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ACTIVATING URBAN NODES IN SUBURBAN SETTINGS
High Density Development at a Long Island Transit Hub

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STATEMENT

The desirability of suburban living is in decline, as more and more people are moving to cities in response to a shifting paradigm of millennial values. Suburbia fails to provide a lifestyle of convenience and lacks the inherent social infrastructure necessary to satisfy the demands of the current millennial population. Density must be introduced in existing voids in order to reconstruct the suburbs to adapt a more urban climate. The suburbs must begin to administer more rental housing in order to accommodate younger demographic groups, and provide them with a lifestyle they can afford.

ABSTRACT

Over the past century, suburban living has been a sign of prosperity and a manifestation of the American dream. Owning a large single-family home, a spacious yard and a car have become a measure of success. The trend towards suburban habitation has created a surge of sprawled development that has led to an inefficient built-environment.

The attitudes, and lifestyles of the current population have shifted; millennials are getting married and starting families later, with a greater demand to settle in cities. Suburban living is no longer held at the same prestige as it once was, as people are placing higher value towards living near jobs and walkable amenities. The demand and cost of urban living has skyrocketed. Today, over 50% of the country’s population lives in cities, which is expected to increase to up to 70% by 2050.

The overpopulation of cities has caused a surge in housing costs - making urban settlement increasingly unaffordable. The suburbs fail to provide millennials and young professionals with an adequate supply of rental housing due to its dominant presence of single family homes. The expensive cost of cities, along with the lack of viable housing in the suburbs has many young professionals stuck, in search of a feasible place to live.

The suburb’s has potential to be urbanized, and to provide a mix of housing types that accommodate a more diverse set of residents. There is an abundance of blighted structures waiting to be retrofitted for productive use, and a substantial amount of large vacant sites that pose the opportunity for new development. Architecture, and redevelopment can serve as a device to help adapt the built environment of the suburbs to fit the needs of the current population. A shift towards a denser form is necessary, and the street must address walkability, engage public activity, and incorporate the natural landscape. Suburbia can encompass a hybrid of urban and rural qualities, and can be redefined to provide optimal living conditions at affordable rates.
INTRODUCTION

The American suburban movement, allowed an immediate escape from the health hazards and over crowdedness of the city. Residential settlements were relatively compact, and the notion to achieve a more private and quiet living environment with quick access to the city and its resources was successful. The invention of the automobile granted widespread ability for people to move to the suburbs, and exacerbated urban flight and suburban sprawl. The automobile unhinged the limitation of density, and spurred excessive dispersion that now defines the national landscape.

Cultural values have changed and the suburbs is no longer held at the pedestal that it once was. The population of cities are rising, due to their supply of job opportunity, and ability to satisfy the lifestyles of the millennial population. With increasing demand of urban living, rental rates of cities are at an all-time high, and are becoming widely unaffordable for young adults, and individuals entering the corporate world. Suburbia is primarily geared towards families, and made up of owner-occupied single-family homes. In some cases, people spend more on housing costs in the suburbs than in their respective cities because of the ownership expenses.

The suburbs must begin to accommodate a more diverse demographic, and provide a social infrastructure that people look for in cities. To achieve this, more rental housing must be introduced, and new development must be designed to inherit urban qualities through increased density and an integration of building uses. This thesis seeks to investigate organizational strategies that would best fit suburbia to mitigate flight to cities, decrease the dependency of cars in the suburbs, and promote a more inclusive environment with a more diverse group of individuals.
THE SUBURBS — THEN

The suburbs have been historically defined as urban areas that exist beyond the physical limits of a city and that house underprivileged and impoverished populations. The foundation of suburbia has inherited a negative overtone; characterized as being generic, lacking an architectural character that relates the history of place at which it exists. These perceptions have changed with the emergence of a larger middle-class that realized they no longer wanted to settle alongside industry. The commercial activities associated with cities induce noise, and an intrusive atmosphere that people began to avoid. There became a grimy connotation of cities, caused by excessive factory pollution, and over-crowdedness. In the early 1800's, New York and Boston have experienced an outbreak of disease, caused by their lack of sewage systems that exacerbated fifth, and health hazards. It became more desirable for people to live outside main urban centers. Privacy became more valued, and the elite began to prefer a greater closeness to nature.

The construction of the first-steam-powered-rail systems in the 1830's granted upper classes the opportunity to depart from the city, and escape its nuisances. Rail and streetcar systems began developing wide-spread in large cities, and small residential enclaves began emerging in the midst of their surroundings. The population of Westchester County, a suburb of NY, had doubled between 1850, and 1870, and again between 1890, and 1910. A suburban movement began to take place.

The development of public transportation systems in the United States created the first-wave of widespread suburban sprawl, and urban flight. At this point, the suburbs, consisted of a compact agglomeration of residences located alongside train stations. All homes required walking access to public transit. America had adopted a British suburban model in the pre-automobile era. There became a strict separation between residential and commercial space and suburban inhabitants had a com-
plete dependence on the rail-system to conduct errands, and to take them to and from work. They were able to live in a quieter, more private environment while maintaining access to the essential provisions of the city at the expense of commuting.

The necessity to constrict urban clusters in the suburbs was relieved with the invention of the automobile. Sprawled development persisted at unprecedented rates, redefining the national landscape as we know it. The government's recovery plan to the US' economic depression in the Post-World War II era contributed to the deluge of suburban settlement, helping pave a path for growth. The plan mandated a more extensive distribution of home mortgages, with benevolent rate's. Industry's simultaneously began adopting a system of mass production in order to reduce labor costs and increased efficiency. Automobiles became manufactured at a massive scale at an affordable price, giving most people the ability purchase cars. Ideals of the "American Dream" became commodified, and strongly identified with the opportunity of home and car ownership, with suburbia remaining a symbolic forefront. Capitalist United States took advantage of this ideology; widespread faith of social mobility and its association with suburban living bolstered the mass consumerism of vehicles. This fueled the exploitation of automobiles, causing the US to become more dispersed in comparison to other countries.

The status of the suburbs, has been an ever-changing response to American cultural changes and changes in land value. People's attraction to the suburbs has correlated with their changing preference of amenities and desire to escape industrial nuisances. Upper classes chose to live in cities when it was essential to them, and when living in a city was the only way to access basic necessities, and earn money. Once granted mobility, they recognized the opportunity of living on the urban fringe and amongst nature; away from all of the congestion of the metropolis. Once suburban dwelling became attainable to most people, its prestige faded, and more of the inconsistencies and shortcomings of suburban nature have come to light.
THE SUBURBS – NOW

There is now a widespread misconception in regard to popular housing preferences, where it is commonly believed that the majority of the population now favors living in cities. This can be perceived as a result of the substantial population growth of cities over the past decades. In 1950, the percentage of the population that lived in cities was 30%, where it is 50% today, and is expected to rise to 70% in 2050. Despite the evident urban expansion, there is no clear, discernable common preference between urban, and suburban living – housing decisions are derived from individual feasibility that varies based on age, and financial situation.

The suburbs are family oriented; they primarily consist of single family homes with yard space for children to enjoy. The school districts are generally a higher quality than they are in cities; they are self-controlled by individual local governments. The homogeneity of towns, along with the diversity of individual hamlets within suburban counties causes for segregation. Better education and public services are only available to the upper middle class, and the lower classes are left with little mobility towards integration.

Urban areas experience an influx of millennials, and young professionals. The suburbs fail to accommodate them due to their family oriented nature, and disproportionate amount of job opportunity. Suburbia is not adequately designed for young adults new to the corporate world, devoid of marital status and an established career. People between the ages of 20 and 30 flock to cities for the abundance of jobs, the social aspects, the ability to navigate without a car, and the supply of rental housing. Urban lifestyles best fit the majority of millennials at the stage of young adulthood, however, that is not to say that they will not choose to move to the suburbs in the future.

A survey asked millennials whether they were city people or suburbanites, and the results were almost an even split. 37% reported as city people, whereas
36% responded as suburbanites. This data suggests that millennials would be willing to live in the suburbs if they weren’t subject to suburban limitations. 45% of Millennials live in cities, yet, only slightly more than 1/3 of those surveyed identified as city people⁶. The failure of suburban infrastructure to accommodate young adults has become increasingly problematic. The population growth in cities is causing rental rates to rise to amounts that are becoming unaffordable.

The suburbs are not accommodating towards millennials, and cities are not affordable. The median gross monthly rent in Manhattan is over double that of Nassau County for a fraction of the square footage. It is $1,688 per month as opposed to $785 per month. People who live in Nassau County, however, spend more on housing per month because of the predominantly owner-occupied market. The average monthly housing cost in Nassau County is $2,799 per month, whereas it is only $1,857 per month in Manhattan. Manhattan is made up of 77% rental occupied units, whereas Nassau County is only made up of 20%⁷. This causes millennials to be stuck; they can’t afford the expensive rents of the city, and are unable to find housing in the suburbs. 21% of Millennials live at home with their family in order to save money, or because they are unable to find adequate housing. There is a demand for rental housing in suburbia⁸. It can be supplied at affordable rates, and can appease the needs of those who cannot afford the expensive rents of the city, and aren’t looking to purchase a home in the suburbs. Mixed use community and housing developments must be introduced in suburbia in order to satisfy a demand for housing while creating areas of destination within the suburbs that begin to redefine urban space in suburban environments.
CRITICISMS

Sprawl has transformed the built environment of the country by creating dispersed pockets of development that dominate the national landscape and create a slew of social issues that divide different demographic groups. The lack of density that exists within greater metropolitan areas impedes unity, and prohibits people from having the same types of experiences and exchanges they may have in a city. The typical suburban typology only accommodates the lifestyles of family's, and has yet to also acknowledge the demands of individual residents and millennials that are new to the corporate world. The inherent uniformity of suburban municipalities prohibit knowledge and a lack of understanding of other cultures. It constrains individuals to a bubble that exacerbates a social ignorance and a narrow mindset that prevents further change. The over dependency on cars has become a handicapped. It constricts people to the indoors and hinders a connection between individuals and their surrounding built environment. Life is not solely experienced at specific destinations; the journey is just as important.

Suburbia obtains a monotonous, and generic nature. The rapid growth, and mass production of the suburbs prohibited the definition of distinct variations between suburban towns. American Suburbia collectively lacks major character. it possesses an evident “sameness” across the board. Towns on the urban fringe were originally designed to have a strict disconnection between uses, in order to achieve residential privacy, and a more productive environment within individual programs. “Housing, office, retail and industrial activities were all independent from each other, and only transferable through the automobile”. The failure to integrate uses has transformed the way in which space is commonly occupied. People aren’t enjoying the outdoors, and aren’t immersing themselves in an urban experience. The national landscape has been redefined; Cities are now primarily “dominated by dispersed, car-dependent suburbs, which in form and function vary hardly from place to place”.

The social structure of the suburbs is not diverse - individual municipalities have generally homogeneous social structures. Larger suburban regions may have a diverse set of towns, but individual townships within the region have a population relatively alike. “American suburbs are thought to have social structures characterized by homogeneity in contrast to urban diversity. Although uniformity is often the case within individual suburbs, when taken as a whole the suburbs that make up a metropolitan region often display as much variation as that contained in urban neighborhoods”. The suburbs make up the majority of the overall metropolitan landscape, yet, they only cater to specific groups of the population. They should be more affordable than cities, but don’t provide housing that accommodates young professionals and singles without families of their own.
RE-THINKING SUBURBAN DEVELOPMENT

How can these suburban constraints be broken? How can a new suburban typology approach the issues of diversity, density, identity, and mobility? Urban forms, and strategic uses of landscape must be studied in order to formulate and identify the most productive suburban organization. New Urbanism ideals must be incorporated to administer an integration of building uses. Housing, office, retail and industrial activities must exist within a synthetic environment. New development must contain a historical embeddedness - the inscription of history in the landscape that is currently lacking. Urban Morphologies must be defined with the modification of the built and social fabric.

Despite the compromising aspects of suburbia, it includes many advantageous qualities that are unavailable in urban areas including space and affordability. The availability of wide open spaces in the suburbs gives it the potential to employ optimal living conditions that combine the natural elements of the country with a contemporary urban fabric that satisfies the essential metropolitan conveniences. Suburbia provides many blank canvas’ for redevelopment that can inject new urban methods that respond to societal preferences.

Cities of different scales must be analyzed in order to identify successful planning strategies, and to diagnose the proper organization of suburban towns based on their size. “The cities physical form has a direct effect on the human activities that go inside it”10. When reconfiguring suburbia, attention to size and relationship to the grand urban network must be considered to inform the decisions of how and where to build.
DEFINING FORM

Urban Environments are comprised of different layers that constitute their form, and essence. Kevin Lynch established five defining factors that make up urban form. These elements include size, density, grain, shape, and pattern.

**Density and size** should have a direct relationship with one another; the larger the size of an urban area, the more density it should be able to hold. A city's size lays the initial framework of its urban layout, and organization; it informs proportions of commercial and residential zones, and sets a precedent towards planning the other components of its scheme. Suburban municipalities currently ignore the adequate ratio of density and size, and should begin to conventionalize a strategic relationship between the two in future planning. New York City is an example of a city that ignores the proper ratio between density and size – It is overcrowded and over polluted as a result.

The **grain** of a city is defined by its distribution of program, and the architectural character of its different uses, as well as the demographic distribution of its inhabitants. Urban grain is represented visually through the common residential and commercial building typologies that make up space. It is essentially delineated by zoning. Allowing the grain to commodify social uses has been more successful in older cities, with program being distributed within a finer grid. Medieval cities have achieved an exemplary delineation of program and designation of public space that allows for interaction and contact with the urban environment. Precise focal points are defined, and set up a hierarchy of uses. Market squares dominate the fabric and often include a castle or cathedral – becoming an important source of institutional space. "Modern cities differentiate on a broader scale. Grain is course rather than fine." This larger scale differentiation can allow residents to have quiet local streets with open areas. It is more efficient for individual uses that require a larger area or a specific function, but causes a lack of urban interaction and exchange between differ-
ent programs. This is an increasing problem for the suburbs, because programs are so spread out.

The shape of the city is defined by the silhouette of its mass. Lynch identifies the common shapes of cities, and the appropriate shapes in accordance to their size. The shapes he distinguishes include a compact mass, a long narrow ribbon, a central mass with large arms of development, and a constellation.

In a compact mass, the urban center is centrally located within a particular circumference. This arrangement works when the city isn’t too large, and the center can be close to all of the cities surrounding sectors.

The long narrow ribbon scheme typically occurs along a road or river. It is evident in typical street villages – and would be the most successful typology for suburban areas given their size. A main-street can be identified, and respective residential areas and alternative uses can be arranged around it. All residences can be relatively close to the main line. This linear organization rarely grows very large because the more the “ribbon” expands, the more disconnected the surrounding areas will be from each other. In this case, “the surrounding rural areas become patches of towns with a lack of unity”.

The central mass with large arms of development resembles a star. It combines a strong center with the advantages of linear extensibility and contact with open country. It allows for urban expansion but at the expense of an overtaxing single center and a difficulty towards navigating around the urban circumference.

This constellation is seen more commonly at the regional scale, and is evident in New York. It is made up of separate units that are distributed over a region, and held together by a web of transportation lines.

Urban form is then defined by its internal pattern, and the axial arrangement of streets. The circulation to and from major nodes, and the ubiquitous street grid. A successful pattern includes a specialization, and variation of street sizes and a strategic placement of open spaces that provide a relief from building. “The modern city requires rhythmical balance between enclosure and openness.” Shopping and office areas have a need for concentration, the threshold between commercial and residential space must begin to accommodate public open space and greenspace.
Size, density, grain, shape, and pattern are all basic aspects of the city's physical form and all have a powerful effect on the quality of life that goes on. Balance between services and growth, prevent an inefficient use. It is important to discern the optimal metropolitan pattern by having all these aspects work together in a uniform manner.

The shape of a suburban town would be most effective as a long narrow ribbon - defining a main street corridor amidst surrounding residential housing. This ribbon would link to the constellation shape that connects the suburban town to the larger urban network and the nearby city. New development shall be more course in grain - suburbia is comprised of an enormity of dead malls and strips and surface parking, which can serve as areas of foundation for large mixed-use redevelopment projects.

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*Fig 1.11*  
*Parking Space -> Urban Development*  
Large areas of surface parking at blighted malls & departments serve opportunity for urban development in suburbs
POSITIONING LANDSCAPE

“Public realm shall be created out of the ex-urban middle between traditional urban centers and greenfield suburbs. Priority should be given to landscape, rather than freestanding built form, and there is a pressing need to transform certain megalopolitan types such as shopping malls, parking lots, and office parks into landscape built forms.” – Peter Rowe

Landscape design can set the framework for infrastructure, and begin to organize the program and form of the built environment. Landscape urbanism provides an opportunity to integrate high density built environments with large open green spaces, where the two conditions would administer a contrast between nature and structure and the natural environment is able to act as a relief from a heavy compact urban fabric. Suburbs is surrounded by existing greenspace that is important to preserve, and that can be worked with in order to delineate program and define boundaries between infrastructure and the built environment. Natural landscape is a major distinguisher between suburban and urban environments – urban development within the suburbs can create a hybrid condition of rural and city like conditions.11

Ebenezer Howard’s “Garden City” Concept emphasized the importance of creating “compact towns surrounded by a wide rural belt” The garden city typology is defined by a series of avenues and concentric boulevards that are lined with vegetation. It includes 6,000 acres designated for agricultural and recreational uses with only a small portion dedicated to the residences. This ideology emphasizes the importance of living with the environment. Open greenspace is maintained towards the center, while industry is allocated on the perimeter in order to allow for large consolidated natural spaces as opposed to small dispersed green areas12.

Landscape must be prioritized in the urban development of suburban environments. The natural vegetation is what distinguishes suburbs from cities, and it is important to embrace the relationship between greenspace and the built environment.
PRECEDENTS
The Rockville Town Square is a 12-acre development that was previously an old strip-mall with parking that took up the majority of the site. The project reconstructed a decrepit building surrounded by predominately void space into a dense cluster of buildings that create a community hub and a town center.

The project includes a community center, 644 new residential units, dozens of shops and restaurants, a cultural arts center, and a county library. The buildings bound the perimeter of the site to introduce density along the street. They shape a large plaza along the center of the development, which provides relief, and necessary public space for the neighborhood. Residential buildings have inner courtyards to accommodate parking, and common greenspace for residents.

The newly defined blocks are lined with permeable pedestrian walkways to improve the pedestrian setting and access to retail and commercial spaces along the street, while also delineating a system of paths that connects to the central plaza. The building forms, and materiality are consistent with those in the surrounding context.
RADIANT CITY
LE CORBUSIER

The Radian City was designed to consolidate individual program in compact areas in order to conserve density and maintain outdoor space along the perimeter of buildings. The radical scheme imposed high density housing with the intent of having all residences in close proximity to transit. This concept is controversial because it proposes high density in a suburban area.

Aspects of this concept will influence the design intervention of this thesis. The intervention will not follow as strict of an order and will not separate all program into individual buildings, but, it will emulate the idea of creating high density housing - consolidated in a single building in order to preserve the natural environment around it.
The "Garden City" is an urban concept, developed by Ebenezer Howard to improve the quality of urban life. It imposes a strict allocation of program, where structures line the perimeter of green spaces. All industry is located on the edge of the city, with agricultural and recreational uses distributed throughout.

This concept emphasizes the importance of creating "compact towns surrounded by a wide rural belt." The garden city typology is defined by a series of avenues and concentric boulevards that are lined with vegetation. It sets aside 6,000 acres for agricultural and recreational uses with only a small portion dedicated to the residences. Open greenspace is maintained towards the center, while industry is allocated on the perimeter in order to allow for large consolidated natural spaces as opposed to small dispersed green areas.

Garden cities originated as farmland, where Howard used the existing greenspace to carve out an urban plan. This concept of delineating program through the preservation of greenspace will be emulated in the intervention proposal.

FIG 2.05 | http://welwynhatfield.co.uk/
FIG 2.06 | https://upleaf/xmlmedia.org/
FIG 2.07 | http://www.oliviapress.co.uk/save0033.jpg
Delhaize Quai De Rome redefines the existing block that it is situated on by relocating an existing building, and creating a pedestrian walkway that divides the site and delineates a separation between structure and open space. The series of elevated pathways shaped by patches of greenspace prevalent throughout the site links the building to its surrounding context and engages pedestrian access. The form of the building, and landscape enforce a connection between the supermarket and the neighborhood.

The site is elevated to accommodate parking space that is predominately underground in order to reduce traffic and the visual impact of cars on the ground level, while also allowing for more room for vegetation. The supermarket has a tiered green roof that provides a public greenspace amenity for the community, and can potentially act as a park.

The project is a successful example of how architecture can begin to integrate commercial and public uses, and engage the surrounding built-environment. It would be lucrative in a suburban environment by impacting pedestrian entry and providing public and green space in an area where density is introduced.
CASE STUDIES
In this project, Ma0 Studio designs the master plan of a city in the Netherlands, at which there is no existing infrastructure. The site is comprised of woodlands and natural landscape, and the intent of the project was to make something from nothing. In doing this, a grid has been created to include dense clusters of building development surrounded by the existing landscape. Voids within the urban fabric are formed as a result of surrounding buildings. In doing this, the architect is able to create an urban identity for a city with no existing history. Hubs of dense urban space is surrounded by large voids that are defined with different vegetation and landscaping. There is a tight urban fabric in areas that are able to cover the vast area of the city while still preserving an abundance of nature. Green footprints were created first, informing the organization of the city thereafter.
This project exists along a large site, and has a variety of different program. The building is comprised of housing, office space, retail, and public space. The ground plane is negotiated to provide an elevated surface that accommodates public space. Below the surface includes retail and commercial spaces. The project is situated in walking proximity to Laurentina Station, allowing residents the ability to commute.

Large volumes are suspended over the elevated surface. Include housing and includes residential. The arrangement of program and the way that the project interacts with the site is successful, and can serve an influence on the design proposal.
TWELVE40 - MIXED METALS
INTERFACE STUDIO ARCHITECTS / PHILADELPHIA, PA

Twelve40 occupies three edges of a street block, where one boundary exists along a main commercial avenue, and the opposite backs a quiet residential street. The footing of the site informs the programmatic composition of the building; it is comprised of two rectangular volumes with a central courtyard. The mass facing the busy street is mixed use with ground level retail and apartments, whereas the one along the residential street consists of a series of townhomes.

The project accomplishes to maintain the density of its surrounding urban fabric, while cultivating a central courtyard that provides parking, and common space for residents, as well as additional entryways. It successfully divides private, and public space, and defines the change of program through the materiality of the facade.

The townhomes fit in well with their immediate context by inheriting a modular residential typology that address the street with the inclusion of covered stoops. The syntax of wood, metal and brick materials emits a warm, homey aura. each townhouse unit has a rooftop terrace and a balcony. The apartments each have a balcony as well, where the penthouse units have their own rooftop space.
PROGRAM ANALYSIS
The project is a mixed-use community that incorporates housing, retail, office space, dining, a train station and public outdoor space in an integrated environment. The site includes varying housing typologies, including townhouses, and apartments. Many of the apartments will exist above a commercial ground floor. The Mixed-use buildings will stand along a busier, commercial corridor, where the single apartment buildings, and townhomes will be situated along quieter-residential streets. Parking will be located underground, and on the lower levels of the building in order to maintain more density and a lack of void space. The buildings will include inner courtyards so that private, and quasi-private outdoor space would be provided for residents without disrupting dense edge conditions of the site.
MOUNTAIN DWELLINGS
BJARKE ANGLES GROUP / COPENHAGEN, DENMARK

"How do you combine the splendour s of the suburban backyard with the social intensity of urban density?"

The Mountain Dwellings, designed by Bjarke Angles Group is located in the Orestaden district of Copenhagen, 10 minutes outside of the city center. The project accomplishes to provide roof garden terraces, and on-site parking for all residences while maintaining a dense agglomeration of housing. It is successful at providing private outdoor space for each apartment despite the building’s multi-family typology, and close proximity of units.

The building’s parametric form is strategically organized to incorporate a mix of parking, living space, and outdoor green space while cultivating a distinct separation and a cohesive link between the different programs. This project is the first in Orestaden to provide residents with parking directly outside of their home. The garage acts as a base foundation upon which housing is fixated above, providing cars with the necessary direct street access, and residents with the parking adjacencies to their homes. The housing slopes with that of the garage, creating a mountainous form that delineates a stepped roof garden that is able to accommodate space for all 80 units of the building; thus forming a residential community that is maintained within a single structure, and that exists within an urban setting.

FIG 4.0
FIG 4.1
FIG 4.2
FIG 4.03 - RELATIONSHIP TO PUBLIC

FIG 4.04 - PROGRAM

FIG 4.05 - SECTION

FIG 4.06 - GREENSPACE

FIG 4.07 - PARKING

FIG 4.08 - APARTMENT

Additional Housing
Mountain Dwellings

PARKING - 215,000 SF
HOUSING - 108,000 SF

FIG 4.03 | Diagram by: Author / Google Earth
FIG 4.04 | Diagram by: Author / https://www.archdaily.com/15022/mountain-dwellings-big-image
FIG 4.05 | https://www.archdaily.com/15022/mountain-dwellings-big-image
FIG 4.06 | Diagram by: Author / https://www.big.db/#projects-mtn
FIG 4.07 | Diagram by: Author / https://www.archdaily.com/15022/mountain-dwellings-big-image
POWERHOUSE
INTERFACE STUDIO ARCHITECTS / PHILADELPHIA, PA

Powerhouse provides a multiplicity of housing types within a mid-level sized residential building. It accommodates a mixed community, that satisfies the needs of different demographic groups through its provision of diverse units. Despite the building's variation, it appears cohesive from the exterior, where you are unable to identify a programmatic change along a single facade. The building includes single family townhouses, duplex's and apartments.

The project successfully addresses the street, and engages the sidewalk. The building provides large elevated stoops with a concrete frame that matches the sidewalk to emphasize an integration between the two. The railings along the residential entry-ways incorporate a design that matches the benches along the street. The buildings organization, and entry thresholds enforce walkability by creating a connection to the immediate context of the neighborhood.

The scale of this project would fit in well within a suburban environment; it has an appropriate amount of levels to create a densified cluster of housing without being intrusive. It successfully accomplishes to incorporate yard space for all duplex, and single-family units. The townhouses, and lower level duplex's have a backyard at ground level. The townhouses also open up to a green roof terrace on the top floor. The higher level duplex's have a stair that leads up to a green rooftop. The strategic assembly of unit types has allowed for privacy amongst all outdoor spaces.
FIG 4.13 - PRIVATE GREEN SPACE

FIG 4.14 - DUPLEX PLANS

FIG 4.15 - TOWNHOUSE PLANS

FIG 4.16 - APARTMENT PLANS

FIG 4.17 - PROGRAM DIAGRAM

31 UNITS
4 TOWN HOUSES
16 DUPLEX'S
11 APARTMENTS
CO-WORKING SPACE
WEWORK OFFICES

WeWork is a global network of co-working spaces that allow individuals to rent office space at their convenience. There are a variety of different plans, ranging from small offices, large offices, and custom office buildouts.

The program of the design intervention will accommodate co-working space so that it can provide residents with the opportunity towards living and working in the same area. Co-working space would bring industry into the suburbs, and prevent the need for individuals to commute into the city for work.

The program allocates the large office spaces on the perimeter of the building envelope. The center has a service core with surrounded by several conference rooms. Smaller offices are allocated within an inner volume of the plan, but contain glass enclosed walls in order to let in natural light.
AVG SF - 45,000 SF

FIG 4.21 - PLAN

FIG 4.22 - PROGRAM

FIG 4.23 - PLAN

FIG 4.24 - PROGRAM

Legend:
- Large Office
- Small Office
- Service
- Conference
- Public

FIG 4.22 | Diagram by Author
FIG 4.24 | Diagram by Author
1111 Lincoln Road is a mixed-use building with retail and restaurants on the ground level and parking above. The building is adjacent to an existing bank and provides walkways from each parking level to the bank. The parking garage is designed to accommodate different purposes and to be able to adapt to an alternative use in the future.

The building is constructed with concrete and remains very open throughout each level.

The project includes 300 parking spots, 11 shops and 3 restaurants at ground level. There is also retail spaces on the 5th floor, a rooftop garden, a rooftop pool and restaurant, and some luxury residences.
Dokk 1 is an urban destination within its area. The building serves primarily as a library, but houses additional program that accommodates community use. On the ground level exists a transit station, with immediate connection to a light rail. The second story is comprised of mostly library space, with some private work rooms. The second floor is a split between library space and rentable office space, and the third floor is almost all rentable office space. The building also includes media rooms, and conference rooms.
Building Envelope

Open Air Station / Parking

Raised Ground Plane

FIG 4.34

FIG 4.34 | Diagram by Author / https://upload.wikimedia.org/wikipedia/commons/thumb/5/5i/DolI1_version_3.jpg/1200px-DolI1_version_3.jpg
PROPOSED PROGRAM
DISTRIBUTION

HOUSING - 60,000 SF
  APARTMENT - 35 UNITS / 40,000 SF
  CONDO - 15 UNITS / 20,000 SF

COMMERCIAL - 70,000 SF
  RETAIL - 15,000 SF
  OFFICE - 45,000 SF
    SMALL - 12,000 SF
    LARGE - 25,000 SF
  CONFERENCE - 3,000 SF
  OPEN SPACE - 5,000 SF
  RESTAURANT - 10,000 SF

TRAIN STATION - 2,000 SF

LIBRARY - 65,000 SF
  OPEN WORK SPACE - 45,000 SF
  MEETING ROOMS - 7,000 SF
  MEDIA ROOM - 3,000 SF
  CAFE - 4,000 SF
  EMPLOYEE OFFICE - 1,000 SF
  EXHIBITION - 5,000

PARKING - 150 SPACES

PARK / GREENSPACE

TOTAL - 197,000 SF
SITE ANALYSIS
LONG ISLAND, NY

Long Island is within the New York metropolitan area, east of Manhattan and New York's main urban agglomerate. It embodies an almost entirely suburban landscape, comprised of a series of towns made up of single family homes with small designated commercial areas. Farmland originally consumed the majority of the island; the introduction of the expressway, bridges and underground tunnels to Manhattan allowed for commutation to the city and catalyzed an influx of development in the region. In the mid 20th century construction methods were simplified, and residential housing began to flourish at a massive scale.
FIG 5.02 | SITE SELECTION

SITE REGION

NEW YORK CITY
BROOKLYN
QUEENS
LONG ISLAND

FIG 5.02 | Diagram by Author
REQUIREMENTS

- Located Along Rail Line
- Distance to Manhattan = 1 hour
- At Least 150,000 SF
- Existing Surface Parking

CONSIDERATIONS

- Surrounding Commercial Program
- Adjacency to Nature / Greenspace
- Relationship to Road Systems
- Relationship to Town
- Neighborhood Demographics
RAILROAD
AS A CONNECTION

The railroad is a link between Manhattan, and the suburbs of Long Island. The transit system covers the extent of the island, with train stations situated in towns that exist along a given line. Most areas on the Island lie within a 15 minute driving distance from a given station. The current typical condition of these stations manifest a vast emptiness of land, and a lack of integration to their surrounding neighborhoods. They provide a blank canvas for potential transit-oriented development that could supply a demand for rental housing and could begin to redefine suburban city centers. Dense, urban development along these stations would administer a living environment that would allow residents easy access to the city, and that would implement walkable amenities within their immediate area. It would activate existing commercial infrastructure within its context, and would cater to non-family residents, supplying them with affordable housing in an urbanized community that Long Island characteristically lacks.

1. Oyster Bay, NY
2. Syosset, NY

FIG 5.03 | TRANSIT MAP

FIG 5.03 | Diagram by Author
POTENTIAL SITE 1:
OYSTER BAY, NY

SQUARE FOOTAGE: 173,375 SF
HOUSEHOLD DENSITY: 3.38 HH/ ACRE
DISTANCE VTO MANHATTAN: 1 hr 10 min

FIG 5.04 | ROADWAYS

FIG 5.05 | COMMERCIAL

POTENTIAL SITE 2:
SYOSSET, NY

SQUARE FOOTAGE: 334,800 SF
DENSITY PER ACRE: 196 HH/ ACRE
DISTANCE TO MANHATTAN: 52 MIN

FIG 5.06 | ROADWAYS

FIG 5.07 | COMMERCIAL
SELECTED SITE
OYSTER BAY, NY

FIG 5.08 | AERIAL OF SITE
FIG 5.11 | TOWN LIMITS

Site

10 Minute Walking Radius

Municipality

FIG 5.11 | Diagram by Author / Google Earth

The text analyzes suburban developments that took place in the United Kingdom to identify different suburban typologies that exist and strategies towards increasing their mobility. The publication established different categories of suburbia, including historical inner suburbs, social housing estates, peripheral social housing estates, and car suburbs. The analysis of the evolution, and historical context of suburban typology can begin to inform development strategies to address issues of transportation and density when reconfiguring suburban conditions.

Garde, Ajay M. New Urbanism as Sustainable Growth? PhD dissertation. http://journals.sagepub.com/. The research paper discusses New Urbanism Techniques and principals that can foster sustainable growth. The paper emphasizes the importance of mitigating sprawl, and advocating for infill development. Garde conducted a survey amongst designers, developers, and planners to inform his research, and validate whether or not they are using New Urbanism techniques for their projects.


Retrofitting Suburbia provides methods and examples towards reconfiguring the suburbs into a denser, more urban environment to accommodate societies changing lifestyles. The book provides a plethora of examples of suburban retrofit projects including the conversion of parking structures, malls, big box stores and shopping centers into whole communities that include housing and commercial uses. It provides insight on political, social and economic implications of a changing built environment in suburbia.

The Form of the City. Lynch analyzes the cities of Boston, Los Angeles, and New Jersey. Lynch discusses how intellectual improvements and scientific revolution in society shapes the changing built environment and physical form of cities. He breaks down 6 main categories that makeup the urban form, including size, density, shape, grain, and the internal pattern. These categories are integral in evaluating the adequacies of cities, and in informing development that will relate to its contextual urban form.


This article discusses the relationship between natural environments, and the process of urbanization. It argues that landscape infrastructure, and form should organize the framework of building fabric, and the overall urban network. It suggests ways in which the landscape can mediate de-densification and sprawl within an urban context. Landscape can begin to remediate negative conditions, including blight, that exist within the built-environment.