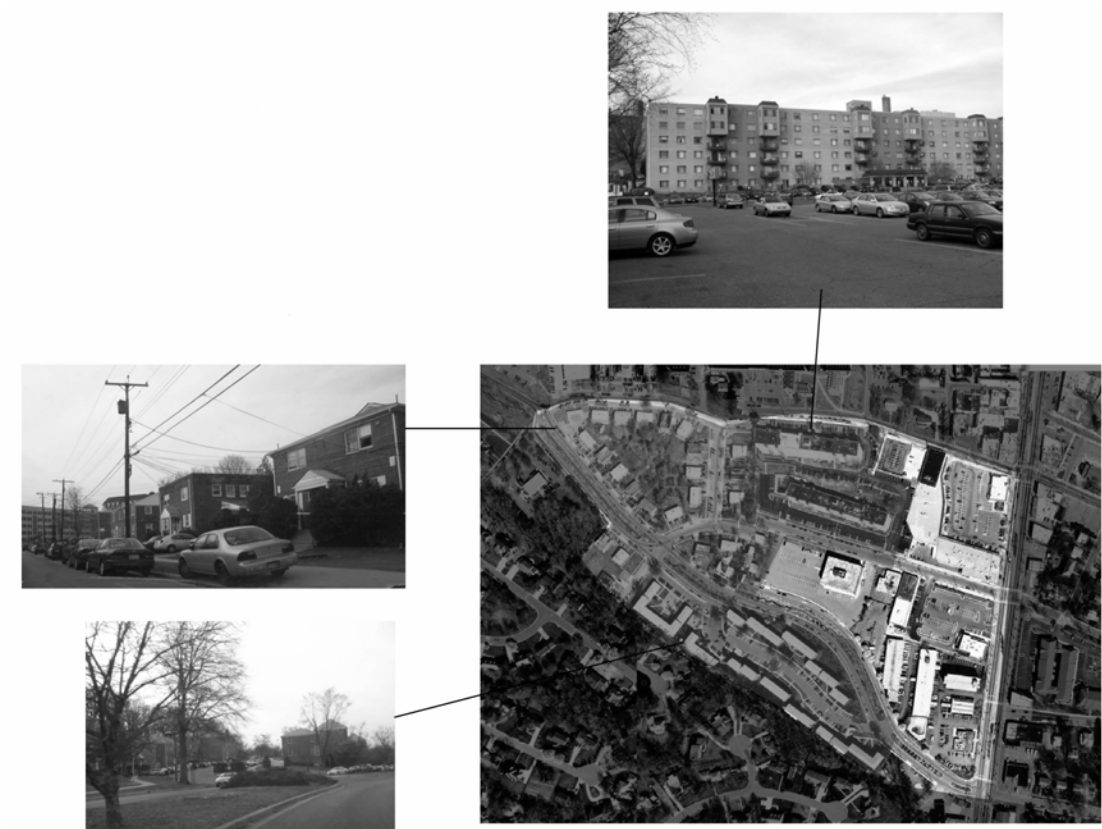


Figure 12 – Existing residential typologies (Carroll)

Each city is an archetype rather than a prototype, an exaggerated example from which to derive lessons for the typical.

Robert Venturi

Chapter 3: Precedents and Typology

Master Plan Precedents

University of Maryland Master Plan

University of Maryland is a driving force in the design of this project, and therefore the 2001 Master Plan is an important precedent in this process.

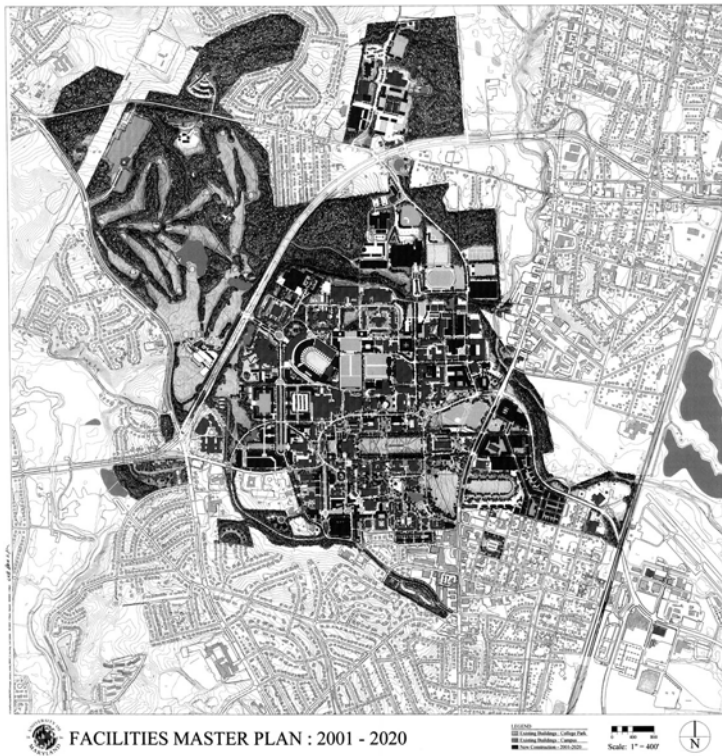


Figure 13 - University of Maryland Facilities Master Plan map

This plan is of particular importance given the stated goals:

...this plan, in contrast to previous ones, puts the siting of buildings and the development of the campus in a wider context. The committee considered ways to preserve our architectural heritage and extend the aesthetic appeal of the grounds and buildings. It looked at problems of balancing appropriate density of buildings with accessibility and attractiveness, and it advocated environmental stewardship. The planning committee established four principles or goals to guide future development:

- 1) plan the built and natural environment in a way that preserves the beauty of the campus and protects the environment;
- 2) reduce the number of automobiles on campus and eliminate vehicular congestion to the extent possible while promoting unimpeded movement across the campus;
- 3) reinforce the campus's role as a good neighbor in the larger community by the careful development of sites on the campus periphery or in outlying areas that link us to the community; and

- 4) preserve the architectural heritage of the campus and enhance it through open spaces, gathering places, vistas of green lawn and trees, and groupings of buildings that promote a sense of community.

University of Maryland Facilities master Plan 2002, Executive Summary

The vistas, greenways and attention to edges can be utilized as this site is developed. It is a great resource to have a map of the next twenty years of development on the adjoining 1200 acres.

Downtown Schenectady Master Plan

The Downtown Schenectady Master Plan completed in 1999 by Hunter Interests Inc., Sasaki Associates, Synthesis Architects, and O. R. George & Associates was undertaken with the express goal of:

.....short-term development actions which produce synergistic impacts and which together turn around the downtown economy and heighten investment confidence.

And to

...initiate actions which immediately bring more **people** into downtown Schenectady during daytime and evening hours; **focus** actions on a relatively small geographic area initially, so as to maximize impacts and assist each other; and work toward the true **partnership** of effort that will be necessary to overcome past divisions and sustain and expand revitalization efforts already underway.

Downtown Schenectady Master Plan Executive Summary

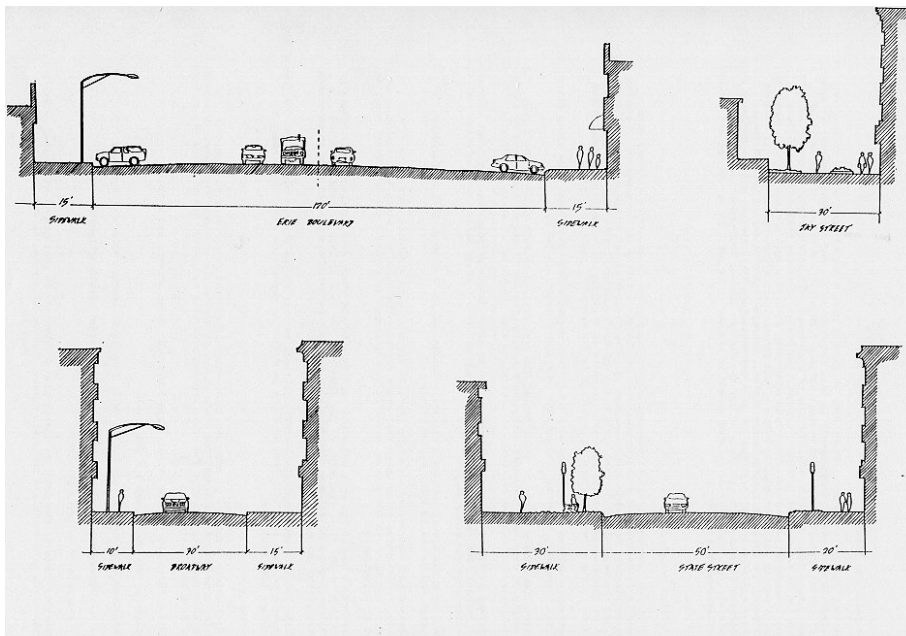


Figure 14 – Schenectady Master Plan street sections (Sasaki Associates)



Figure 17 – Wesleyan University Master Plan (Ayers Saint Gross)

In addition the Master Plan seeks to develop an imageable town.

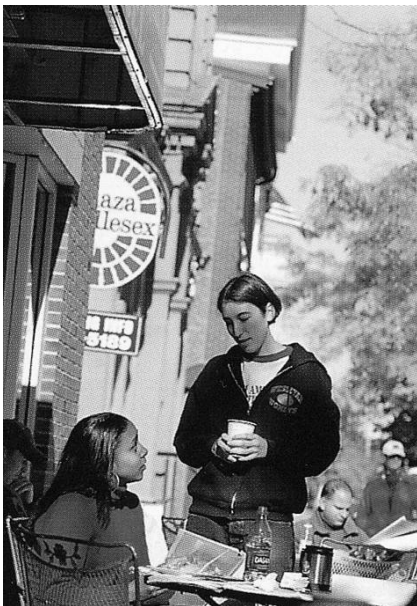
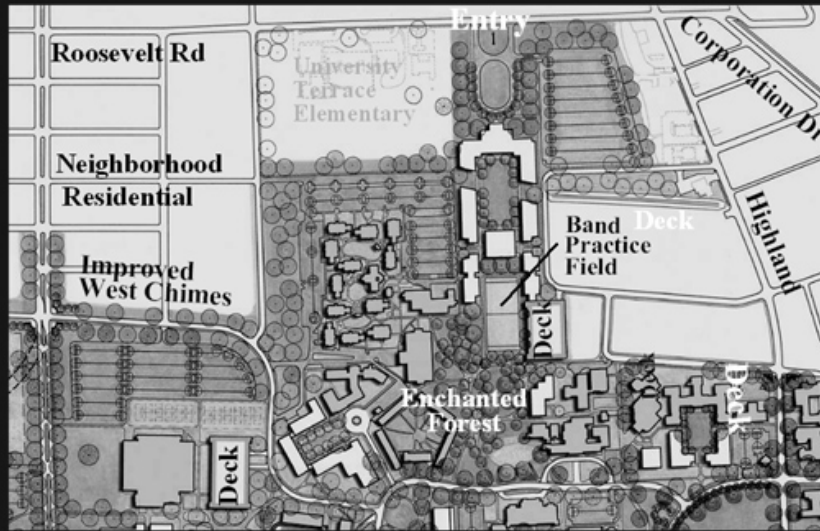


Figure 18 - Wesleyan University Master Plan (Ayers Saint Gross)

Louisiana State University

In much the same way Louisiana State University seeks to establish a better relation to its edges.

8. Upgrade campus edges and the university-neighborhood interface.



Louisiana State University 2003 Campus Master Plan SmithGroup JJR

Figure 19 – Louisiana State University Master Plan detail (Smith Group JJR)

This master plan contains a number of other foci that make it relevant.

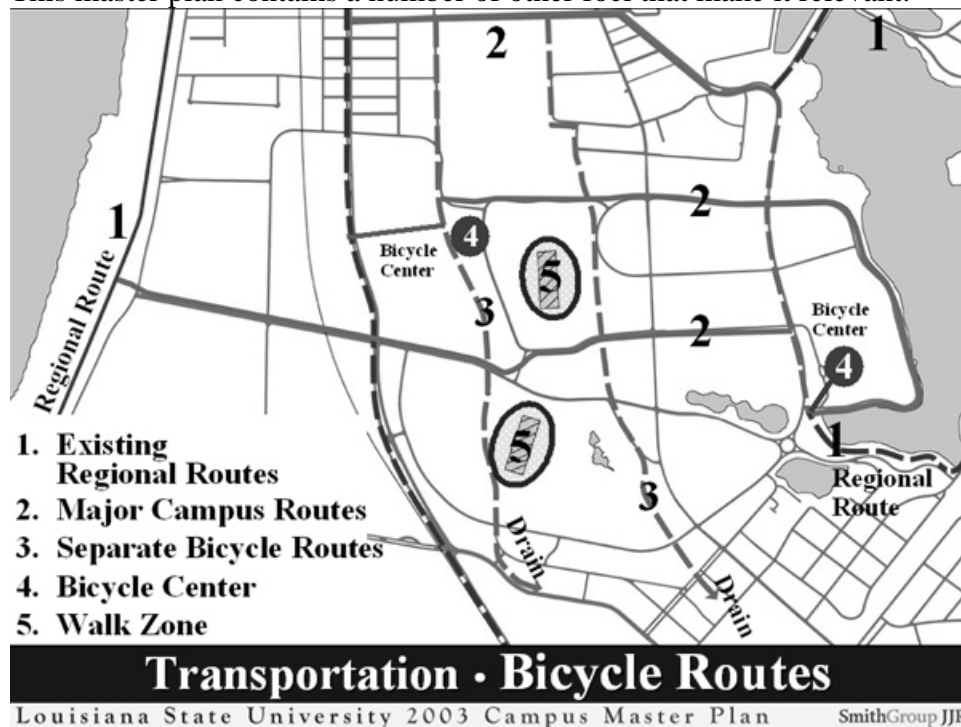


Figure 20 – Louisiana State University bicycle routes (Smith Group JJR)

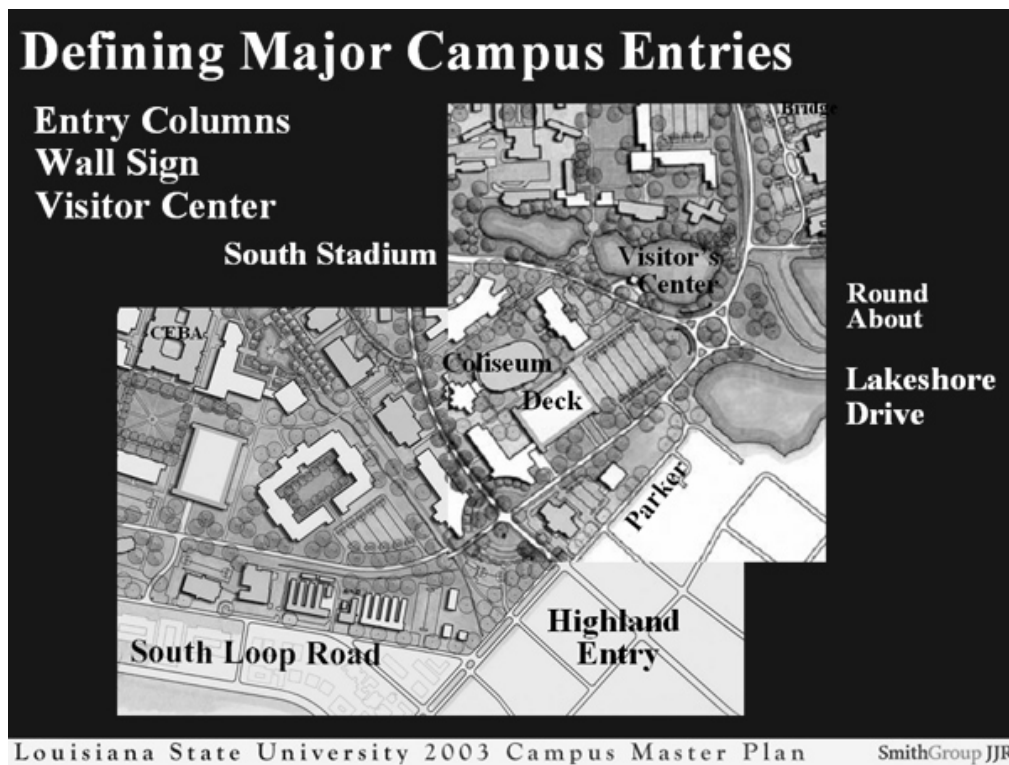


Figure 21 – Louisiana State University Master Plan entry (Smith Group JJR)

These Master Plans reflect different foci, but are all relevant to this thesis in several areas. They address the central issues of economic redevelopment, town gown relations and edge conditions, transportation routes and internal order, consistency and identity. The Master Plan for this thesis site must address the economic redevelopment of College Park, with attention to its identity as a symbiotic part of the University of Maryland, but with an understanding that economic health requires the attraction of investment from outside of the community. This development must look at issues of edges, relations between the full time residents of College Park and the students, transportation, identity as well as others.

Building Precedents

Washington Court Apartments.

This 1986 building by Polshek Partners inserts a modern mixed use residential/retail building into a historic district. The building is able to blend in with the existing fabric while maintaining its own identity. In addition it is able to maintain a street level retail presence while creating a semi private courtyard for the residents. This rear space is separated from the street in both section and plan.



Figure 22 – Washington Court Apartments exterior view (Polshek Partners)

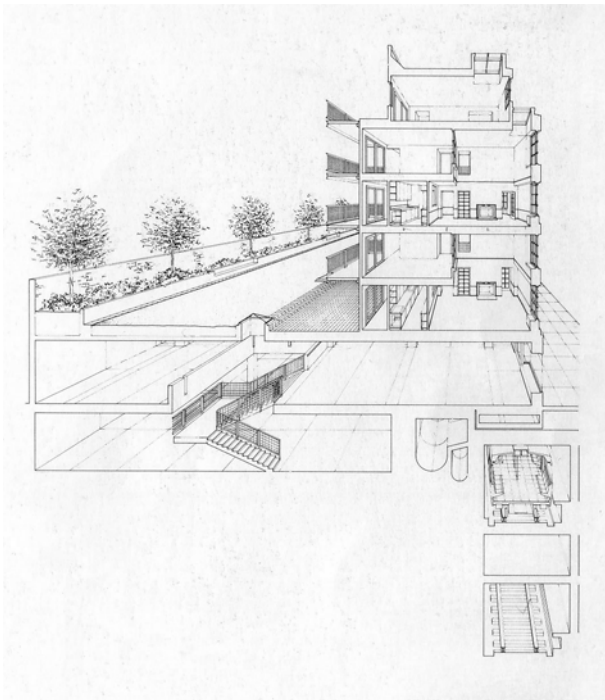


Figure 23 – Washington Court Apartments section (Polshek Partners)



Figure 24 – Washington Court Apartments interior courtyard (Polshek partners)

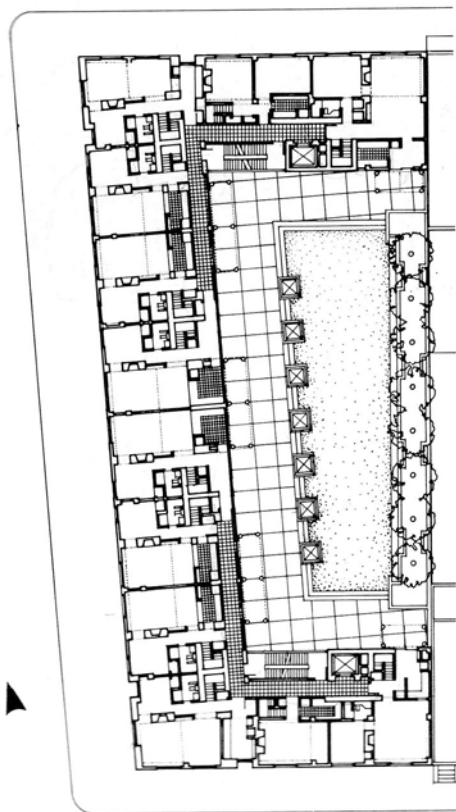


Figure 25 – Washington Court Apartments floor plan (Polshek Partners)

Bronxville West

This 1985 mixed use development by Polshek Partners manages to maintain a street level retail presence in addition to 240 housing units and a 1000 car garage. This project represents a density of 80 DU/acre. This is a density that would fit quite well in the College Park residential area.

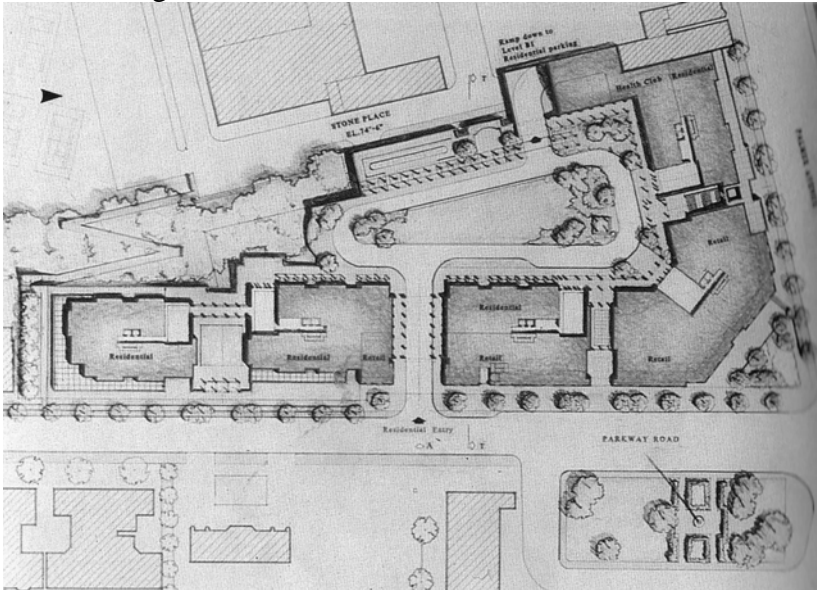


Figure 26 – Bronxville West Apartments schematic plan (Polshek Partners)

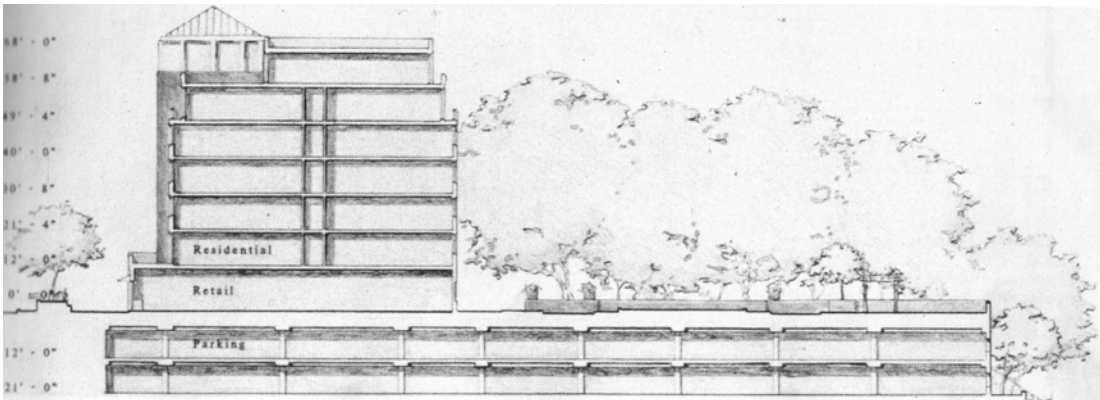


Figure 27 – Bronxville West Apartments schematic section (Polshek Partners)

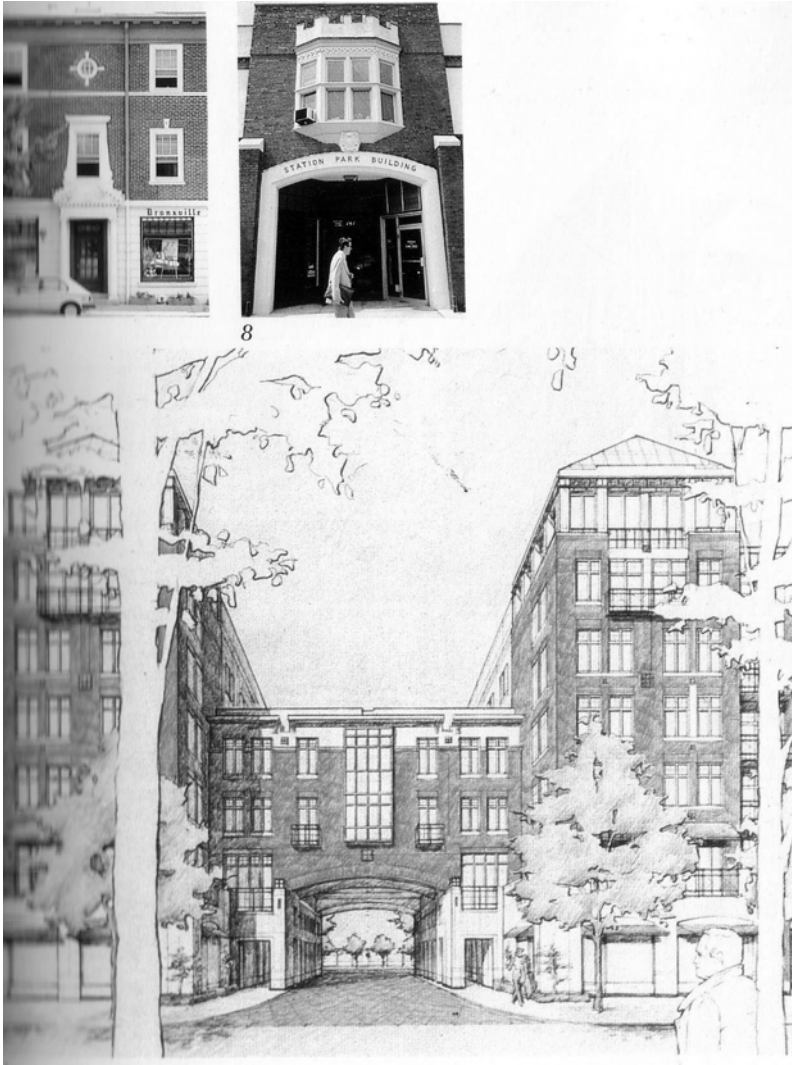


Figure 28 – Bronxville West Apartments local context (Polshek Partners)

Hsimen Hin-Nu Terrace

This 1995 mixed use development by Michael Pyatok in Oakland California maintains street level retail, and affordable apartments of 1-4 bedrooms. Affordable housing is a good model for student housing. The density on this site is slightly less than optimum for College Park at 55 D.U.A.. The parking is built at .85Spaces/Dwelling Unit, and 30 Retail Spaces. This is half of that required by code on the College Park site, but may provide a model for sharing of spaces and reducing parking loads.



Figure 29 – Hsimen Hin-Nu Terrace exterior view (Pyatok Architects)



Figure 30 – Hsimen Hin-Nu Terrace exterior view (Pyatok Architects)



Figure 31 – Hsimen Hin-Nu Terrace interior courtyard (Pyatok Architects)



Figure 32 – Hsimen Hin-Nu Terrace section view (Pyatok Architects)



Figure 33 – Hsimen Hin-Nu Terrace section perspective (Pyatok Architects)

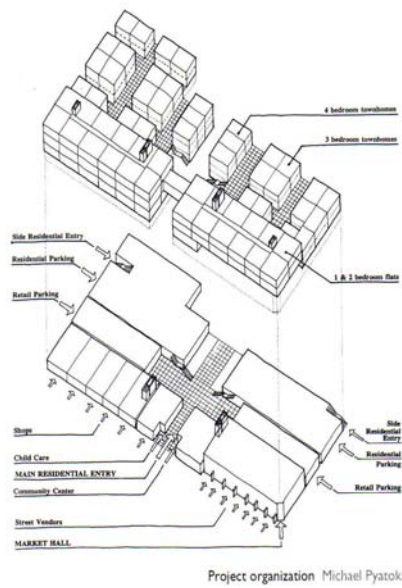


Figure 34 – Hsimen Hin-Nu Terrace program diagram (Pyatok Architects)

Typology

The retail portion of this site will reflect the typology of the pedestrian shopping street. Each of these streets is intimate in scale, with small scale retail and restaurants on the ground floor. In each case the buildings are less than 5 stories, of moderate width, with a continuous street wall.

Examples of the relevant type are shown below.



Figure 35 Old Town Alexandria 1



Figure 36 M Street - Georgetown 1



Figure 37 Bethesda Row 1



Figure 38 Newbury Street Boston 1

“The city is a fact in nature, like a cave, a run of mackerel or an ant-heap. But it is also a conscious work of art, and it holds within its communal framework many simpler and more personal forms of art. Mind takes form in the city; and in turn, urban forms condition mind.”

Lewis Mumford

Chapter 4: Design Approach

Objective

To create a residential neighborhood that functions as an extension of the University of Maryland campus, and to reclaim the western edge of route 1 in order to establish a vibrant “main street”. The design will look to historical examples of small towns and college towns for common factors that make them successful. This thesis will investigate and suggest patterns of development that will reflect the following design objectives:

- Have the site engage the edge of campus.
- Increase the residential density
- Return Route 1 to a form that reflects the archetypal main street
- Reclaim the Guilford Run as a natural asset
- Consolidate open space into meaningful areas for recreation
- Reconstruct the street grid into a functional hierarchical organization.

Design Approach

The Process

This site is currently the subject of a community Charrette process being spearheaded by the University of Maryland Student Government. This process proposes to forward recommendations for this thesis site as well as a site approximately one mile to the north on the east side of Route 1. Initial results from a pre-Charrette meeting indicate that the students seek a more pedestrian friendly downtown with a greater diversity of retail. The Charrette which took place at the University of Maryland Architecture School in April of 2006 was attended by approximately 80 people. These included

elected officials from College Park, University of Maryland faculty and students from multiple disciplines. The result was multiple schemes from nine different teams.

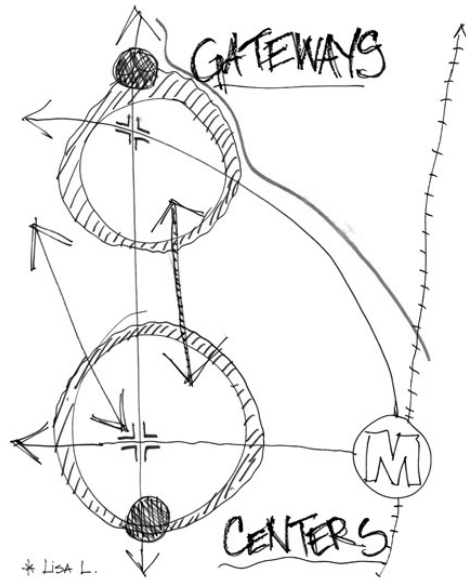


Figure 39 – College Park Charrette April 2006



Figure 40 - College Park Charrette April 2006

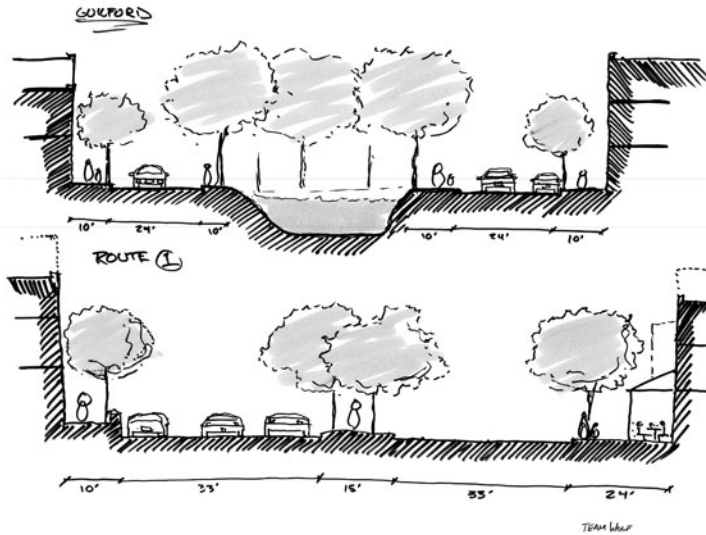


Figure 41 - College Park Charrette April 2006

These were selectively presented to the Mayor and City Council of College Park on April 25th 2006.

In addition there are two other documents which affect the development of this area.

There exists a 1995 Comprehensive Plan for College Park. This was approved by the Mayor and City Council in December 1995.

Route 1 Sector Plan 2000. This plan created a new zoning category Mixed Use Infill (M-U-I) which replaced the Commercial Shopping Center (C-S-C) zone, and now allows commercial or residential, as well as mixed uses, in order to provide flexibility and attract new development to the area.⁵

This Sector Plan states as one of its goals:

Reaffirmation of a main street character for US 1 from downtown College Park to Berwyn Road. A main street character has:

- Compact development along the street edges

- A strong pedestrian environment with buildings located close to the street, separated by wide sidewalks, and with amenities such as street furniture and plazas.
- A primarily retail environment with a mix of community-related shopping, institutional, service, office, residential and open space uses.
- Conveniently located shared and structured parking facilities

Recommendations for this area include:

- Land assembly and comprehensive development of the “Knox Boxes” area with a variety of attached and multifamily housing suitable for faculty, graduate and undergraduate students.
- A mix of service-oriented retail and office uses that minimize the need for vehicular trips.
- Compact and vertical mixed-use development
- Possible reorientation of internal roadways and enhanced pedestrian connections and open space.
- The use of structured and/or shared parking.
- Rezoning as necessary to provide a mix of uses after land is assembled and a development proposal prepared.

Vibrant main street towns will also function as precedents as will mid-rise residential buildings. Two conditions must be taken into account. The first is that student housing should reflect the typology of the college campus while allowing itself to function independently. The second is that the retail portion of the site should function as it intersects the college, the main street, and the larger fabric of College Park as a whole.

This investigation will conclude with the employment of lessons regarding salient features of successful small towns in a master plan, and the investigation of a mixed use building at the seam between retail and residential fabric.

Problems and Issues

Town Gown relations

The design approach to this thesis begins with an understanding of the site in its historical and political context. A college town is both an analogy for larger urban areas, and an exploration of unique urban phenomenon. College towns and their

intersection with universities present a unique interrelationship. In particular a large state school like the University of Maryland with a total population greater than that of the town. As a state university, Maryland occupies a large portion of the land mass in College Park (almost 2 square miles), but does not pay taxes on this land.

The college town, where it comes into contact with a university of significant size, is a study in extremes. A large transient population creates a large demand for rental housing with remarkable turnover in occupancy. Commuting generates large volumes of traffic. Demographics are skewed to younger ages (51% of College Parks population is 18-24 years old). Off-campus housing creates conflicts with permanent residents, as young people live their college lifestyle. This may include many young people living in a single family house in a residential neighborhood, the consumption of alcohol etc.

Campus Edge

The University of Maryland Campus occupies 1250 acres to the north of this site, and the residential fabric within the site is occupied almost exclusively by university students. The issue for this thesis is the engagement of this edge. The buildings to the south of campus operate as an extension of campus fabric, but are distinct from the campus in terms of ownership. They must retain their own internal logic, but reflect the overall organization found in the University's Master Plan.

Guilford Run

This small stream is currently hidden, serving as a median for Guilford Road. This does not serve the stream well, but also in following the stream course the road is unnecessarily winding. These two elements must be disengaged. The road must have its own logic and function within the site as a whole, and the stream must be considered independently of the street grid.

Route 1

Route 1 is a busy 4 lane state highway that occupies the Western edge of this site. The road is quite busy, and currently carries traffic moving at 50 miles per hour or more (though the posted speed limit is 35 miles per hour). The lack of enclosure along this stretch of Route 1 caused by the fact that there are currently parking lots along the road edge, allows traffic to move too fast. Establishing a street wall would serve to return this sense of enclosure, and serve to slow traffic.

Residential Fabric

The residential fabric to the Southwest of the site is not directly related to the campus. It is not connected to the road grid of the site, but currently backs up to the Graduate Gardens Apartments. This will affect the design only in the respect that noise may become a consideration at this edge of the site. A further pressure on the housing market in this area is that the City of College Park must contend with the tension between owner occupied single family houses and those rented to students. The city has sought to incentivize owner occupied houses in residential areas, thus adding further pressure to a tight student housing market.

Parking

The unique nature of this site at the edge of, a major state thoroughfare, and a University of 35,000 students requires that issue of transportation and parking will need to be investigated within the larger community.

The university currently has an undergraduate enrollment of 25,442, and dorm space for 10,623. In addition 9927 graduate students. 4600 undergraduates and 10,798 faculty and staff hold parking permits for University lots. The University currently has 20,033 parking spaces for which 25,325 permits are issued.⁶

According to the University of Maryland 2001-2020 Facilities Master Plan 87% of faculty, staff and students arrive at the University by car (78% of these in single occupant vehicles). And further a student housing market and feasibility study commissioned by the University in 2005 indicates that 70% of students living in University Affiliated Housing walk to class⁷

Issues of public transportation and walkability are paramount in creating a sustainable community.

Architecture is life, or at least it is life itself taking form and therefore it is the truest record of life as it was lived in the world yesterday, as it is lived today or ever will be lived.

Frank Lloyd Wright: An Organic Architecture

Chapter 5: The Program

Objectives

Increase available student housing by increasing the density and efficiency of the housing.

Create a more vibrant “Main Street” along the Route 1 corridor through the

Improve circulation by reestablishing blocks and developing street hierarchy.

Make use of natural features

Create and identity consistent with the University

Tabulation and Summary

Increase available student housing

There are two significant new student housing projects in College Park in the last five years.

University View Tower completed in 2005 sits on Route one north of the campus.

This is a 16 story tower above a three story parking garage. This building contains 353 units (housing 1008 students) of two and four bedrooms with an average unit size of 1013 square feet. This represents a density of nearly 114 units per gross acre, or 168/acre if we assume 65% buildable lot (or 331 persons/beds per gross acre 480/net acre). The breakdown in units is 50% 2 bedroom units (168 sq ft); 50% 4 bedroom units (average size 1260 sq ft). This is an average of 338 sq ft per occupant.

South Campus Commons is a public private partnership built on university property adjoining the thesis site it was completed in 2002. This complex houses 1260 students in 340 units, in seven buildings of 4-5 stories. The units in this complex average 1030

square feet. This represents a density of 74 units per gross acre, or 113 per net acre assuming 65% buildable lot (or 274 persons per gross acre 420/net acre). The breakdown of units is 15% 2 bedroom (average size 723 sq ft) and 85% 4 bedrooms (average size 1084). This is an average of 278 sq ft per occupant.

The current zoning in the thesis site envisions no more than 45 dwelling units per net acre. At 45 units per net acre (assuming 65% buildable land on the 41 acre site) this would mean 1200 units over the entire site. At the 113 units per net acre of South Campus Commons this site would net 3011 units for the entire site. At the 168 units per net acre of the University View Tower this site would net 4477 units.

All of this is in contrast to the current state of the site which has 527 units at a density of 20 dwelling units per net acre for the entire site.

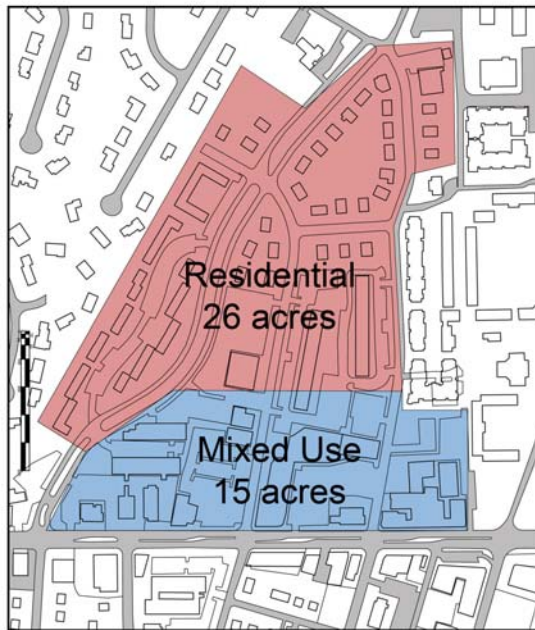


Figure 42 – Site diagram (Carroll)

In order to evaluate the site more specifically, the 15 acres bordering route 1 will be considered truly mixed use, while the remaining 26 acres bordering Guilford Road and the campus will be largely residential.

The 15 acres bordering Route 1 from Guilford Road north to Lehigh Road and extending approximately 500 feet west into the site. Will be comprised of ground floor retail, office space and residential above. The 15 acres will be considered 65% buildable, leaving 9.75 acres. This area can fit:

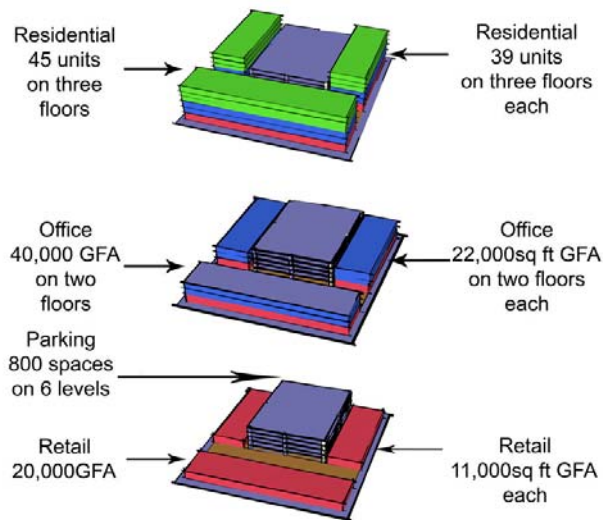


Figure 43 – Schematic block diagram at 45 DU/acre (Carroll)

@ 45 units per acre

123 units per block

55,000 square feet of retail

110,000 square feet of office

800 parking spaces on

The remainder of the land, 26 acres, could easily accommodate the remaining 960 units to achieve a density of 45 units per acre. In fact if the remaining 960 units were built at a height of 4 stories they would require on 7.3 acres of the 26 available. The assumptions in this estimate are as follows:

The 26 acres would net 65% buildable land after roads and rights of way are subtracted. This is 16.9 acres.

The 960 units at an average of 1000 square feet would require actual footprint of 1,280,000 square feet assuming 75% efficiency for the buildings. When the buildings are assumed to be a uniform 4 stories the actual building footprints occupy 7.3 of the available 16.9 acres

@ 168 units per acre the site would be required to carry 4500 units requiring a gross square footage of residential of 6 million square feet. The two blocks along route 1 would be required to carry 600,000 square feet of residential each.

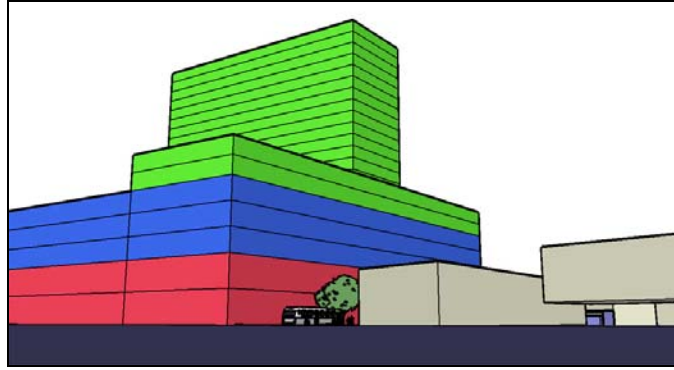


Figure 44 – Schematic block perspective at 170 DU/acre (Carroll)

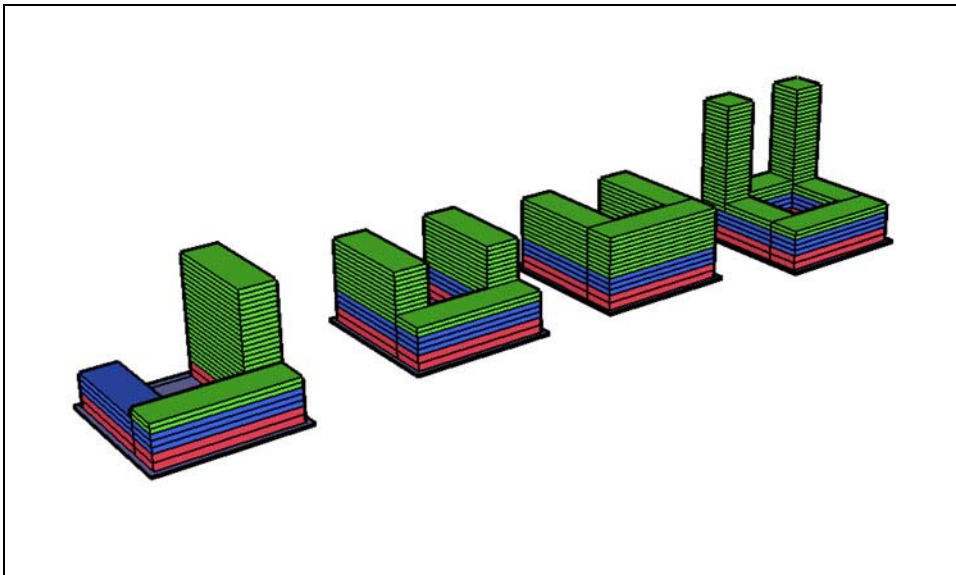


Figure 45 – Route 1 Block configurations at 170DU/acre (Carroll)

450 units per block
 110,000 square feet of retail
 150,000 square feet of office
 800 parking spaces

The remainder of the land, 26 acres, could accommodate the remainder of the 4500 units to achieve a density of 168 units per acre. If the total 4500 units were built at a height of 8 stories, they would cover the entire 16.9 acres of buildable land. At 10 stories the 4500 units would cover 81% of the buildable land. The assumptions in this estimate are as follows:

The 26 acres would net 65% buildable land after roads and rights of way are subtracted. This is 16.9 acres.

The 4500 units at an average of 1000 square feet would require actual footprint of 6 million square feet assuming 75% efficiency for the buildings.

When the buildings are assumed to be a uniform 8 stories the actual building footprints occupy 100% of the available 16.9 acres.

In each of the two previous scenarios the density does not seem to compliment the proposed nature of College Park. At 45 units per acre it is possible to retain the roughly 4 story scale of the retail street, but the density of the residential is too low. Covering less than 50% of the buildable land with 4 story buildings does not take full advantage of this site. At the higher density (168 units per acre) mimicking University View Tower, the site becomes unmanageable. The retail street is blown up to an 8 to 10 story size, with towers of 10 stories covering 80% of the buildable land on the entire site.

If the site were developed at a density that matches that of the South Campus Commons(113 DU/ net acre), the area along Route 1 can remain at 4-5 stories, and the remainder of the site could be built to a uniform 8 stories, covering 60% of the buildable land. A more likely scenario is that the 15 acres along Route 1 will support approximately 15% of the residential (in this case 450) units, with the remainder of the retail space supporting approximately 80-90,000 square feet of ground floor retail, and approximately 110,000 square feet of office space. The remaining 2550 units of residential would be distributed along the site from 10 story towers along Knox Road, and stepping down to 3-4 story buildings along a greenway following the Guilford Run. The 2002 MNCPP Route 1 Sector Plan recommends:

Adequate screening, buffering and tapering of building heights adjacent to single-family neighborhoods

The following buildings by Ayers Saint Gross for George Washington University and Johns Hopkins University are examples the characteristics of the buildings that could occupy Knox Road. The first is a 9 story building housing 433 students in 135,700 gsf.



Figure 46 – George Washington University dorm exterior view (Ayers Saint Gross)



Figure 47 – George Washington University plan (Ayers Saint Gross)

The second is a 9 story building housing 600 students and 30,000 square feet of retail.



Figure 48 – Johns Hopkins University dorm exterior view (Ayers Saint Gross)

Each of these buildings establishes a street wall. By meeting the sidewalk they help to define the road. More private spaces for each building could be included to the rear of the building. In addition each building has a base at approximately 20 feet giving the pedestrian a sense of scale that is not intimidating.

Always design a thing by considering it in its next larger context—a chair in a room, a room in a house, a house in an environment, an environment in a city plan.

Eliel Saarinen

Chapter 6: Conceptual Design

Alternative site planning strategies

The salient features of the site that are evident in the existing road grid are an excess of surface parking, insufficient street hierarchy and a lack of accommodation for the single natural feature, the Guilford Run Stream.



Figure 49 – Existing Roads (Carroll)

Each of the following preliminary site/road studies aims to address these issues. The first reestablishes a street grid, and emphasizes the Hierarchy of Knox Road and Guilford Road as traffic routes. Guilford Road is recognized as an entry to campus and is given prominence for this reason. In addition the street to the West of Route 1 is expected to carry traffic in and out of this sector, while the remaining streets are thought to be mostly residential. Guilford Run is emphasized as a linear park and an amenity. For this reason the street grid crosses it at only three points. The traffic circle in this scheme adds a focal point off of Route 1 where a hotel could be located.



Figure 50 – Site Intervention Scheme 1 (Carroll)

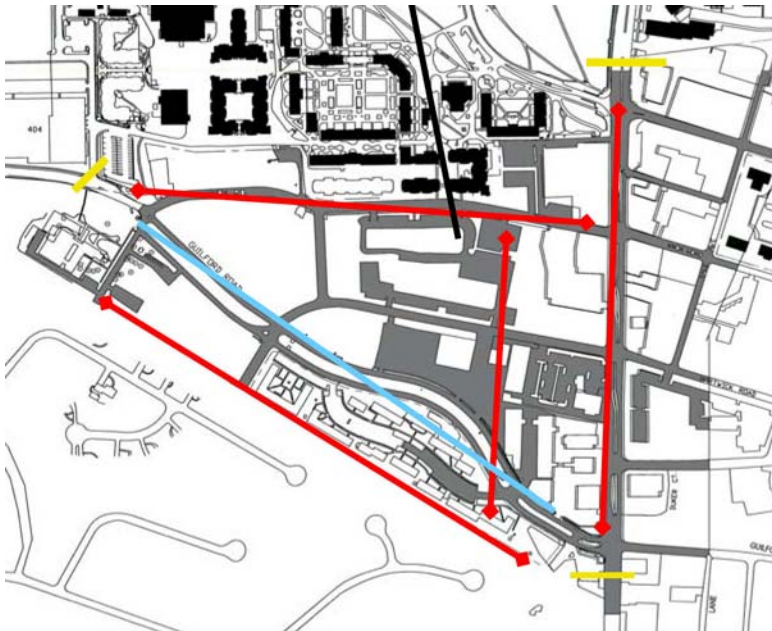


Figure 51 – Street Hierarchy diagram (Carroll)

The second scheme emphasizes the street grid providing a greater number of streets to disperse traffic and provide on street parking. Guilford Run is allowed to move across the grid making an episodic linear park that makes contact with the green lawn running parallel to the business school as envisioned in the University of Maryland Master Plan.



Figure 52 – Scheme number two – denser street grid (Carroll)

The third scheme takes the unrealistic position that the grid and traffic flow on route 1 could be further dispersed by reconnecting the street grid to the roads in University Park and University Heights. While this is unrealistic, the resulting street grid does prove an interesting response to the changing conditions moving from Route 1 back into the more residential areas.



Figure 53 – Scheme three – reconnecting street grids (Carroll)

This fourth scheme is a variation on scheme two in which the street grid is made more dense, but purposely interrupts a number of the internal streets in order to make them local residential streets. Other streets are allowed to pass through making them traffic carrying streets. In addition the east side of Route 1 was reconfigured to provide for a public green to house the new College Park Town Hall and Post Office.

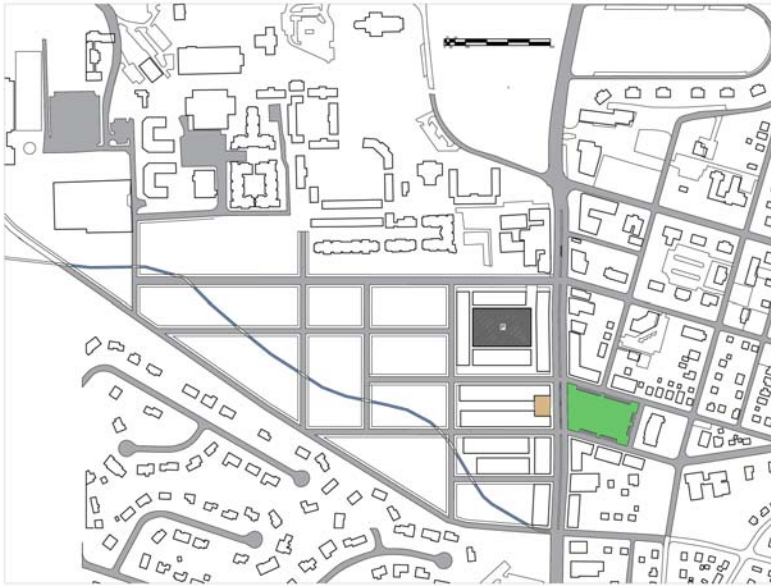


Figure 54 – Denser interrupted street grid.

Parti Strategies

In the initial investigation of this thesis a block back away from Route 1 was explored as a possible block to be designed in detail. The reasons for this were as follows

- This location provides a more dramatic seam between residential and retail fabric.
- The topography of the site is more dramatic west of Route 1, providing for more opportunities to make use of the topography to vary program vertically.

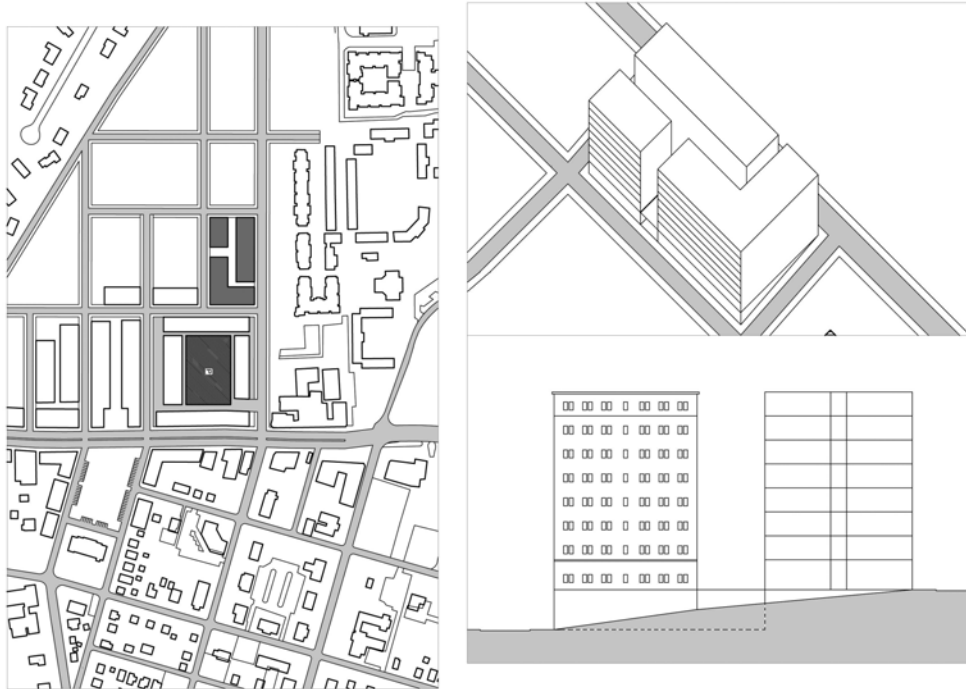


Figure 55 – Initial Building parti (Carroll)

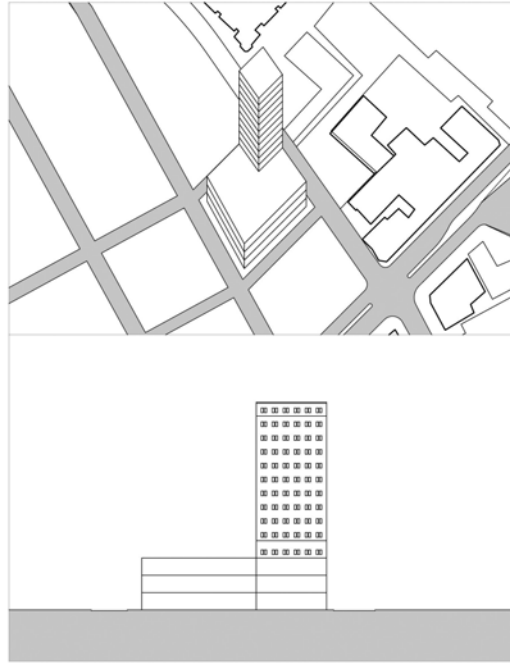


Figure 56 – Initial Parti 2 (Carroll)

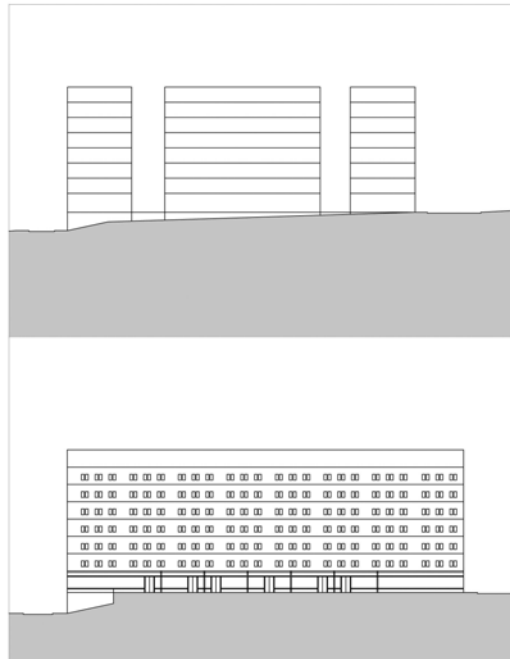
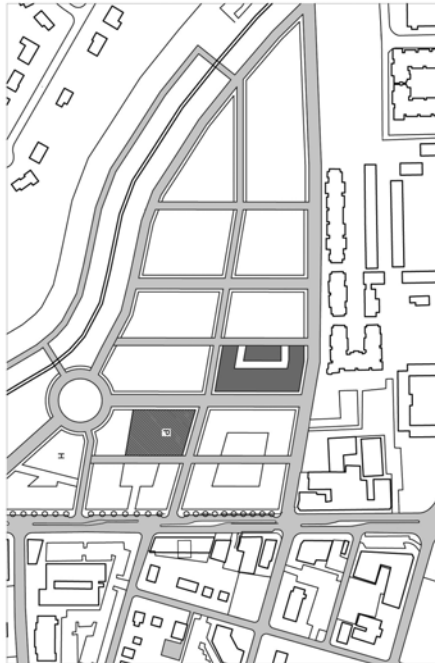


Figure 57 – Initial parti study 3 (Carroll)

Revised Parti Strategies

It became clear that despite the more dramatic topography on other parts of the site, the correct corner to design was at the intersection of Knox Road and Route 1.

The first scheme foresaw a parking structure wrapped by retail, office and residential fabric. In addition access through the street wall from Route 1 is provided via a small public plaza.

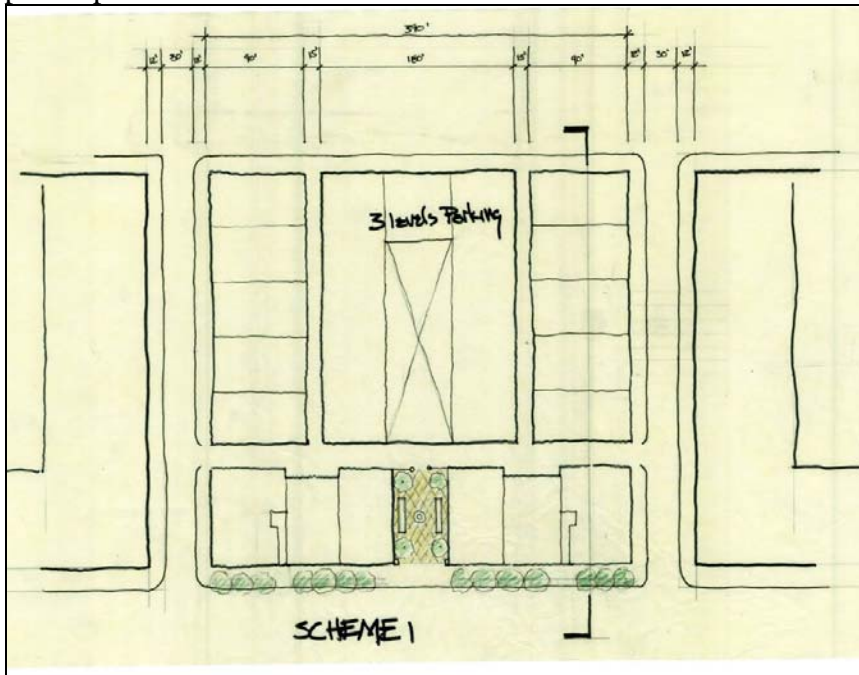


Figure 58 – Parti Scheme 1 (Carroll)

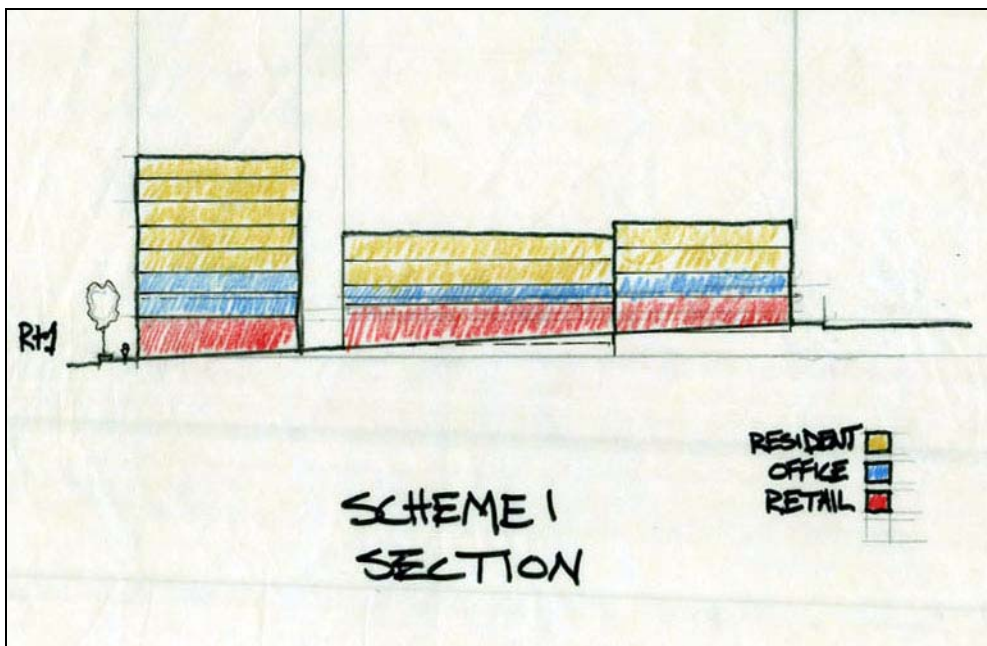


Figure 59 – Parti Scheme 1 – land use (Carroll)

In a second possible scheme on the same location, the parking is moved back to the next block. And the first level is taken up with retail accessed both from the outside of the block, and internally by an arcade.

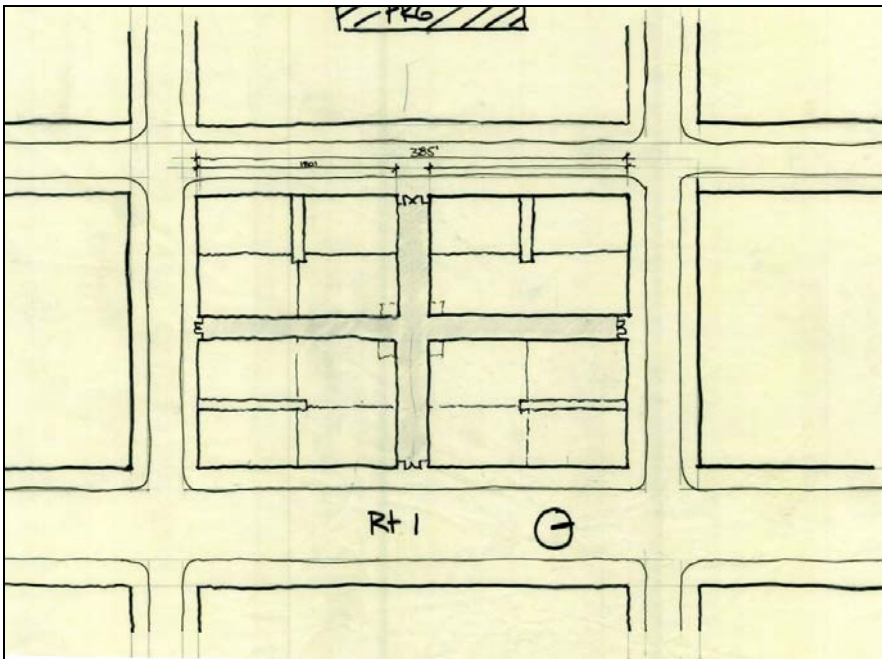


Figure 60 – Parti Scheme 2 – Arcade (Carroll)

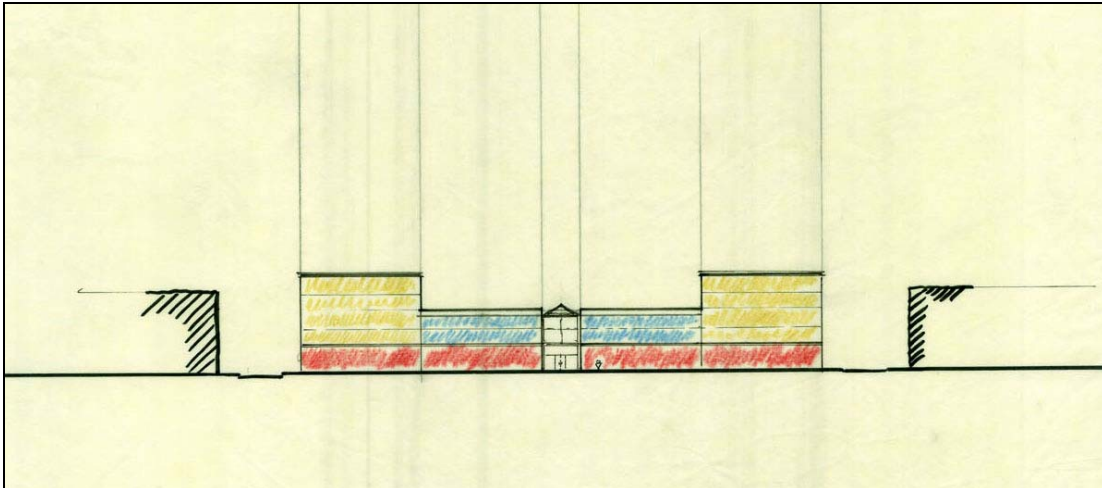


Figure 61- Parti Scheme 2 – Arcade section (Carroll)

The third scheme explored the notion that the street wall could be interrupted by a well defined plaza that might serve as a point in which a density of retail could be achieved. In this way this this would serve as a focal point for the downtown.

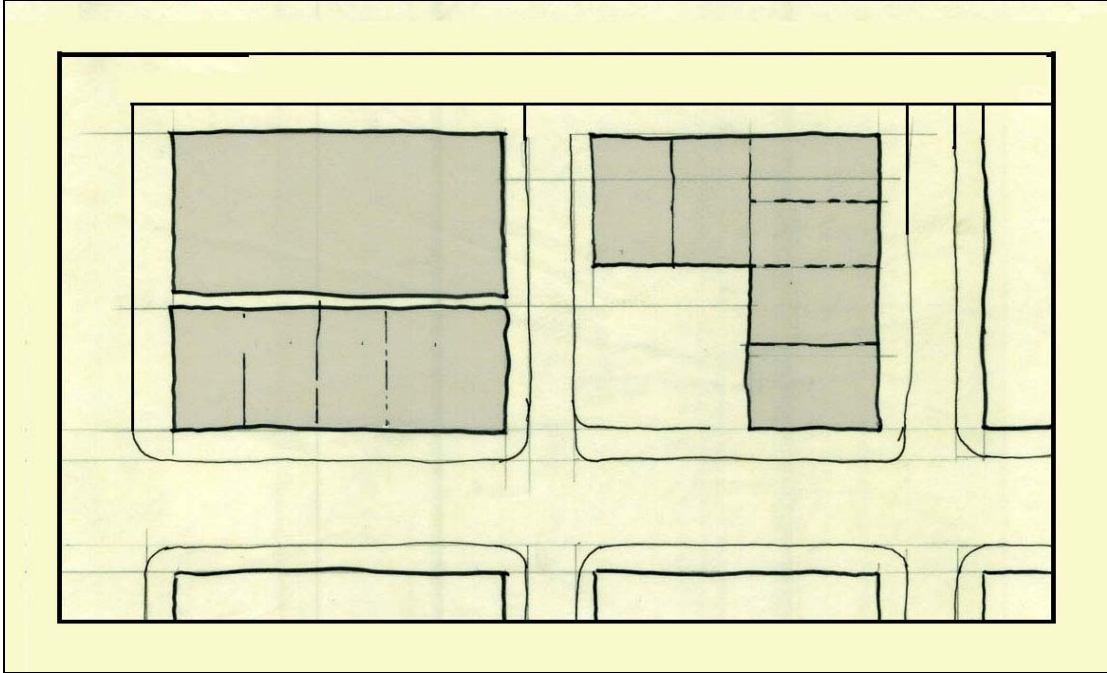


Figure 62 – Parti Scheme 3 – (Carroll)

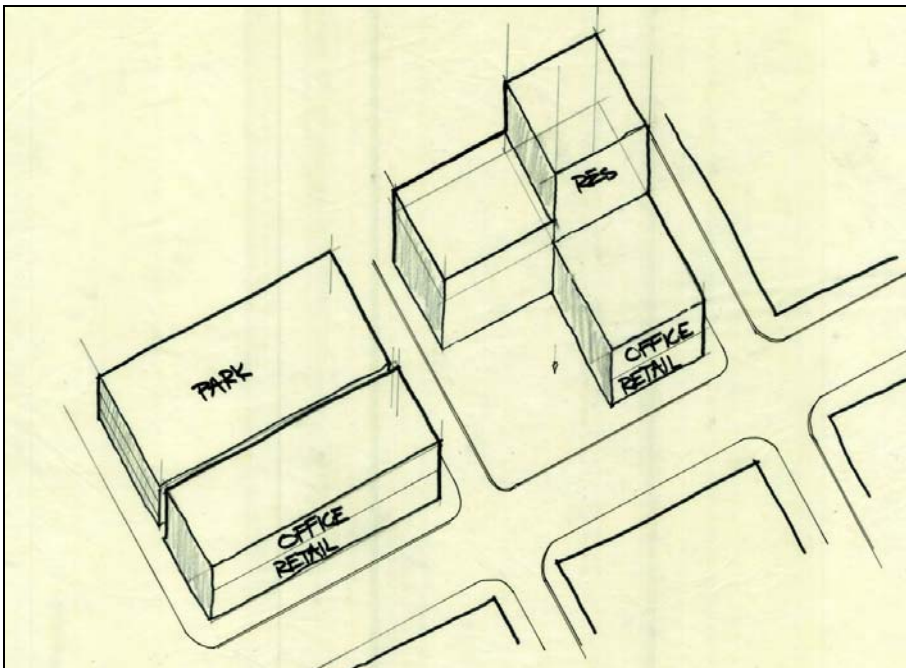


Figure 63 – Parti Scheme 3 (Carroll)

The fourth possible parti sought to explore the issue of the linear nature of Route 1 as a retail street. The buildings on side streets are pulled back slightly in order to open up pedestrian plazas. These areas are small but could accommodate restaurant seating, activating the side streets.

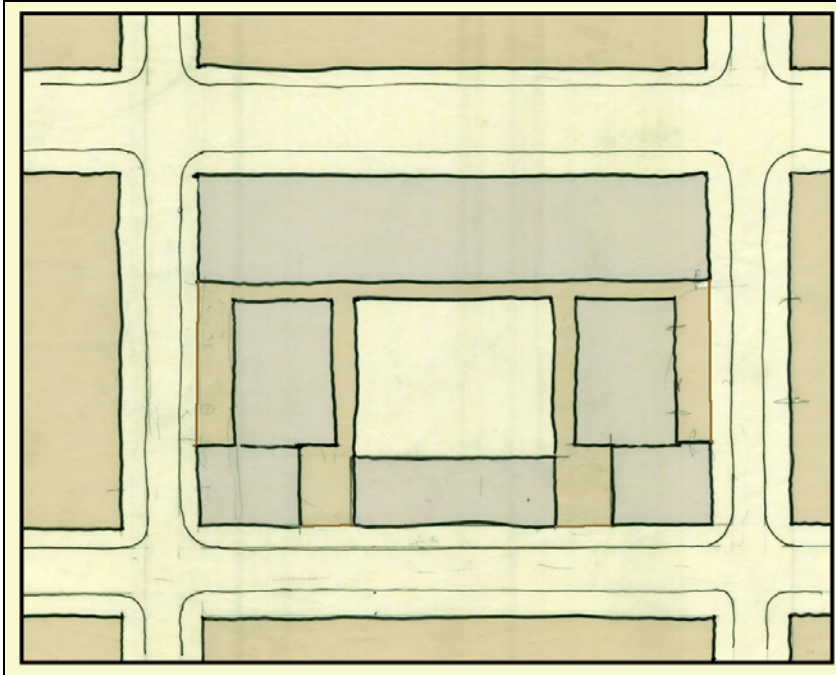


Figure 64 – Parti Scheme 4 (Carroll)

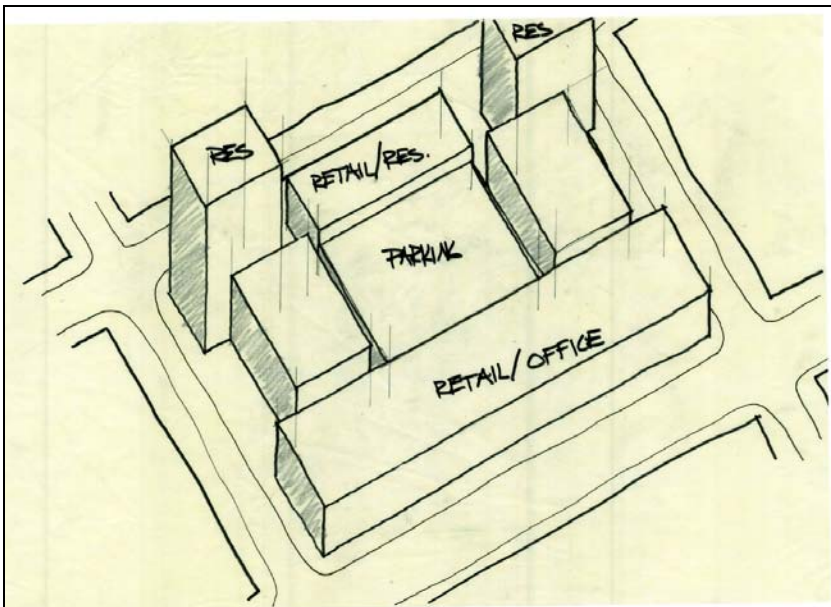


Figure 65 – Parti Scheme 4 (Carroll)

Adsd

Chapter 7: Final Design and Conclusions

Design Decisions

The final design is a response to continuing development in the community, including and RFP process for a 38 acre University owned tract along route 1, to be developed as a mixed use public private partnership. Market studies of the current housing needs indicate that there is a severe shortage of affordable housing. This shortage coupled with a continued desire by the city to reestablish single family residential neighborhoods as predominantly owner occupied creates a desperate need for additional student housing. A market study commissioned by the University in 2005 projects potential additional demand for undergraduates beds to be 1,871, as well as potential demand of 828 beds for graduate students.⁸ The design density in this thesis has been scaled back slightly to 35 dwelling units per acre, which nets approximately 2000 beds. At this density the site is a consistent 3-5 story of residential fabric.

Additionally in the final design the focus area was divided into discrete zones for undergraduate, graduate, faculty and family housing.

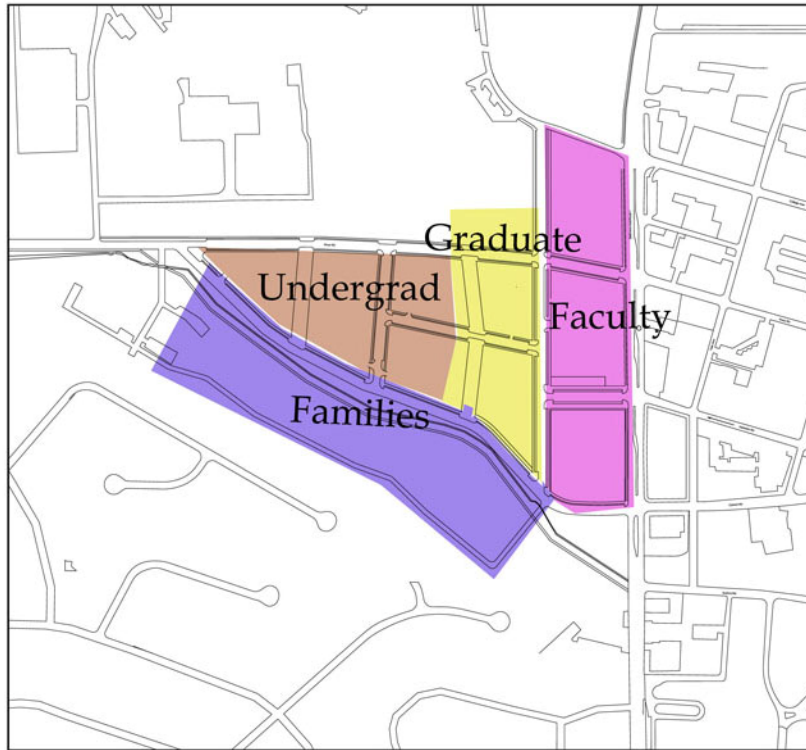
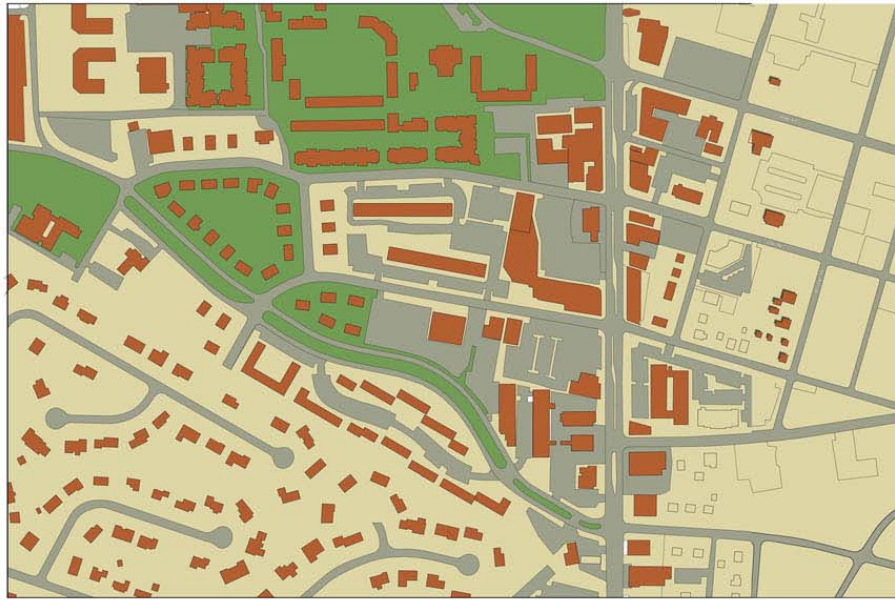


Figure 66 - Site organization (Carroll)

These designations were predicated on several factors. The first is that each of these constituencies have different needs in regards to housing. For example faculty are willing to spend a bit more for amenities, whereas graduate students are willing to trade amenities for lower rents. Undergraduates prefer two of four bedroom apartments, while graduate prefer efficiencies, one bed, two bed or three bed apartments, but not four bedrooms. Given the high demand for housing, different constituent needs and the transient nature of the population it seems important design a building system that was able to adapt to changing needs. For this reason a building system predicated on a fixed structural grid, with fixed plumbing wall locations was adopted. Within this grid a series of apartments were designed that could meet the needs of

the four identified groups. In this way, a building designed for faculty could be adapted to house undergraduates if the market conditions demand.

The dire shortage of acceptable housing, the desire for additional retail options in the city, and the continued search for an identity for College Park will undoubtedly bring about many changes in the near future. If the needs and plans for change can be assessed as a whole, the ultimate outcome of the coming storm can be change for the better.



Existing Site

29% Surface Parking (Aprox 1100 spaces)
 527 Residential Units
 13.5 du/acre
 115,000 sf Ground Floor Retail



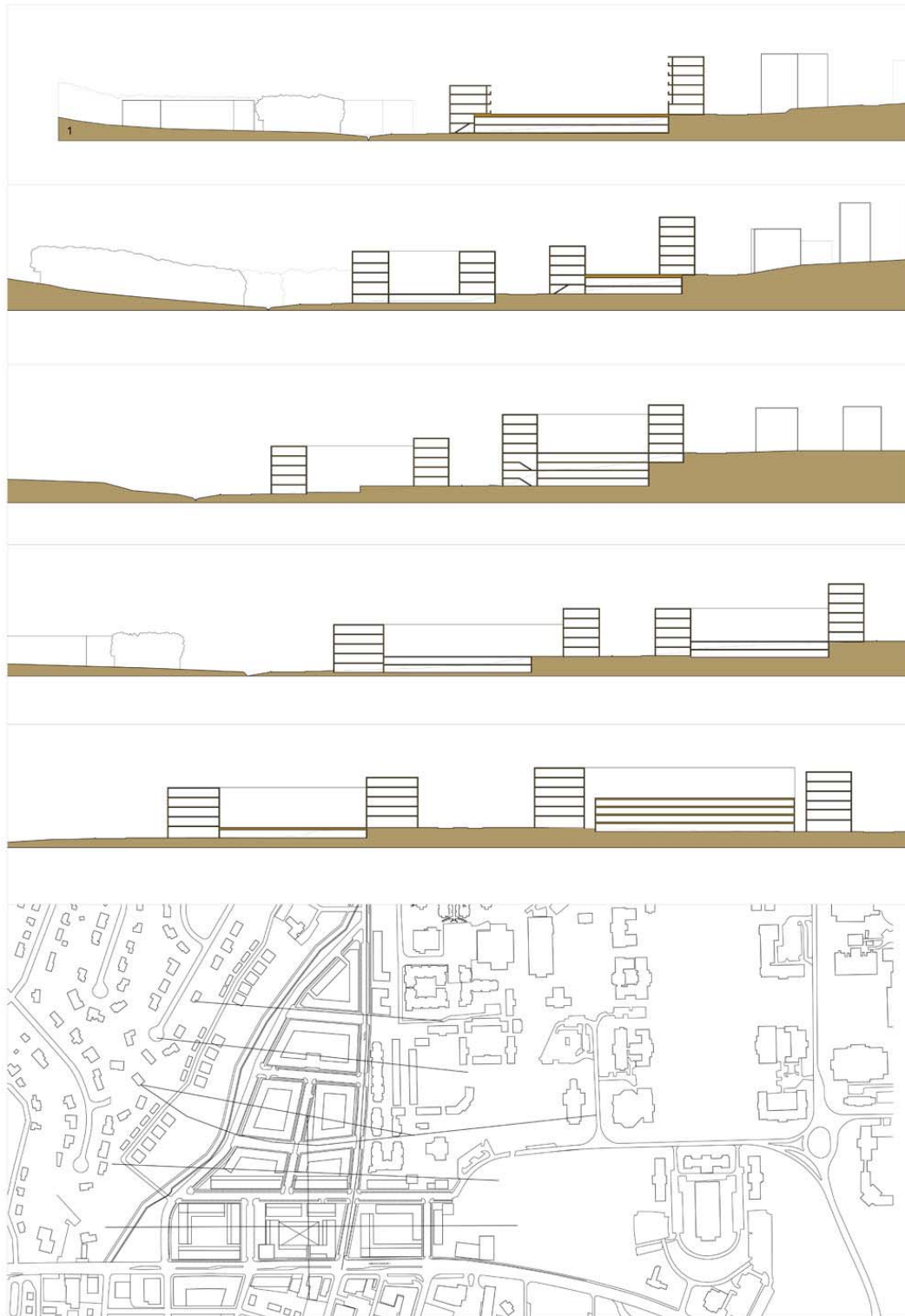
Proposed Site

2.5% surface parking (Approx 1200 spaces)
 1462 units - 807 Undergrad, 325 Graduate, 330 Faculty
 35.6 du/acre
 190,000 sf Ground Floor Retail

Result

10.5 usable acres recovered
 935 additional units
 Additional 75000 sf retail

Figure 67 - Site Plan Before and After (Carroll)



Site Sections



Figure 68 - Site Sections (Carroll)

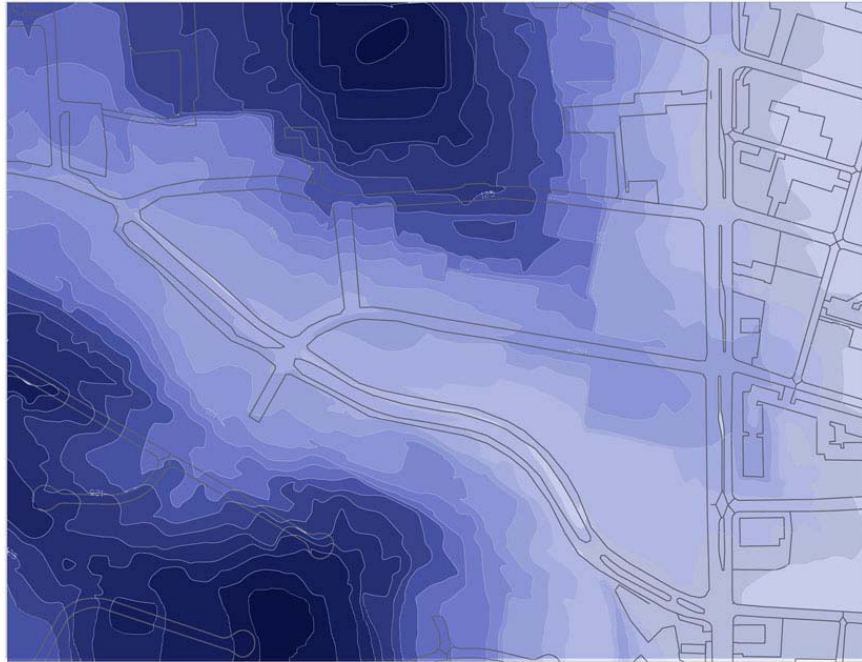


Figure 69 - Topography Diagram (Carroll)



Figure 70 - Building in Situ (Carroll)

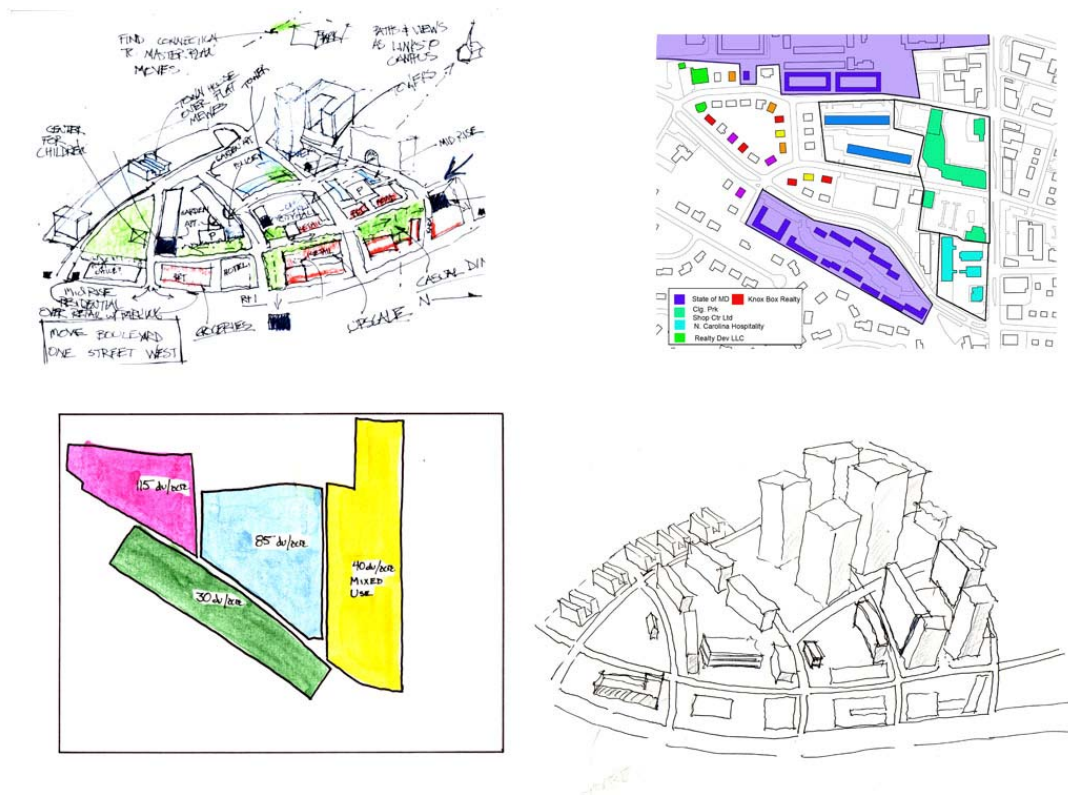


Figure 71 - Site Diagrams(Carroll)

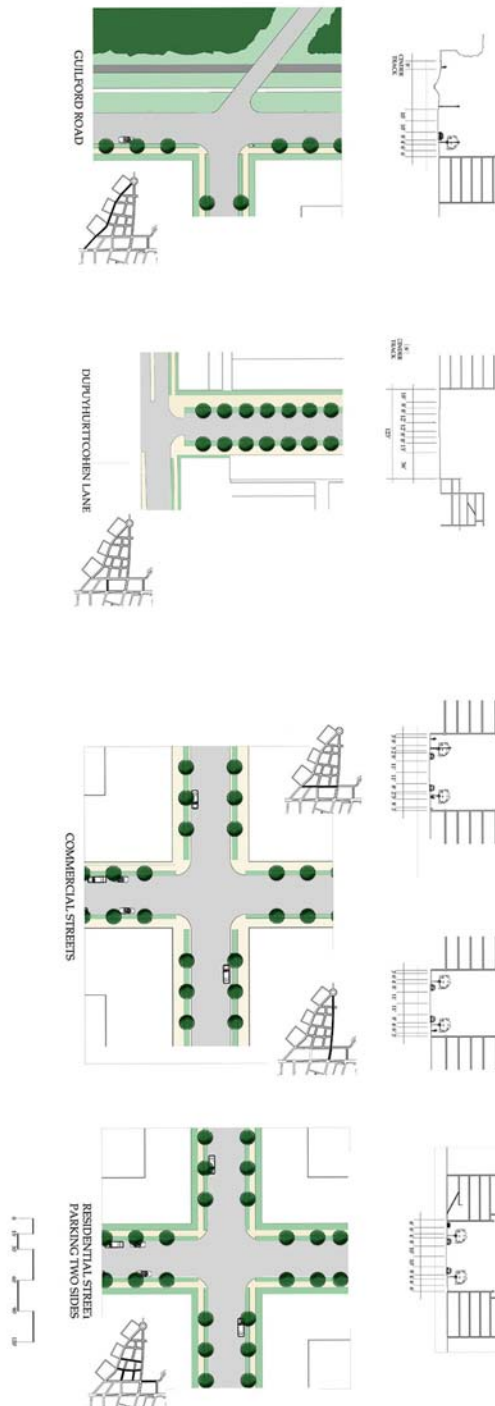


Figure 72 - Street Typology Diagrams (Carroll)



Figure 73 - Campus Connections (Carroll)

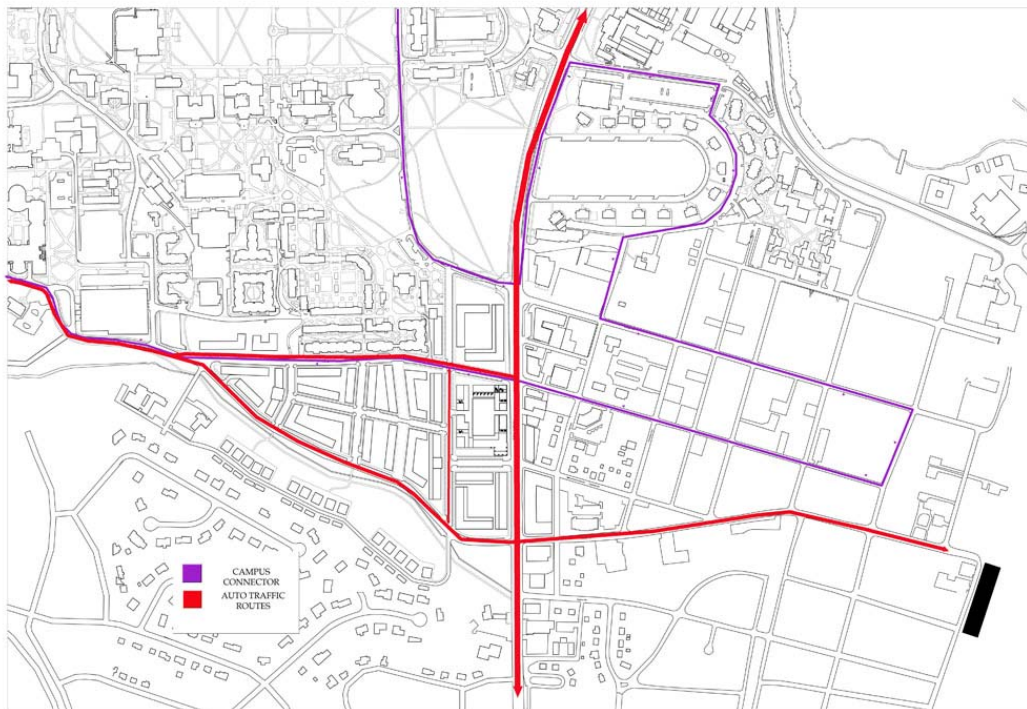


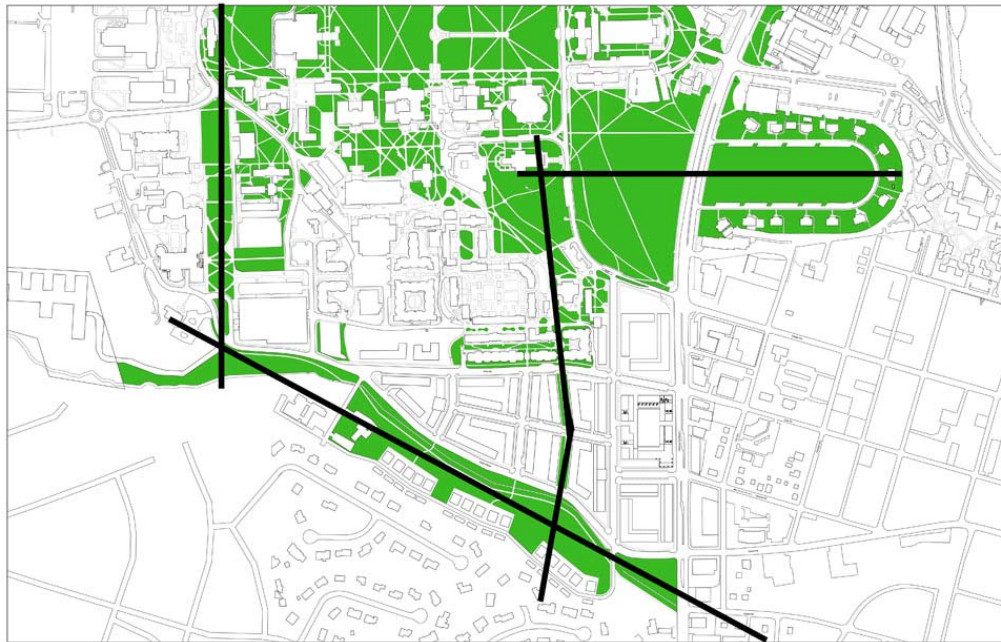
Figure 74 - Auto and Bus Circulation (Carroll)



Figure 75 - Retail and Residential Streets (Carroll)



Figure 76 - Typical Retail Street (Carroll)



GREEN CONNECTIONS/AXES

Figure 77 - Green Connections/Axes (Carroll)

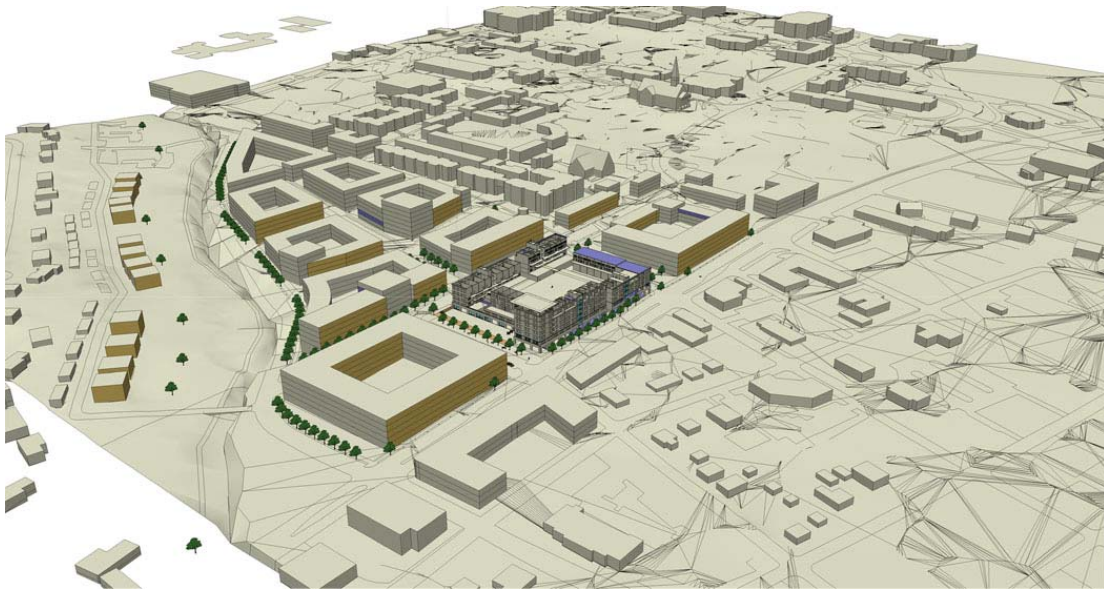


Figure 78 - Aerial View (Carroll)

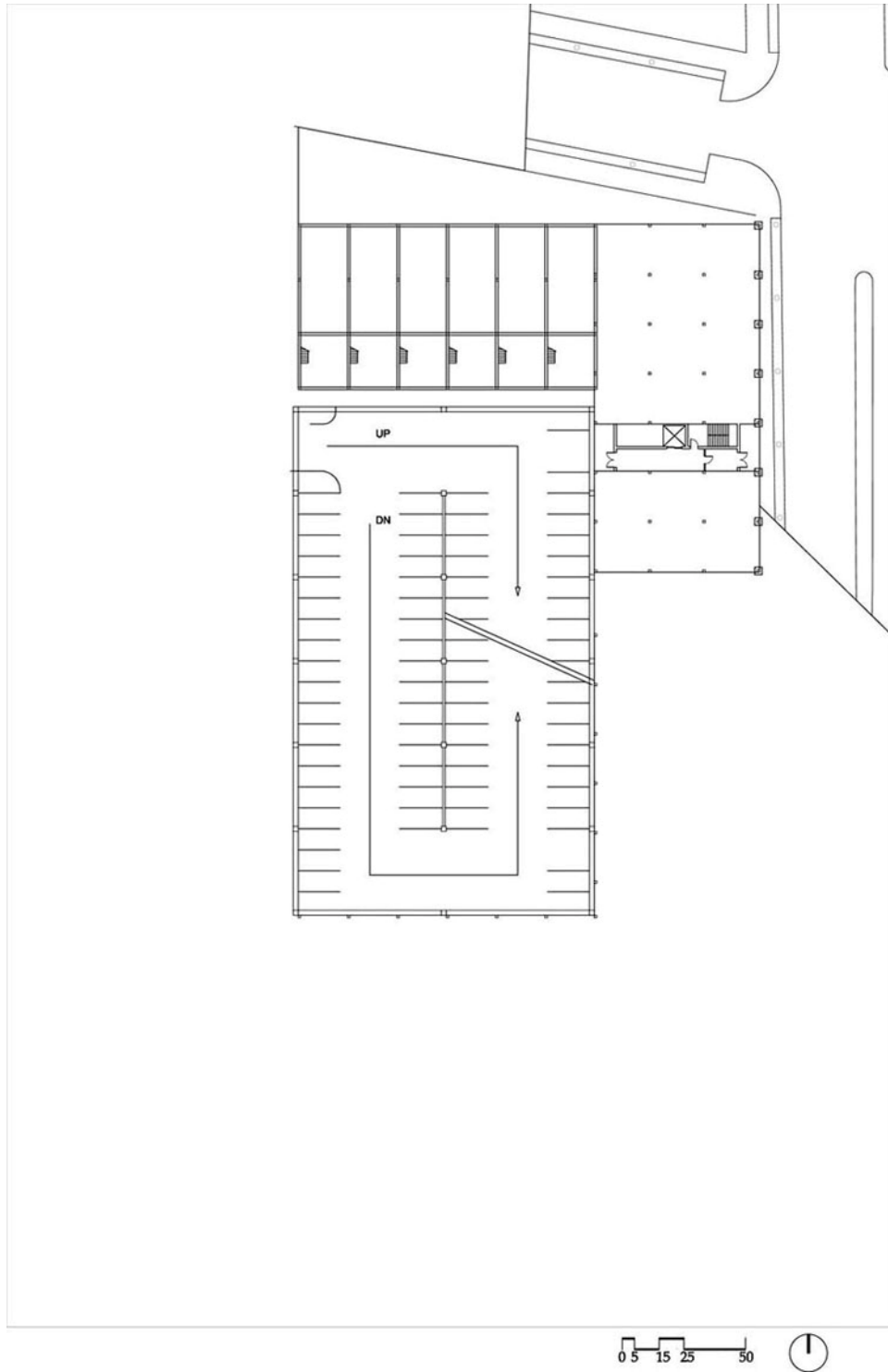


Figure 79 - Lower Level Plan (Carroll)

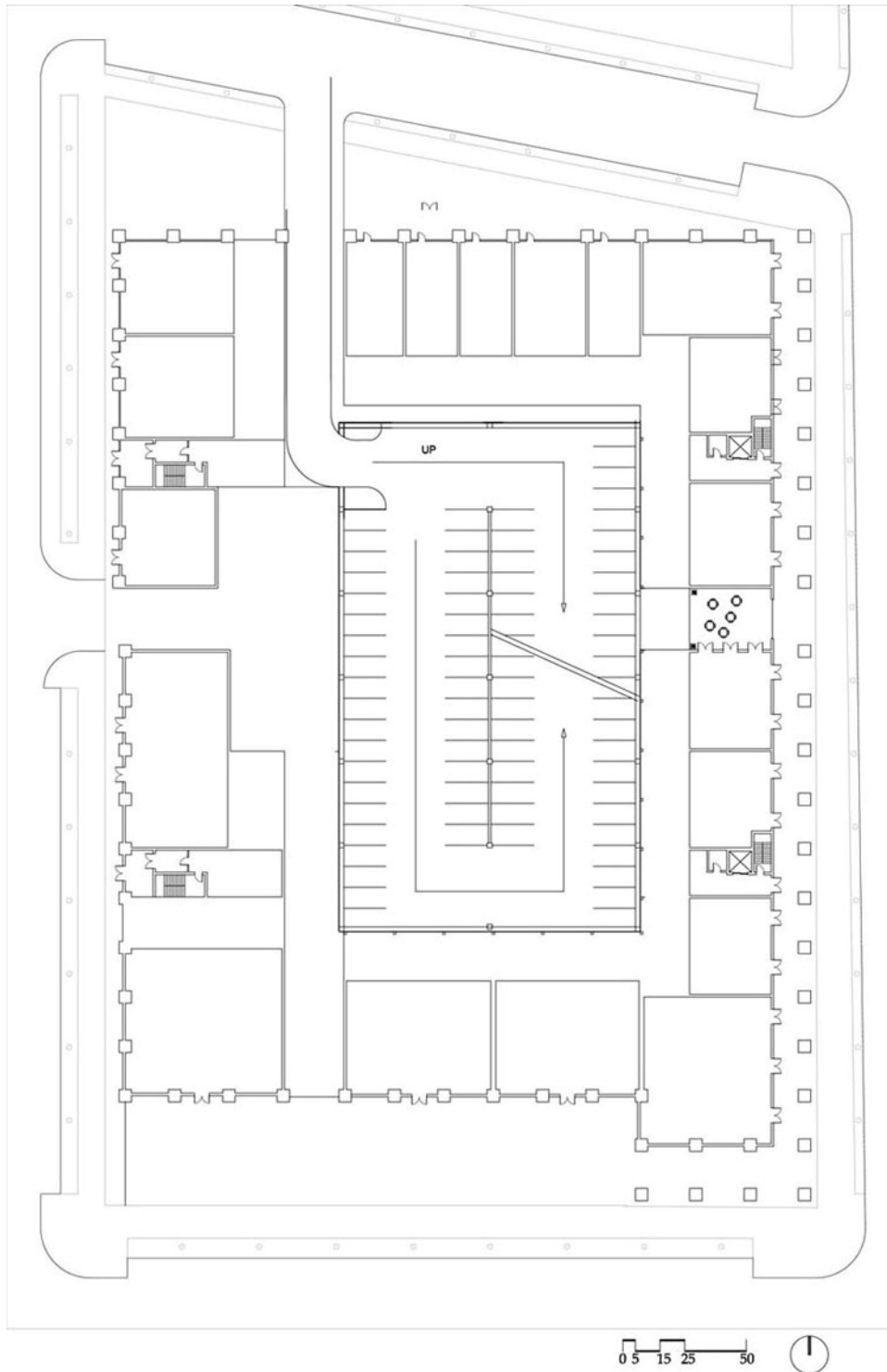


Figure 80 - First Level Plan (Carroll)

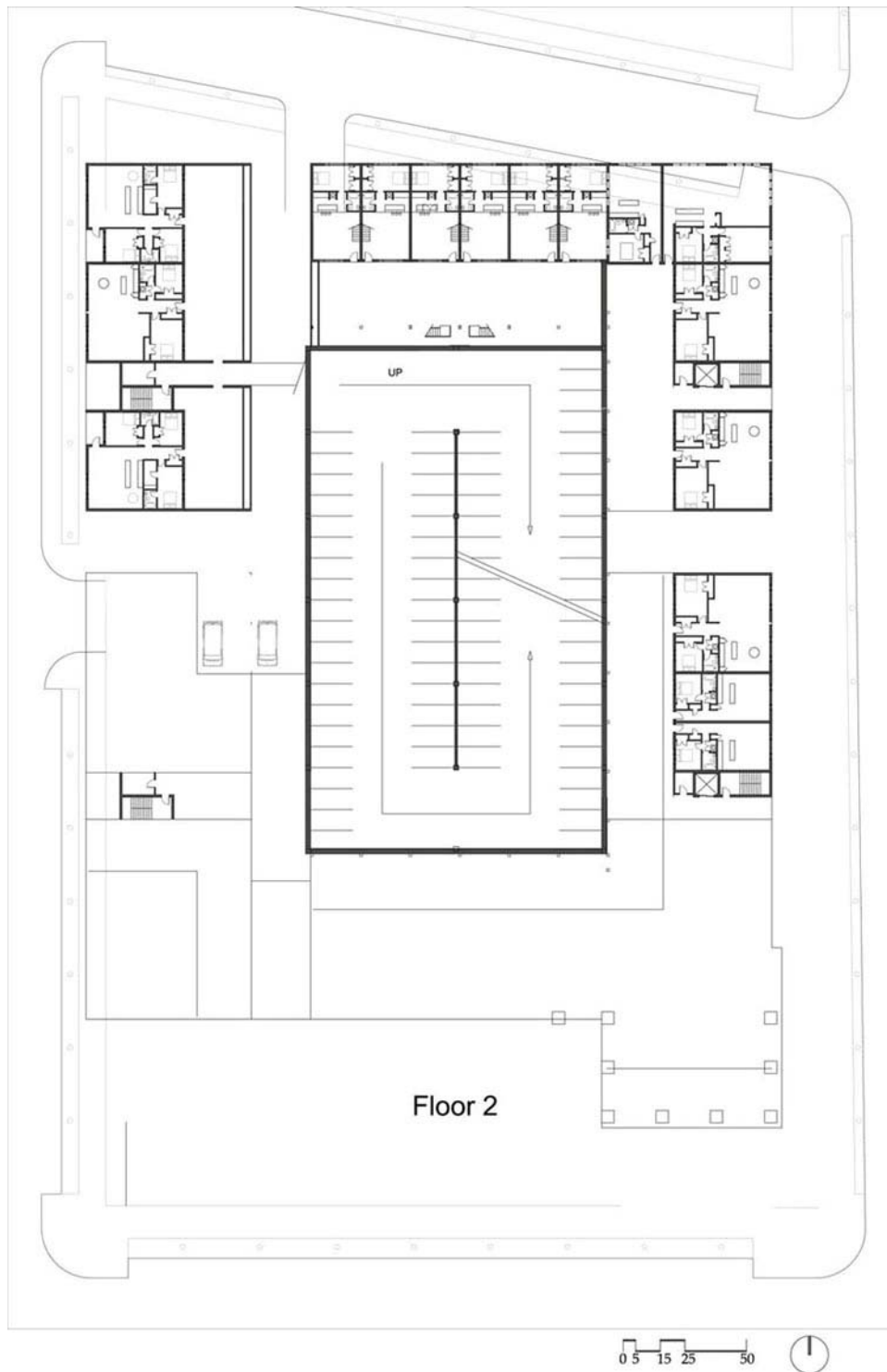


Figure 81 - Second Level Plan (Carroll)

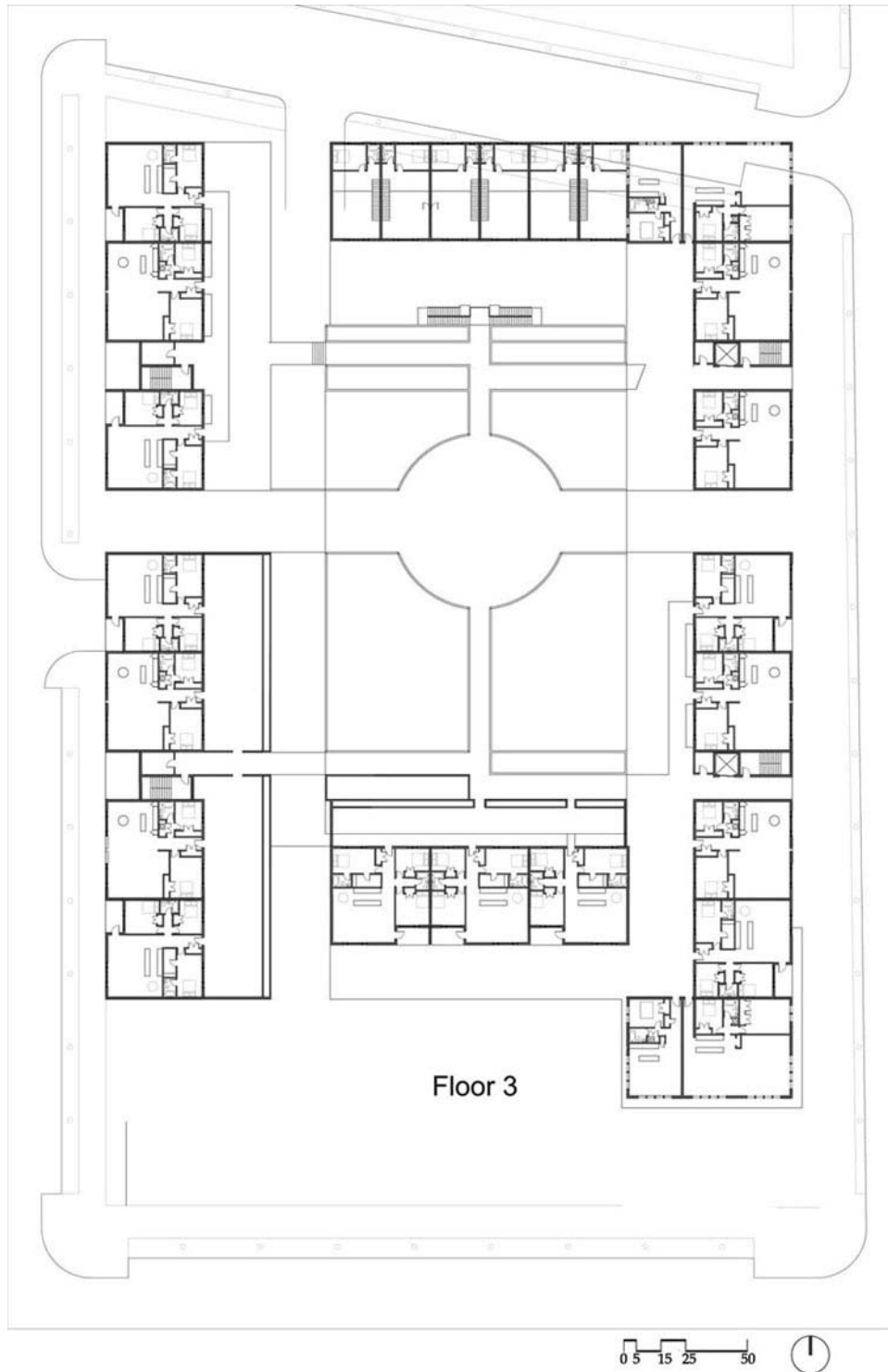


Figure 82 - Third Level Plan (Carroll)

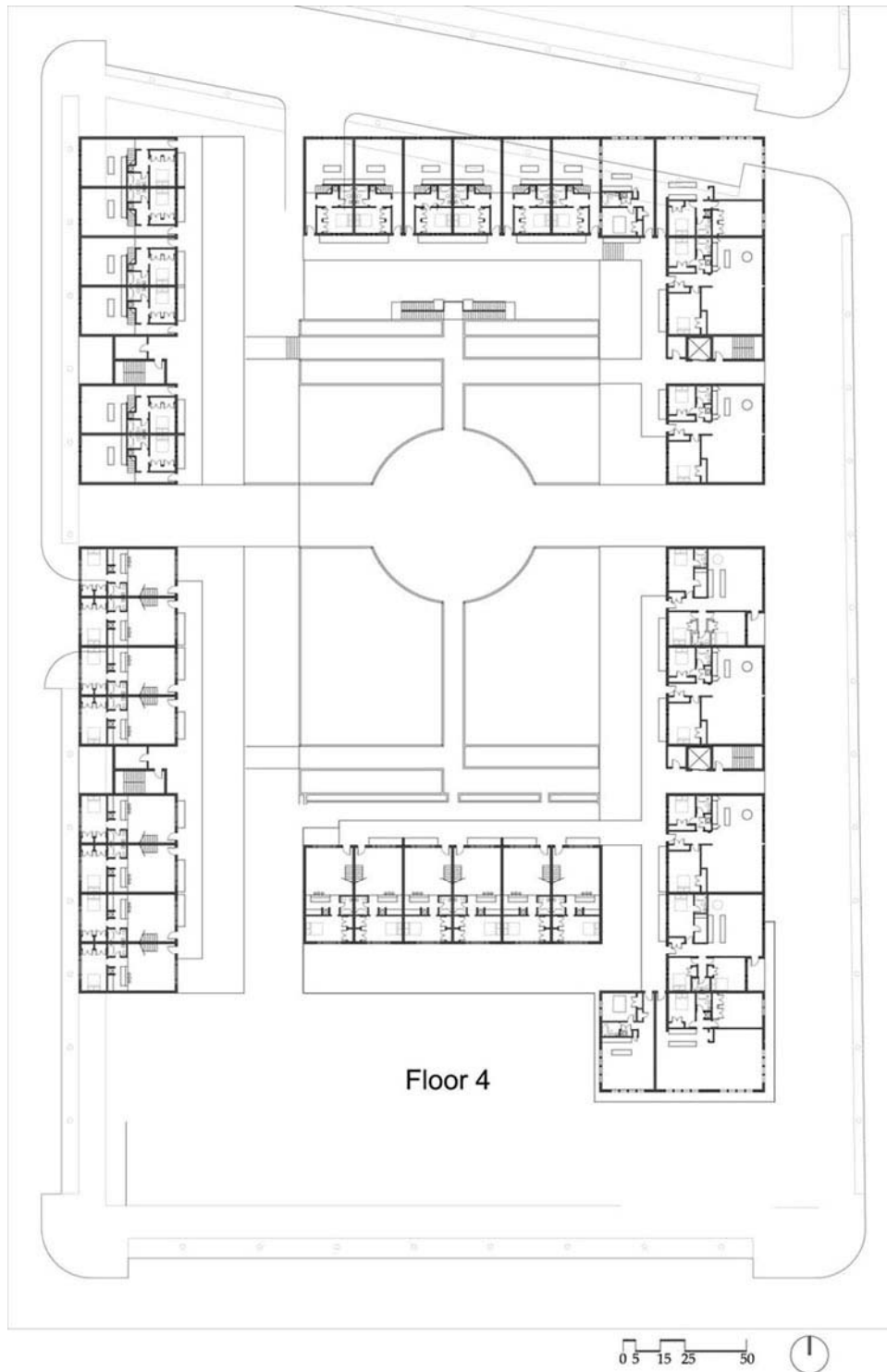


Figure 83 - Fourth Level Plan (Carroll)

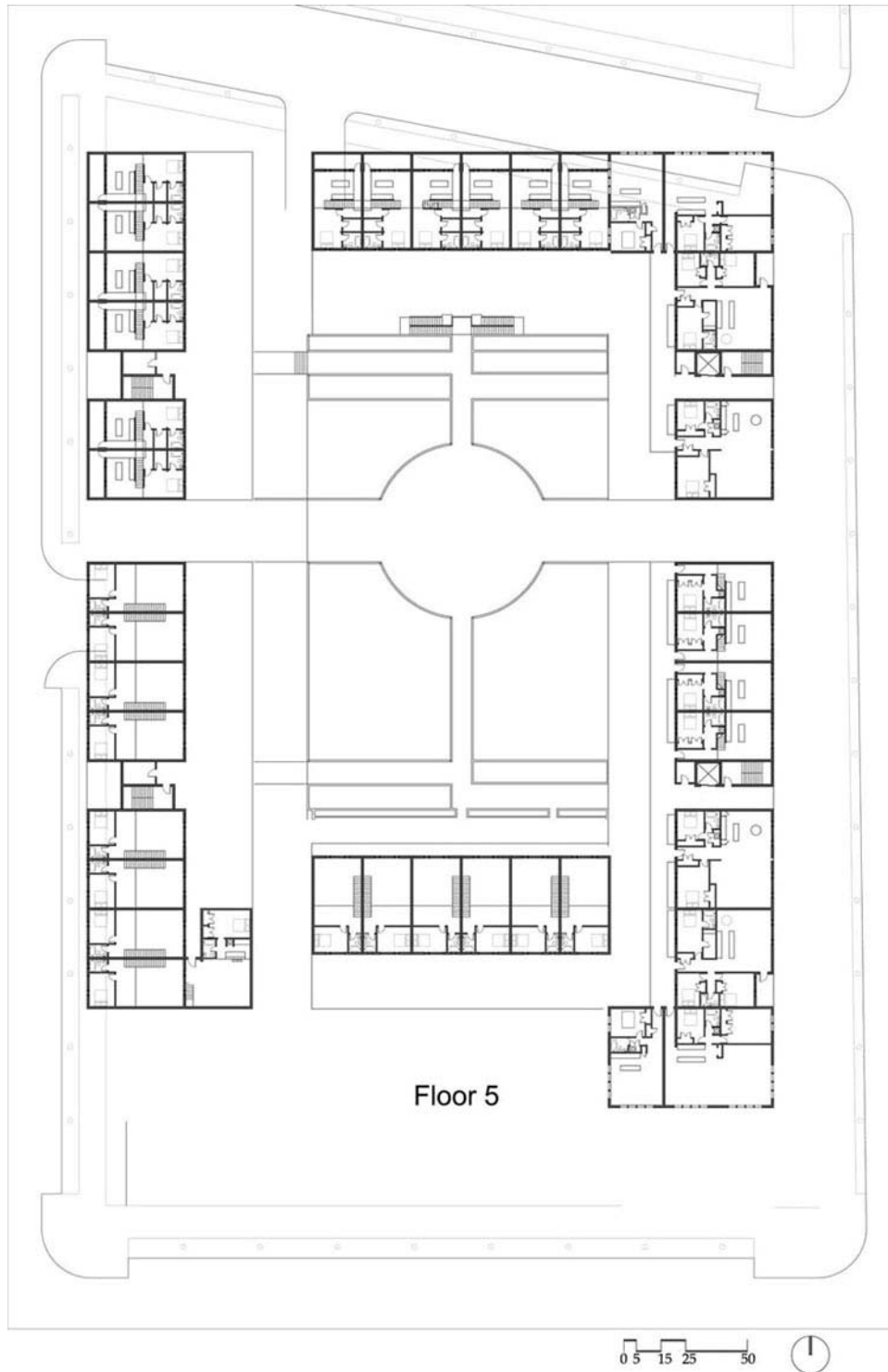


Figure 84 - Fifth Level Plan (Carroll)

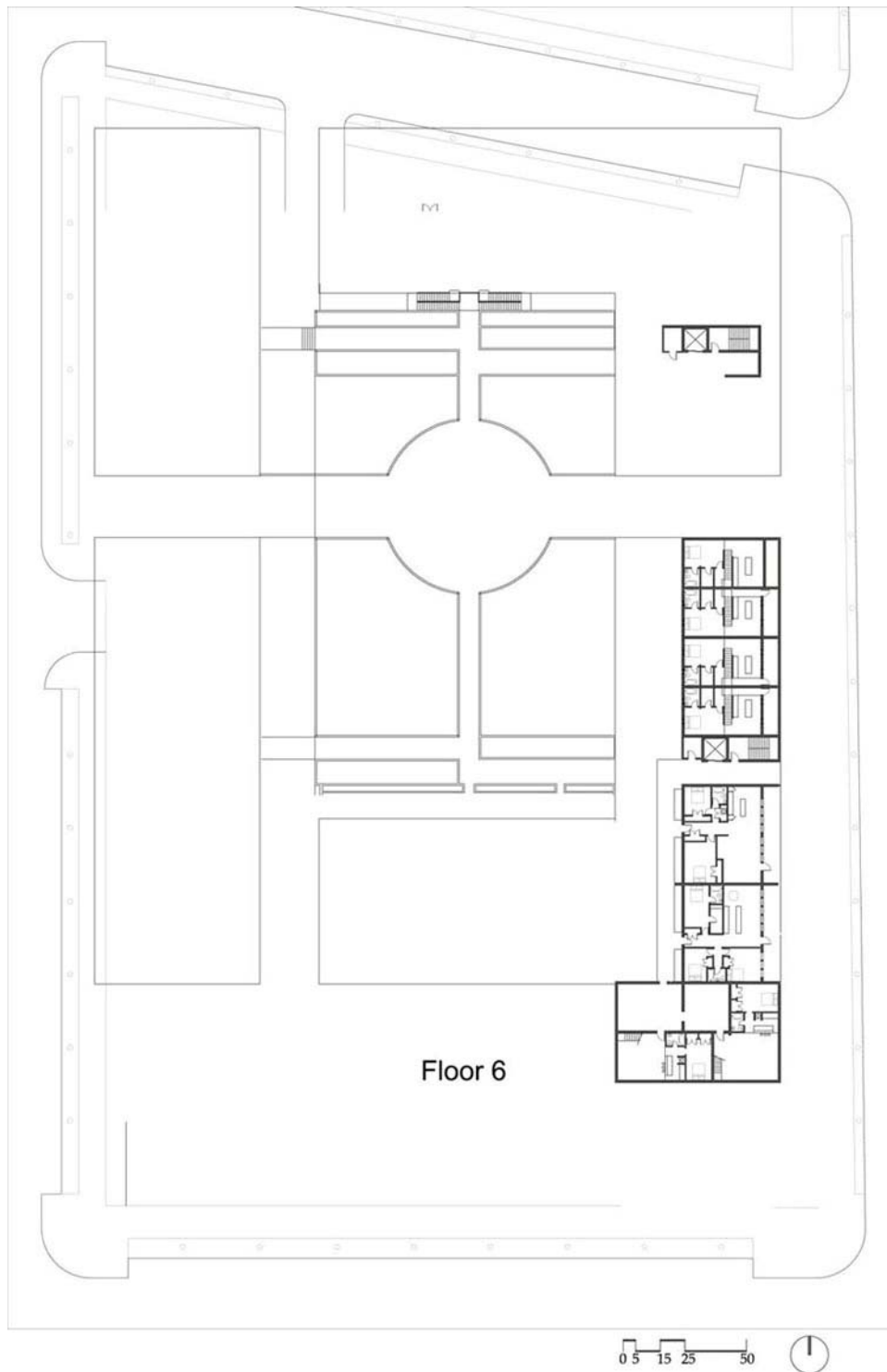


Figure 85 - Sixth Level Plan (Carroll)

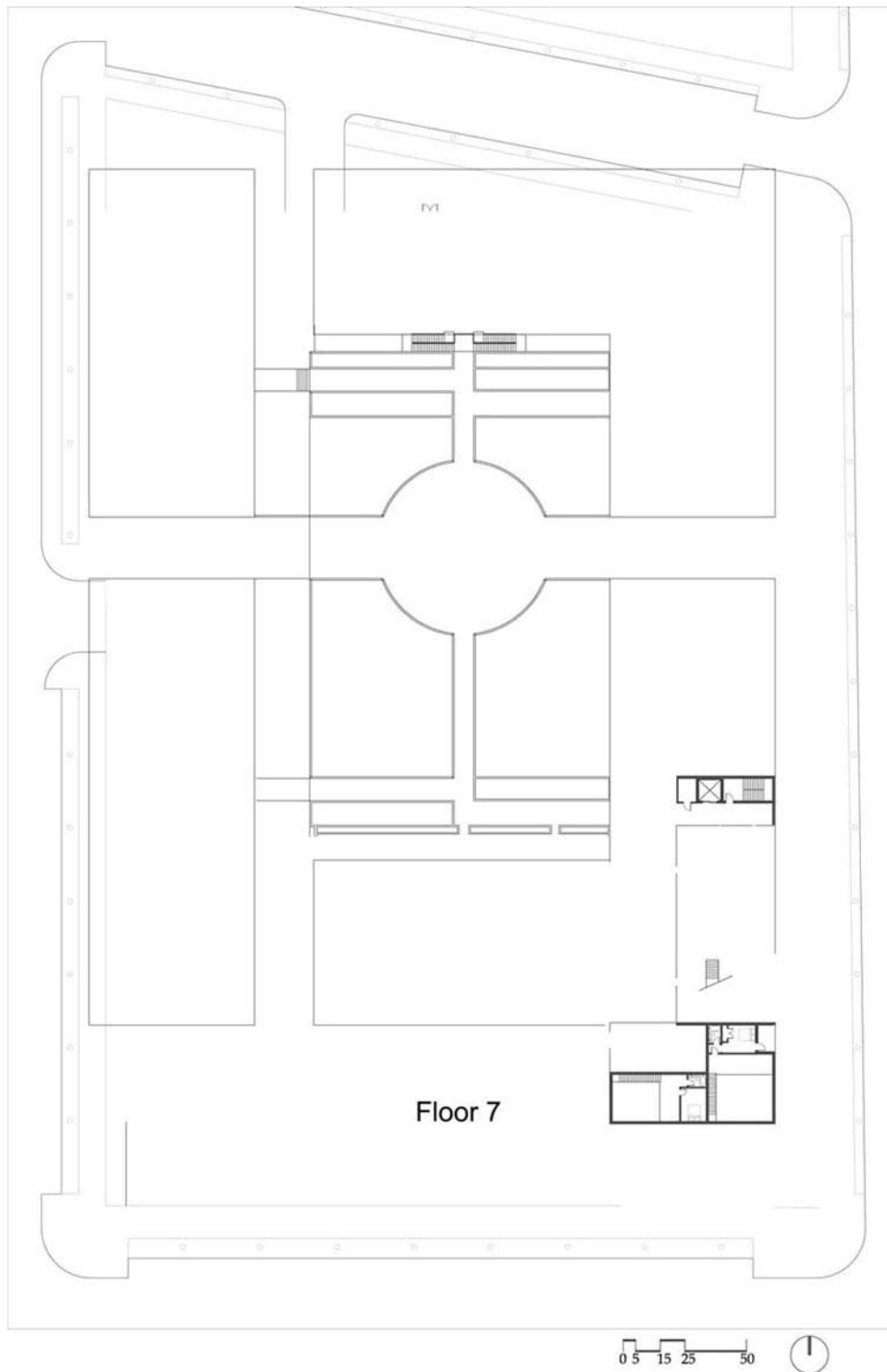


Figure 86 - Seventh Level Plan (Carroll)

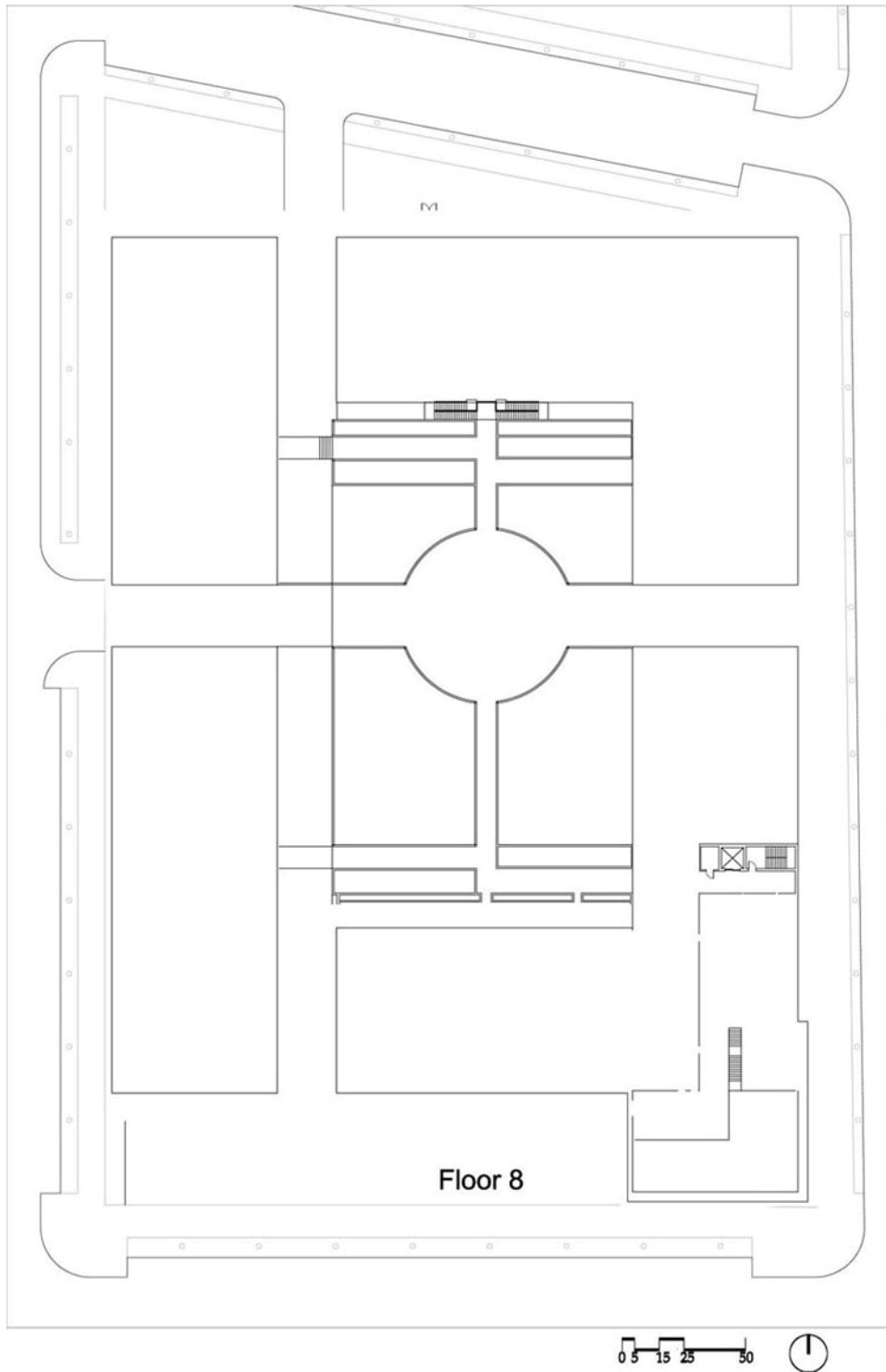


Figure 87 - Roof Plan (Carroll)



Figure 88 - Building Section (Carroll)

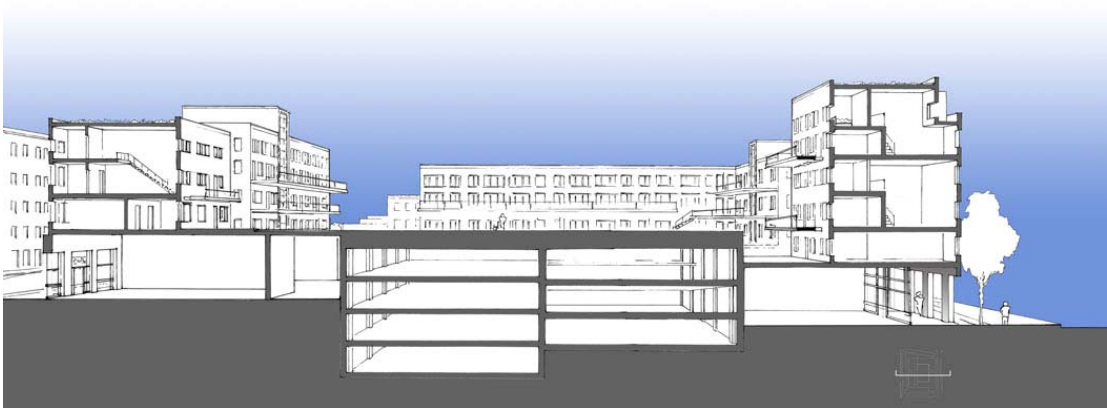


Figure 89 - Building Section 2 (Carroll)



Figure 90 - Interior View (Carroll)



Figure 91 - Interior View



Figure 92 - Building Section Diagram (Carroll)

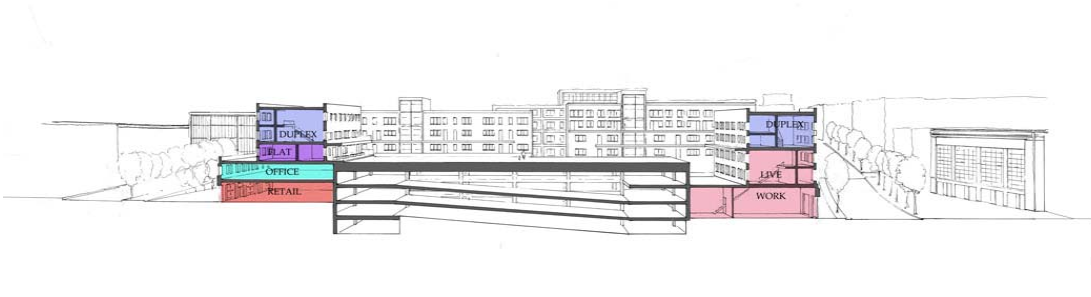


Figure 93 - Building Section Diagram 2 (Carroll)

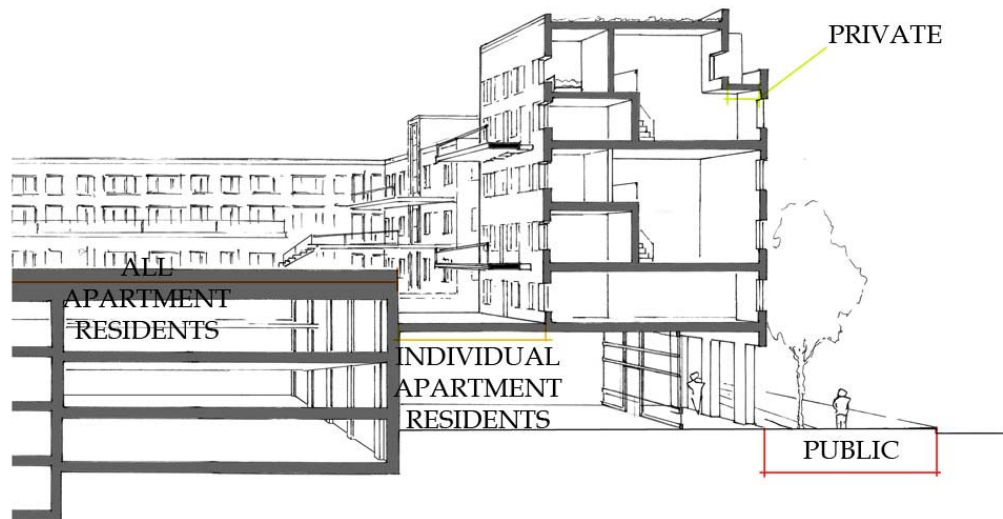


Figure 94 - Degrees of Privacy (Carroll)



Figure 95 - Site Section (Carroll)



Figure 96 - Exterior Plaza View (Carroll)



Figure 97 - East Facade (Carroll)



Figure 98 - North Facade (Carroll)



Figure 99 - Fouth Facade (Carroll)



Figure 100 - West Facade (Carroll)

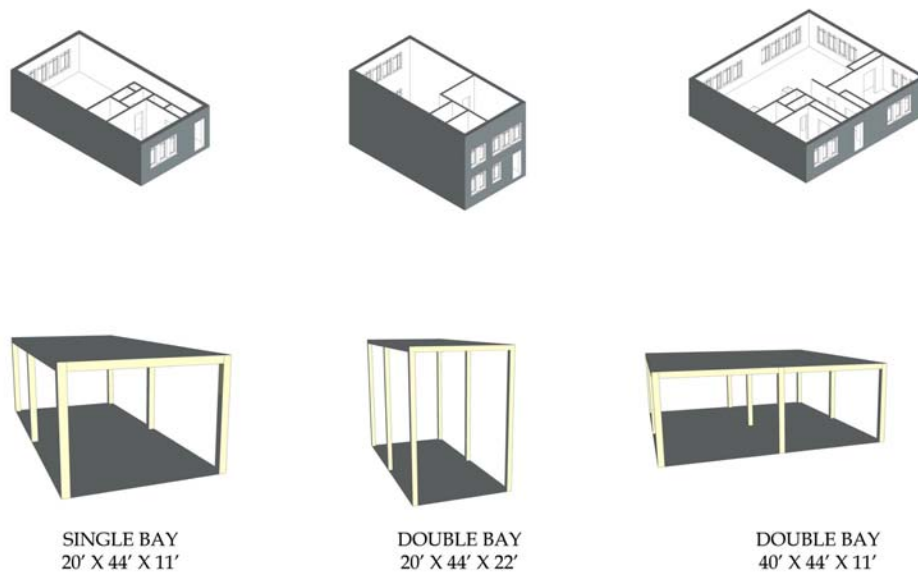
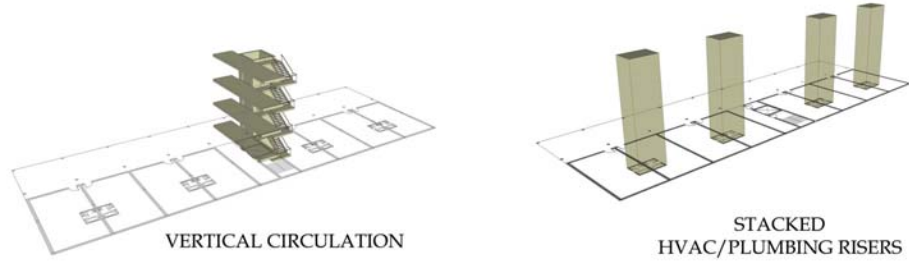
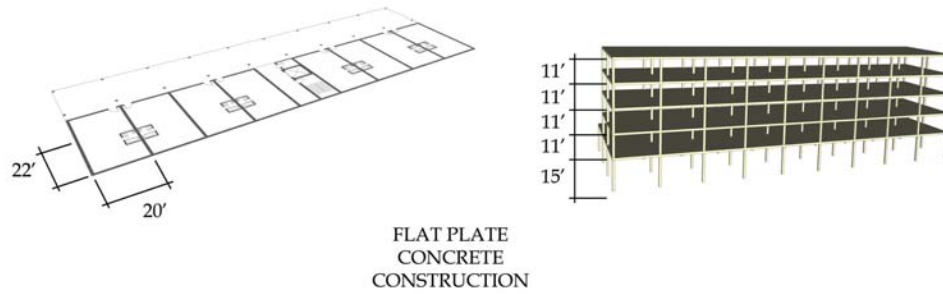
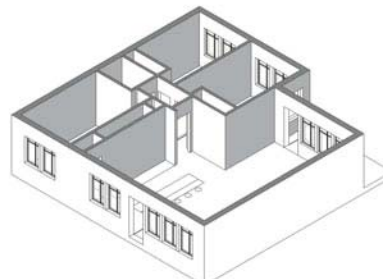
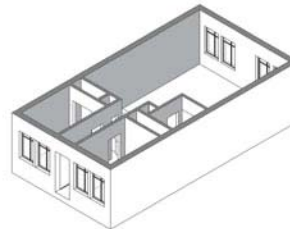
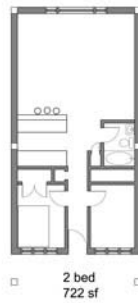
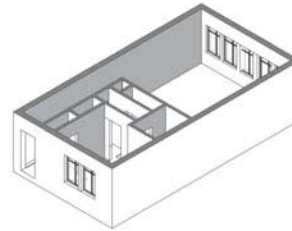
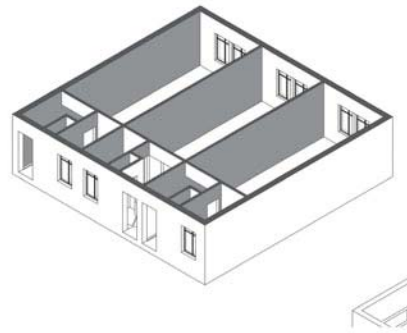
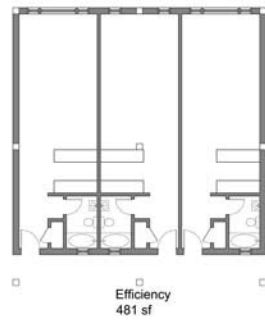


Figure 101 - Building Construction Diagrams (Carroll)



Figure 102 - Faculty Apartment Types (Carroll)



GRADUATE HOUSING

Figure 103 - Graduate Student Apartment Types (Carroll)

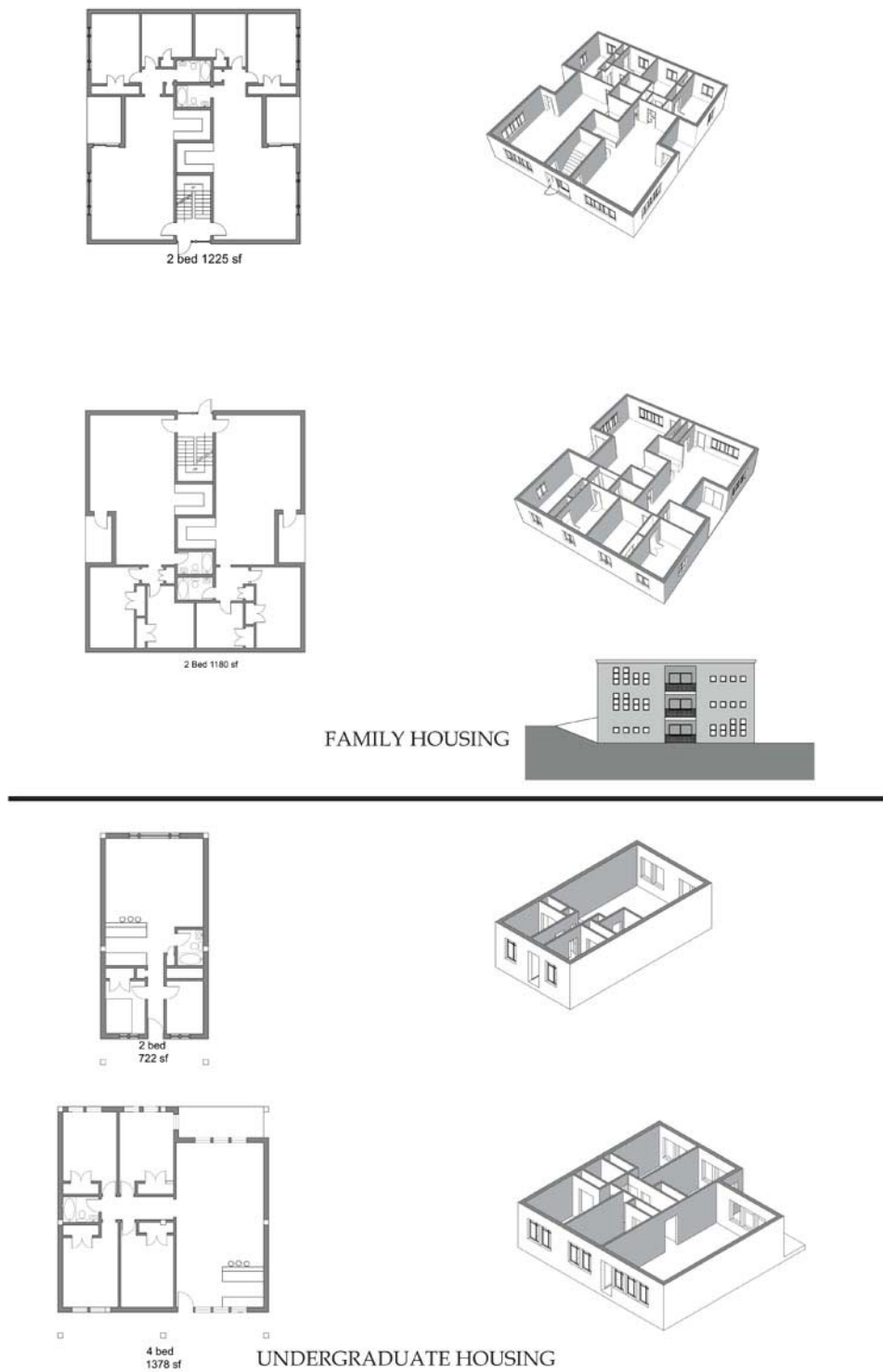


Figure 104 - Family and Undergraduate Apartment Types (Carroll)

Conclusions

One of the most pressing issues facing the university community in the near future will be the lack of adequate housing. As universities like UCLA and UC Berkeley recognize that affordable housing is a powerful recruiting and retention tool the role of this vital resource at the University of Maryland will only become more important.

It is critical; that the University and the City find ways to partner to achieve mutually advantageous outcomes. If these two entities can work from a shared vision, and if the University takes an active role in shaping and encouraging good development at its edges, the City of College Park has the potential to become an asset to the university community. The development pressures, land values, and housing demand are aligned to generate a large amount of development in the near future. If this development takes place even one mile from the campus, an opportunity to ease traffic problems in the immediate vicinity will have been missed.

This design solution was well received, although the development of the facades was a focus of the discussions. It is my hope that this does not detract from the larger point that dense development along this edge of the University could be advantageous to all.

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Endnotes

¹ ibid p. 7

² ibid p. 7

³ www.umd.edu

⁴ www.census.gov/census2000

⁵ www.ci.college-park.md.us/Plan_and_zone.htm

⁶ www.umd.edu

⁷ Student Housing Market and Feasibility Study
UNIVERSITY OF MARYLAND AT COLLEGE PARK
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⁸ Student Housing Market and Feasibility Study
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