NEIGHBOURHOOD [RE] FORMATION

Envisioning a future for Don Mills

by

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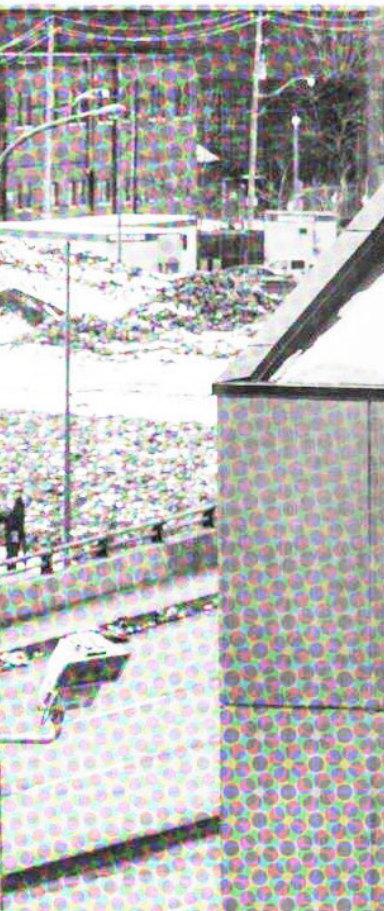

"We are living in the city which is growing, we are re-densifying the compact city of the last decade. We are regenerating the grids, we are returning to the built-up city driven by the need to save on resources, but this return cannot be a reluctant one."

Per, A. F.((2011). Density Is Home. a+t architecture publishers)

TOPIC: Neighbourhood [Re] formation

ABSTRACT: Architecture is known to be the physical language of community. What define cities are streets, blocks, and buildings, and their interaction defines the neighbourhoods. Cities are poised for unlimited growth (Lefebvre, 2003) and the challenge is to propose a vision for the future growth of already dense neighbourhoods. The research aims to study the evolution of contemporary urbanism, ideas, and theories in order to explore the structure of the existing neighbourhoods and understand the dynamic behind the street patterns and urban blocks. Case studies are investigating the quality and configuration of physical urban form through recent history. The ideas are compared and contrasted to challenge modern and post-modern urban theories in order to propose a new vision for future urban growth. The design project takes into account the importance of urban morphology and typology and their impacts on the identity, diversity and affordability of the neighbourhood.

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To them I dedicate this thesis.

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1.0

Introduction

We are living in the city which is growing, we are re-densifying the compact city of the last decade. We are regenerating the grids, we are returning to the built-up city driven by the need to save on resources, but this return cannot be a reluctant one (Per, 2011)**.**

Considering the population growth of large cities such as Toronto, there is an increasing demand for dwellings, public spaces, education, and amenities. If Toronto is to remain vibrant and competitive in the years to come, then its neighbourhoods must be desirable living areas. We need to have dynamic, diverse neighbourhoods to support population growth. We are living in the city which is growing; we are re-densifying the compact cities. We are regenerating the grids; we are returning to the built-up city driven by the need to save on resources, but this return cannot be a reluctant one (Per, 2011).In search of the city, it appears that neighbourhood is an indispensable building block. Kevin Lynch, In the Image of a City, suggests that neighbourhoods are “the basic element of the city” and the main way “most people structure their city”. However, the concept of the neighbourhood has become less apparent in the modern and postmodern city. In modern neighbourhoods, the idea and the architecture that make the social realm have been lost. Studying the evolution of urbanism, ideas and theories, the research tends

to investigate the quality and configuration of physical urban form to reintroduce a stronger social realm. Don Mills is selected as a model for this urban investigation; since it has been the model of North American suburban developments. The arrangement of existing urban forms is influenced by modernism, yet the direction of the potential future built-form will have to be invented.

The aim of this study is to find a balance between past, present and the possible future. Understanding the importance of architectural context in the city, this study articulates a vision for the future of Don Mills by investigating strategies to address the needs of future generations. Defining neighbourhoods as terminals and distribution networks that sustain contemporary life, the vision proposes to increase the density of existing urban form yet keep the neighbourhood affordable for everyone. In a sense, it aims to convert the existing typology (building type) and morphology (urban structure) of the Don Mills, into one that can adapt to further transformation. The aim is to create a strong, socially defined neighbourhood, one that becomes a more identifiable part of the city. At the moment, the Don Mills neighbourhood fabric is a combination of segregated functions. The design proposes a radical re-shape of the neighbourhood. Don Mills design principles are being respected, but modified with re-invention of built and open spaces, animating new possibilities and new experiments within the neighbourhood, the vision proposes a new direction for future urban development.

The questions that are addresses through this research are:

- What is a neighbourhood?
- What are the variables that define a neighbourhood?
- What can be learned from previous exploration of the neighbourhood?
- Why is it critical to propose a new vision for Toronto neighbourhoods? Why Don Mills?
- What are the needs of future generations for community design?
- How can the neighbourhoods adapt to address the needs of the residents of tomorrow?
- How can one encourage higher density neighbourhoods within existing context?

Q. How does one convert an existing, non-sustainable community into one that is more sustainable without losing its quality?

Introduction

The neighbourhood, as an urban entity, is a living organism that embodies a unique culture; a contextual history and a future in which new buildings weave the living traditions into a new and historic fabric. Cities are poised for unlimited growth. Robert Neuwirth, author of Shadow Cities, indicates that each week 1.5 million people migrate from rural areas to cities, so the possibility of expansion cannot be ignored. Architects and designers are now facing the challenge of expanding already saturated neighbourhoods and redefining urban environments.

> "The contemporary problem of urban sprawl is a direct result of planning practices that no longer use human-scaled neighbourhoods as building blocks for urban growth" (Mclaughlin, 1997).

In response to this, certain ideas have established about what constitutes "good urban form". Calls for sustainable urban form, smart livable cities, regional cities and New Urbanism, to mention a few, support the need for compact, diverse, walkable environments that stand in contrast to automobile-oriented, conventional suburban developments (Talen, 2005).

1.1 Methodology

The research aims to study the parameters and variables that define a neighbourhood; analyzing the evolution of urbanism, and related ideas and theories, in order to explore the structure of existing neighbourhoods. The aim is to understand the dynamic behind street patterns and residential arrangements. Case studies investigate the formation of physical urban form, focusing on residential environments. In addition, the case studies identify the pattern of development, density, lot sizes, public spaces, street patterns, dwelling types, and social diversity through analytic case studies. The research investigates a vision for future development of Don Mills (Figure 1), to reconstitute an effective relationship of building to lot and to street and propose a new urban form, which corresponds to the future urban development.

It is also necessary to mention that, for the purpose of these analyses, the experience of urban areas, based on individual perception or culture, is not considered. In fact, it has been assumed that these variables are fixed. In this regard, the purpose of studying the existing urban neighbourhoods is to provide a better basis for understanding and improving the physical urban environment.

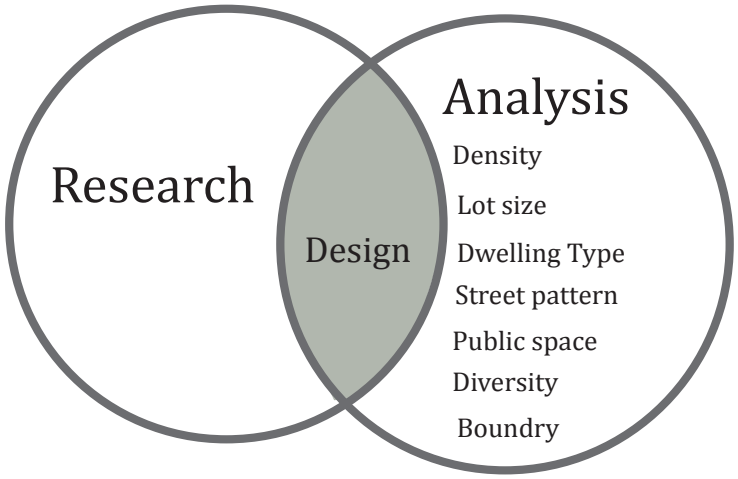

Figure 1 - Methodology - Source self driven

“Does the average man get enough sleep? What is enough sleep? What is the average man? What is does?”

Robert Benchley, My ten years in a Quandary, and how they grow

Figure 2 - Neighbourhood Definition - Source:Self-derived

1.2 What is a Neighbourhood

The first item to address is the definition of neighbourhood.
“Does the average man get enough sleep? What is enough sleep? What is the average man? What is does?”Robert Benchley, My ten years in a Quandary, and how they grow
Words that are part of everyday conversation tend to become stretched and embrace different meanings. Neighbourhood is one such word.

> “The revival of interest in neighbourhoods is part of an overall reassertion that ‘place matters’, not only to the well-being of individuals but also to the health and prosperity of the broader community” (Talen, 2005).

Oxford dictionary defines neighbourhood as “a district or community within a town or city” (Oxford Dictionaries, 2010).Reginald Isaacs, author of: *are urban neighbourhoods possible?* (Journal of housing 5), took a different position on defining the neighbourhood; he questioned whether the concept of neighbourhood in big cities has any meaning at all. He believes that city people are mobile, having the option to choose from the entire city (shopping, entertainment, jobs, and friends). In fact, he believes a city is a collection of opportunities, of all kinds; the fluidity, in which these opportunities and choices can be used, is an asset. Isaacs argues that neighbourhoods as isolated islands do not function in fact they are a combination of places and people. Great neighbourhoods are defined by differences that make opportunities for cross-use, with an area greater than one’s immediate street network (Jacobs, 1992).
Moreover, traditional urban planners define neighbourhoods as the growth of complete urban units surrounded by specialized corridors and districts. In this definition the focus is on pedestrian movement, human activities having been integrated through a rich mixture of landscape and buildings (Mclaughlin, 1997).
Examining different definitions illustrates the over-lapping approaches to define the idea of a neighbourhood. According to Christa Freiler, author of why strong neighbourhoods matter, a neighbourhood can be defined based on the following elements: (Freiler, 2004)

- Function: in this definition, a neighbourhood is seen as a site for the routine of everyday life.
- Boundaries: defining a neighbourhood via fixed boundaries, such as postal codes (Freiler, 2004).
- Degree of homogeneity: Homogeneity can be formed by choice. The assumption is people with similar values and lifestyles often aggregate to the same geographical location (Freiler, 2004).

As evidenced above, there is no particular definition of neighbourhood. The definition is fluid in regards to the specific variables and characteristics; therefore, different definitions serve different interests. As mentioned previously, the focus of the study is on measurable variables and physical forms. Neighbourhoods cannot be studied in isolation. In fact neighbourhoods are the result of series of interrelations and interactions both within and beyond their boundaries.
For the purpose of this study, a neighbourhood is defined as terminals and distribution networks that sustain modern life (Figure 2).

A neighbourhood is a place that encourages the interaction of people and their:

- Home area: for social interaction and making connections with others. This includes the home and immediate surroundings (Freiler, 2004).
- Locality: for schools, shops and parks (John Sewell, 1993).
- Wider urban district or region: this is the level of neighbourhood that exists for job opportunities, “the wider landscape of social and economic opportunities” (Freiler, 2004).

1.3 Parameters that define a neighbourhood

In 1924, at a conference in Toronto, Clarence A. Perry, of the American Russell Sage Foundation, proposed that the elementary school should be at the civic centre of the neighbourhood district:
“Since the public school, more nearly than any other local institution, touches all families within its sphere of service, it is a common denominator of neighbourhood life and seems therefore the best

available basis for determining the size of the local community unit"(Perry, 1924, as quoted in Novick, 1979).
Perry also defined the size of the neighbourhood as the maximum distance children should have to travel in order to attend elementary school (1/2 mile). 80 years later, this is still considered as a reasonable scale (Mclaughlin, 1997).
Although scale is important when considering what a neighbourhood is, it is not the only variable.

1.3.1 Variables under study

As previously mentioned, there are different variables that define a neighbourhood. For the purpose of this study, basic variables are:

- Walkability and mobility: Having amenities and services within a ten-minute walk. People walking around increase interactions among people and inhibit isolation. However, if parks, stores and schools are not within walking distance, then a minimum mobility and easy access must be ensured through a good and affordable transportation system (Freiler, 2004).
- Open spaces: such as parks and public markets, provide the opportunity that promotes interactions among individuals and diverse groups. As indicated by Jane Jacob Public spaces that are accessible to all contribute to a sense of tolerance, awareness, and mutual respect (Freiler, 2004) (Jacobs, 1992).
- Diversity: socially mixed neighbourhoods, Mixed income and other social mixes (e.g. by family type, ethnic group, generational group) (Freiler, 2004).
- Public spaces: to attract people and make them feel comfortable and proud of their neighbourhood. The aim is to value the identity of the place and encourage people to go from one place to another (Freiler, 2004) (Sewell, 1993).
- Open boundaries: give people the opportunity to move in and out freely. The neighbourhood is also open to outsiders; it does not feel closed or exclusive. In Toronto, most neighbourhoods are probably 'open' in this sense, even those with high degrees of homogeneity (Jacobs, 1992) (Sewell, 1993).
- Density – According to Jane Jacobs (1992), high density (as

opposed to over-crowding) increases connections and interactions between people, reduces isolation, and increases safety.

> "Since the public school, more nearly than any other local institution, touches all families within its sphere of service, it is a common denominator of neighbourhood life and seems therefore the best available basis for determining the size of the local community unit".
>
> Clarence Perry

In order to study the density of neighbourhoods it is necessary to have an understanding of:

- Lot sizes
- Dwelling Types

The lot size and dwelling type analysis also illustrates the diversity of the place as well as the interrelation of public spaces and pedestrian walkways.

It is important to keep in mind that high building density is not just about more apartments and houses, but the entire infrastructure that comes with development, such as access to transportation, health facilities, education, leisure activities, food sources, etc. In town planning, measurement of physical density can be divided into two categories: (Cheng, 2010)

- People density, which studies the number of people or house hold per given area
- Building density, that examines the ratio of building structures to an area unit

High density is always associated with overcrowding; however, the notion of high density expressed in terms of building density has little to do with overcrowding. In fact, high building density tends to develop open spaces and releases more land for services to improve the quality of urban living and develop the economy of the neighbourhood (Cheng, 2010). High building density can be achieved through different building typologies, which correspond to similar densities but yield vastly different streetscapes and built fabric. The aim is to create a high degree of convenience for work, service, and entertainment in order to establish interactions between the individual and physical environment and create a sense of community

1.4 Neighbourhood settings/Models

Before discussing the way neighbourhoods ought to be, it is necessary to look at their historical structure. Sidney Brower, author of Good Neighbourhoods, categorizes the models of neighbourhood based on the concept of engagement and diversity. She categorizes types of neighbourhood based on case studies of existing neighbourhoods (figure 3). Characteristics of each model are as followed (Brower, 2000).

The first category is the market place model (boulevards and medieval streets), representing active and lively neighbourhoods with many shared facilities which cater to a large and diverse population. The model encourages people to interact within as well as outside the neighbourhood, offering open streets that create diverse connections at different levels. The street-space is strongly defined by the surrounding buildings. The general diversity increases the need for devices to create privacy, including back gardens and courtyards. The street and the boulevard serve as a recreational facility, a place for pleasure, exercise and social interactions(figure 3) (Brower, 2000).

The second category is the club model. Exclusive neighbourhoods with shared facilities are open only to members and their guests. Models of this category include the Green Square, garden suburb, gated communities and monastic colony. It creates an opportunity for residents to meet one another but does not offer any interaction outside the neighbourhood boundary. The dwelling often turns its back to the streets, with members looking inward to a shared public space which is accessible by the member of that community only (figure 3) (Brower, 2000).

The third category is the refuge model, where the housing unit is not part of a neighbourhood, as a result, there is little or no sense of community with the neighbours. Models of this category are the country place and the enclosure. The houses in this category are usually big enough to facilitate the necessary amenities of the residents(figure 3) (Brower, 2000).

Brower studied the characteristic of each category and define a good neighbourhood as an inclusive (strong sense of belonging),

vibrant (community interaction) and cohesive (mutual responsibility) environment. Studying the structure of medieval cities reveals that successful neighbourhoods intensify the activities, not just densify the ground. Streets were places for trade and movement, recreation and celebration. Homes were designed to facilitate workshops as well as a place for family. Gardens behind the houses were for growing food and recreation through the presence of greenery within the urban fabric (Vale, 2010). Design was based on creating multiple use of built form for different purposes, maximizing the use of the physical resource, with one resource supporting many functions.
In this study, the characteristics discussed in Brown's case studies are set as the preliminary requirement of any selected case study.

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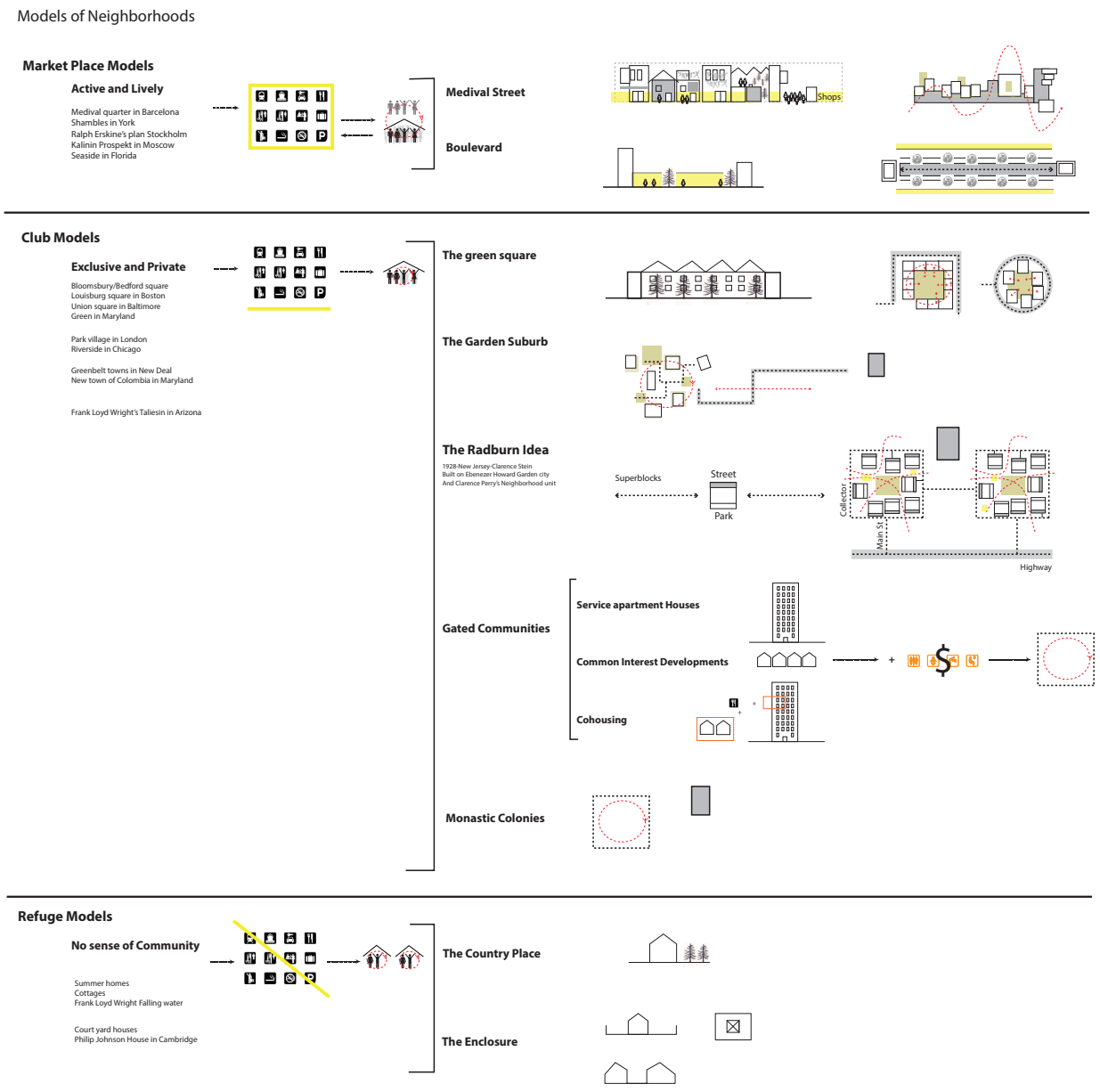
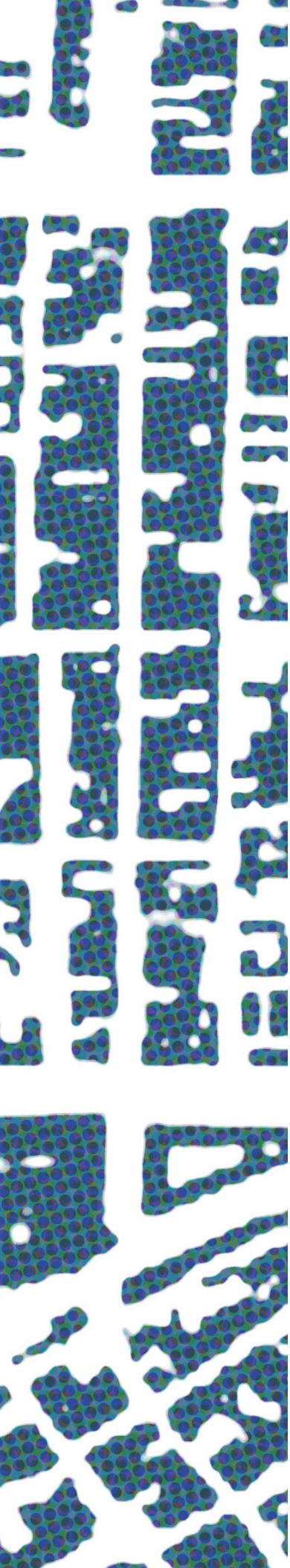


Figure 3 - Neighbourhood Model - Source:Self-derived base on Sidny Brown analysis



2.0

Neighbourhood Morphology from 1850 to Present

The interest in neighbourhoods is not new. Analyses and case studies illustrate two major schools of thoughts known as Modern and post-modern urbanism.

2.1 Modern Urbanism

Replacing one model for another in accordance with compatibility with the time period is at the root of human culture. As cities grew, the problem with the sewage system, health and dirt intensified. For centuries, starting in 16th century until early 20th century, the general assumption was that cities are bad and unhealthy. With people believing that cities mitigate against a good family life. John Dewey, Henry Ford and Henry Adams were pioneers of this anti-urbanism. They believed that only way to solve the city's problem is by leaving the city. The aim was to dictate a separation between where people worked and where they lived (Sewell, 1993).Several movements began in response to these issues and the demand for space; this was the beginning of Modern city planning. City beautiful movement, Regent's Park (London) by John Nash, Riversid (Chicago) by Fredrick Olmsted as well as the Garden City (London) by Ebenezer Howard, were aimed to create a modern suburb, which tended to be a marriage of town and country. They believed that a great town

can no long exist without great suburbs (John Sewell, 1993). Moreover, the popularity of automobiles and advances in the highway transportation system provided the opportunity to move away from problems of inner city and made suburbia a preferred place to live (Tu & Eppli, 1999). Population growth and industrialization were reflected in extensive housing projects for the working class. Responding to population growth and its needs, modern movements took advantage of the automobile and transportation technologies to reformulate urban concepts and introduce suburban life.

2.1.2 Garden city

Ebenezer Howard initiated the Garden City idea in 1898. In his proposal, he envisioned suburban life combined with socialist ideals. Howard questioned whether communities needed to be detached from corrupt elements of society. He argued that people have a tendency to live in cities; in his proposal he investigated the quality of magnetism that drew people to the city. His vision was to end poverty and slum conditions (Figure4) as well as to provide an alternative way of living and working in an established urban area. Developing the Garden City, Howard's idea was to incorporate elements of both town and country. The aim was to encourage a different way of living, by creating the third magnet he wanted to gain all the opportunities of the town along with all the qualities of the country (Howard, 1898).
Howard argued that the way to achieve the town-country plan was to develop a new town in the middle of the countryside. He suggested a 1000 acre land occupied by 32000 people, surrounded by large area of green belt. He also suggested 5000 acres of farms and all types of institutions. The Garden City was planned to be a small to medium sized town offering the usual range of urban jobs and services (Ward, 1998). Howard imagined the entire Garden City to be circular in form, with 5 acres of public garden in the very center of it, surrounded by public buildings (Figure 5). The public buildings would also look outwards onto a much larger park, no less than 150 acres in size. Residential areas were to be located on the outer side of the park. The design offered overcrowded housing with an appealing physical environment with houses arrayed along the boulevards and the intermediate radials. Howard's vision of the residential areas was to consist of no single architectural style, suggesting diversity in design and shape of the buildings.

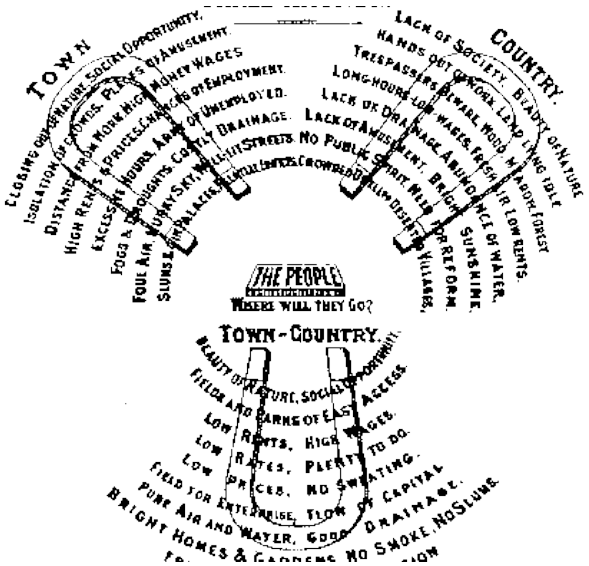


Figure 4 - Garden city - Source: Reprinted from T*o-morrow a peaceful path to reform,* by Howard, E. 1898,

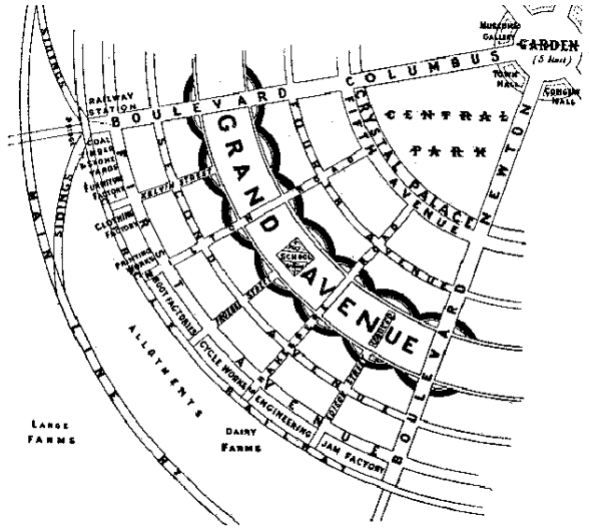


Figure 5 - Garden city - Source: Reprinted from T*o-morrow a peaceful path to reform,* by Howard, E. 1898,

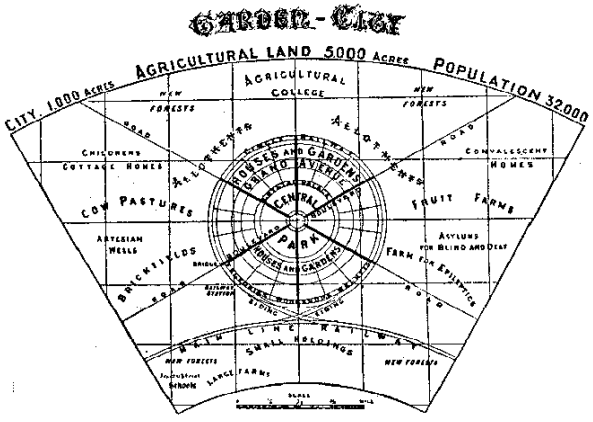


Figure 6 - Garden city - Source: Reprinted from T*o-morrow a peaceful path to reform,* by Howard, E. 1898,

According to his proposal, the average lot should be 20 x 130 feet and the minimum 20x100 which gave a density of about 90-96 persons per acre (Ward, 1998).The planned city also served economic and social opportunity. In order to create the minimum travel distance between home and work, Howard placed the workplaces in a narrow industrial belt around the edge of the town served by a circular railway (Figure 6) intending to make the city a walkable settlement within which no one need a car to commute within the neighbourhood (Ward, 1998). His prediction of Garden City growth was to create more garden cities close to the original one as the latter one became overpopulated. Over a period of time, the result would be a series of garden cities that offered a range of jobs and services. Each city connected to others by a rapid transit system. Howard called this a polycentric social city (figure 6) (Howard, 1898).Howard was also concerned about the social aspect of the plan. Allowing provision of public works and welfare benefits, he based the plan on collective ownership of land upon which rents are paid by tenants (March, 2004) (Ward, 1998).

2.1.2.1 Case study: Letchworth

In 1902, the Garden City Association made the decision to build a first Garden City as a social experiment to prove that Howard's ideas were practical. They started the project by purchasing 3,800 acres of land, at Letchworth in Hertfordshire, instead of the 6000 acres proposed by Howard (Figure 7). The town was designed as a zoned town with the industry concentrated in one area, surrounded by industrial housing. The communication area was placed in the center and large houses were placed at the edge of the town. The master plan, designed by Barry Parker and Raymond Unwin, incorporated existing roads, trees, hedgerows and a large amount of green open spaces. Parker and Unwin proposed an open layout for the roads and houses to preserve some of the features of a park. To get the maximum amount of sunlight, the houses were surrounded with large gardens all around. Planning Letchworth, the idea was to create conditions in which industry would be out of site of the residents yet close enough for workers to commute to work. Therefore, the factory area was placed to the east of the city and on both sides of the railway, in a way that it would be out of sight of the greater part of the town and where the wind would carry away the smoke, from residential areas.

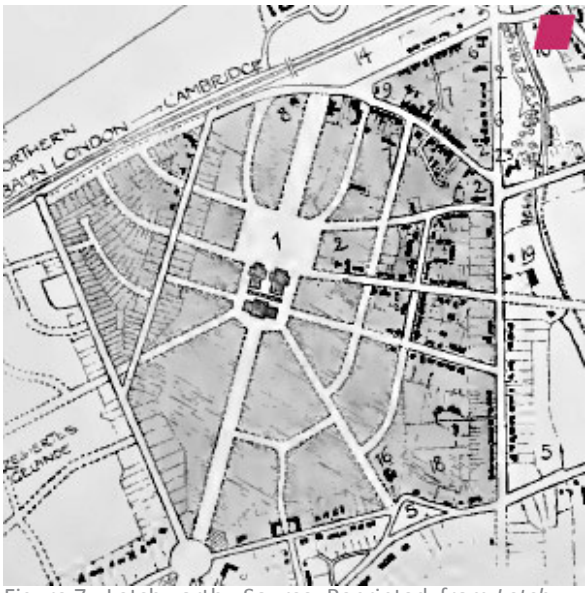


Figure 7 - Letchworth - Source: Reprinted from *Letchworth, The First Garden City*, T *Purdom, C. B. , 1949 , J. M. Dent & Sons Ltd*

Figure 8 - Letchworth - Source: Reprinted from *Letchworth, The First Garden City*, T *Purdom, C. B. , 1949 , J. M. Dent & Sons Ltd*

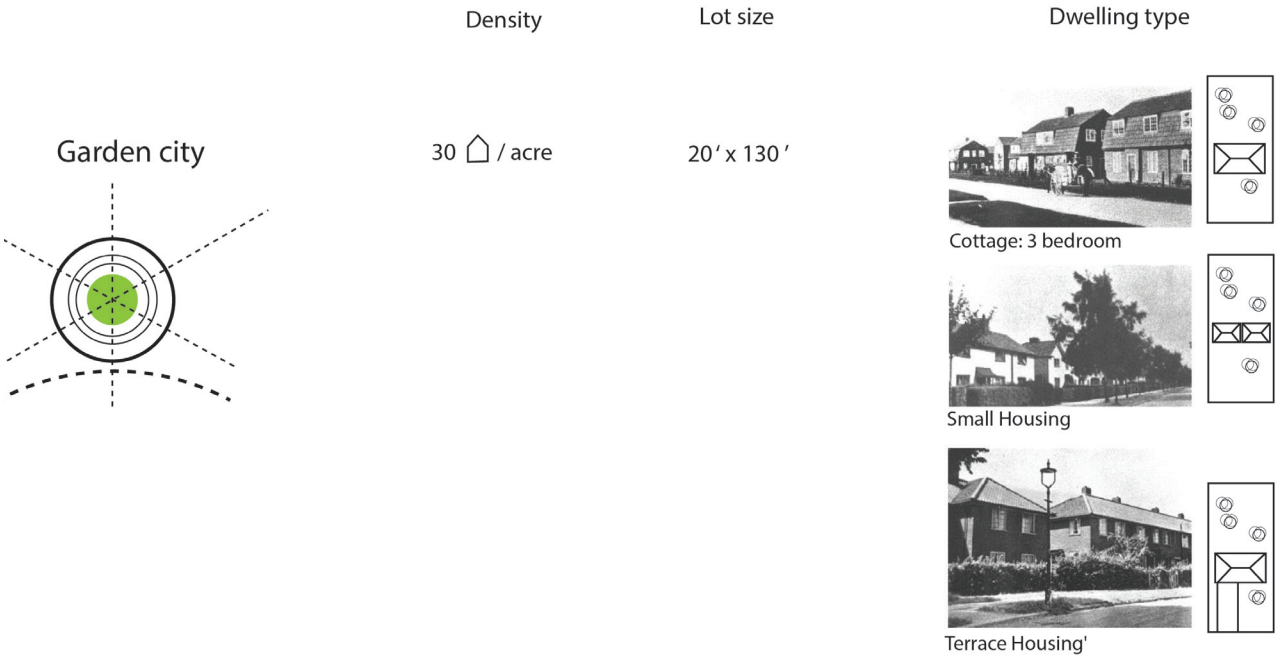


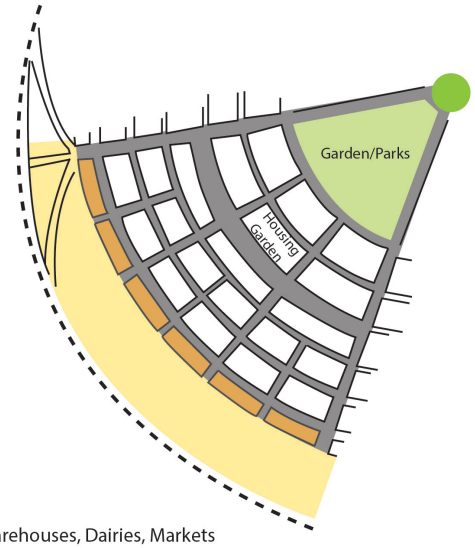
Figure 9 - *Garden city Diagram - Source:self driven*

Street Pattern/ Walkability

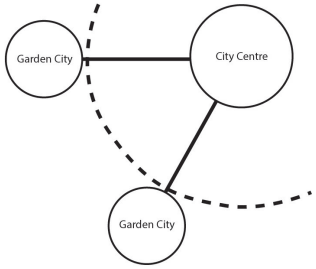
Public spaces

Diversity

Boundry/Connection



Workers
Farmers
Family



Factories, Warehouses, Dairies, Markets

Farms

Highway

Critics

The Garden city plan has been adapted for many urban developments, being efficient in such way that decentralized the center of the cities and created diversity among cores. Pedestrian oriented neighbourhoods are also another positive aspect of Howard's plan. Despite the benefits of the proposal there have been concerns about how the Garden City plan

- Howard's assumptions about density were conservative. He based the Garden City plan on single family homes with gardens throughout the neighbourhood. Offering limited density, the plan does not work as a diverse, walkable neighbourhood (Edwards, 1914).

- In the Garden City most of the houses were designed by the same architect, therefore, there is a lack of uniformity and individualistic character of most of the houses.

2.1.3 The success and failure of modernist city design

Suburban living has many advantages, yet its rapid growth is accompanied by numerous new issues and challenges. Miles of homogeneous new subdivisions destroyed the sense of place and the identity of the neighborhoods. The resulting suburbs are masses of houses that lack community gathering spaces, markets and other daily amenities within walking distance. Green spaces were transformed into houses, shopping centers and parking lots; an isolated land use increases the reliance on automobiles which leads to traffic congestion and air pollution. This disconnection from daily activities and needs is one of the many factors that have resulted in an unhealthy lifestyle for countless suburbanites. This trend has been pushing people from the suburbs to urban areas and can be seen more recently in "B*uild a Better Burb*: a competition to retrofit Long Island downtowns." (Gregory, 2010). In response to these problems, urban planners started searching for new solutions (Brower, 2000).

Since walking distance is a historic axiom of urban patterns, most of these new movements and adaptations used a five-minute walking distance as a primary design determinate.

2.1.4 Neighbourhood unit

Perry introduced the neighbourhood unit in 1929; his innovation was driven from Forest Hills Gardens and various other examples that he admired, such as the Hampstead Garden suburb in London. His proposal was a series of principals that he called the neighbourhood unit. The unit is based on 160 acres of land with schools, playgrounds and local stores located within walking distance in a way that residents could access them without crossing a main highway. In the neighbourhood unit concept 10% of the land would be set aside as park spaces (Brody, 2009). Perry proposed the neighbourhood unit while the urbanist focus was on suburban developments influenced by automobiles. The 160- acre size came from a judgment by Perry that the distance across neighbourhoods should be no more than a 10 minute walk.

Perry based the neighbourhood on numbers of families and households needed to populate an elementary school. He also proposed to

locate religious buildings and other institutions at the center of the neighbourhood with apartments and shops at the corner. Perry's vision was to accommodate large public play areas around the buildings to create the sense of community and connectivity (Barnett, 2003).He placed the main streets along the perimeter in order to define and distinguish the "place" of the neighbourhood and eliminate unwanted traffic. He also proposed curvilinear form for the local, inner streets to maintain both safety and aesthetic purposes

2.1.4.1 Case study, Radburn

Radburn was planned by Stein and Wright in 1929 and was influenced by both garden city and the neighbourhood unit principals. The town was planned simply but comprehensively. Addressing the housing demands, the idea was to design paving, sidewalks and sewers to the particular needs of the properties. All the lots were arranged in a way to get the maximum sunlight and a tolerable outlook (Gatti). The planners designated sites for playgrounds, schools, gardens, theaters, churches public buildings and stores. The plan was organized to create a minimum of danger, noise and confusion by separating pedestrian and vehicular traffic as well as locating factories and industrial buildings where they can be used without interrupting residential areas. As Clarence Stein, the American urban planner and the major proponent of the Garden City movement in the United States, stated, the idea of the plan was to give inhabitants a sense of security and happiness (Birch, 1980). The primary innovation of Radburn was the separation of pedestrian and vehicular traffic (Figure 10) (Gatti).This was accomplished by replacing the street pattern with the super-block, which is a large block of land surrounded by main roads. In addition, the houses are grouped around small cul-de-sacs, each of which has an access road coming from the main roads. The remaining land inside the super-block is park area. The living and sleeping sections of the houses face toward the garden and park areas, while the service rooms face the access road (Gatti). The circulation around the block is located on the garden side of the houses, these paths crossing the park when necessary. For further

connections, pedestrian underpasses and overpasses also link the blocks (Figure 12) (Birch, 1980). The idea was to create a pedestrian walkway that can be accessed at any given point and proceed to school, store or church without crossing the streets. To save on construction costs and also create more security for park spaces, the housing of Radburn was accessed through narrow roads that branch off the main street. This strategy helps the developer to use the money and the land to cover the cost of grading and landscaping the play spaces. Radburn was convinced by Stein and Wright to house 25,000 people. The Depression pushed the builder, City Housing Corporation, into bankruptcy. For this reason, Radburn could not expand beyond its present size of 149 acres which includes 430 single family homes, 90 row houses, 54 semi-attached houses and a 93 apartment unit, as well as a shopping center, parks and amenities (Gatti) (Birch, 1980). Lewis Mumford considered Radburn"the first major advance in city planning since Venice", being the first example of city planning which recognized the importance of the automobile in modern life without permitting it to dominate the environment (Figure12)(Gatti).

Figure 14 - Neighbourhood unit-Radburn - Source: Reprinted from *the town for the motor age*, by Gatti, R. F , Na, Retrived from http://www.radburn.org/geninfo/history.html

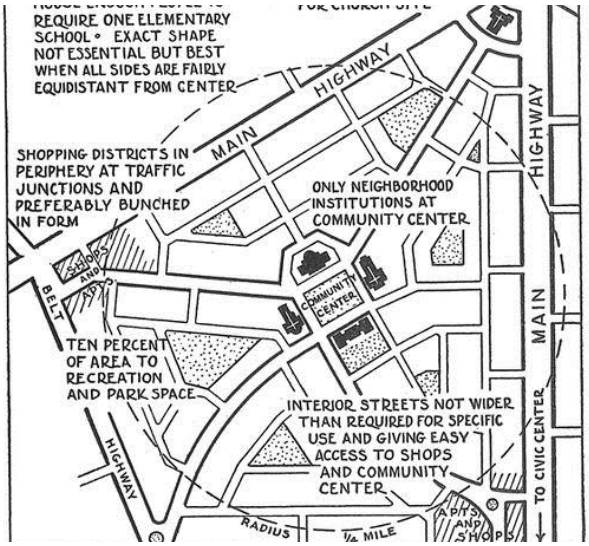


Figure 10 - Neighbourhood unit - Source: Reprinted from "The neighborhood unit Concept" by Brody, J ,2009

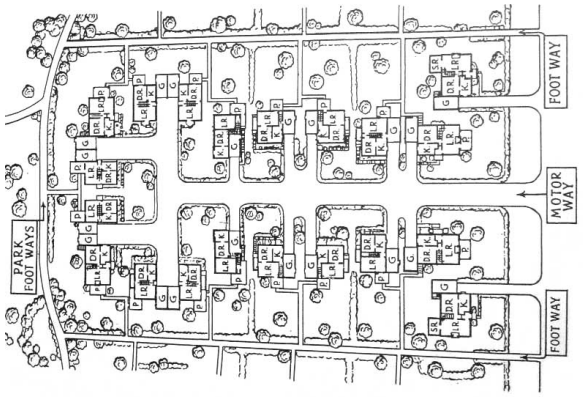
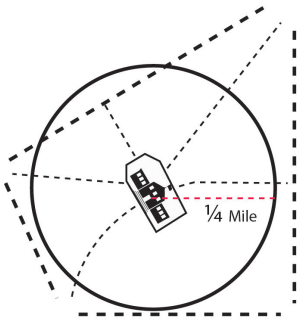


Figure 11 -Neighbourhood unit - Source: Reprinted from "The neighborhood unit Concept" by Brody, J ,2009

Figure 12 - Neighbourhood unit - Source: Reprinted from "The neighborhood unit Concept" by Brody, J ,2009

	Density	Lot size	Dwelling type
Neighbourhood unit			
	12 ⌂ / acre 🏫 / 160 acre	40′ x 100′	multiple-family Single-family

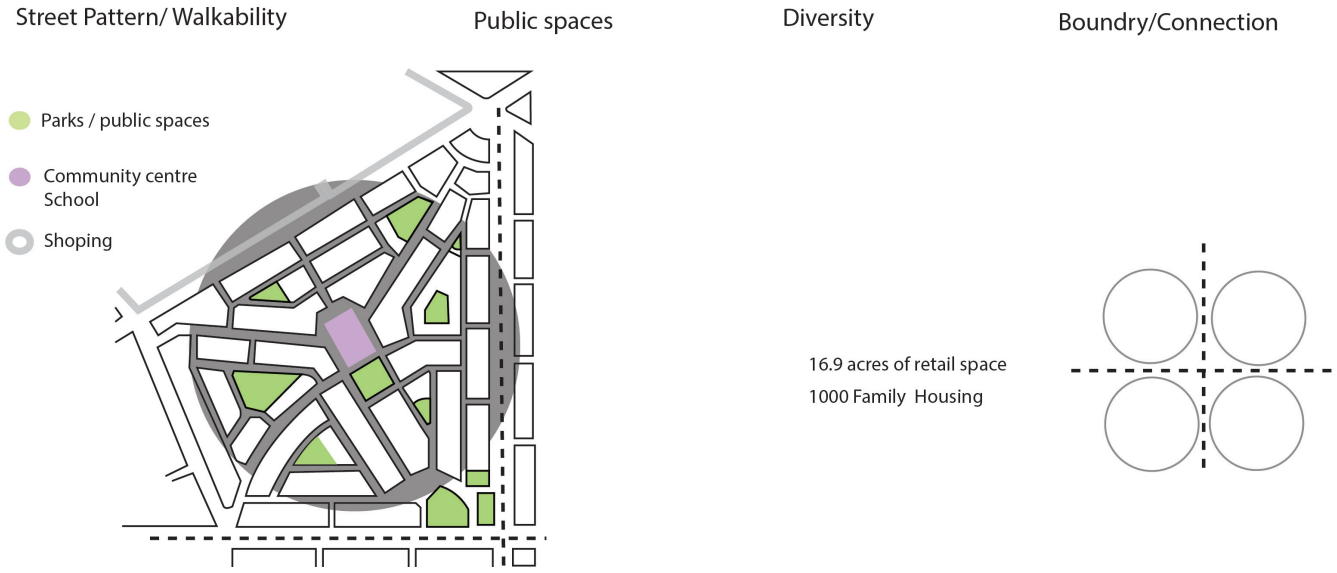


Figure 13 - *Garden city vs neighbourhood unit - Source:self driven*

Critics

The Neighbourhood Unit concept provides a decentralized, self-contained, organized neighbourhood that promotes environmental consideration by conserving open spaces, harnessing the automobile and promoting community life (Birch, 1980). Starting in the late 1960s, the idea of building new neighbourhoods began to lose favor with planners and reformers. Most of the planners saw the neighbourhood unit concept as a limiting one, arguing that social relationships in the modern world are networks. Other planners saw the neighbourhood unit concept as exclusionary, believing that neighbourhoods are a way of separating people by social class (Figure 13)(Barnett, 2003).

2.1.5 Don Mills

Within Toronto, the Don Mills neighbourhood has been chosen as a model to investigate the vision for future neighbourhoods. Don Mills is Toronto's first planned neighbourhood. It has been considered as the model for suburban development across North America for decades. In order to investigate the future vision for suburban neighborhoods it is best to explore the idea in Toronto's mother of suburbs. The idea of the Don Mills development was initiated by E.P. Taylor who purchased the north and east of Toronto's farm lands in 1947. The master plan for Taylor's project was designed by Macklin Hancockin co-operation with Douglas Lee, Henry Fliess, and James Murray. Macklin Hancock was a student of Harvard University. He was Walter Gropius' student and trained by Gropius as a modernist. Hancock had strict homage to the idea and aesthetics of the Bauhaus. At the age of 27 he left his studies at Harvard to work on Don Mills. Emphasizing functionality, the idea for Don Mills was to create a modern, community oriented city.

2.1.5.1 Urban Morphology

Following Bauhaus principals, Hancock wanted to give Don Mills a distinct style, an image entirely different from the existing city (John Sewell, 1993). There were five concepts that Don Mills birthed that never occurred in Canadian cities pre-1953 (Live at the shops, 2012):
1. Dividing the area to four quadrants, each including a school, a church and a park - Each quadrant was designed following Perry's neighbourhood unit principal making the elementary school the cultural focus with related community activities such as the church and local stores. Although in practice their low density made corner stores economically unsustainable (Plummer, 2009), the idea was to create diversity by offering commercial, industrial, institutional and residential areas (figure 15).
2. Offering separate pedestrian and vehicular network (figure 15) -Hancock's idea was to design a safe pedestrian neighborhood. Instead of the regular grid system, he introduced a road system with curving streets all ending at T-intersections. The roadways were designed to follow the existing topography of the site while consciously intended to be uninviting to strangers with no sidewalks. Instead,Roads were bordered and stretched into a front lawn leading directly to the house; to maintain the pedestrian flow within the neighborhood, Hancock designated an internal system of walkways (Ainsworth, 1986) (John Sewell, 1993).
3. Offering new house forms and new lot configuration- The aim was to create architecture that speaks to the identity of Don Mills. To make it affordable for all economic classes, Don Mills accommodated a wide variety of housing types, including three-storey apartment buildings and semi-detached homes with predominately ranch-style single-family houses (Plummer, 2009) (Toronto Demographics, 2006). Hancock wanted to face the broader side of the houses along the street; planning Don Mills, he resized regular Toronto lots into 50x100 feet. He also allowed more space between housing units with a variety of setbacks. Promoting modernist architecture and the Bauhaus aesthetics, Don Mills developers controlled the architectural design, colors, and materials of all buildings in Don Mills. In order to keep the language consistent and to prevent the project from deteriorating into a typical post-war project, the

corporation insisted that builders use company-approved architects who had been educated according to Bauhaus principles (Shim, 1987) (Mumford, 2002)(figure 15).

4. The area was designed as a system of parks, ravines and green spaces within the urban form to preserve the natural environment of Don Mills, with 40% residential area and 20% parks. The pedestrian pathways are also incorporated as part of the green spaces (Sewell, 1993).

5. Don Mills was planned to create a diverse neighbourhood, introducing local industry jobs, rental townhouses and low-rise apartments. Hancock included 320 acres for light industry and a large commercial area at the center. The three lands used, however, were strictly segregated to avoid the conflicts within the area (Plummer, 2009) (Sewell, 1993).

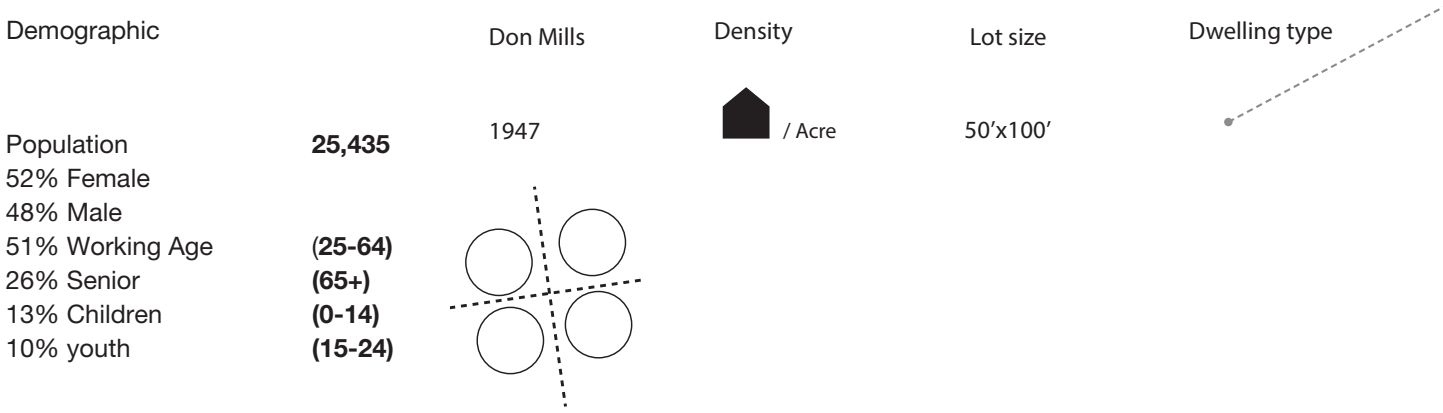
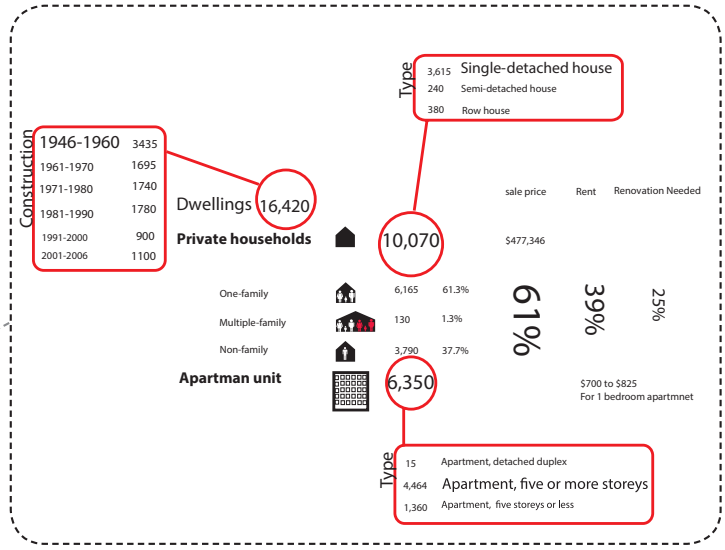
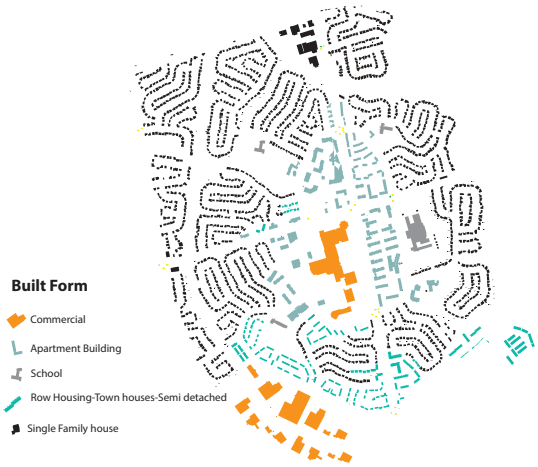


Figure 15 - *Don Mills - Source:self driven*



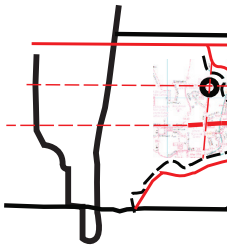
Street Pattern/ Walkability

Figure Ground



Diversity

Boundary/Connecti



Critics

Although Hancock aimed to create a diverse neighbourhood, he separated all the activities with minimum conflict. That separation even applied to types of residential uses. Hancock dedicated each block to only one type of residential use which led to segregation and separation of the activities, with minimum interaction within the neighbourhood (Ainsworth, 1986) (Toronto Demographics, 2006).The attempted plan for Don Mills was to create a new town where people lived and worked; although the semi-detached houses were specifically designed for rent, after construction the housing prices were so high that factory workers could not afford to live there. The dwelling price range also killed the idea of a diverse mixed- income neighbourhood (Live at the shops, 2012). The other design principal that didn't function the way Hancock aimed for is the pedestrian flow within the neighbourhood. He proposed houses with maximum frontage offering diverse setbacks from the street. Although the relationship of houses to the street encourages pedestrian engagement and flow, Hancock never took advantage of this configuration. He designed streets with no sidewalks and separated pedestrian pathways. The separated pedestrian pathway was incorporated with parks and green spaces which may have work fine during the day, but was not as pleasant to walk through at night. Don Mills has evolved since it was farm land in 1947(figure 16).Recently, in response to some of these issues; there are two major developments in Don Mills:

- In 2006 The Don Mills Centre was demolished and replaced by The Shops at Don Mills, a pedestrian-friendly outdoor plaza, incorporating a town square which is designed to act as a true community centre. The plaza was designed following Hancock's idea and modernism principal of functionality and community; in addition to increase the density of the area, seven residential high rises have also been proposed within the commercial precinct over the coming years, contravening Hancock's strict division of land uses (Live at the shops, 2012).
- The second is a new development which is located in the southeast quadrant of Don Mills, between the developed southern edge, the CPR rail tracks, and the Don Valley Parkway. It is clearly built based on new urbanism principles, and features semi-detached and mid-rise units.

1947

1957

1962

1992

2007

2009

Figure 16 - Don Mills - Source Reprinted from 3*0-year-old Don Mills to be studied*, by Ainsworth, L., 1986, Toronto

2.1.5.2 Housing typology

T There are 16,420 dwellings in Don Mills. The majority of the land in Don Mills is used for single family dwellings (10,070) among which there are 3615 single detached houses, with 50% three bedroom houses,25% two bedroom and the rest 4 and 1 bedroom houses; the remaining are semi-detached and row houses which are mostly located on southern part of Don Mills; the second dominant dwelling types are the apartment units(Figure 17) (Statistic Canada 2008, 2008). The number of apartment units will increase substantially upon the redevelopment of Don Mills center. Another interesting statistic is the relatively high number of rented units; in fact almost 39% of Don Mills dwellings are available for rent (Toronto Demographics, 2006). The majority of buildings in Don Mills were built between 1952 and 1965 (the time period in which Don Mills was built), but they are mostly in a good condition and some may be in need of minor repair; based on 2006 statistics and studies, only 25% of all dwellings in Don Mills needed some kind of repair (Toronto Demographics, 2006).In terms of single family housing, there are three dominant types of single family houses in Don Mills which offer characteristics that are unique to the area. Unlike most suburban houses, these houses do not have basements. The houses are following the Modernist principle of form following function, with minimum ornamentation and emphasis on functionality. In some cases there is extra space available for future family growth (figure 19) (brokerage) (Toronto Demographics, 2006) (Plummer, 2009). (figure 17) .

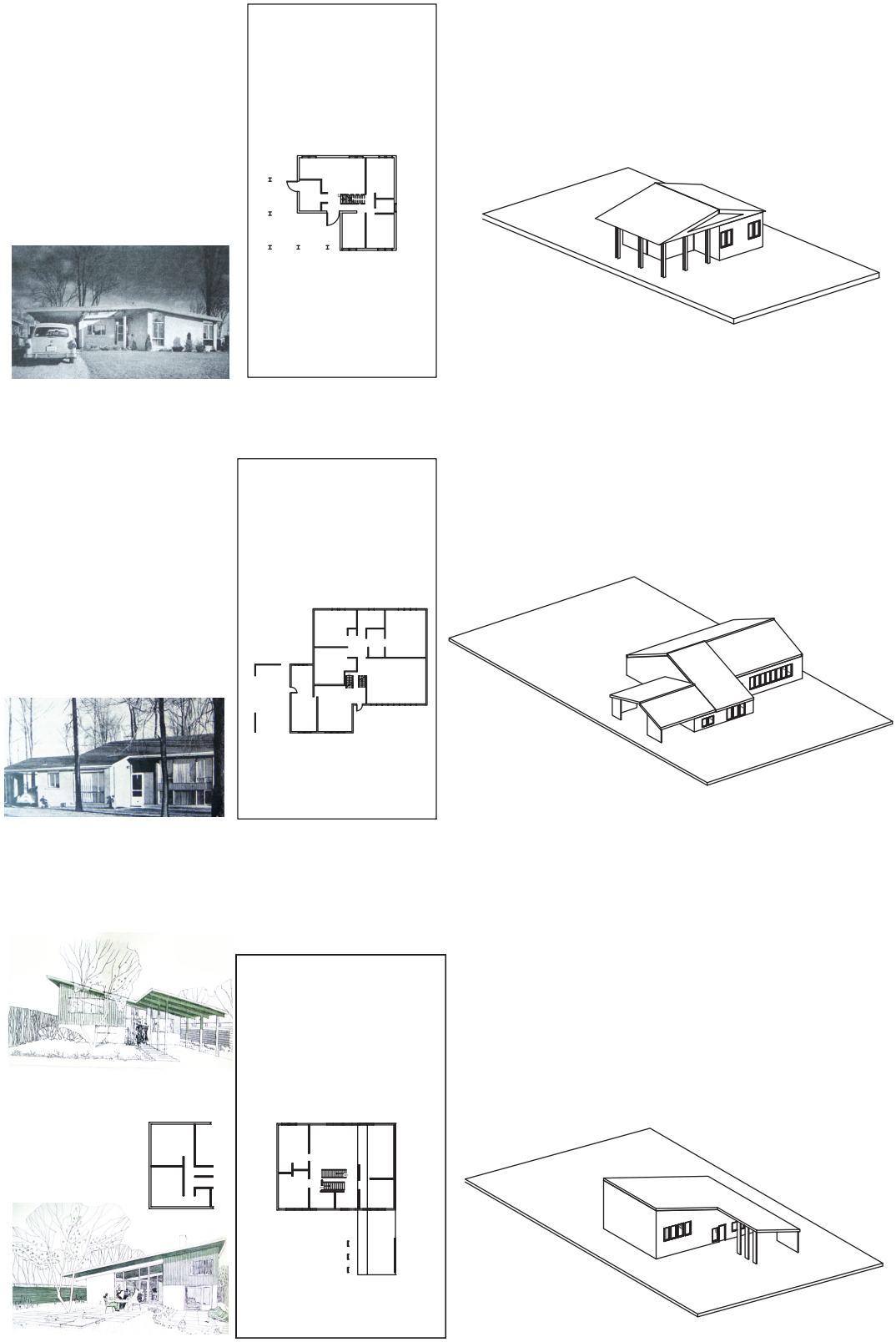


Figure 17 - *Don Mills - Source* Reprinted from 3*0-year-old Don Mills to be studied*, by Ainsworth, L., 1986, Toronto

Rise of post-modernism, seeking a different direction

2.2 Post-Modern Urbanism

Modern urbanism attempts to illustrate clarity of form, absence of multiplicity and conflict. Open space is often understood as a boundary between public and private; streets are seen as avenues for traffic rather than as places with many overlapping possibilities. The modern city was intended to be separated into distinguishable areas of life thus divided the city into categories of living, working, leisure Pedestrian and vehicular circulation. The focus of modern urbanism was on minimizing the space between parallel buildings and maximizing the built form. The modern building was to be made through the advent of universal new technologies such as prefabrication or minimal structure, and the modern city was to be shaped by a enthusiasm about the new automobile and accessible highways (Jacobs, 1992) (Lefebvre, 2003).

2.2.1 Postmodern urbanism

The challenge to the modern projects and the decline of the public realm called for new responses from urban designers. Whereas modernism from the 1910s to the 1960s responded to the challenge of establishing social order for a mass society; post-modernism since the 1960s responded to the challenge of placelessness and a need for urban community (Ellin, 1999).

In contrast to modern urbanism's insistence upon structural honesty and functionality, postmodern urbanism sought to satisfy desires that were not merely functional the aim being to express meanings other than the building tectonics. Ada Louise Huxtable, who pioneered modern architectural criticism, illustrated the emergence of post modernism as "a search for meaning and symbolism, a way to establish architecture's ties with human experience, a way to find and express a value system, a concern for architecture in the context of society" (Ellin, 1999).Postmodern urbanism attempts to create a link between knowledge and feeling. The aim is to encourage direct, structural relationship between social behavior and physical form.

2.2.1.2 New urbansim

> "Traditional small towns provide both inspiration and countless practical lessons for the design of new communities" (Bressi.T.W., 1994).

New Urbanism emerged in the 1980s as a response to conventional suburban developments (Tu & Eppli, 1999), offering housing with small lots, short housing setbacks and front porches, neighbourhoods with plenty of public space, a mix of land uses, and narrow interconnected streets. New Urbanism is more about building typology; the paradigm is to address the human-scaled structures and forms (Mclaughlin, 1997).

> "New Urbanism stands for the restoration of existing urban centers and towns within coherent metropolitan regions,

> the reconfiguration of sprawling suburbs into communities of real neighbourhoods and diverse districts, the conservation of natural environments, and the preservation of the built legacy" (Congress for the New Urbanism, 1996).

The new development suggests that neighbourhoods should be diverse in use and population; communities should be designed for the pedestrian, public transit as well as the car. The neighbourhood should be shaped and defined by public spaces and community institutions; as it has been set by congress for new urbanism the urban places should be designed to celebrate local history, climate, ecology, and building practice (Congress for the New Urbanism, 1996).New Urbanism tends to maintain the diversity of the city and neighbourhood by creating higher density, diverse land uses as well as diverse housing types, more public space, interconnected street networks and pedestrian-oriented design (Mclaughlin, 1997). New Urbanism defines the neighbourhood as the integration of people and places, commercial and residential. The close mixing of lot sizes and building types is intended to encourage socioeconomic diversity. New Urbanists suggest that the optimal size of a neighbourhood is a quarter-mile radius from the center of the community. To shorten the distance from the neighbourhood's center to its edge, new urban planners reduce the size of each lot; there are also more town homes and multi-family units included in the plan to increase housing density (Tu & Eppli, 1999).The new developments encourage neighbourhood interaction to maintain a sense of community, by placing houses near each other and close to the street along with town centers, village squares, parks and greenbelts. The aim of New Urbanism is to create a pedestrian friendly environment and reduce people's reliance on the automobile. To address the issue, new urbanists are proposing a walkable environment along with public transit. Narrowing the street widths, reducing housing setbacks and placing garages at the rear of the lots are also the strategies that promote the walk ability of the neighbourhood.

If sprawl is the post-industrial landscape of private investment, New Urbanism counters that by emphasizing that which is public, pre-existing and enduring.

> "New Urbanism urges people to slow down, to get to know their neighbours and to become more connected with their environment" (Dunham-Jones, New urbanism as a counter-project to post-industrialism, 2000).

In a sense, new urbanists believe that design is not autonomous but synergistic: each individual design decision matters in terms of how it triggers social, environmental and economic effects within the urban whole. New Urbanism is Utopian (or at least idealist and reformist) yet inspirational. It is Utopian because it aspires to a social ethic that builds new or repairs old communities in ways that equitably mix people of different income, ethnicity, race, and age, and because it promotes a civic ideal that coherently mixes land of different uses and buildings of different architectural types (Dutton, 2000) (Mclaughlin, 1997). It is inspirational because it sponsors public architecture and public space. The physical model is a walkable city that offers face-to-face social interaction with a hierarchy of private and public architecture and (Bressi.T.W., 1994).

2.2.1.2.1 Seaside

Proposed by Duany and Plater-Zyberk, Seaside is one of the first attempts of New Urbanism to address the suburban issues; it turned the discussion of traditional urban design on its head. (Hesburgh Libraries and School of Architecture). The site is 80 acres, located in Walton County in North WestFlorida, adjacent to the settlement of Seagrove Beach. Duany notes that, "urbanism achieves its resilience and diversity not through scale but through the 'saddling' of time". They believe that if one makes something that cannot be changed,it is dead; in fact the goal is to create diverse live urban forms. Seaside's code has offered the opportunity for greater complexity over time (Hesburgh Libraries and School of Architecture).The Seaside code applies to the various private buildings (residential and commercial) in town. The program was broken down into eight sections classified by lot type (Figure18), addressing the location and scale of yards and porches. Designing the master plan,Duany and Plater-Zyberk applied the multi functionality of the design principles. They recognized that the needs and the economy of a place may change over time.Critics:

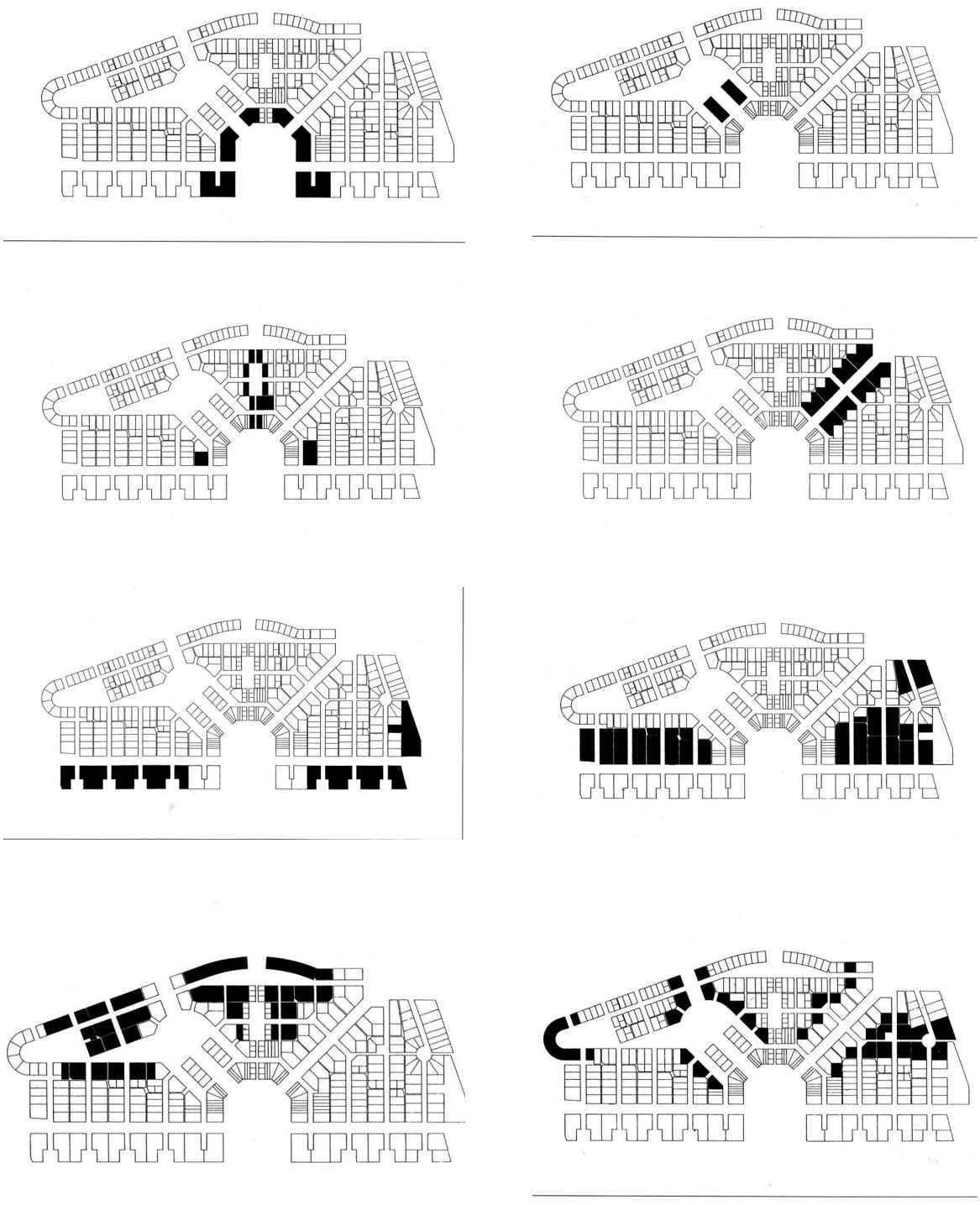


Figure 18 - *Seaside - Source Reprinted from Duany & Plater,* Retrived October 2013, from http://www.dpz.com/ Plater-Zyberk.

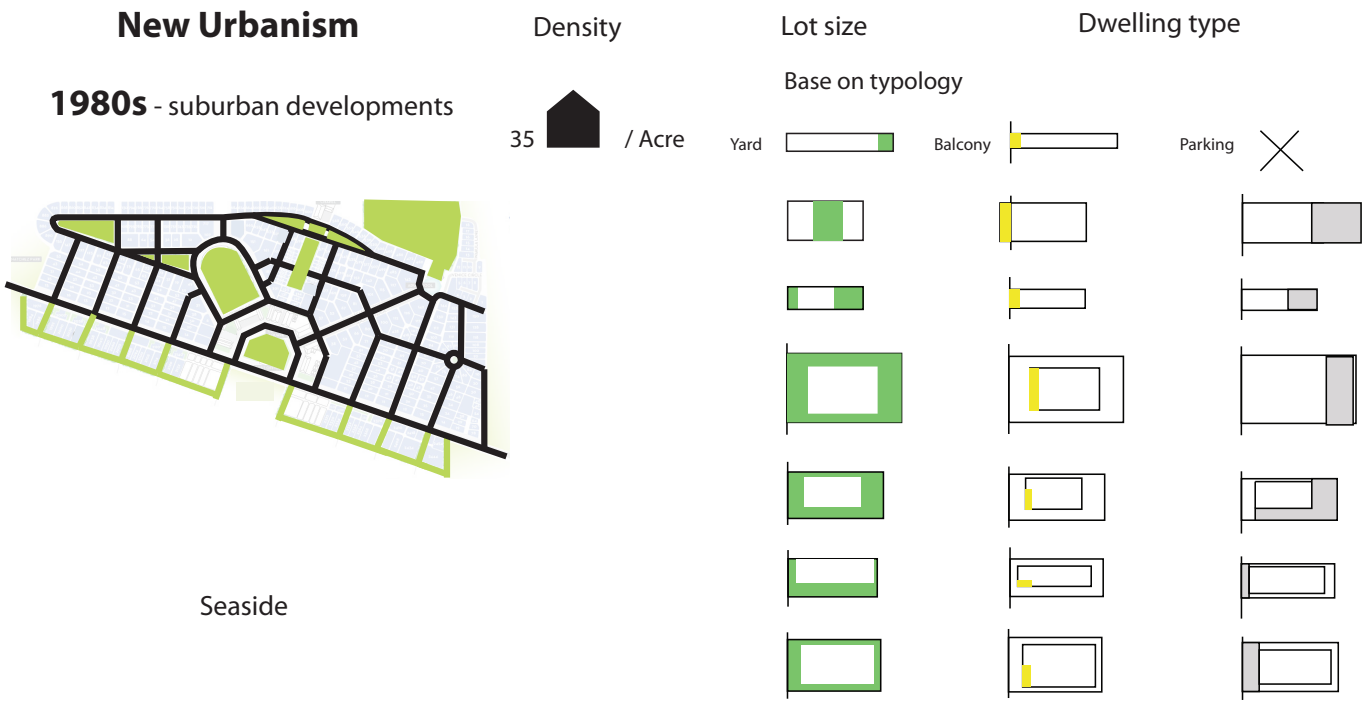
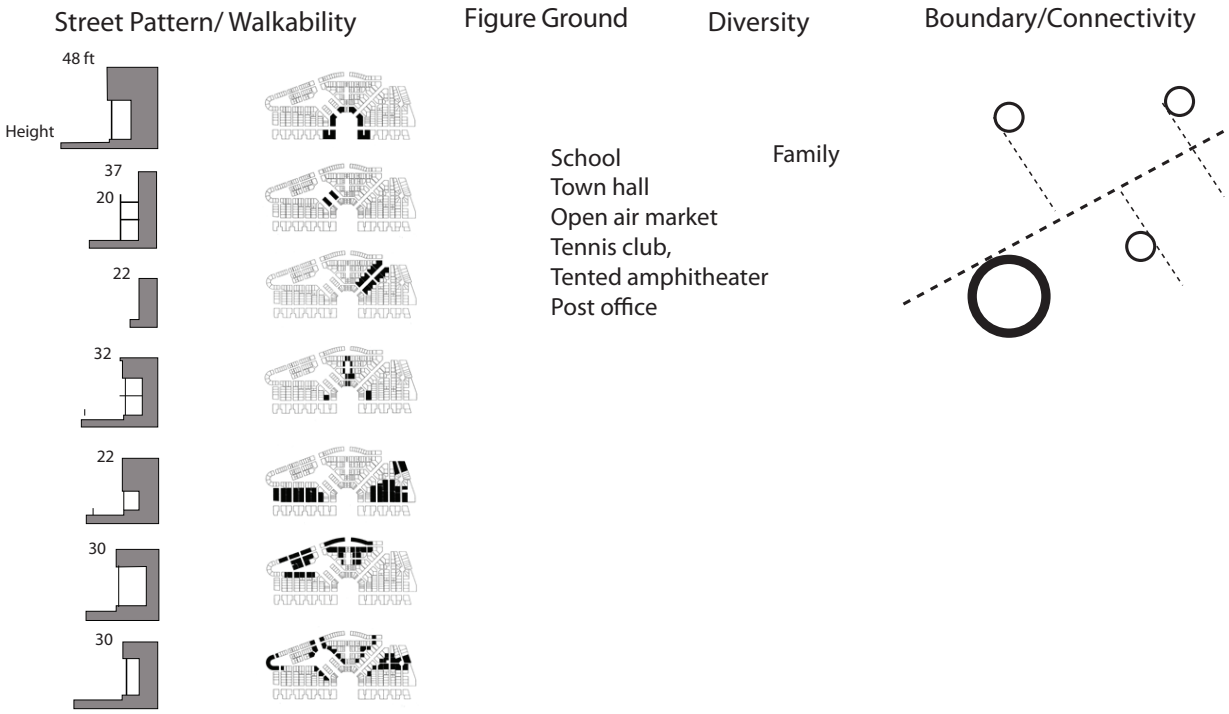


Figure 19 - *New urbanism - Source:self driven*

Critics

Although New Urbanism opened a different direction in planning, the question is whether New Urbanism offers a desirable place to live. Further analysis of New Urbanism principles reveals some issues:

- The neighbourhoods are designed based on flexibility, diversity and affordability but over time they change to places that are not affordable. The planners may create a variety of housing but no one can guarantee the diversity of townscape in terms of price and affordability.
- Another issue is the traffic. Narrow pedestrian streets create traffic on main streets; therefore, most of the people tend to use the back lane entrance of their houses.
- Although the plan was meant to increase the density of the neighbourhood, it didn't satisfy the growing population.
- One of the main principles of New Urbanism development and



mission statement was the attempt to encourage leadership in community building, while most of the suburban New Urbanism developments were entirely privately governed.

In fighting for change and winning over converts, New Urbanist principles have increasingly transformed into rigid rules, types have become models and the elasticity and ingenuity of design is increasingly being sacrificed to the needs for formulas, easy answers and a recognizable marketing image. As New Urbanism has become more successful, its designs have become reactionary and less revolutionary. It became a part of a machine it set out to resist, simply another formula to replace the earlier one (Dunham-Jones, New urbanism as a counter-project to post-industrialism, By definition, retrofitting is to install parts not available during the.

2.2.1.3 Retrofitting Suburbia

Original construction. Ellen Dunham-Jones (Urban planner and the co-writer of Retrofitting suburbia) believes that as we continue to shift from an industrial to a post industrial economy,our relationship to the urban forms and neighbourhoods alters. The focus is to highlight changes in codes and design techniques in order to maximize the quality of individual places and propose an identifiable, durable place to which people will be attracted (Dunham-Jones, Retrofitting Suburbia, 2009).Retrofitting urbanism proposes a way to create responsive urban environments and gives insights about the pattern of changes, especially for the built forms that resist the change. The goal is to convert areas that foster the largest carbon footprints into more sustainable, less auto dependent places.
The focus of the development is on Greenfields, (the underutilized places in-between, often derelict shopping centers and strip commercial sites surrounded by seas of asphalt). The attempts are to decentralize the poverty and establish an urban node with in a polycentric reign. The aim is to propose a systematic growth pattern for the grey field areas in order to reshape the neighbourhood and increase the density and diversity. The strategy is to increase: (Dunham-Jones, Retrofitting Suburbia, 2009)

- Feasibility and efficiency of transit
- Local connectivity
- Permeable surface and green spaces
- Public and civic spaces
- Choice in housing type and affordability
- Internal and external integration

Case study:

One of the first attempts that follow the strategies of retrofitting suburbia is the Kansas City, “Revising the Rules” project. The focus of the project is on postwar suburban houses. The problem with Kansas City is that increased demand for privacy and space makes many postwar suburban houses too small by today’s standards (Dunham-Jones, Retrofitting Suburbia, 2009). As residents age in place, their

houses may not serve their needs. People tend to develop limited mobility; therefore, there is a need for remodeling as well as updating and revising the building codes and zoning regulations. In 2005, the Kansas City First Suburbs Coalition, a public private initiative,was formed to remodel the housing and neighbourhood. One of the routes towards revitalization was through the legalization of accessory apartments in or over garages, where there are homeowners with limited income or the ones with more space than they need (Figure20).

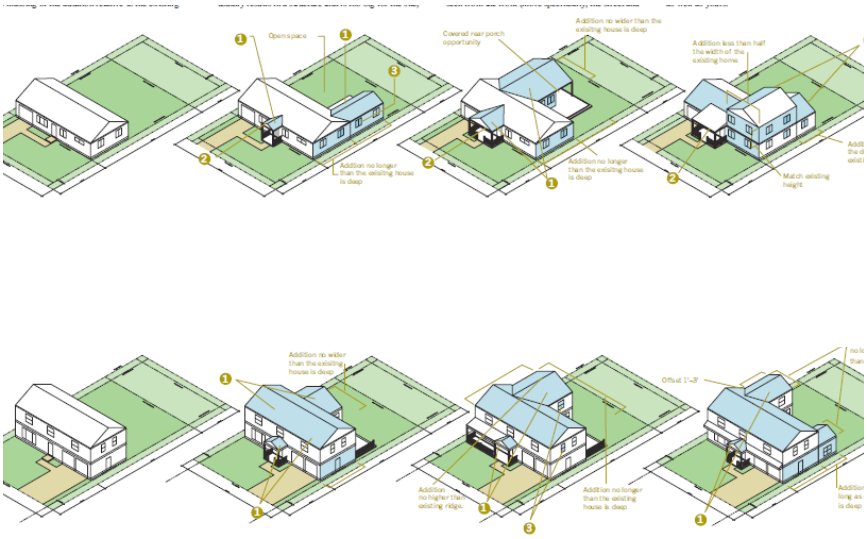


Figure 20 - Retrofitting Suburbia - Source Reprinted from *First Suburbs Coalition Idea Book, by Eric Piper and MARC, NA, 2005*

Remodeling of houses was based on the First Suburban Coalition Idea book (Eric Piper and MARC, 2005). This was due to the increase of floor area of the houses, which create opportunities for sharing dwellings and affordable housing for both the homeowner and renter. The zoning code contained provision for accessory units no larger than 1,000 square feet per single family dwelling; one of the dwellings had to be occupied by the owner and the total number of occupants was not to exceed eight if any of the occupants were an “unrelated person”.

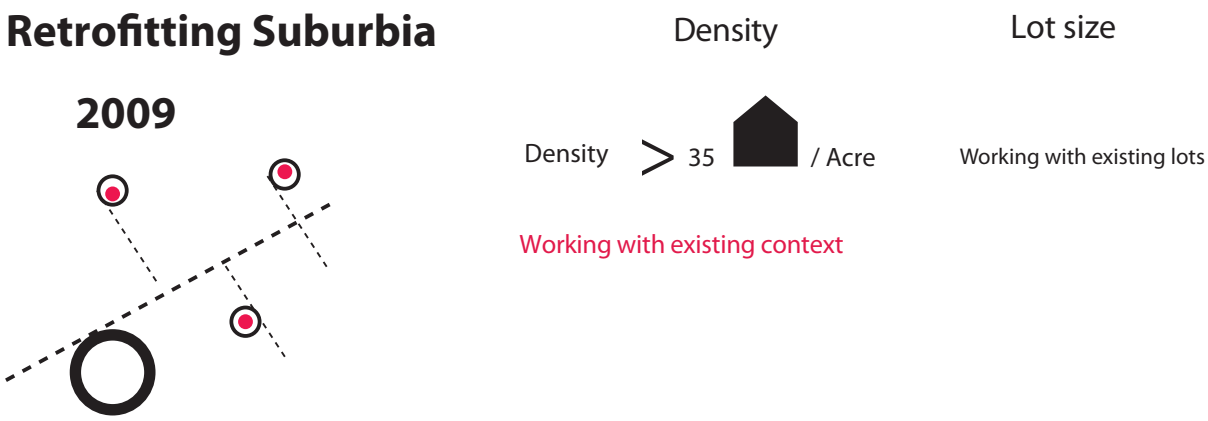
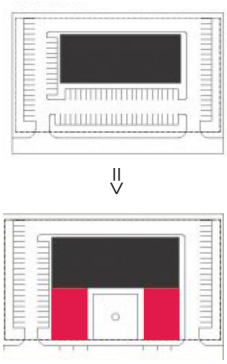


Figure 21- *Retrofitting suburbia - Source:self driven*

Dwelling type



Street Pattern/ Walkability

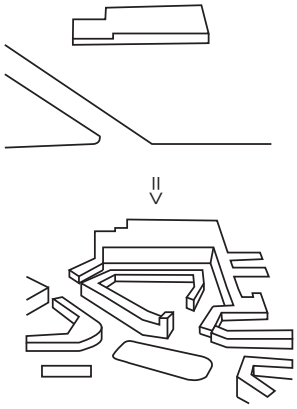
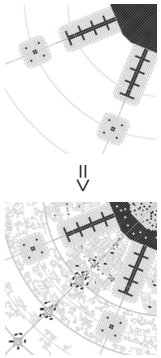


Figure Ground



Diversity

Family Housing
Apartments
Shops
School
Market

Critics:

The problem with the retrofitting idea is that there is no single solution and the approach may differ from case to case depending on the structure and form of the neighbourhood (Renn, 2009).The issue with post war housing and urban forms is that they are built with such a rigid “form follows function” design paradigm that they are difficult and expensive to retrofit for other uses. The problem is that the retrofitting proposal also suggests solutions which may create forms that are not adaptable to future and farther changes.

2.2.1.3 Ecological Urbanism

One of the recent approaches to urbanism and neighbourhood development is Ecological Urbanism; ecological urbanists argue that, the population growth of the cities results in a greater exploitation of the world's limited resources.

The question is how can the city with all its mechanisms of consumption ever be ecological?

While sustainable practices are entering the mainstream of the profession, Ecological Urbanism tends to take the step farther and offers an alternative lifestyle, a new way of thinking, while emphasizing the interrelationship of organism and the environment (Mostafavi, 2010). The theory argues that we need to take advantage of the fragility of the planet and its resources for design innovations and promote conventional solutions (Mostafavi, 2010).

The aim is to find a balance between past, present and the possible future and come up with cross disciplinary and collaborative approaches, to propose new methods of thinking towards urbanism.

Ecological urbanism is offering a trans-disciplinary approach to give designers the opportunity to address the challenges facing the urban environment and to create dynamic relationships in a city towards the lens of ecology.

Considering ecology as a medium of constant change, the Methods should address the retrofitting of existing urban conditions as well as plans for the city of future. Ecological urbanism is taking advantage of different characteristics of the city to provide different experiences and create interactions rather than separations (Mostafavi, 2010). The aim of ecological urbanism is to create a new perspective, not necessarily solutions and design methodology. Ecological urbanism is offering a trans-disciplinary approach to give designers the opportunity to address the challenges facing the urban environment and to create dynamic relationships in a city towards the lens of ecology. The approach tends to change the way people see, behave and understand their surrounding and their relationship to their environment.

2.2.1.4 Implementation

Architectural and urban design movements justify the neighbourhood myth on social, technical and formal ground. This study reveals that neighbourhood formation and morphology are derived inherently from changing social conditions and technical advancements. Today, the neighbourhood should offer more varied social activities as the collaboration of 'work,' 'live,' and 'play'.

From the analysis and case studies, the guideline parameters which define the back bone of future growth are extracted; the idea is to form a vision, derived by the collaboration of chosen parameters (Figure24):

- Self-sufficiency of the Garden City
- Walkability of the Neighbourhood unit
- Identity of place as well as housing typology base on street function of New Urbanism
- Densification and working with existing context of Retrofitting Suburbia
- Trans-disciplinary approach of Ecological Urbanism

However one cannot simply create the physical components of a successful earlier setting but rather to recreate the quality of the residential experience. The problem is that goodness is always assessed in relation to the available alternatives; good neighbourhoods of the past reflect the life style of that particular time. This means that the neighbourhood of the future has to be adapted to suit the residents of tomorrow. Therefore, respecting the chosen parameters, the vision also has to be designed to be adaptable. The challenge is to modify the chosen parameters to suite the need of future generations.

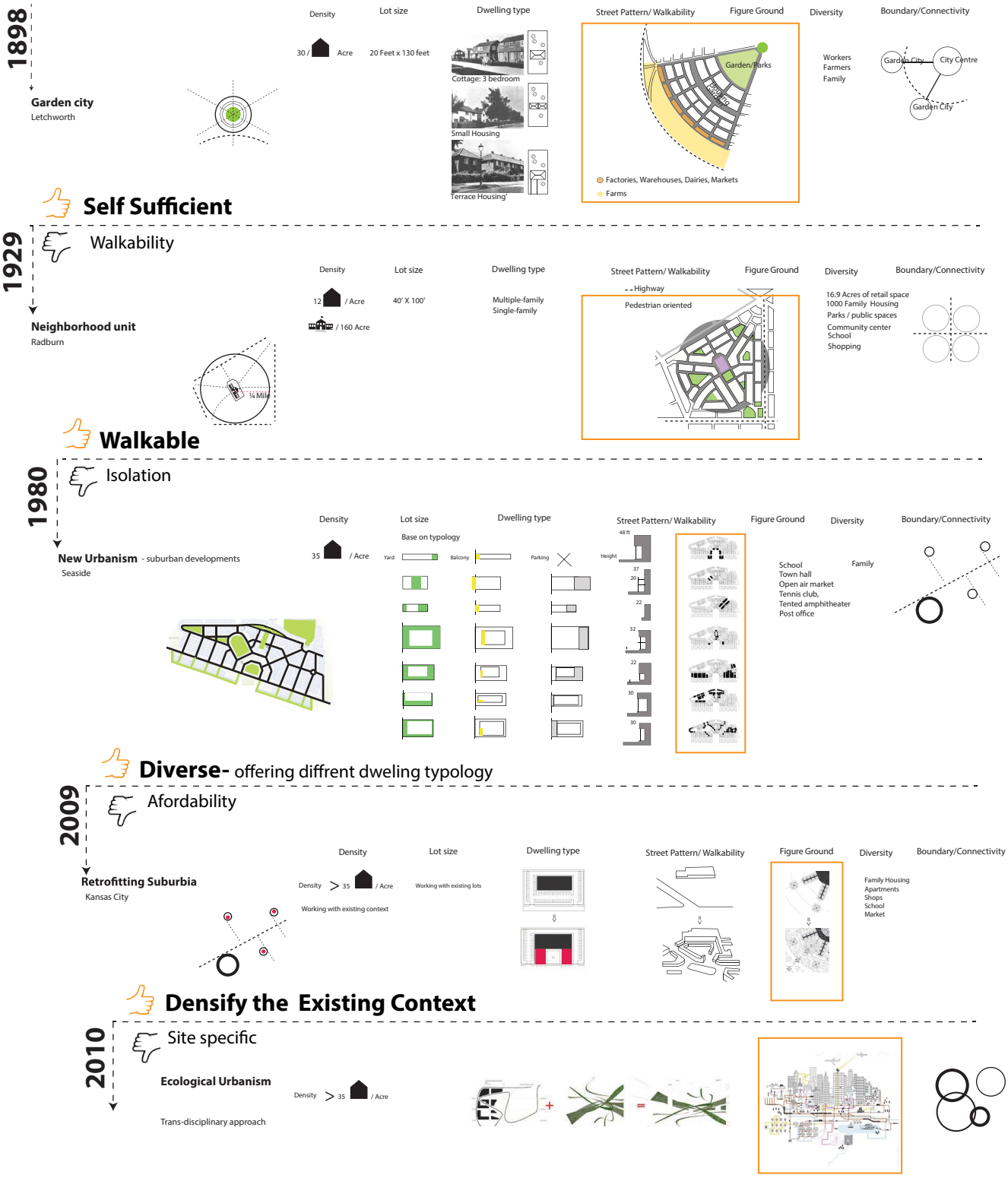


Figure 22 - *Implementation - Source:self driven*

The study reveals that neighbourhood formation and morphology are derived inherently from changing social conditions and technical advancements.

3.0

Vision of future neighbourhoods

Over the past 30 years, Canada's cities and communities have experienced rapid and relentless changes. Global shifts have led to the collapse of some industries and rise of others, causing migration from rural areas to cities. On the other hand, immigration to Canada has increased, resulting in a rapid growth of city population.

3.1 Why it is critical to propose a new vision for Toronto's Neighbourhood?

> *"Canada's cities are central to the country's social and economic well-being. As Canada's largest urban region, the Greater Toronto Area alone produces nearly 20 percent of the country's Gross Domestic Product, is home to almost 40 percent of Canada's business head offices, and has one of the most highly diversified economies in the world. At the heart of Toronto's success are its neighbourhoods."* (Drummond et al, 2002).

In Canada, a 'rediscovery' of the neighbourhood took place in the 1970s (Novick, 1997).

Healthy neighbourhoods are the hallmark of Toronto's civic success. Their strength comes from the rich mixture of cultures of residents, safe streets, abundant green space, diversity of shops and cultural amenities, and the social infrastructure of community services and programs (United Way of Greater Toronto and The Canadian Council on Social Development. 2004).

Toronto has been always known for its neighbourhood formation and revitalization. In 1979, the Social Planning Council of Metro Toronto released the ground-breaking report, Metro's Suburbs in Transition. The report illustrated that poverty, isolation, and distress also exists in Metro's suburbs and not just in the inner city as had been assumed. Based on Metro's suburbs analysis, Toronto's neighbourhoods demand attention today because many are beginning to show signs of distress. The situation is putting Toronto's long history as a city of great neighbourhoods at risk (Novick, 1997). The report laid out a framework and policy agenda for the social development needs and changes on new suburban communities (Novick, 1979).

Based on Metro's suburb report and analysis, the major reasons for the new focus on neighbourhoods are:

- Growing neighbourhoods
- (Re) developing high density in existing neighbourhoods
- Discovering the potential of a neighbourhood as a building block for social cohesion and the source of local solutions to problems
- Increasing recognition that cities and urban regions are socially, environmentally, and economically critical to the well-being of individuals, regions and countries
- Growing concentrations of high poverty levels and deprivation among certain urban neighbourhoods

3.2 What are the needs of future generations? Who are the residents of tomorrow?

3.2.1 Change in population

The Greater Toronto Area (GTA) is projected to be the fastest growing region of the province, with its population increasing by 2.8 million, or 44.6 per cent, to reach almost 9.2 million by 2030. The GTA's share of provincial population is projected to rise from 47.3 per cent in 2011 to 51.6 per cent in 2030 (Ontario Population Projections Update). By 2030, the highest shares of population age 15-64 will be found in GTA census divisions with Toronto at the highest (64.1 per cent).

Analytic study of statistics (figure 25) illustrates that within 20 years there is a significant growth in population age 0-14 as well as 30-45 and 55-65. In conclusion, the target population or the residents of tomorrow will be either young families (couples with young children), single people or retired people.

The question is, what are the needs of the target population.

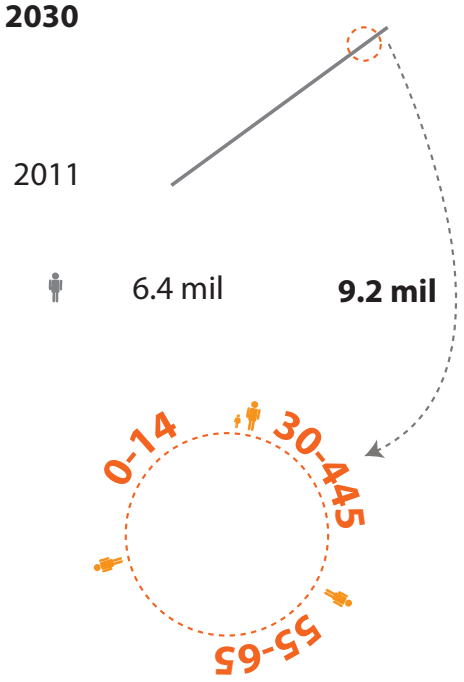


Figure 23 - Population Growth - Source:self driven Information from *Ontario ministry of finance* , in Ontario Population Projections , Retrieved February 2013, from http://www.fin.gov.on.ca/en/economy/demographics/projections/

3.2.2 Change in dwelling type

Closer analysis reveals that people between ages 20-44 tend to live in rented dwellings and as they age and grow older by age 55-65 they mostly own their dwellings (Figure 2). Analysis also shows that people between ages 20-44 are mostly living in apartments and as they grow older they are willing to move in to single detached houses (Figure 25). Figure 25 and 26 analyses demonstrate that as the population grows older the demand for single family houses increases. Yet statistics on the type of dwelling (Figure 26) shows that although there is a significant growth in number of apartment buildings, there is not a significant growth in number of single family houses with in Toronto (Ontario Population Projections Update) (Statistic Canada 2008, 2008). As demand for single family housing increases, the price will be higher and fewer people will be able to afford such dwellings. The challenge is how to make the existing single family houses more affordable.

As David Hulchanski, of the faculty of Social Work at the University of Toronto stated in his research on 3 cities within Toronto, Toronto's middle class is shrinking rapidly. "If nothing changes, we will be a city in two halves of higher income and low income." (Hulchanski, 2007)
Studies reveal that cities that manage to provide affordable housing for low-income workers while continuing to attract higher-paid employees can grow (Rogers, 2000). The social mixture helps to create secure, attractive environments with good services, which encourage professional workers to stay within their neighbourhood (Rogers, 2000). Without this mixture, cities simply polarise into a collection of ghettos. Neighbourhoods need a critical mass of people and activities if they are to work properly. Neighbourhoods should act as a hub for the communication network, creating compact and interdependent spaces within a built environment.

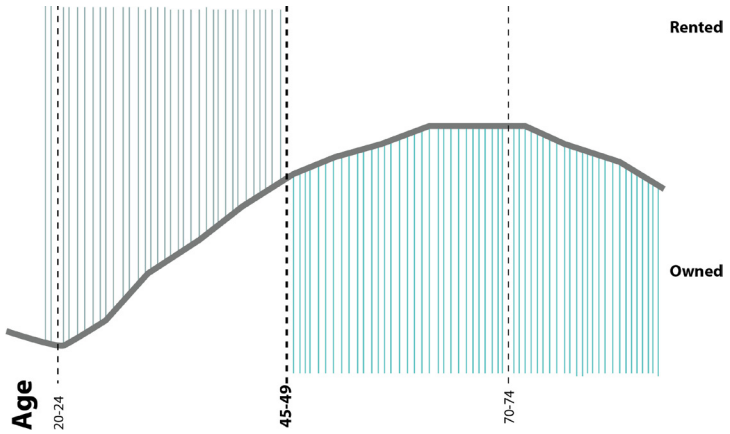


Figure 24 - *Ownership by age ,* Source:self driven Information from *Ontario ministry of finance* , in Ontario Population Projections , Retrieved February 2013, from http://www.fin.gov.on.ca/en/economy/demographics/projections/

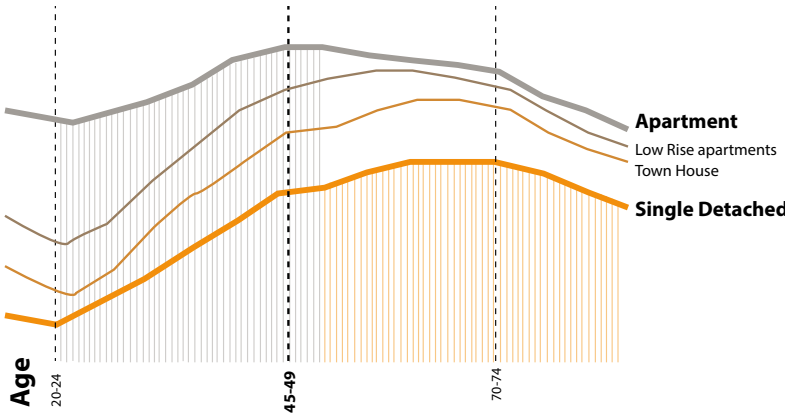


Figure 25 - *Dwelling demand by age* ,self driven ,Source refer to Figure 24

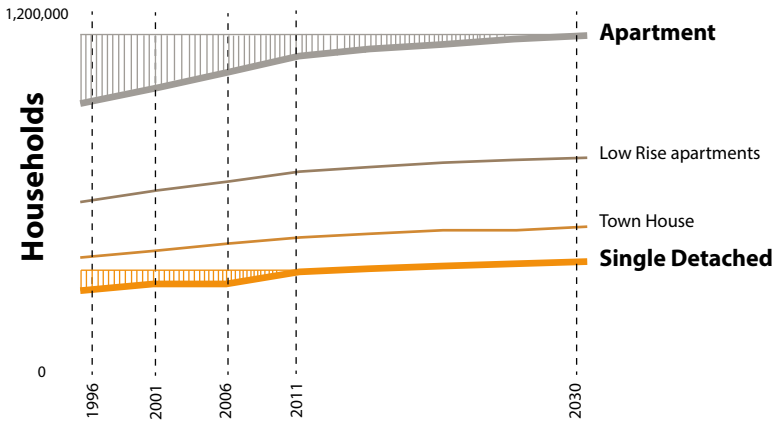


Figure 26 - *Dwelling type Source:* self driven, Source refer to Figure 24

3.2.2 Job change

As people in developed nations have moved from a manual, industrial based economy to a service based one, from a predominately male work force to one that is equally divided between male and female; there has been a deepening gap between the old inner urban communities and suburban neighbourhoods (Rogers, 2000). Suburban neighbourhoods are transforming into bedroom neighbourhoods, people are commuting to the city to go to work, school and even to access other facilities. Like inner city neighbourhoods, suburban neighbourhoods should attract jobs and skilled people back into the heart of them, at the same time building the skill of the people who live there (Rogers, 2000). The neighbourhoods should offer the opportunity to exchange knowledge and challenge the idea of 'work','live','play', to another level of "educate and coach", "produce and induce", "absorb and apply".

3.2.3 Change in family

Change in population and employment has been accompanied by a transformation of the household.
Household size has more than halved in a century, from nearly 5 people per family to just over 2 today (Rogers, 2000). This reduction in family size has many causes such as more elderly people, later marriage and childbearing, fewer children per family, more divorce and more single parents as well as more economic independence for women. If people are living longer and many more of them live alone, communities must be designed in a way that meets their desires. If more people are living alone or in pairs, this will have a dramatic effect, not just on the amount of space people occupy, but the ways we interact (Rogers, 2000). Smaller households and fewer children mean less informal support from relatives and more demand for organized service.

The neighbourhood of the future should be for everyone, a place where children, young couples, families and elderly share their experience.


Image © 2013 DigitalGlobe

4.0

Why Don Mills is in need of change?

A coordinated response to the growing needs and lack of services in Toronto's inner suburbs

4.1 How can Don Mills adapt to address the needs of the residents of tomorrow without losing its quality? What is the future of Don Mills?

> Strong, healthy neighbourhoods improve the quality of life for everyone. They are also critically important to the long-term prosperity of our city. Yet many Toronto neighbourhoods are showing signs of stress. There have been major population changes over the last two decades, with growing levels of poverty in the inner suburbs and few services to meet the needs of residents (David Hulchanski,2007).

4.1.1 The case of Levittown

Levittown,founded by William Levitt, in 1929 and located on Long Island in Nassau County, New York ,is one of the first affordable planned suburban communities built decades after World War II, largely comprised of small, single-family houses with auto-oriented shopping centers (Dunham-Jones, Retrofitting Suburbia, 2009). In the past half century, the community has matured. Residents have aged

and diversified while the population has decreased due to an increase in the number of households without children (Purdom, 1949). The communities are built out resulting in little available land for new construction. Recognizing the needs of aging residents, the town used public money and/or land to support the construction of multi-unit housing for seniors, typically on rezoned retail parcels. Despite some of the developments, the original physical patterns and the urban morphology have remained resistant to change. Young people are moving out of the neighbourhood and the area lost its diversity and livelihood. Similar to Levittown, studying the current demographics of Don Mills (Figure 15, Figure27) reveals that the dominant population age is 24-64, who are comprised of mostly low-income immigrant families with children. In 20 years, the majority of the population will be retired parents whose children who have moved out of the house for various reasons, while the aged population is willing to sell their property and downsize to a more affordable place.

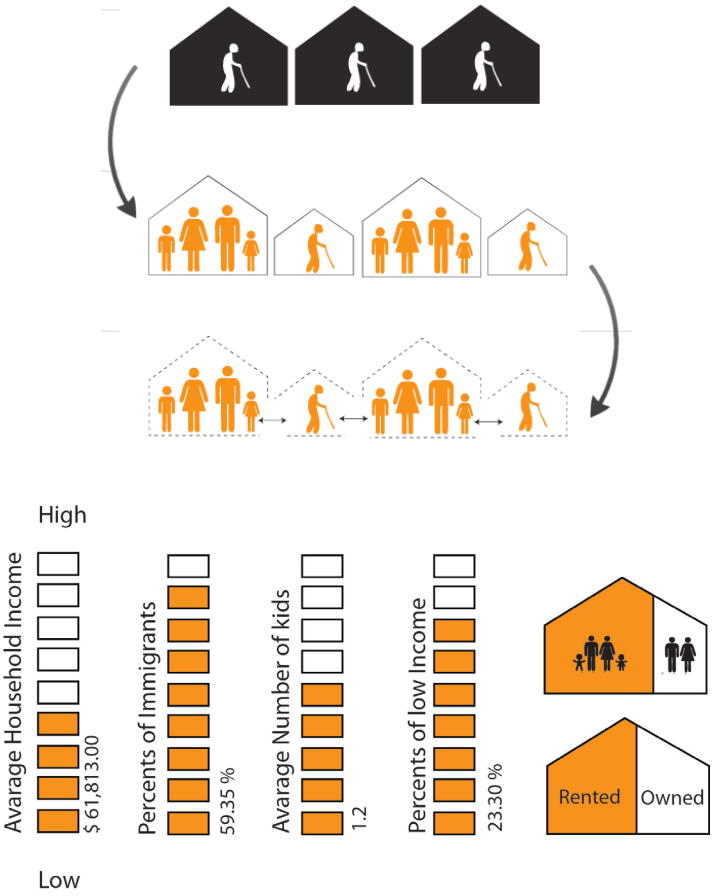


Figure 27 - *Aging population- Don Mills Demographics - Source:self driven*

4.1.2 The case of St. Lawrence

Similar to the ways in which the modernists of the early twentieth century responded to changing conditions, the late twentieth century saw a response to other issues as a result of modern building (Sewell, 1993). In the 1970s, the City of Toronto wanted to build a community from the ground up on old industrial land as a way to revitalize the inner core and attract new residents downtown. When the city decided to redevelop the St. Lawrence neighbourhood, a decision was made to create a new model of development. Urban renewal developments were beginning to show issues of poor living conditions due to high concentrations of lower income residents. The city decided it was best to create new residences on old industrial land rather than clearing existing buildings to create high rise towers (toronto, 2005). The St. Lawrence neighbourhood was mandated to fit into the existing fabric and character of the neighbourhood. There was to be a mix of affordable and market housing along with mixed use of the ground floor to provide amenities to the community. The project was developed in three phases, taking a few decades to complete. A total of 4310 units were provided on fifty-six acres of land, which resulted in the area housing about 10,000 people. While the resulting buildings are not considered the most aesthetically pleasing, the planning process and resulting community is largely considered a success (Figure 28).

The St. Lawrence neighbourhood is significant because of the planning methods used. It contradicts the elements that re-compose the modernist visions. The development is mixed-use rather than segregated use. Housing is provided for mixed incomes rather than a single income. Development is geared towards the pedestrian rather than the car. Buildings are placed sensitively into the urban fabric, respecting the existing context rather than having entire neighbourhoods torn down. St. Lawrence blended into the surrounding context through human scale and materiality.

The program comparison, illustrates the segregation of activities within Don Mills (based on ¼ mile walking distance). While activities are placed in a way to maximize the diversity in St. Lawrence neighbourhood.

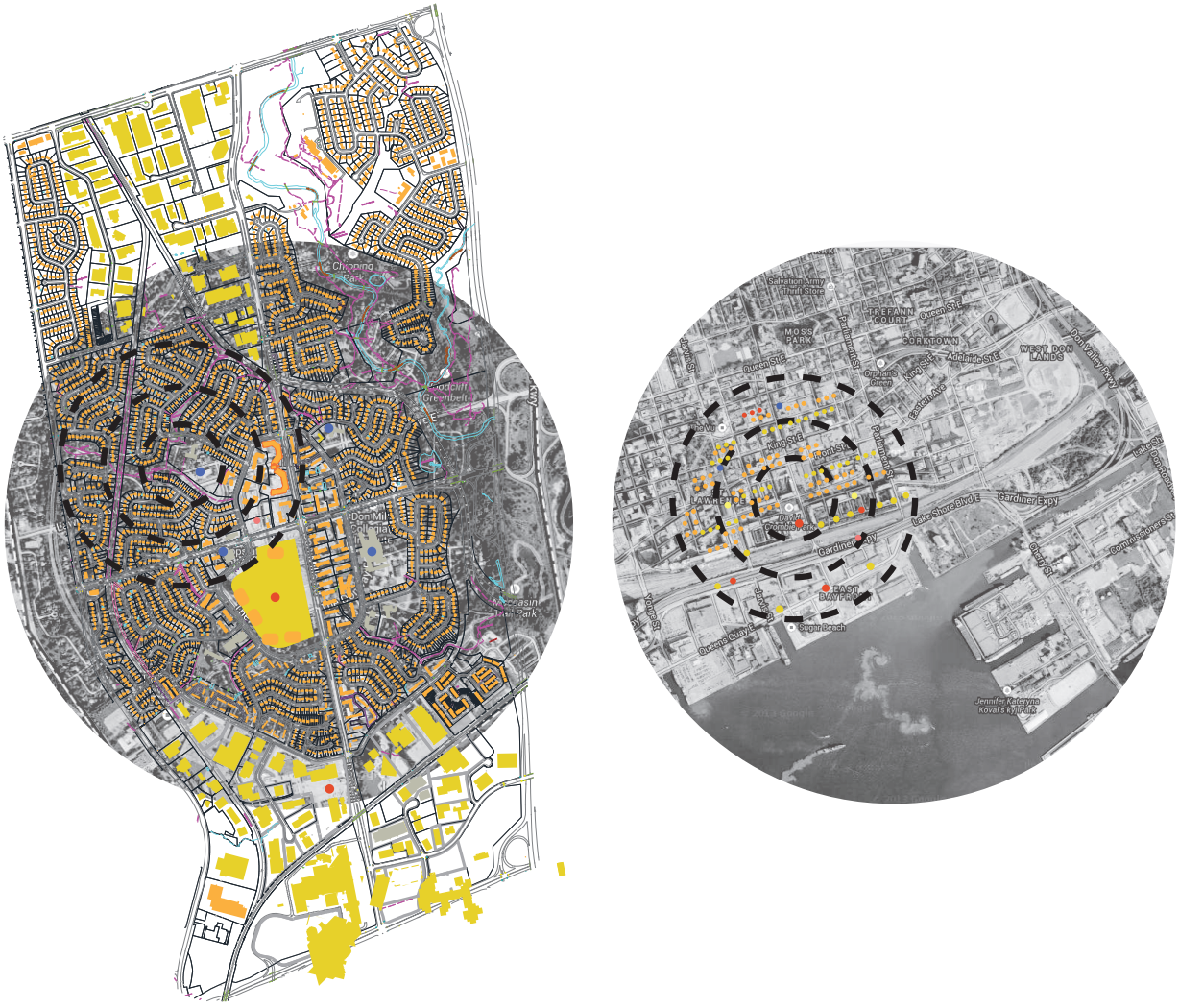


Figure 28 - *Diversity of programs in Don Mills vs St. Lawrence - Source:self driven*

4.1.3 City of Toronto Official Plan

It is stated that the main goal of the Secondary Plan is to “manage change in the community in a manner that retains and enhances the existing character of the area” (Central Don Mills Secondary Plan, 2009). Some of the objectives relevant to the residential land uses in the area are:

- To maintain a full range of housing forms and tenure;
- To encourage the provision of new affordable housing in appropriate locations in a form compatible with surrounding development;
- To maintain, and where possible, enhance family orientated housing forms;
- To preserve and, where possible, enhance the rental housing stock;

To preserve and enhance the role of school sites as a focal point of community and neighbourhood activity, and as such they will continue to serve as open space and important links in the park and walkway system;

To enhance and improve the walkway/link system to facilitate pedestrian and cycling connections and access to public transit in the community and to the Don Mills Centre;

To preserve and enhance streetscapes and landscaped areas in keeping with the Garden City concept that formed part of the original concept for Don Mills.

The Secondary Plan thus encourages the City to make the necessary improvements to the transportation infrastructure, which is experiencing an increase in peak hour traffic levels on arterial roads (Central Don Mills Secondary Plan, 2009).The Toronto Transit Commission’s Transit City plan will have a significant impact on Don Mills. Two lines will affect the neighbourhood: a north-south LRT (Light Rail Transit) line along Don Mills Road, passing directly through the neighbourhood, as well as an east-west LRT along Eglinton Avenue East, just to the south of the neighbourhood. Both of these projects have been named in the 15 year version of the Metrolinx Regional Transportation Plan (Bow, 2011).

From the data analysis and also what has been suggested by the Don Mills secondary plan, the need for changes and strategies to revive the functionality of Don Mills as a self-sufficient neighbourhood is an asset .As it has been mentioned earlier, Don Mills is all about single family houses. Although the houses were designed by different architects, Hancock made sure that the design follows certain rules.

The question is what was Hancock's vision for the future of Don Mills? Did he allow for future changes? What kinds of changes are appropriate?

4.1.4 Modernist principals and Bauhaus aesthetics

Hancock design the Don Mills Master Plan based on modernist principles. To figure out his vision it is best to study the principle of modern urbanism and housing. As quoted by Walter Gropius, Design should meet the needs of the society with no distinction between form and function (Mumford, 2002). Modern urbanism was introduced by CIAM in urbanism, (JosepLluísSert1937-69, Time and architecture, can our cities survive). Following the modernism principle, Modern Urbanism implies the notion of time through four functions: Dwelling, Work, Leisure and Circulation. Emphasizing the functionality of the urban form and introducing the notion of time, reveals the idea of adaptation and change through design. In fact, the functionality of urban form through time is inseparable from adaptation and changes within built fabric. From a sociological perspective, modernism was to be a necessary response to the rise of the professional middle class, which may have also been Hancock's vision of Don Mills. The idea of Don Mills was never a commuter suburb of Toronto, but rather was to be a self-sufficient community (Shim, 1987). Hancock and Lee designed the neighbourhood based on the demands and functionality of that time. Don Mills was never planned to be a housing estate for upper income people. The planners specifically attempted to ensure that housing was available for all types of people with all ranges of income. The diversity of the community can also be explained by the variety of housing typology in the neighbourhood.

Following Hancock's vision of Don Mills and its Functionality to serve the needs of people, what can this neighbourhood offer to the target population of the future?

4.1.5 Don Mills Real Estate trend

To offer a dynamic function for the existing family housing and planning a vision for the housing functionality in future, it is essential to study the current real estate trends in Don Mills. The analysis shows that 48% of houses on market for sale in Don Mills, are single detached houses. The rest are semi-detached (11.7%) and condos (22.7%). The analysis also reveals that the price for most of the houses in Don Mills ranges from 350$ to 750$(Figure 30) (brokerage) (Toronto Demographics, 2006).From the analysis, it can be concluded that the detached single family houses are not only in an affordable price range but also provide the opportunity for development because of the price, the lot size and lot configuration, yet most of the buyers tend to do renovation rather than demolition. Comparing the real estate trend of Don Mills with other neighbourhoods reveals that there is much less property for sale in Don Mills (Figure 29). Some of the reasons that made that made houses in this area less popular for developers are:

1. The socio-economic level of the area
2. The houses are designed to be well suited to a contemporary lifestyle for a family therefore there is no less demand for demolishment.
3. The government of Canada is offering an unlimited and totally tax free appreciation in the value of your home, if an upgrade is made in a personal residence.

Figure 29 - *Don Mills Real Estate Trend - Source Reprinted from Realtor, Retrived MARCH 2013, From http://www.realtor.ca/map*

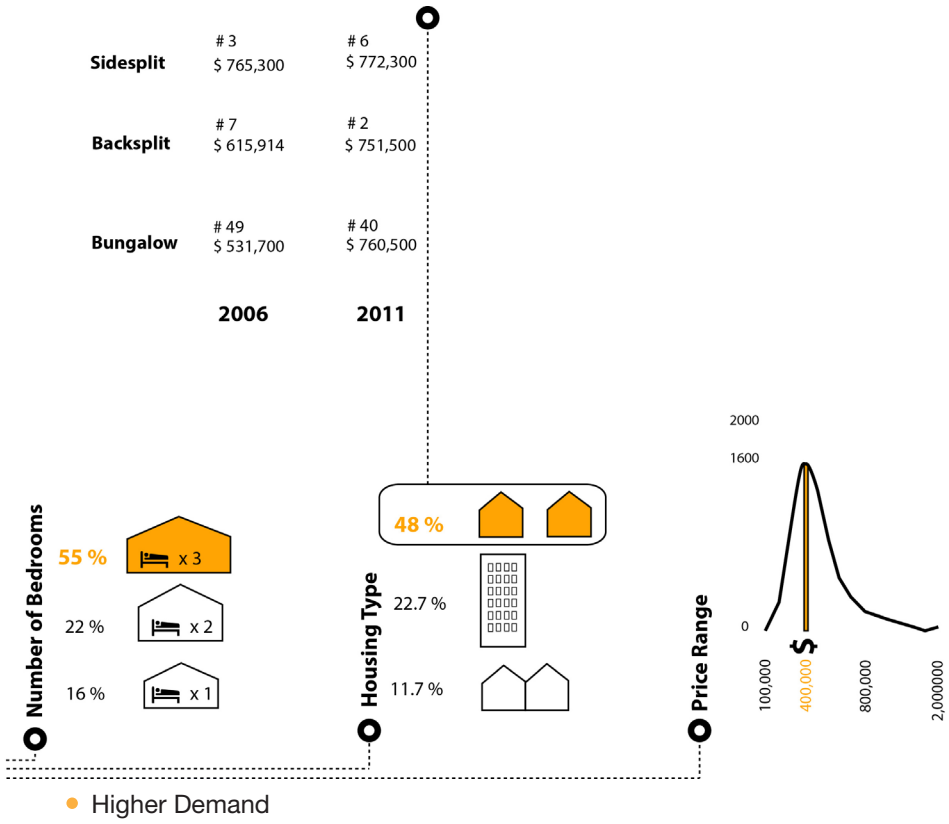


Figure 30 - *Don Mills Real estate trend - Source:self driven eInformation from , Banbury-Don Mills neighborhood profile, 2006, Retrived 2013, from http://www.toronto.ca/demographics/cns_profiles/cns42.htm*

4.1.6 Don Mills Potential

The Analytical study of current real estate trends in Don Mills, with demographic changes and demands, results in a vision which respects the single family housing configuration of Don Mills yet increases the opportunity for affordable developments in future. The aim is to preserve the single family houses in a way that function for the future generation and addresses the needs of the target population. As previously mentioned, due to the high demand of single family houses and the limited number of them, there is a tendency for demolishing the houses and building bigger, more expensive ones. The challenge is to propose innovative urban proposals that keep the neighbourhood affordable for everyone, preserve the existing context and addressing the needs and demands of the future population.

Lot size and housing configuration of Don Mills offer the potential to work in parallel with the existing context. The research is examining some of these potentials.

4.1.6.1 Densification strategies

4.1.6.1.1 Zoning revisions

In 2006, Seattle permitted cottage housing, consisting of small, detached houses clustered around a common green, in single family zone (Dunham-Jones, Retrofitting Suburbia, 2009).

Another example of zoning revisions is to increase the existing density is Hamstead, the Long Island township in which Levittown is located. The city issued “Mother/Daughter use” (Figure 31). The re-zoning allows for a second kitchen for the use of related tenant and “two-family senior residence”. When one owner-occupant of a house is at least 62 years old, an accessory apartment may be rented to unrelated adults (Dunham-Jones, Retrofitting Suburbia, 2009).

4.1.6.1.2 Infill

Taking advantage of not utilized spaces created different approaches to densify the inner neighbourhoods (Figure 32):

- Adding residential development where appropriate
- Builds upon rather than destroys the old community

The characteristics of each have been explored through the case studies

The characteristics of each have been explored through the case studies

Figure 31 - *Sharing Households*
Source:self driven

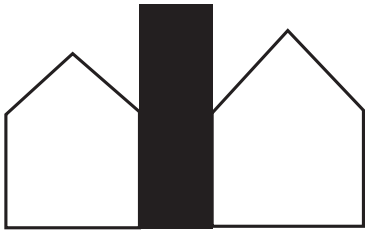


Figure 32 - *Infills*
Source:self driven

4.1.6.1.2.1 Sherbourne Lane

The aim of the project was to create a low-rise, high-density alternative to provide rental accommodation in the inner core of downtown Toronto and the renovation of historic houses in combination with new low-rise infill construction. The old houses were saved and new low-rise, high- density accommodation was built on the land behind the houses. Enhancing the broad nature of the neighbourhood by providing mix of incomes, the emphasis of the project is towards a substantial amount of limited income housing, providing a variety of unit types to accommodate roomers, senior citizens, childless couples and families (Barton Myers, 1978).

The study illustrates how a low density neighbourhood can transform into a higher density one, yet still respecting the identity of the existing context. Revisiting the urban morphology, the study proposed a new building typology that not only respects the urban fabric and the street level experience but also proposes a more diverse demographic by offering different unit types.

4.1.6.1.2.2 Laneway

In the last decade, the laneway – or alley – has been considered as an opportunity for regenerative architectural insertions in Toronto. The city's laneway system has been studied in "Site Unseen" publication by the University of Toronto. Indeed, these laneways are recognized as a vast urban 'resource' offering a new layer of urbanism with the existing fabric. The exploration of this resource was embedded in a morphological and typological understanding of urban form (Chong, 2004). The idea is to densify the inner neighbourhood while respecting the existing context and taking advantage of the laneway.

Through studying and analyzing the built form, lot division and the laneway system, the research is raising awareness of potential, innovative additions to create vibrant and sustainable neighbourhoods

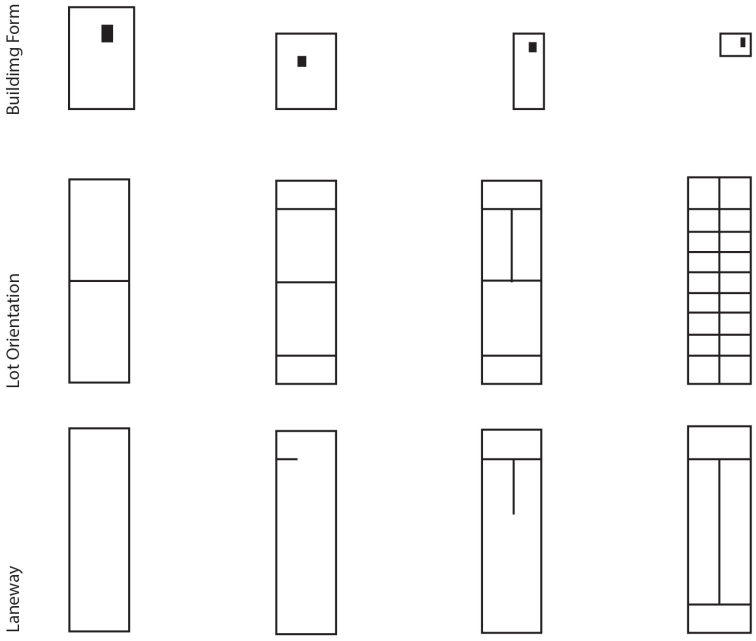


Figure 33 - Laneway infills - Source:*Reprinted from Site Unseen: Laneway Architecture and Urbanism ,* by Chong, Brigitte Shim and Donald, 2044, University of Toronto

4.1.7 Examining the Infill and Laneway conditions for the future growth of Don Mills

Don Mills has large lot sizes and the broader side of the houses are facing the street. This leaves all large portions of the lots empty as the backyard. The housing configuration also allows more space between housing units with a variety of setbacks (Figure 34).

4.1.7.1 Infill

The strategy is to propose housing units at the rear part of the lots for young couples, the unit being owned by the family living in the single family houses and rented to young couples. After a period of time the parents grow old and want to downsize to a smaller more affordable dwelling, while the young couple are willing to upgrade to a bigger dwelling. This vision gives the young couples the opportunity to invest their rental payments and gradually move from the house unit to the single family house. On the other hand, it provides the opportunity for older families to stay in the same neighbourhoods and within their own lot but downgrade to a smaller unit. Although this kind of development opens the option for future changes and growth, because of the additional building, it reduces the lot sizes; therefore, in the future, even if there will be a tendency to demolish the houses, the developer is forced to build same size houses. Thus the houses will be more affordable and manageable in terms of price range (Figure 35).

These housing units can also be stacked on each other to create higher density if needed, or add on top of existing retail stores.

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4.1.7.2 laneway condition

The idea is to propose the housing units as mid-rise apartment buildings constructed above the existing garage of the family houses. The vision also offers public amenities at street level as well as a higher density within the neighbourhood, but questions the quality of urban life, with the neighbourhood getting overcrowded and clustered. Moreover, the proposal eliminates parking spaces and limits the opportunity for future developments of existing family houses, resulting in it not being adoptable or flexible for further changes (Figure 36).

Figure 34 - *Lot configuration - Source: self driven*

Figure 35 - *Infill in between lots - Source: self driven*

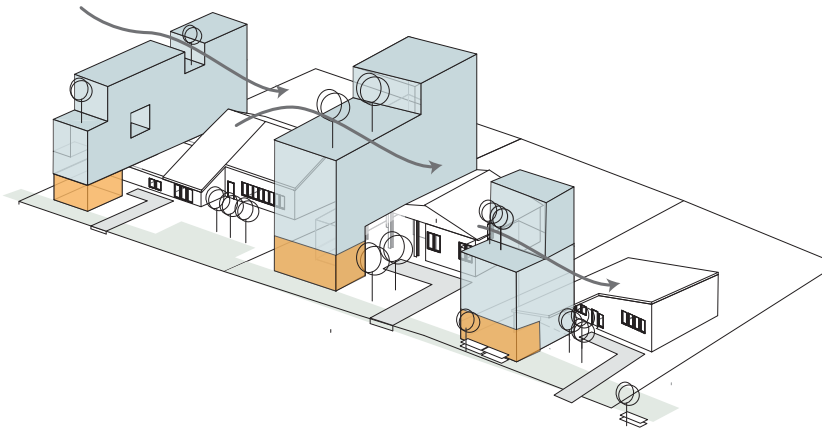
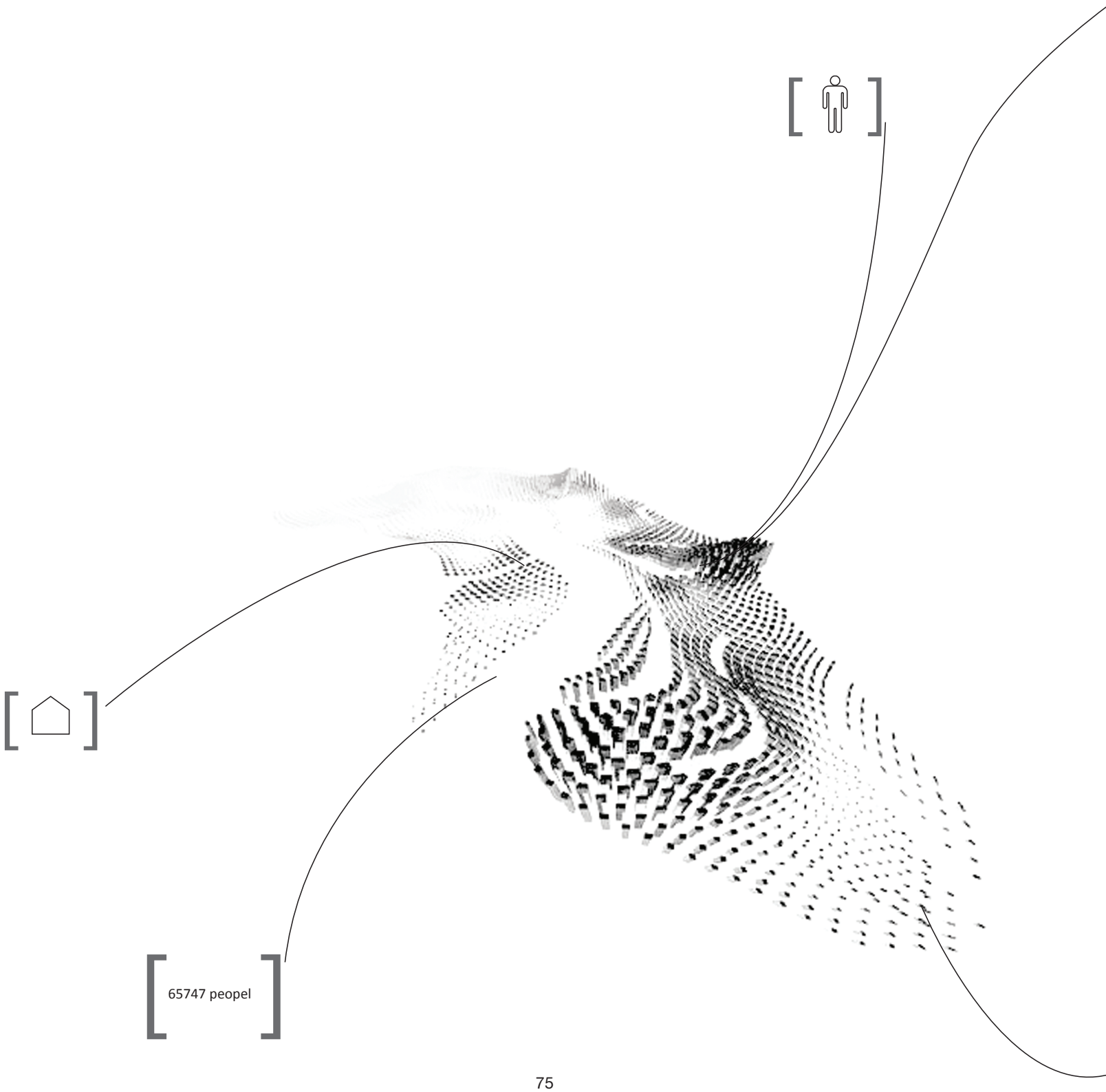


Figure 36 - *Add on Laneways - Source: self driven*

4.1.8 Concerns

One of the main difficulties with these approaches is that it is impossible to fight against the wishes of large part of a population who want to have their own private home, an intimate relationship with the land, a small plot for growing things, and who do not want to have to use an elevator or even meet their neighbour in the doorway. Comprehensive analysis conducted on the Don Mills neighbourhood determines that the transition of suburban neighbourhoods and the adaptation into future context should be through a more systematic generic solution that respects the private properties.
At the beginning, the question was posed in regards to the strategies to convert an existing, non-sustainable community into one that is more sustainable without losing its quality and encourage the existing neighbourhood to adapt to the need of future generations. Through an analysis of presented material about changing and current conditions as well as building a case that references past visions and reactions, it can be observed that at this moment in history the conditions are provoking a big change similar to those that the modernists faced, however the context is quite different. While acknowledging that there is an issue occurring on the periphery of neighbourhood formations, the next step is to suggest a direction to create a solution.

To modify the approach, the essential principals of contemporary theories on neighbourhood designs have been modified.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Complexity and Diversity in Neighbourhoods

Contemporary Theories on Neighbourhood Design

5.1 Trans-disciplinary approach

A city is a complex, dynamic and ever changing entity with many components that support its function. In recent years, the study of ecosystems challenges the science to apply a new kind of thinking to understand the patterns and processes of an ecosystem. The new thinking is systems thinking, away to analyse and understand the relationship and interactions between all parts in a system so an integrated solution can be obtained. Newman and Jennings (2008) also discuss systems thinking in relation to ecosystems. They argue that in order to understand different parts of a system, the entire system needs to be considered along with the wider system within which it is situated. The idea of systems thinking can be apply to different contexts.

James Corner, Landscape Architect and theorist and the founder of James Corner Field Operations, also supports the idea of systems thinking, in the context of urban fabric. He believes that, landscape, urbanism, architecture and infrastructure are moving towards a new era. The inter-relationship between them is defining a new mechanism. The new mechanism attempts to create connections between individuals, their surroundings, political and social

situations, context and culture. This suggests shifting attention away from the object qualities of space to systems that seek to construct a dialectical understanding of how forms relate to the process that flow through, manifest and sustain it.

Corner defines his vision of this trans-disciplinary approach as Landscape Urbanism. He believes in a culture that values meaning over materialism, quality over quantity. He defines landscape as culture rather than real estate and resource.

Corner illustrates his vision through three themes:

1. Processes over time / The processes of Urbanization

As stated by the cultural geographer, David Harvey –

> "The struggle for designers and planners is not with spatial form and aesthetic appearances alone but with the advancement of more socially just, politically emancipatory and ecologically sane mix of spatial – temporal production processes" (Corner J. , 2006)

The idea is neither the built forms nor the landscape in their individuality are responsible for the effective functioning of the urban areas. In fact the integration of both of them is looked as a single entity in creating unique urban forms. Conner and Harvey argue that the process of this formation is defining the quality of urban areas. Thus to understand the urban forms one should understand the ecology as well as social, political, cultural equity of the area. (Corner J. , 2006).

2. Staging of Surfaces

The staging of surfaces deals with the idea of a plane. It suggests to re-understand the programming of functions and to re-think the idea of a plane just being the horizontal surface. As Corner argues staging of surfaces illustrates interests in surface continuities, where roofs and grounds become the same. This is certainly of great value with regard to conflating separation between landscape and building. This allows for urban growth in population, development of various demographical patterns and interactions within the existing systems (Corner J. , 2006).

3. Imaginary

As stated by Corner, the failing of the twentieth century planning can be attributed to the absolute impoverishment of the imagination with regard to the optimized rationalization of development practices and capital accumulation (Corner J. , 2006). The imagination that comes with urban planning or design is the key to the improvement of the urban fabric, which is defined by the elements of urban structure like housing, need to socialize, necessity of food, common recreational facilities, transportation and other forms of civic infrastructures.

Therefore, the model for future neighbourhoods has to be the result of a trans-disciplinary approach that

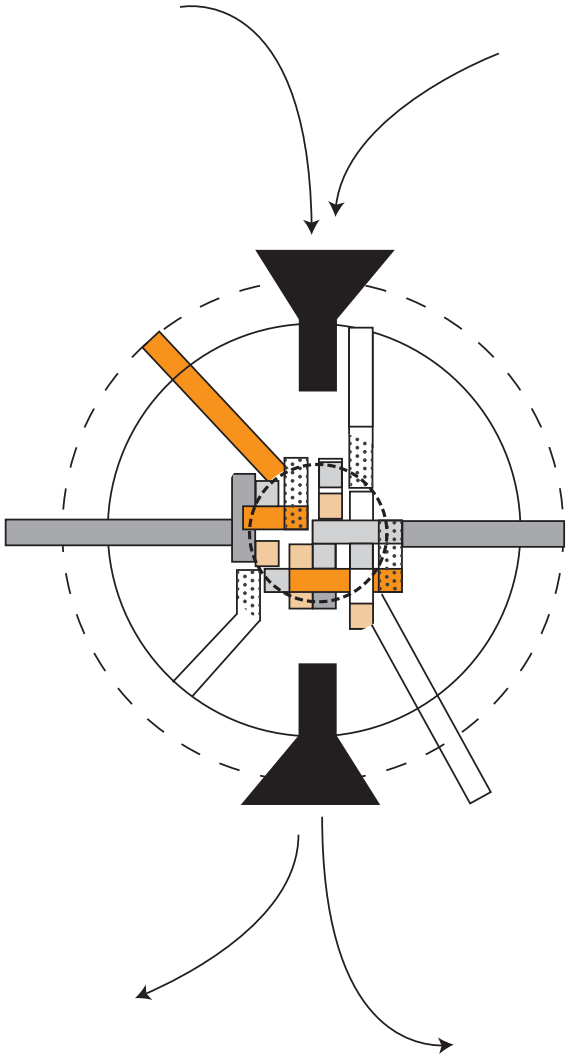


Figure 37- *Reformulate the idea of communal facility- Source: self driven*

introduces a system to understand the processes, connections and interactions within the urban fabric, a buffer that serves as a counter balance to the existing urban form (Figure 37).

5.2 Sense of place

Is a vital attributes that is missing in most suburban communities. As Anita Berrizbeitia, a landscape architect, stated, “Place is fundamentally tied to the question of human experience, of cultural meaning, an object for a subject, something to behold, visually and emotionally. Place acquires meaning through the events and social practices that occur within it, shared experience being as important, if not more so than physical attribute” (Berrizbeitia, 1999).
Lukez (2007) and Kolb (2008) also discuss the idea of identity, by looking at the suburbs as places with lack of layering or history. In order to find identity in generic places one needs to imagine the transformation of the neighbourhoods in the context of the past, present and the future. Creating the sense of place has been addressed in the New Urbanism approach yet the New Urbanists design neighbourhoods based on traditional principles. The biggest issue with New Urbanism is its separation from its context, as if it does not fit in the scale of the city. As pointed out earlier, part of the success of traditional neighbourhoods are their connection to the city.

To address this issue, the new model for a future neighbourhood is focusing on the experience of the place, the goal being to reformulate the idea of a communal facility and define the urban form as a social condenser that responds to inhabitant needs and encourages individuals into group activity. This neighbourhood is designed in a way that shapes activities and mingles the programs together in order to create a new public realm, where visitors drift along a hyper-urbanized environment. In order to define the identity, the designer’s attention should be focused on staging the “conditions necessary to precipitate a maximum range of opportunities in time”. Design should be turned

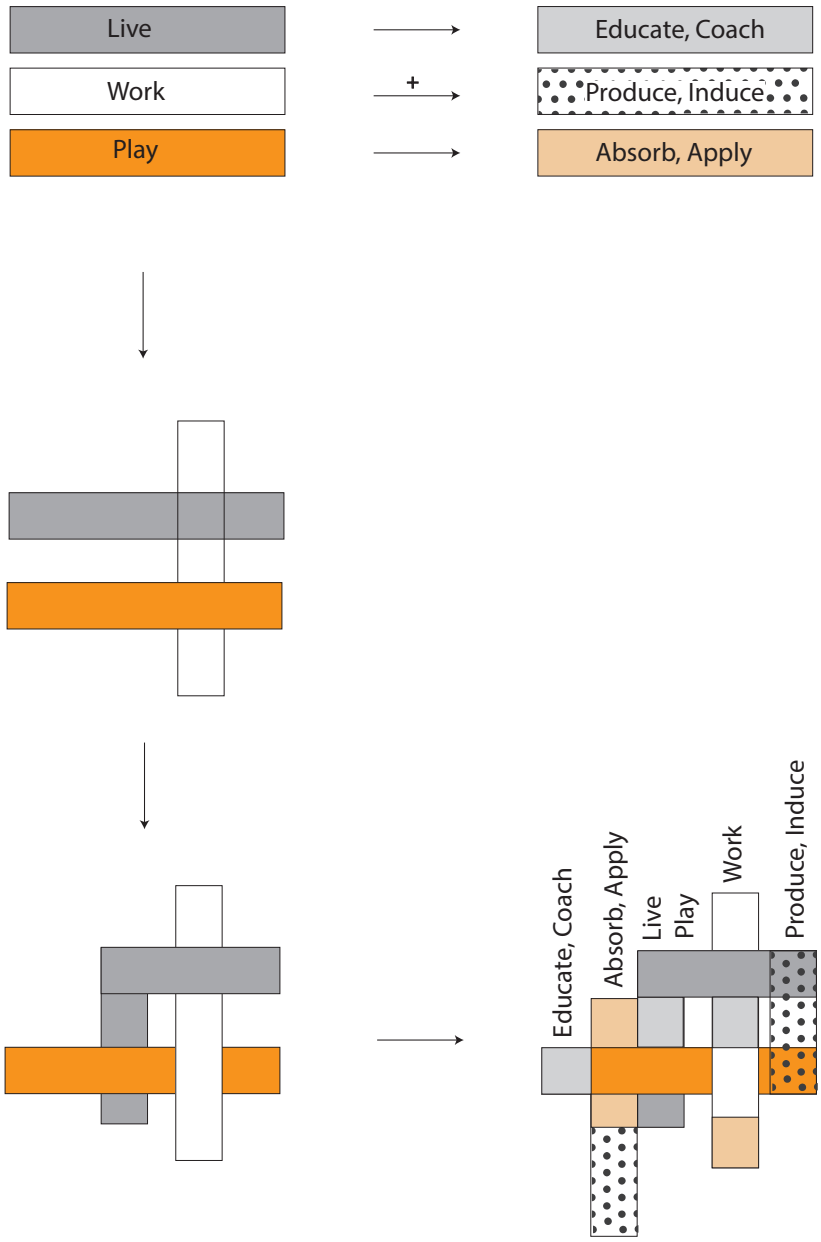


Figure 38 - *Diversify the programing to Reformulate the idea of communal facility - Source: self driven*

from aesthetics to “engendering strategies”, in a way that encourages people to shift and modify the sense of their lives and their place.

5.3 Boundary

One of the contemporary theories practiced by Rem Koolhaas, Peter Eisenman, Frank Gehry and ZahaHadid is Post Urbanism. Post Urbanism has an Anti-urban approach, the idea being to design buildings that act to differentiate, a sculptural reaction against the urban fabric. Post Urbanism questions the concept of boundary and argues that cities are no longer centers but areas with no edge and boundary.

The model for future neighbourhoods is offering permeable nodes that are walkable and connected to their surrounding via public transportation, car and bicycle. The idea is

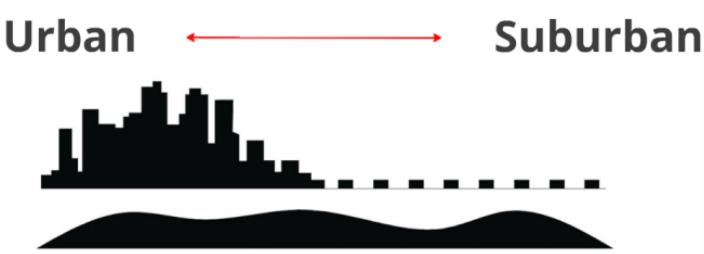


Figure 39: Fading the boundaries between urban and suburban formations - Selfdriven

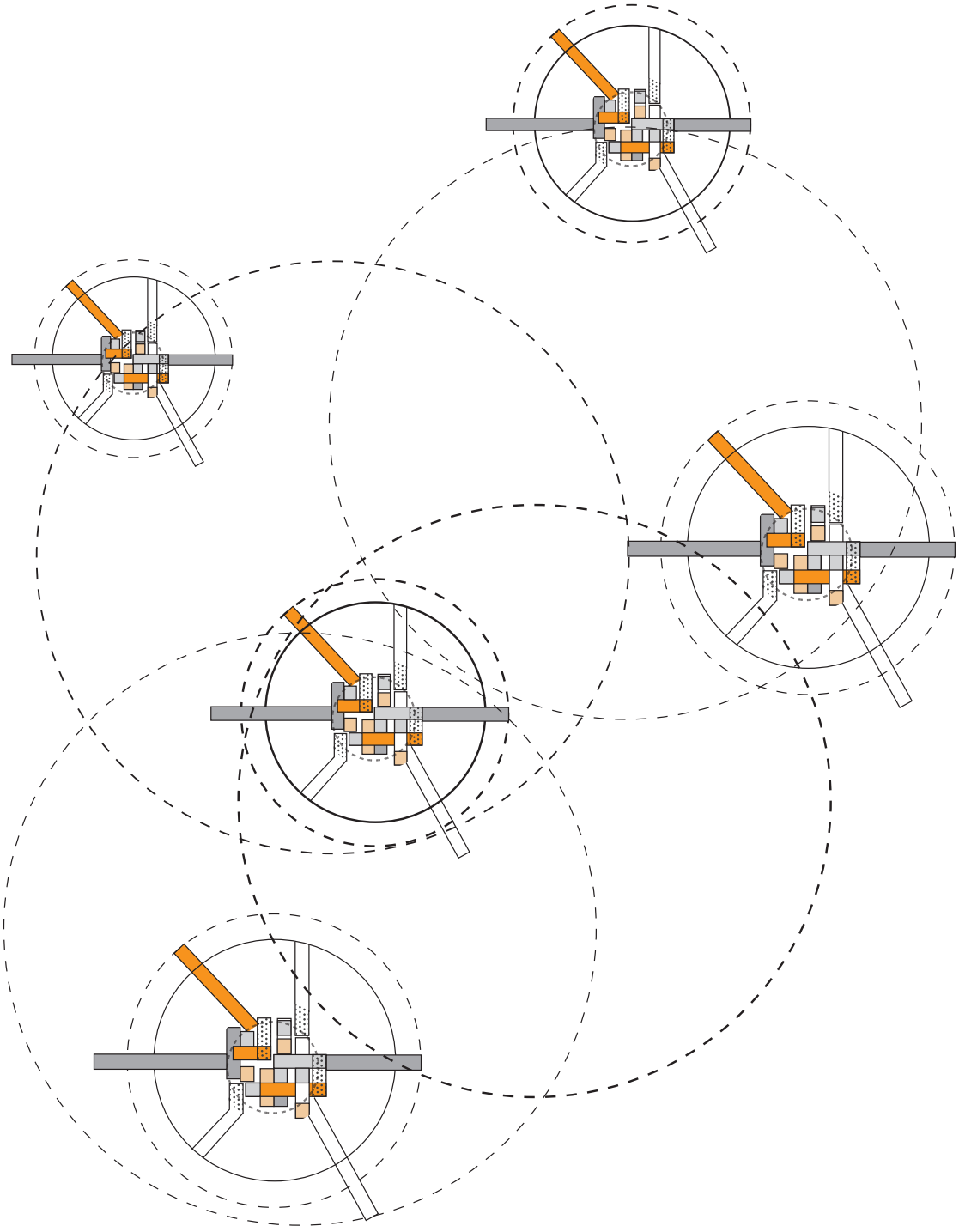
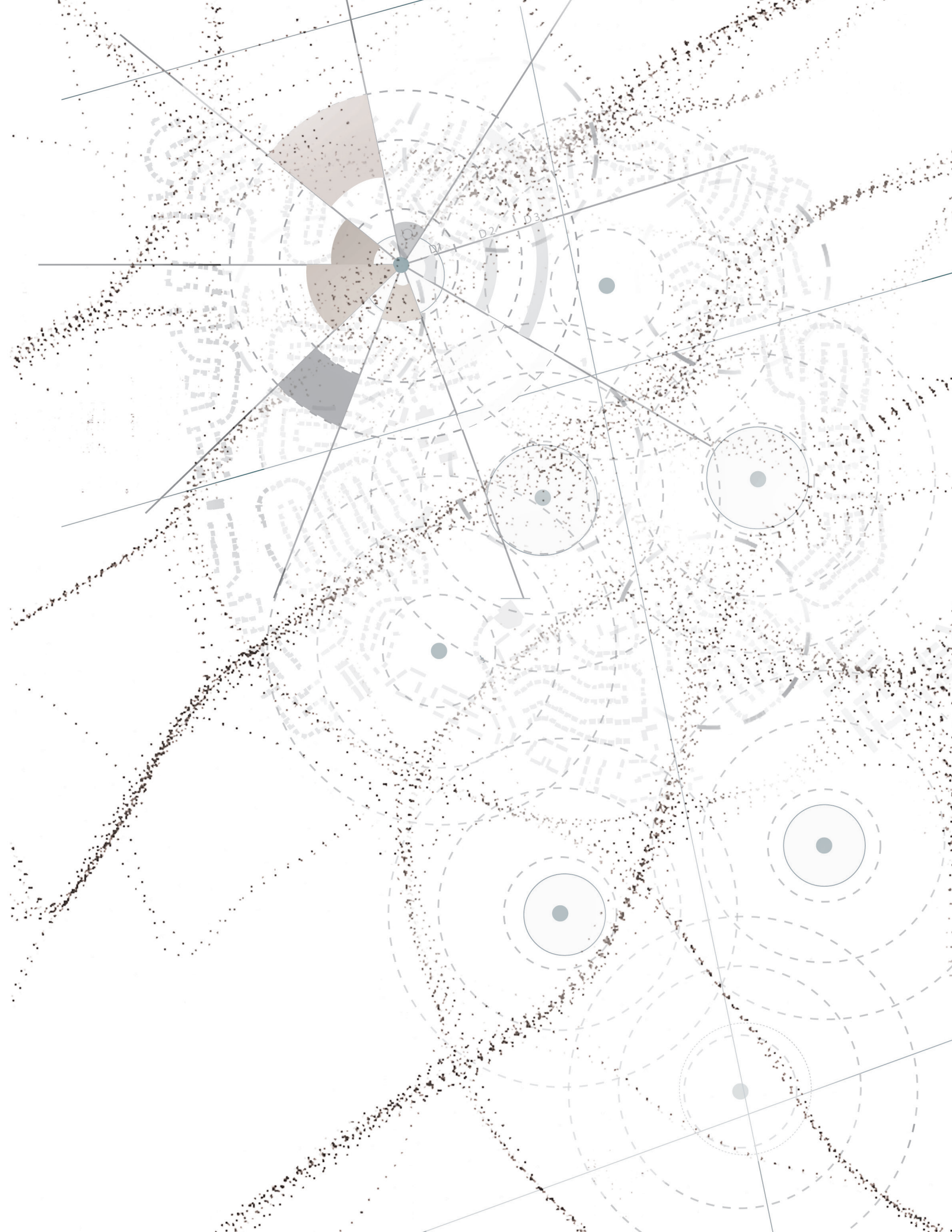


Figure 40 -*Decentralize the node - Source: self driven*


D1
D2
D3

6.0

Design Direction and Principles

The research conducted can be summarized into a few categories where positions must be taken in order to move from research to theory to design. Although the detailed design of each and every node is site specific, they are all following the same design principles which can be broken down into seven categories.

6.1. Processing

> "Why think about processes? Objects in cities, whether they are buildings, streets, parks, districts, landmarks, or anything else, can have radically differing effects, depending upon the circumstances and contexts in which they exist. Cities are a logical extension of the open source movement. The city is both a product and a generator of immense amounts of data." (Hill, 2008)

Going through studies and analyses illustrates the importance of a process in shaping cities and neighbourhoods. From Garden City planning to the most recent approaches of neighbourhood design theory, designers attacked the problem of town planning much as if they were physical scientists. The two major variables for them were the quantity of dwellings (or population) and the jobs opportunities, family sizes and income groups. In fact these variables are related

to each other, in the form of relatively closed systems. In turn, each variable also defines its subsidiary variables that can get modified further. For instance the housing can get modified by the playgrounds, open space, schools, community center, standardized supplies and services. The town as a whole was conceived of these variables in a direct, simple, town-greenbelt relationship (Jacob, 1961).

Design of future neighbourhoods will encompass a big picture scenario where various elements that have been looked at separately or segregated from each other need to be brought together and viewed in a holistic manner. Neighbourhoods need to be viewed as ecosystems using the criteria set out by Newman and Jennings (2007). This system will assist in creating a city that functions in a cyclical manner rather than as a linear industrial process. One of the lessons of studying the visions of post urbanism, ecological urbanism, New Urbanism, is that each one worked in a bold radical fashion in order to react to their conditions. Now is the time to think in a bold all-encompassing frame of context.

Solutions will need to occur within the current framework of development and rely on parametric aspects and forces to create a vision where strategies come out of the site. The studies define guide lines and parameters that encourage a site specific second layer of history and identity. The ultimate goal is to create the next layer in the evolution of Don Mills and sprawling cities everywhere in hopes of fostering a sense of place, identity and affordability.In designing future neighbourhoods, one needs to go from a rigid system which was shocked by everything foreign, to a flexible system which is indifferent to the usual (Sennett, 2001).The design is enhanced by a multiplicity of opportunities, aiming to fade away the functional separation in the mist of post-modern neighbourhoods. AS Mozas, author of Density series, argues People are concerned about having cultural content, well connected and with easy access to the natural milieu. They are looking for a dispersed place in which they feel at home. For this to happen, the dwelling must be connected to an urban center with sufficient critical mass to provide for stimulating cultural activities (Mozas, 2006). In order for this connection to occur, a buffer is needed to de-concentrate the concentration by creating another nodal point. For that purpose a model/node has been designed based on analytic studies of the previous school of thought.

The aim is to increase the flow of activities to enhance the economy and development of the area. Once the node reaches its maximum capacity, another nodal point is created, forming a series of nodes within the region, all interlocked by a system of networks. The node is spreading around the city wherever it is necessary to make a new layer of program and connection within the city.
In the process of making cities for people, the urban landscape must be considered through the five human senses and experienced at the speed of walking rather than at the speed of riding in a car or bus or train (Gehl, 2010). The design is acting as a catalyst, a buffer, that boost the quality of life in existing neighbourhoods, the aim being to integrate nature, urban life and pedestrian infrastructure.

The buffer creates a new type of urban space that unites the city's pedestrian circulation and public transport with urban functions in order to create a unique base for city life, activities and communities, rather than the traditional suburb, the neighbourhood is to hold different types of relatively dense, medium to low-rise typologies with small gardens and large common areas. The Buffer serves as the city's community garden where city life can unfold (Figure 40).

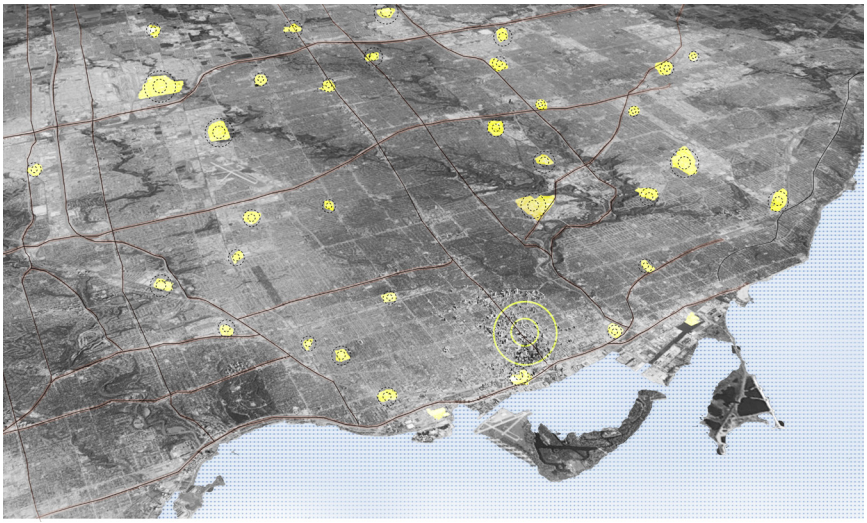


Figure 40 - *Decentralization - Source: self driven*

to decentralize the node of the city into different neighbourhoods in order to fade the boundaries and understand a city as a whole

6.2 The Network

> "We find ourselves at a moment in history in which the nature of cities, as form and experience both, is under pressure from a particular class of emerging technology. The advent of lightweight, scalable, networked information-processing technologies means that urban environments around the world are now provisioned with the ability to gather, process, transmit, display and take physical action on data." (Greenfield, 2012)

6.2.3 Grid based on data analysis

The proposed grid system is based on Toronto's typical urban grid direction, which is slightly off the North.

The concept of shifting grid systems was initiated by Peter Eisenman in 2001, in designing the Berlin Project; he attempted to re-invent a context through a new interpretation. In so doing, Eisenman superimposed the Mercator grid (the most generic of the earth's applied divisions) on the Berlin urban grid. The encounter of these grids gave the architect a foundation to propose structures and spaces later outlined in the program requirements (Eisenman, 1989).

Inspired yet not similar to the Eisenman approach, the module is based on a grid system which has been defined base on quarter mile (20 min) pedestrian access. The goal is to optimize continuity between nodes. The grid creates fields of intensities. Close to the nodes the programmatic streams get denser and more intertwined, so the program gets more mixed and the mixture fades out towards the neighbourhood borders. Mixture of public and Private enclaves are placed along the edge of the neighbourhood, making the transition from one neighbourhood to another smooth. The network is being modified based on the analytic data from the neighbourhood and different alternatives are being tested to extract the most feasible approach for the site.

6.2.3.1 Connection

One of the inputs that define the grid system is the type of connections that can occur within a network, the aim being to create a network that integrates with the physical context and optimizes continuity between members. Depending on the site we are dealing with, there are different approaches (figure 41,42).

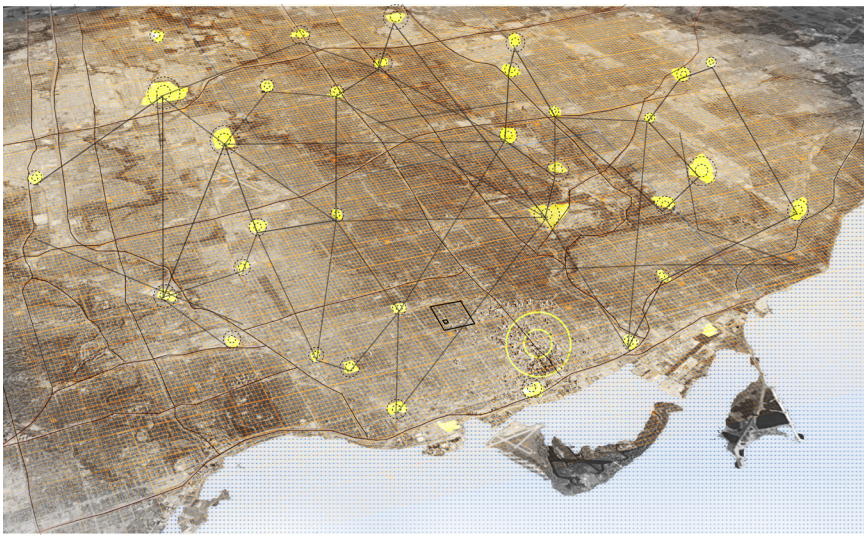


Figure 41- *applying the grid - Source: self driven*

Figure 42 - *variety of connections - Source: self driven*

6.2.3.2 Blocks

The other input is the block distance. As it has been mentioned, the typical block distance of the network is based on 20 minute walking distance, the idea being to maximize the Walkability of the area. For that reason, the activities are being grouped and placed within (5-10), (10-15), (15-20) minute walk from the node center (Figure 43). The node center can be defined as a public space, a school, community center, existing transportation station, etc. The node center is acting as an attraction point (a magnet). The magnet might scales the grid down towards the node or spread out and creates openings within the grid. Depending on the size of the site, the patron might have 1 to several nodes (magnet) (Figure 44, 45).

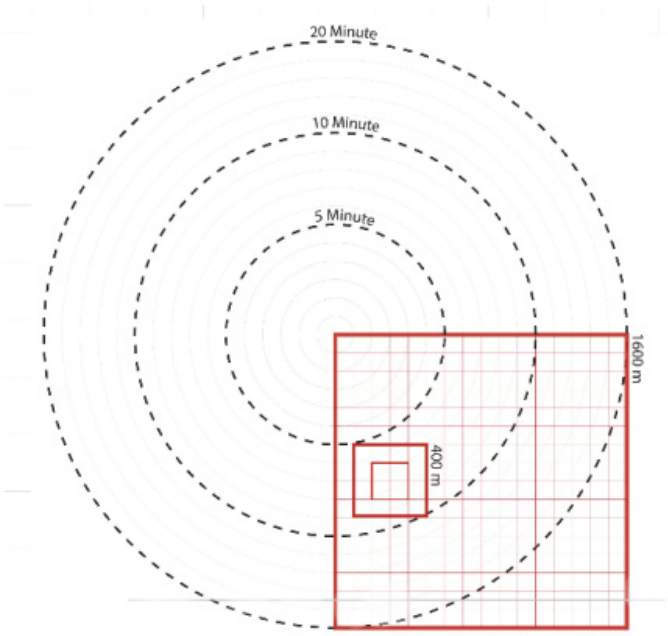


Figure 43 - *The patron/ Magnet - Source: self driven*

This effect can also get modified by combination of several points, creating a linear magnet (Figure 45).

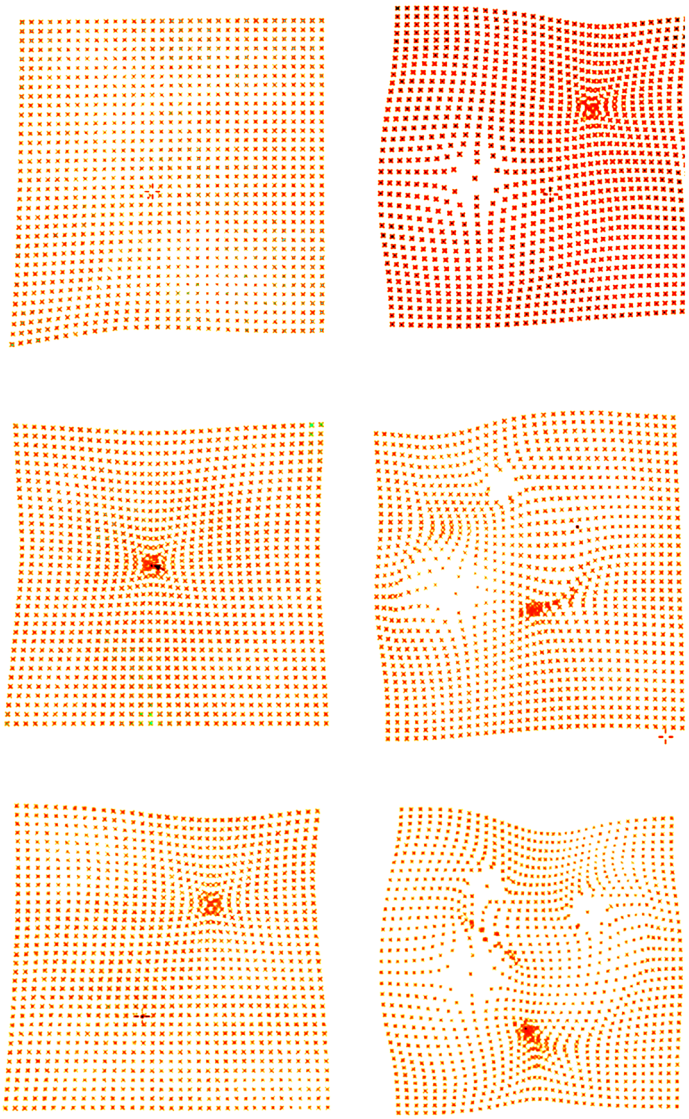


Figure 44- *deformation of the Grid base on the Node placement*
Source: self driven - Grasshopper Analysis

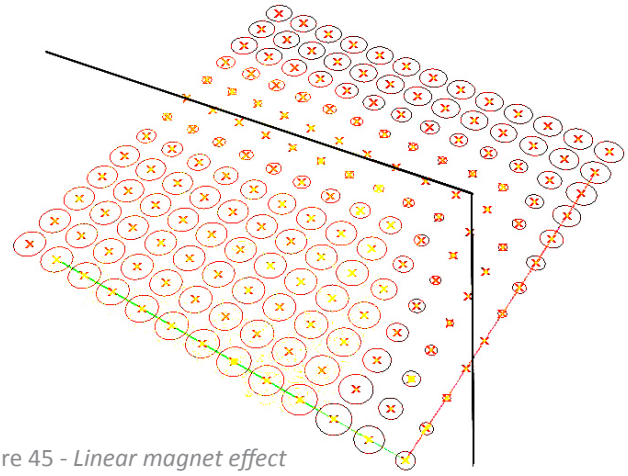


Figure 45 - *Linear magnet effect*
Source: self driven - Grasshopper Analysis

6.3 Future Density

Assumable compactness is an objective a neighbourhood wants to achieve with physical densification. Compactness means improved functional, energetic, economic and strategic efficiency of the city entity.

Comparing the population density of different neighbourhoods as well as the projected density published by the City of Toronto for its suburbs, a population density of 40,000 ppl/sq.km seems to be an appropriate density to develop. Like programming, diversity in density is important to satisfy various tastes for desirable dwelling and neighbourhood. A mixture of high, medium- and low-density is desirable to make more efficient use of land yet to respect the tastes of the people who must live there. Plugging in different types of density into the grid network along with the location of the node center illustrates different possibilities (Figure 44,45,46). The density can either increase or decrease towards the node depending on the programs of the node is offering. If the node is acting as a public space the density might decrease towards the public space in order to maintain visual connection and maintain the openness of the area. In an opposite scenario the density may increase toward the node if the node is acting as a transportation hub. The idea is to use the density to define the type of spaces.

The input of these 3 parameters proposes different alternatives. Shaping the network system based on these parameters offers a variety of possibilities that can be modified and adjusted to satisfy desires of specific sites. The network is transforming the urban landscape into a mesh-work of open and available resources via open, shared platforms that encourages citizens in group activities. In a sense, the network henceforth is understood as something that can be assembled retroactively, on demand and in response to an emergent of need and desire.

The grid system and network identify the connection as well as a wide variety of shared, situated displays and interaction surfaces of all sizes which increase layers of urban space. These surfaces can act as infrastructural mediators, performative taxonomies, connectors, parks and public plazas as well as dwelling blocks.

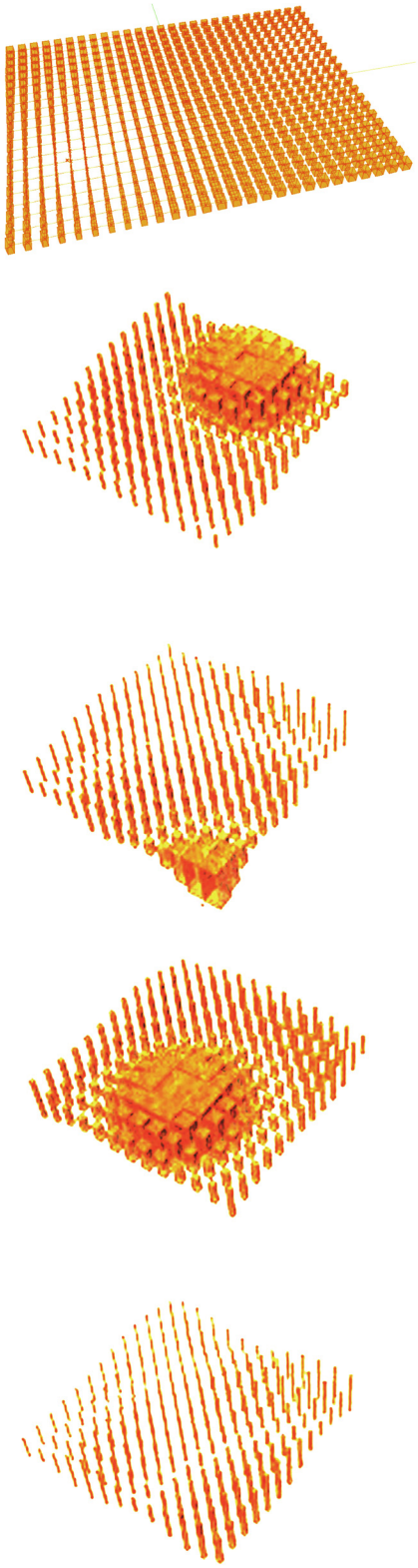


Figure 46- *Density variation*
Source: self driven - Grasshopper Analysis

6.4 Amenities and Programming

6.4.1 Nodes and connectivity

The neighbourhood of the future will contain small pockets of compact mixed-use nodes that will be interconnected by various transportation types. Each node offers different types of activity with different levels of diversity. The activities are placed based on 10, 15, 20 minute walking distance. The nodes are connected through parks, green corridors and streets, offering different level of connectivity whether it is pedestrian, bicycle, car or public transit (Figure 49).

Mixed-use neighbourhoods seem to inherit a vibrant character over cities with segregated land use zoning. Diversity in programming on a smaller scale is preferable over diverse programming on a large scale. Areas that thrive seem to incorporate full city programming, including places to live, work and play. The aim is to offer activities for all age groups and to make the neighbourhood as diverse as possible during the day by offering programs that are available in variety of time spans (figure 47, 48).

The city's residents gather for recreation, shopping, sports and other activities. Schools and childcare centers, sports clubs and club houses are located along the public spaces. A layer of urban agriculture is also introduced.

Urban agriculture can be briefly defined as the growing of plants within and around the cities. The most striking feature of urban agriculture, which distinguishes it from rural agriculture, is that it is integrated into the urban economic and ecological system: urban agriculture is embedded in, and interacts with, the urban ecosystem. Thus, this system incorporates the use of urban residents as resources. It generates a direct link with the urban consumer, directly affects the urban ecology, generates an urban food system, and creates breathing space in the dense localities.

Figure 47 - *Existing program diversity in Don Mills (Age-Time)*
Source: self driven

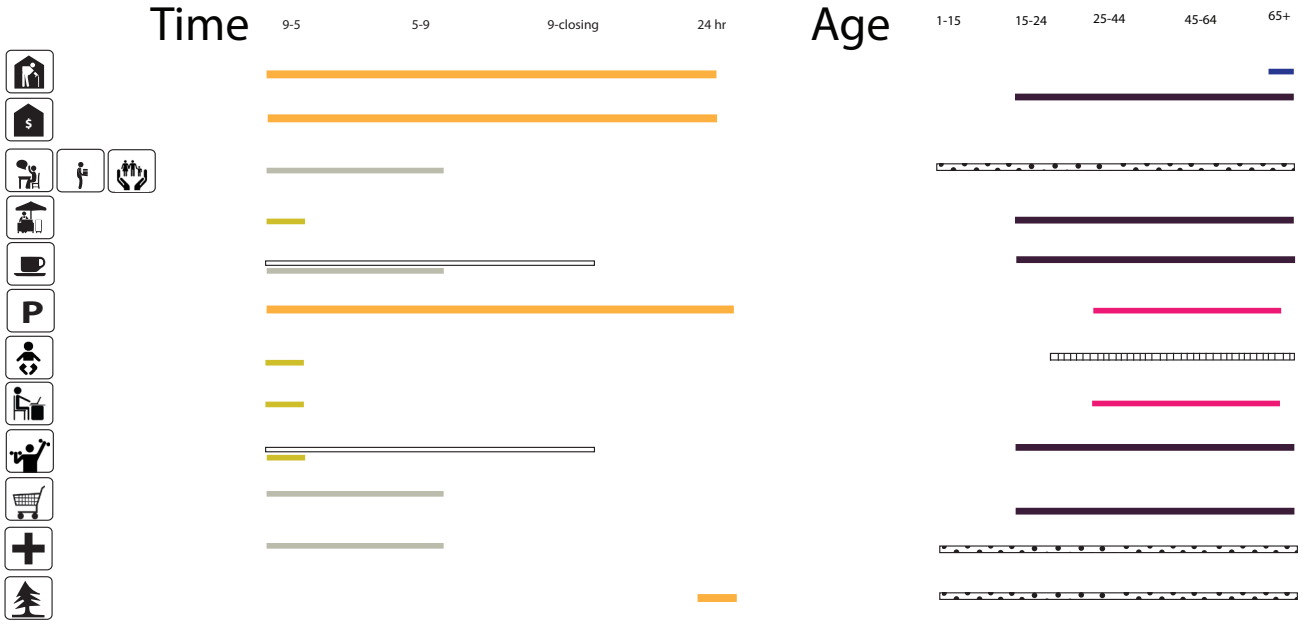


Figure 48 - *Proposed program diversity in Don Mills (Age-Time)*
Source: self driven

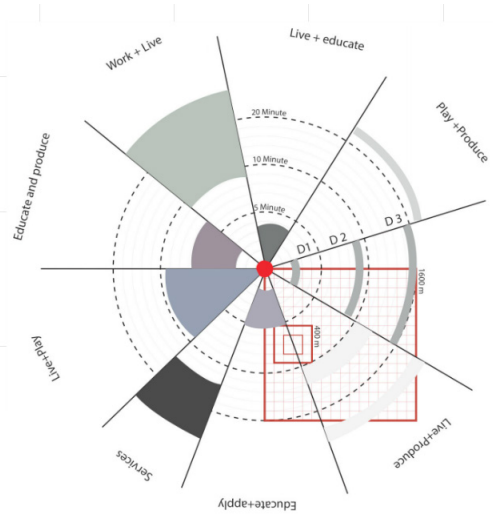


Figure 49- *Activity placement -Source: self driven*

6.5 Social Interaction

While people also need privacy, healthy social interaction is important. A mix of varying types of communal spaces is important in avoiding the isolation within neighbourhoods. These spaces should be very communal like parks and squares, moderately communal like private courtyards, and private like terraces and private yards. Accessibility is also important; therefore, there is no dissociation between flows and places. The aim is to capture a progressive sense of place through continuation of the communication corridors and programmatic substance.

One interesting issue that an analysis of St. Lawrence brings to attention is the typology of living which the area adopted. One of the guiding principles of the design was to have all buildings face directly onto the street, unlike modern towers that had entrances hidden within private streets. What is also important to note is the way by which communal living was integrated into the project. There is a mixture of three different levels of communal living. A linear park lines the section between Jarvis Street and Parliament Street, and this completely public space brings the community together (figure 50). It provides landscaped space to those in high density living that may not have access to a yard or open space. This concept provides a potentially animated element to the area, creating an anchor for the

community. In addition, there are semi-private communal areas that are part of high density buildings. These areas are shared courtyards within the buildings, offering a bit more privacy to residents. Finally, there are private spaces attached to the town houses in the development, for those who may not be inclined to communal living and prefer privacy. The three types of spaces show the diversity which the neighbourhood planners adopted as part of their mandate.

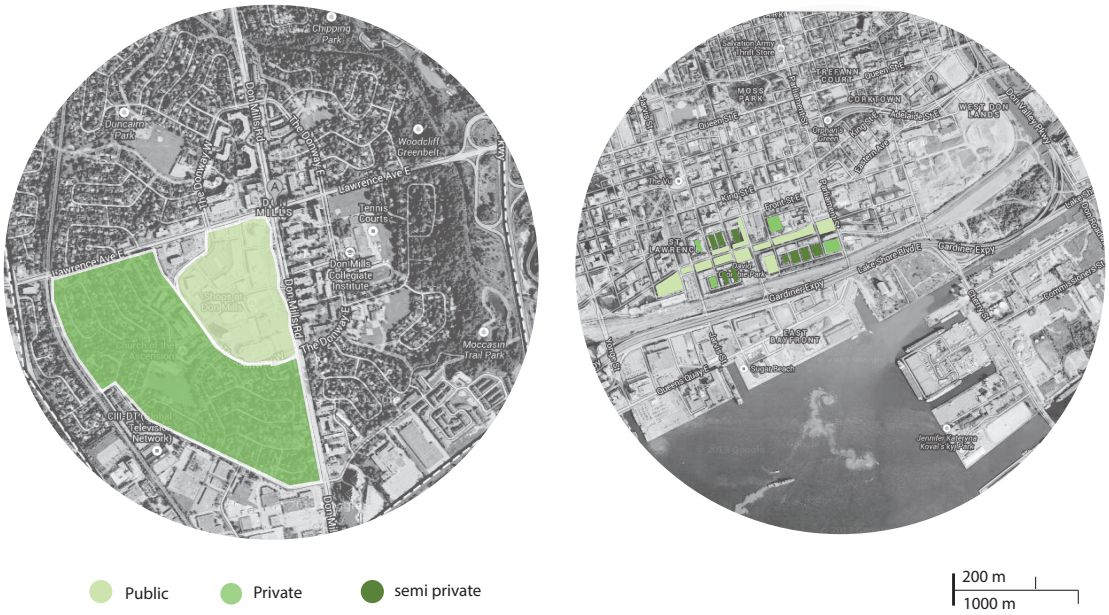


Figure 50 - *St. Lawrence And Don Mills Communal spaces comparison - Source: self driven*

6.6 Dwelling types

Analysing urban and suburban dwelling type a combination of housing typologies have been introduced in order to address the needs of all age groups and personalities. Each dwelling type offers qualities in response to the demands (Figure 51).

- The flexible house: can be adapted and modified to any subsequent use, even other than that of a dwelling
- The office house: with modular spaces, allows occupants to work at home.

- The piazza-house: with collective meeting points that make it easier for residents to get together in open spaces within the building.
- The hotel house: with commercial and leisure services that operate twenty-four hrs /day
- The assisted-living house: ensuring assistant and protection in the immediate environment.

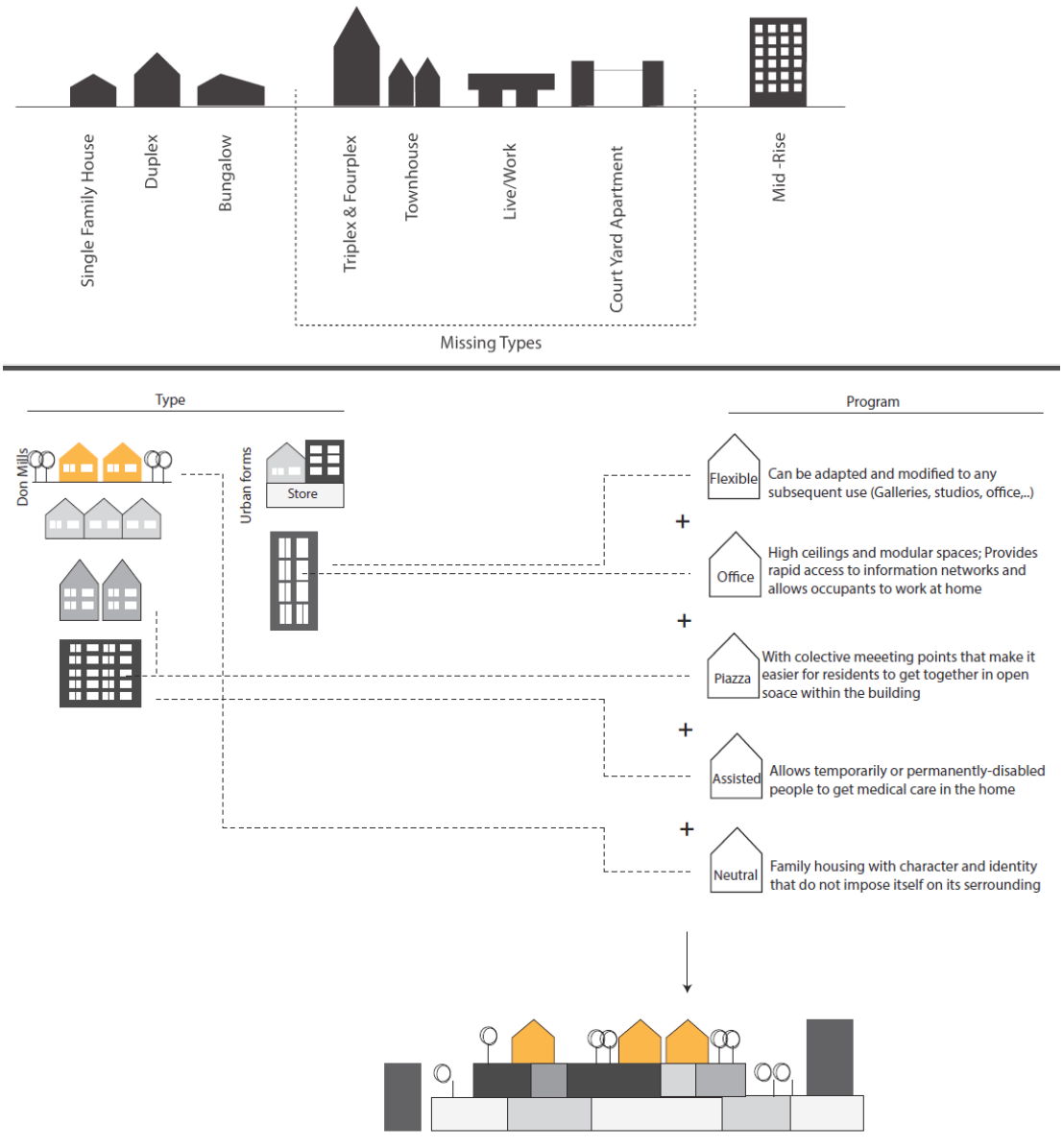


Figure 51 - *Dwelling types*
Source: self driven Retrieved from Density Is Home. a+t architecture,by Per, A. F , 2011

6.7 Parks and open spaces

As previously mentioned, modern urbanism defines communal spaces as segregated green spaces within the neighbourhood. These areas are usually blocked by the backyards and are being used by selective group of people within the neighbourhood (Figure 50). Following postmodern principles and influenced by contemporary theories of urban design the park spaces are being redefined as an active surface. The aim is to introduce another layer of urban agriculture and public garden that is accessible for the residents yet publicly available to experience. Parks and open spaces also function as social hubs whether for markets or events. To make it accessible for everyone within the neighbourhood, the essential size of the green space has been divided into smaller portions and will be spread within the area, so instead of having one large open space there will be several smaller scale open spaces that can offer a variety of programs and functions at the same time (Figure 42).

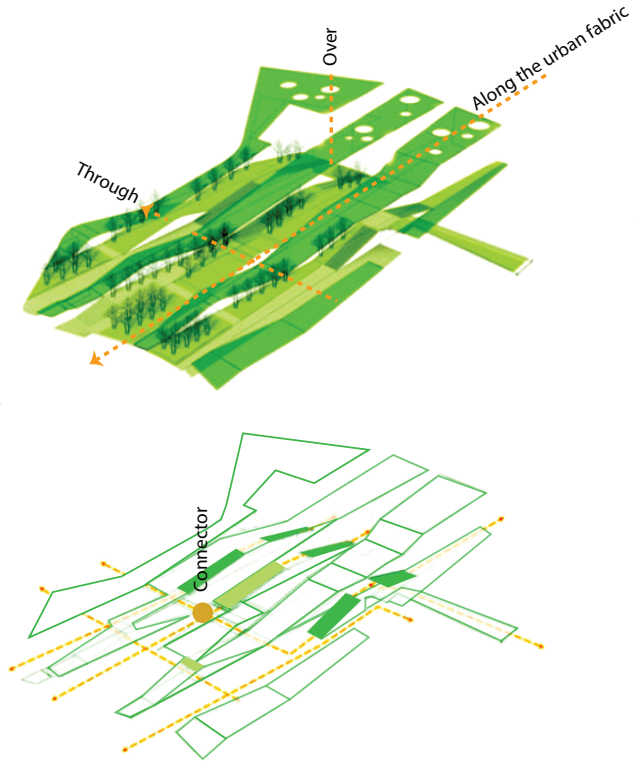
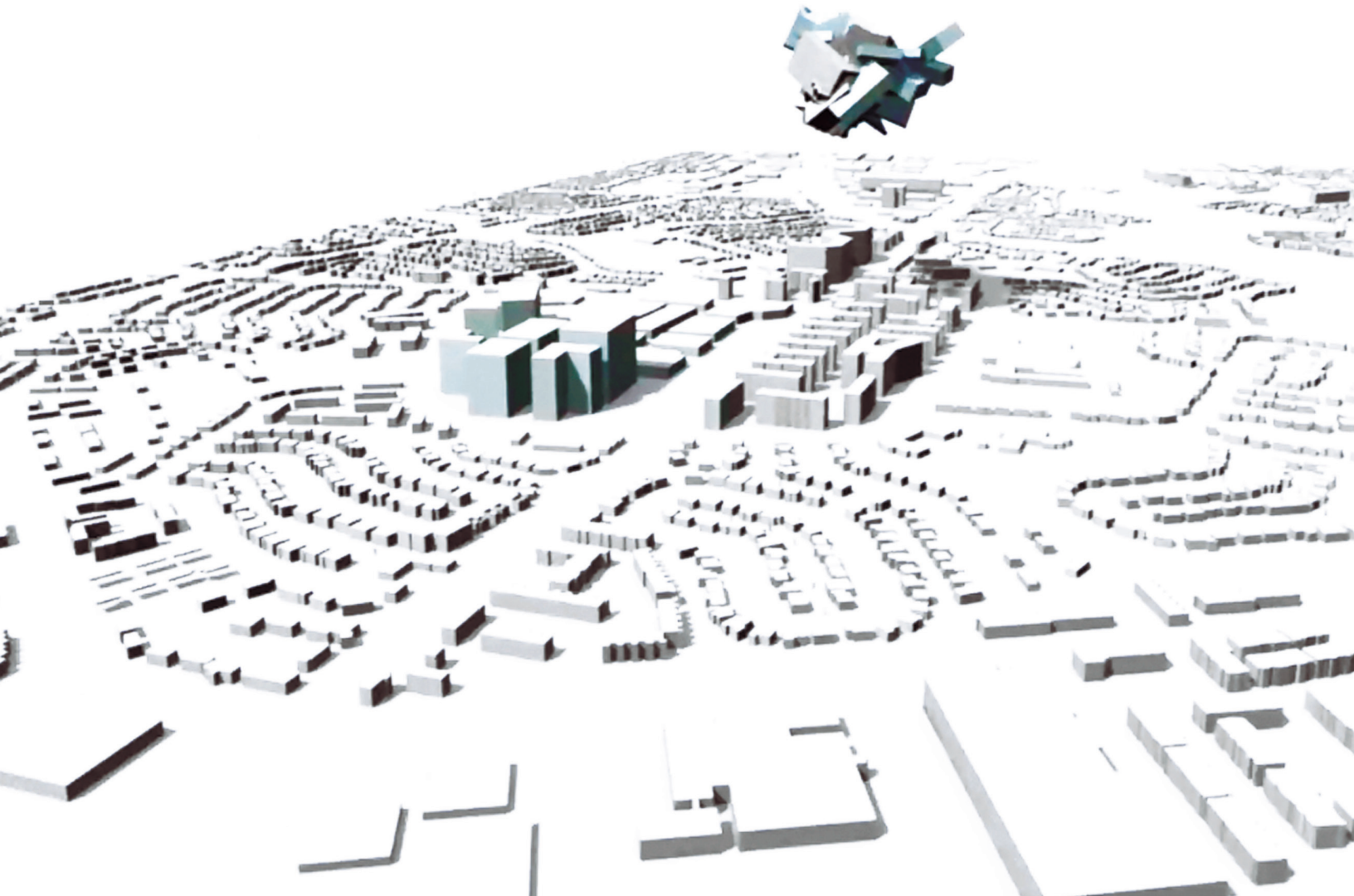


Figure 52 - *Park and green spaces - Source: self driven/ Reprinted from designs the Helping Park in the city of Tianjin, China, retriced, Retrieved 2013, from http:// my.opera.com/CHINHQUAN- by: Perkins+Will , 2008, designs the Helping Park in the city of Tianjin, China*



7.0

Changing the morphology of Don Mills

This project intends to offer a vision for modernist sprawling neighbourhoods and move them into the twenty-first century by focusing on stitching together the fabric and building communities within cities.
The aim is to transform the existing part of Don Mill into an incubator for green jobs, technology and the growth of the Don Mills economy.

This project intends to offer a vision for modernist sprawling neighbourhoods and move them into the twenty-first century by focusing on stitching together the fabric and building communities within cities. What is being proposed is a polycentric suburbia where cities will become a network of multiple dense urban nodes where people will live, work and play. These nodes will be a part of an interconnected network that allows for freedom of mobility by many means of transit so that the entire regional landscape becomes accessible. Urban nodes will be about living. Nodes will be equipped with everything desired for sustaining a community and a city. Leisure activities will be available so will places to work and to build an economy whether in an office or at home. There will be destinations in nodes to encourage people to go from one node to another. The project is a vision for a twenty-first century neighbourhood.
At the moment, the neighbourhood fabric is a combination of segregated functions. The design proposes a radical shake-up of the neighbourhood in both diagrammatic and pictorial terms. Don

Mills design principles are being respected while modified with re-invention of built and open spaces, animating new possibilities and new experiments within the neighbourhood.
The open green spaces are unique characteristics of Don Mills. While, respecting the quality of the open spaces, these spaces are reinvented as destination points bringing all the parts together as a unified whole.
Another principle of Don Mills development was the affordability and diversity of the neighbourhood. Valuing the existing context, the new developments offer another layer, a neighbourhood-within-a-neighbourhood which comprises a central business district, residential development, cultural facilities alongside a new pedestrian trail yet offering variety of housing types and different affordability.
The aim is to transform the existing part of Don Mill into an incubator for green jobs, technology and the growth of the Don Mills economy.

7.1 Interventions

The interventions are introduced in different scales as: Small, Medium and Large.

The interventions are introduced in different scales: small, medium and large.

Small:
The small interventions are on the existing context, by reprogramming the existing plazas, office buildings and public amenities into vibrant and diverse facilities that satisfy the desires of the residents.

Medium:
The medium interventions also target the existing context, introducing infill between and on top of existing structures to intensify the programs in the area. As for the medium interventions, solar panels are being added on top of existing mid-rise apartments and public office buildings. Wind turbines are being placed along the existing rail, the aim being to improve the quality of existing context and enhance the ecology and economy of the neighbourhood.

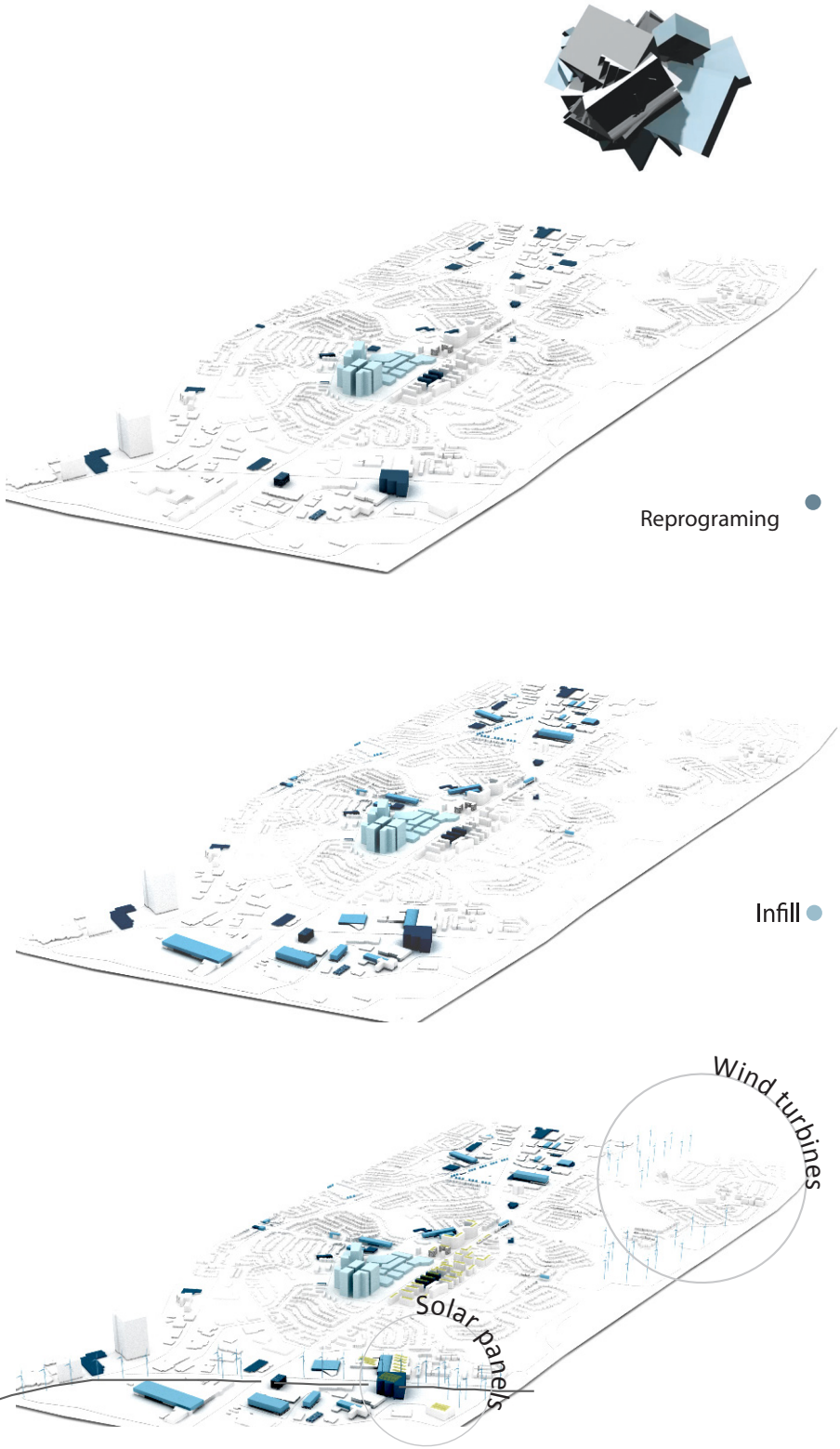


Figure 53 - *Applying Interventions on Don Mills - Source: self driven*

The large interventions are the Nod, injecting new developments on open, publicly-owned spaces and introducing a mixture of programs, the aim being to intensify and diversify the area and reformulate the public realm.

7.2 Large Interventions (Nodes)

7.2.1 Network and Connectivity –Node Placements

One of the main differences of modern versus postmodern urbanism is the way they define communal spaces within the neighbourhood. Analysis of a modern suburban area(Don Mills)shows that although there is a public park as part of the development, there is also large amount of land designated as private in the form of a backyard and front yard(figure 54). While the park may be used by youth and for strolling, there is a high probability that the yard is where intense outdoor living occurs. It has the appearance of being very isolated. Since each development has its own park, the result is a number of public parks concentrated into one area. So, in turn, the park is actually semi-private as it is exclusive to the development. Semi-privacy is reinforced by the backyard of homes in a development facing the park (figure 50).

Therefore, the nodes are placed on existing open spaces and school sites, these areas being the only open and publicly-owned lands in Don Mills. Although the open spaces are essential to the neighbourhood, they also act as a separation within the neighbourhood. To become less of a barrier in order to stitch and unify the suburban landscape, these sites then become prime land for development. The idea is to use the spaces to stitch the new and old development. Another layer of open spaces which is equal in size but more spread around will be added to the site in order to preserve the quality of life and space.
Each node offers different programs in response to the type of dwelling and public school around it. As mentioned earlier, the new grid network is becoming more dense and concentrated around the nodes. Streets and corridors also become narrow toward the inner part of the nodes in order to define smaller blocks and make easier pedestrian flow (Figure 57).

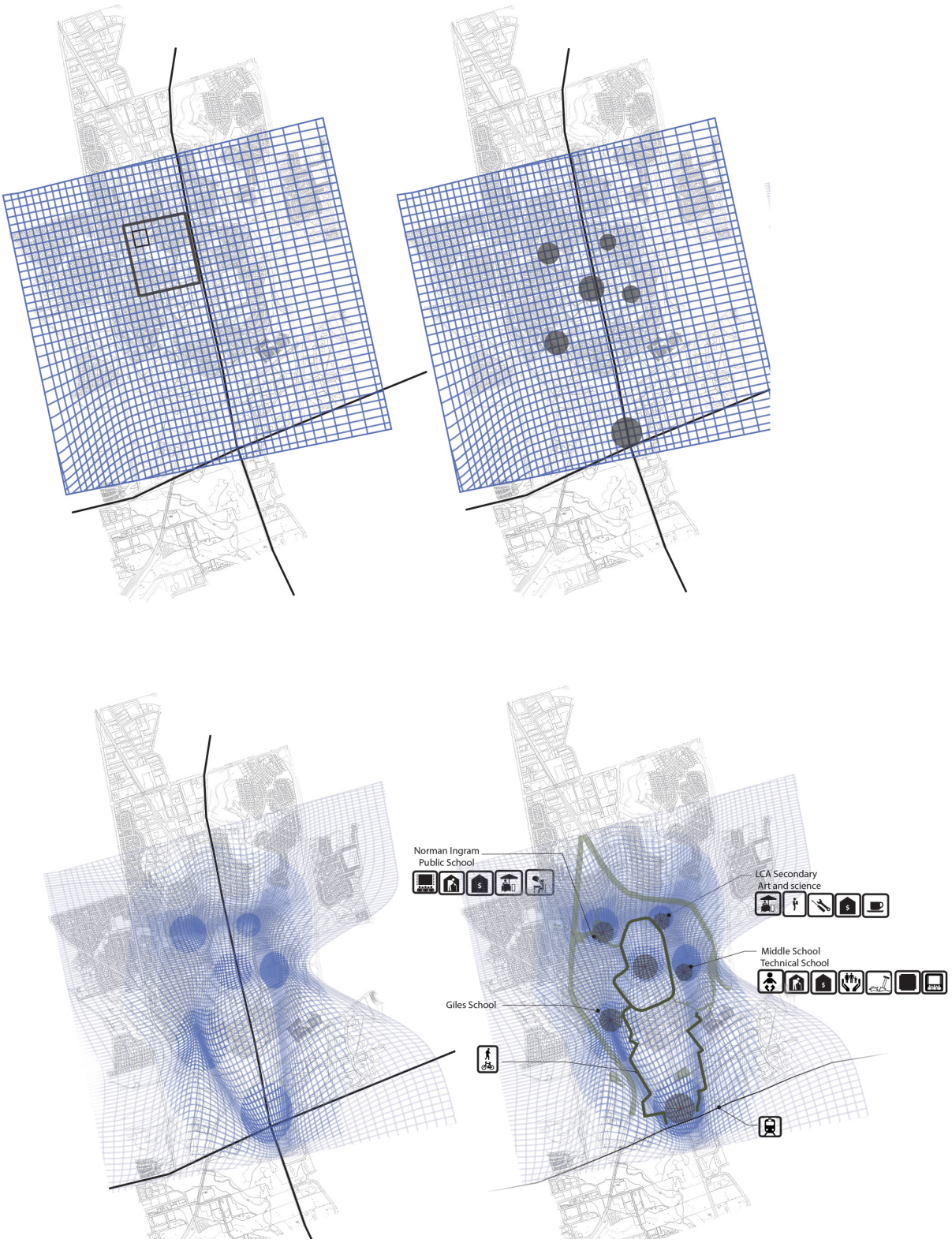


Figure 54- *Applying the grid on Don Mills* - magnetic effect of the nodes on the grid-Defining the programs
Source: self driven base on Grasshopper analysis

7.2.2 Density

To figure out the proper density for Don Mills, a comparison with a similar urban neighbourhood is necessary. The St Lawrence neighbourhood is very similar to Don Mills in terms of the demographics, yet half the size(area) of Don Mills (Figure 55).

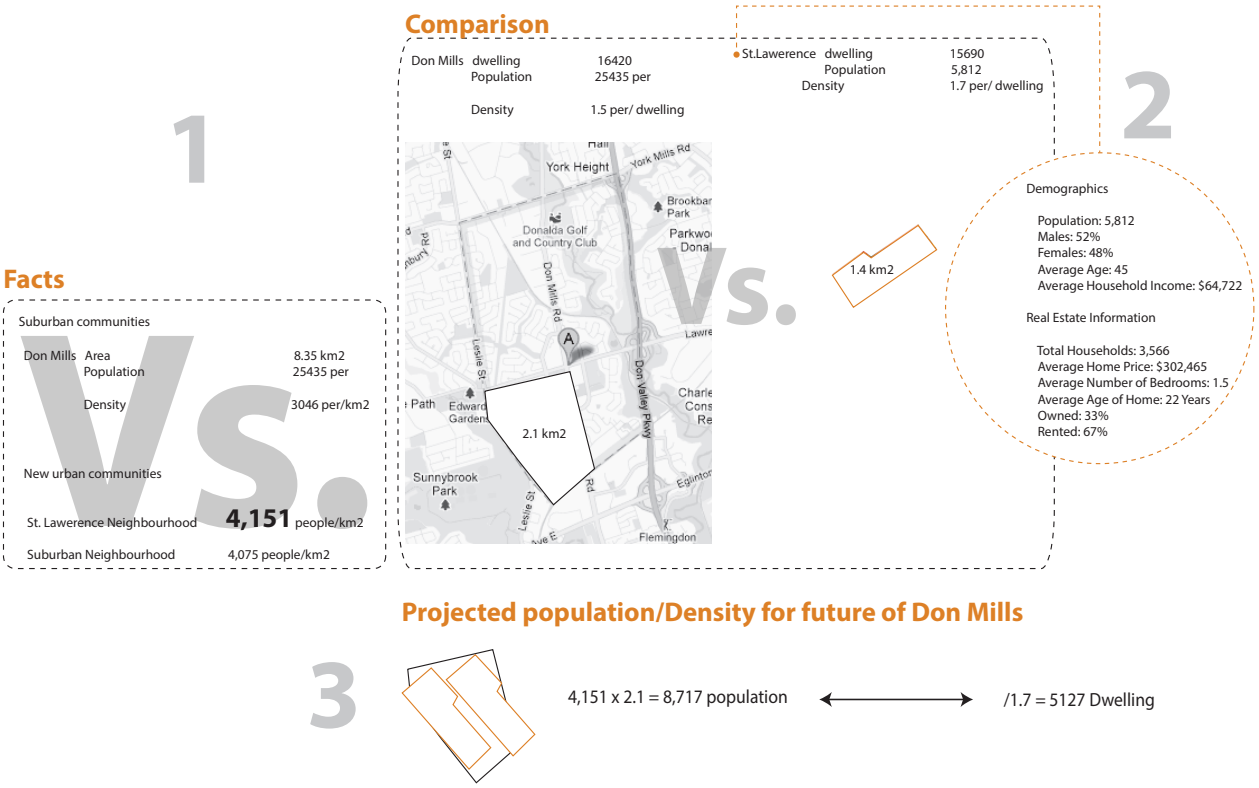


Figure 55- *Calculating the proper density- Source: self driven base United Way of Greater Toronto and The Canadian Council on Social Development. (2004)*

Based on an analysis of the city's fabric and inspired by MVRDV'S proposal for Grand Paris (Appendix A), the future programmatic needs have been extracted. MVRDV proposed 5km x 5km x 5km volume of desired programs for the growth of Paris. Comparing the population of Paris and Toronto and the projected growth of each city, the 5km x 5km x 5km has been modified to a 500m x 500m x 500 m volume of desired programs (Figure 56).

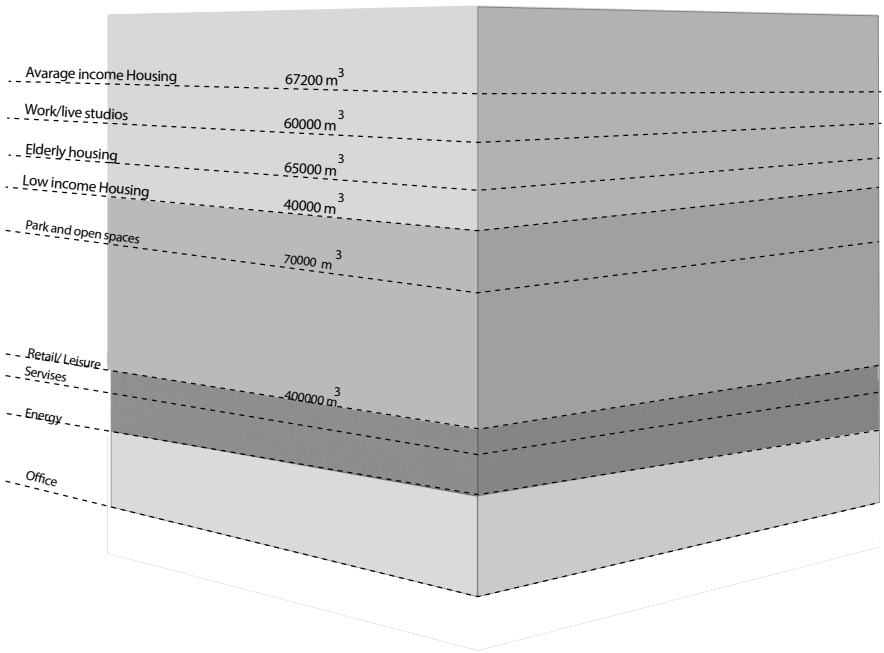
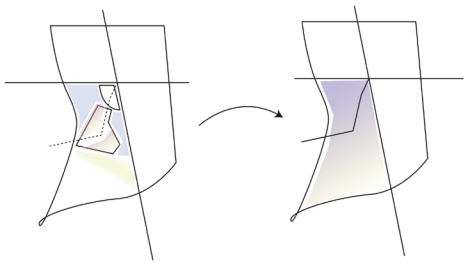


Figure 56 - *Volume of the programs - Source: self driven / base on MVRDV, Grand Paris*

7.2.3 Stitching the Suburban Fabric

The focus further zooms into a single node that is located at the south east of Don Mills. The area is located in a way that challenges the connection and relation between the existing and the new developments. From the north, the area is blending into Don Mills Center which is a new development, east of the site are the single family houses of Don Miles, while on the west part the site faces the affordable row houses and townhouses, from the south the site faces the big box store and the commercial part of Don Mills.
Therefore, the selected node will illustrate the different qualities of the design and how different aspects that the design can be addressed. The idea is to create a connection from Leslie Street to Don Mills center in a way that boost the social interaction and develop the quality of the surrounding neighbourhood.



The shape of the node is defined by applying the magnetic effect on the grid system. The grid is being extracted from the shape to modify the street pattern. Variety of street types is introduced to maximize the connection and increase the pedestrian and vehicular flow through the neighbourhood (More detail in section 7.2.6).

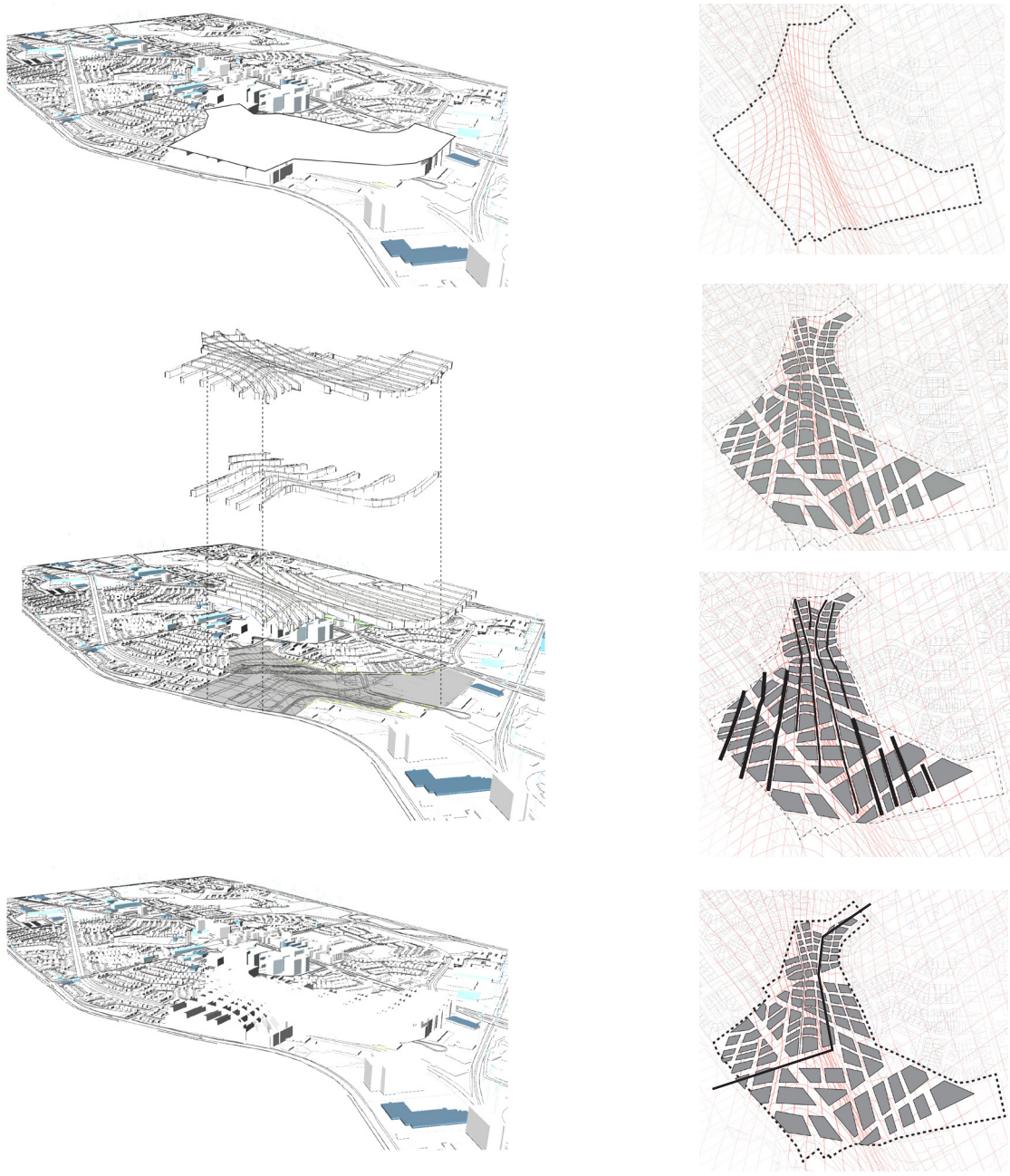


Figure 57 - *Defining Street patterns by applying the magnetic effect of the nodes on the grid system- Source Self driven.based on Grasshopper analysis*

The area is built up with a central amenity space offering multiple activities .Towers and surrounding buildings that incorporate housing and other mixed functions are added around the central space offering a variety of densities. The result is a new urban fabric with an abundance of green and pedestrian space running through the site.

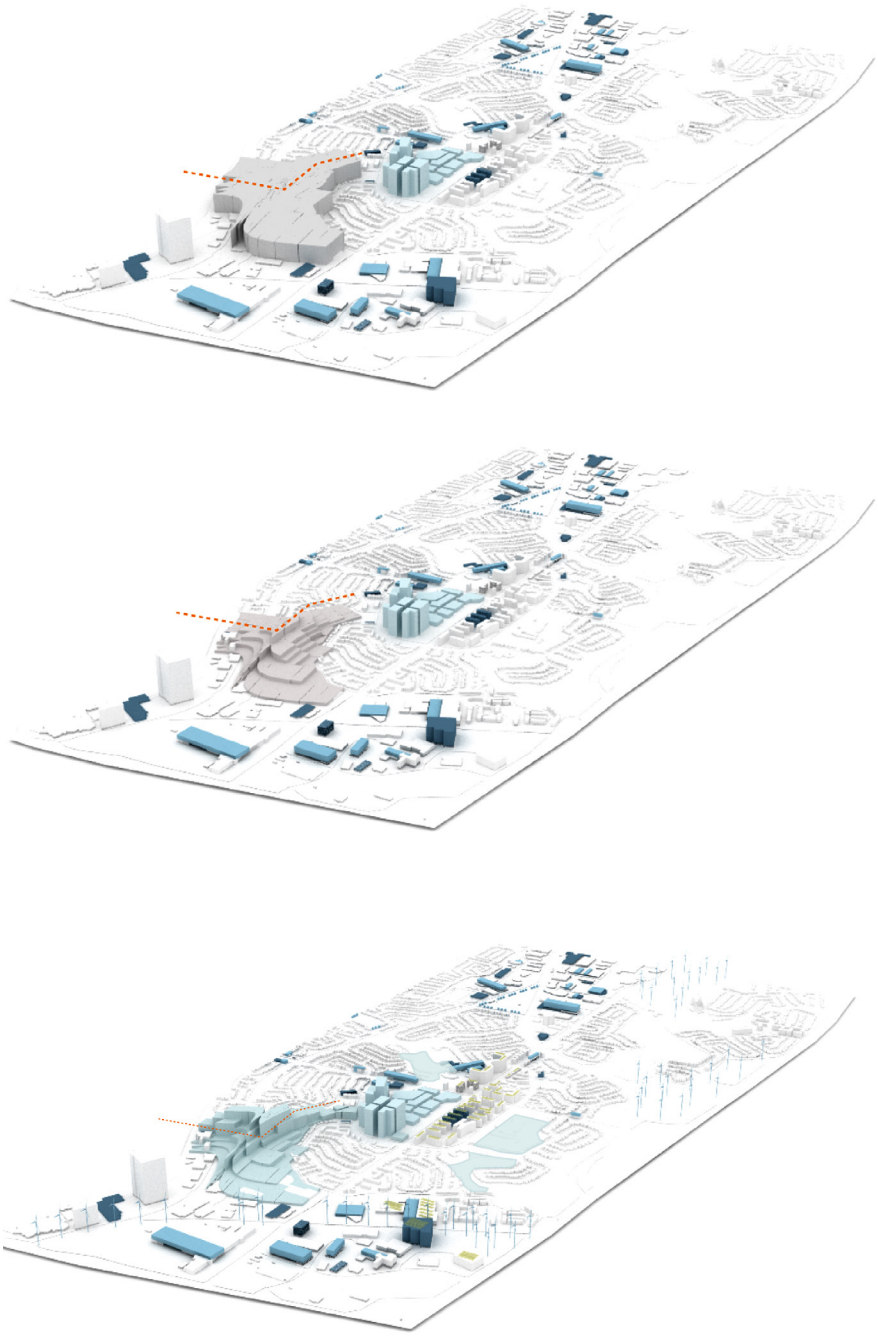


Figure 58 - *Defining the shape of the node by applying the magnetic effect of the attractor line.*

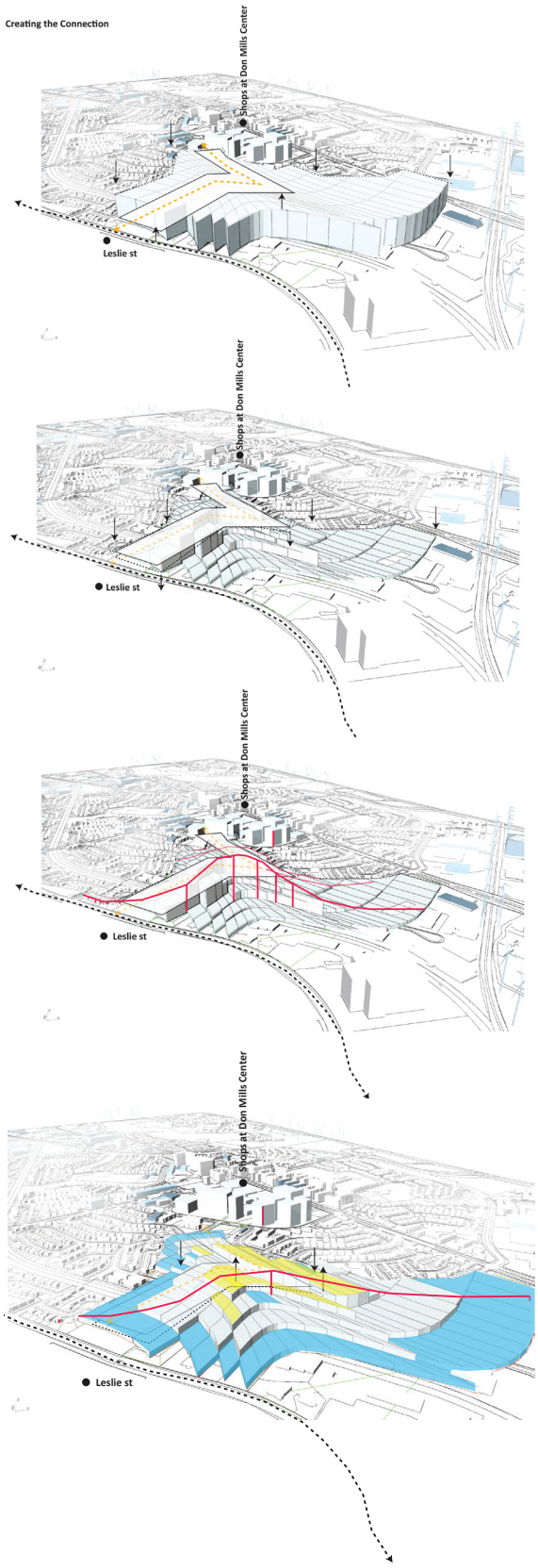


Figure 59 - *Modifying the shape of the node base on data analysis- Source: Self driven*

The next step is to modify the shape of the node, the aim being to blend in the new development with the existing context. As a result, the height is scaled down at the edges of the node to follow the height of the existing family housing. The maximum height of the new development is following what has been proposed and approved for Shops at Don Milles's residential towers. The other variable that affects the shape of the node is the block pattern. Although the tall blocks are placed along the central connector line to maximize the solar penetration through street and open spaces variety of building heights is encouraged as it is shown in figure (59,60).

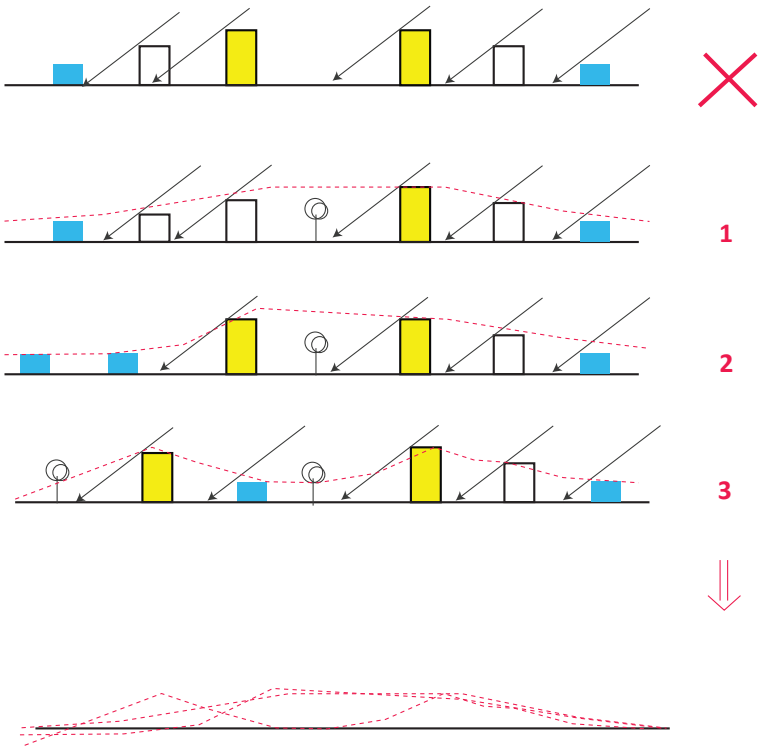
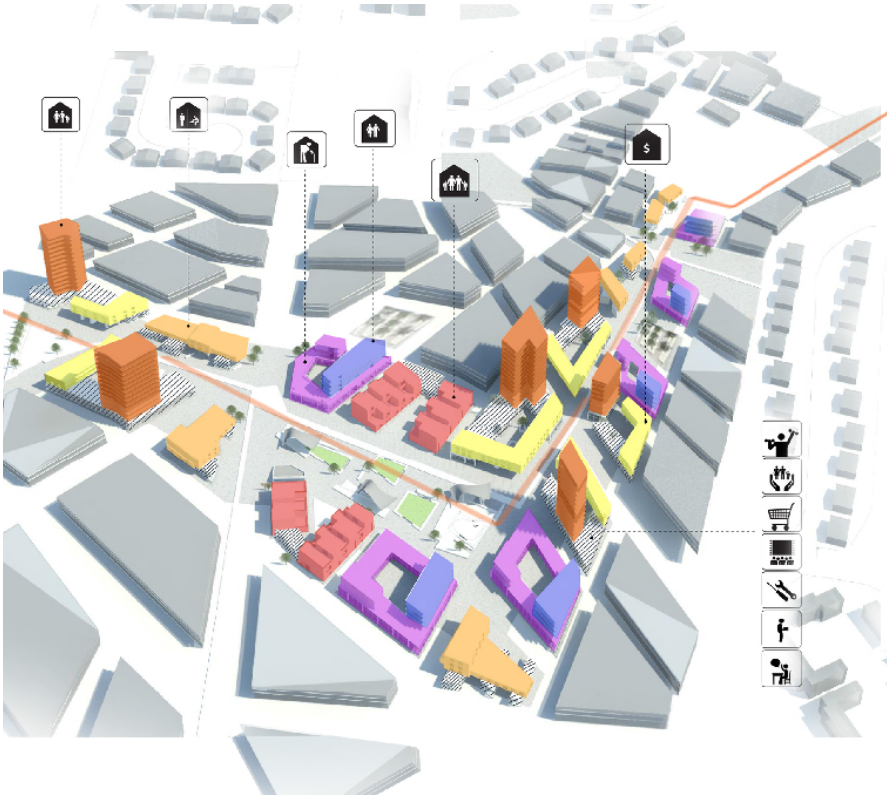


Figure 60 - *Defining the blocks height- self driven- Grasshopper analysis*

7.2.4 Program

The urban node is designed to provide a full range of programming in order to become a vibrant neighbourhood.
The programs include but are not limited to, elderly facilities, commercial and office spaces, workshops, cafés and restaurant, groceries and urban farm, community centers and housing. The programs may also get modified in response to specific sites and locations, as well as to create destination points and encourage people to go from one node to another (Figure 61).



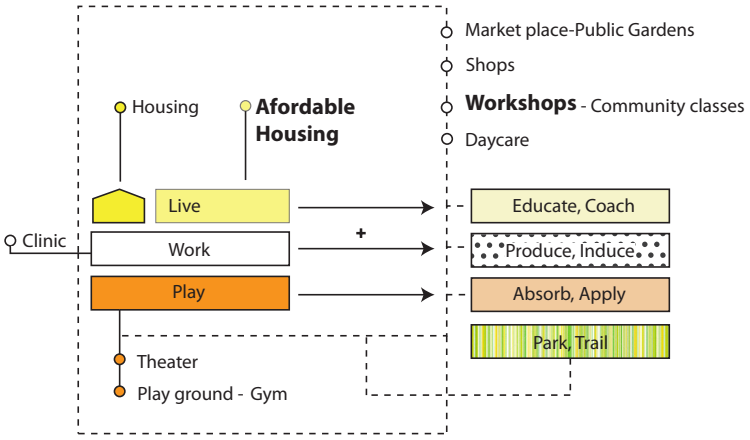


Figure 61 - *Diversity of programming - Source: self driven*

7.2.5 The blocks Typology

4 different block typologies have been introduced and located along the site. Each block is designed in a way to respond to density and circulation of the context (Figure 62).

The first type is offering a low density row housing/semi-detached housing with variety of public spaces on ground level and neighbourhood garden on top. This type is mostly located adjacent to existing housing to respect the view and circulation around the existing context. The landscape of the surrounding eventually rises to create a public plaza with shops and offices, while on the second and third floors the program changes to family houses. The raised landscape also acts as shared green space for the houses.

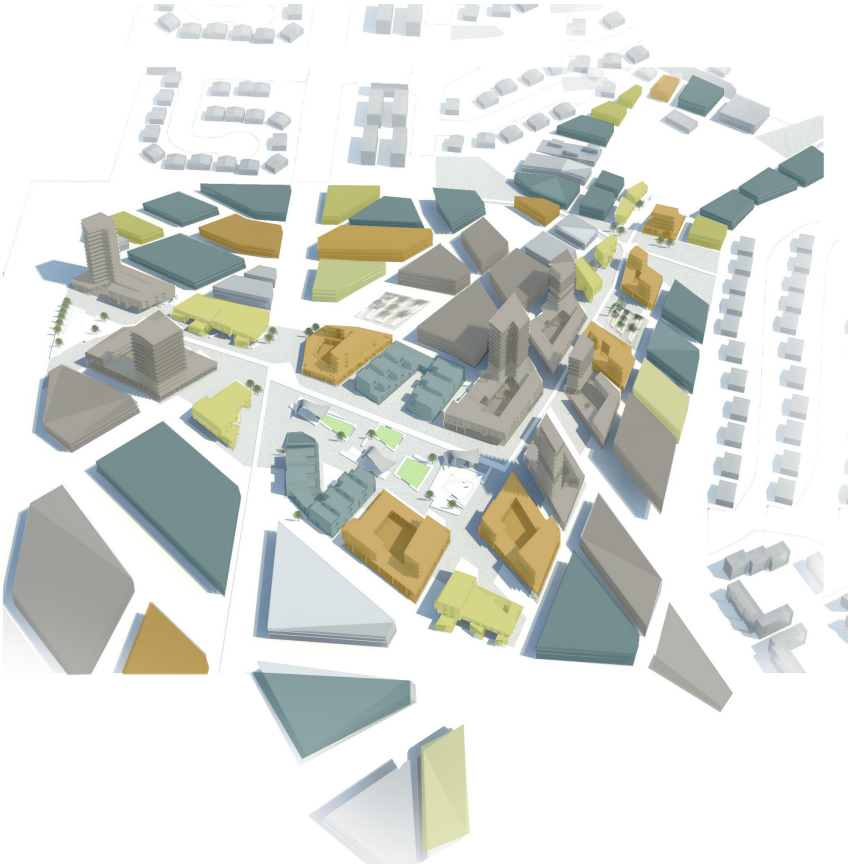
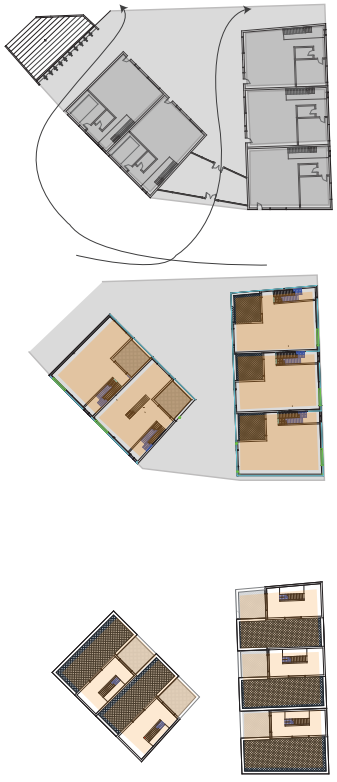
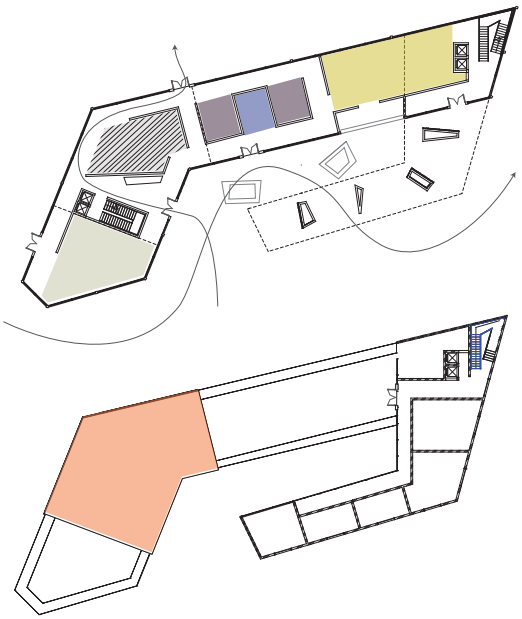


Figure 62- Typologies in Plan-Source: self driven

The second type offers medium density with shared open spaces that encourage pedestrians into a courtyard plaza. The courtyard is fading into surrounding streets and is accessible by the public from two edges (Figure 62,63) . Above those 2 edges which are open, there is an L shaped





Type 1

8 House - 6 (Store-Office) - 1 Communal space

Gross Floor Area 150 m

Type 2

16 Story Tower- Gross Floor Area 400 m^2

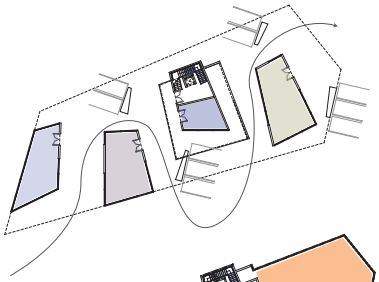
2 Story Work/Live studio gross floor are 800 m^2

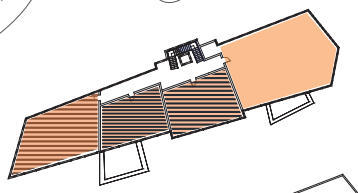
1 Story Commercial gross floor area 500 m^2

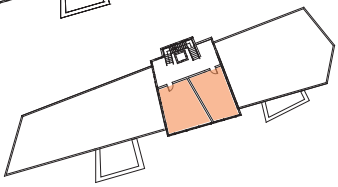
1 Story Communal space gross floor area 800 m^2

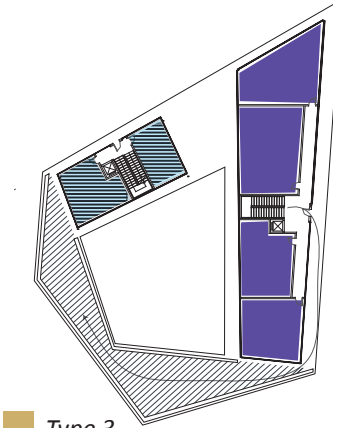
Figure 63- Typologies-Source: self driven

structure that is dedicated to work/live studios. On the other corner of the building, across the opening, there is a 15 story tower which offers small units for couples and youth. Like the other typology, this one also offers commercial and office units on ground level to emphasize the diversity of









Type 3

5-7 Story Apartment - Gross Floor Area 250 m ^{2}

3 Story Elderly facility gross floor are 80 m ^{2}

1 Story Commercial gross floor area 900 m ^{2}

1 Story Communal space gross floor area 250m ^{2}

Type 4

1-2 Studio Apartment - Gross Floor Area 250 m

3 Story Elderly facility gross floor are 80 m

1 Story Commercial gross floor area 200 m

the area. These models are located adjacent to roads and existing streets to maximize the interaction of people on street level and create a sense of community and identity. The idea is similar to Le Corbusier's Radiant City, in which the tower was lifted off the ground so the only elements touching the ground are the services of the building, freeing up the entire ground floor for leisure space.

The third type is more private, with elderly housing and facilities on ground level around a private courtyard and mid rise apartments for family units on top. The unique shape of these blocks allow for more controlled yet open and easy interactions among different generations. These blocks are located adjacent to open and public spaces so that the residents can interact with public and everyday life flow (Figure 62,63).

The last and fourth type is following the same typology as Don Mills center with shops in ground level and a level of apartment units on top. This type is designed for smaller blocks and placed in between others to control the diversity of the different areas. In addition, portions of new residential development that do not provide retail or active uses at grade should incorporate residential units with direct street access to the greatest extent possible (Figure 62,63).

7.2.6 Streets

Going over different street types and connections, an integrated pattern is chosen. The location and connections are defined by the new grid that has been layered on top of the area which has wider streets at the edges and narrower ones towards the center to make the pedestrian and traffic flow more fluid. Studies show that the traffic gets lighter when having more streets with more connection points (Rogers, 2000). To increase the diversity and interaction, a different type of street is introduced, practiced by the Dutch and known as Woonerf. Woonerf is a living street where pedestrians and cyclists have legal priority over motorists (Figure 63). The unique configuration of streets encourages low speed traffic with seating areas and parking spots alongside. The main connection of the nodes to other nodes is tracked by Woonerf in order to identify the direction and lead people towards it (U.S. Department of transportation, 2006).
Aside from the Woonerf Street, the other connections are categories within three different typologies are (Figure 65):

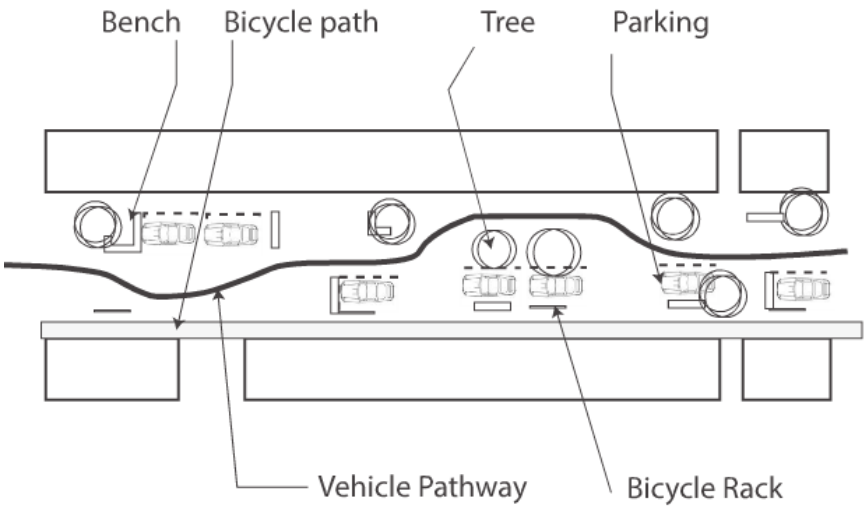


Figure 64- *woonerf Streets - Adapted from - Federal Highway Administration University Course on Bicycle and Pedestrian Transportation-, 2006, http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/chapt20.cfm*

PRIMARY CONNECTOR STREETS

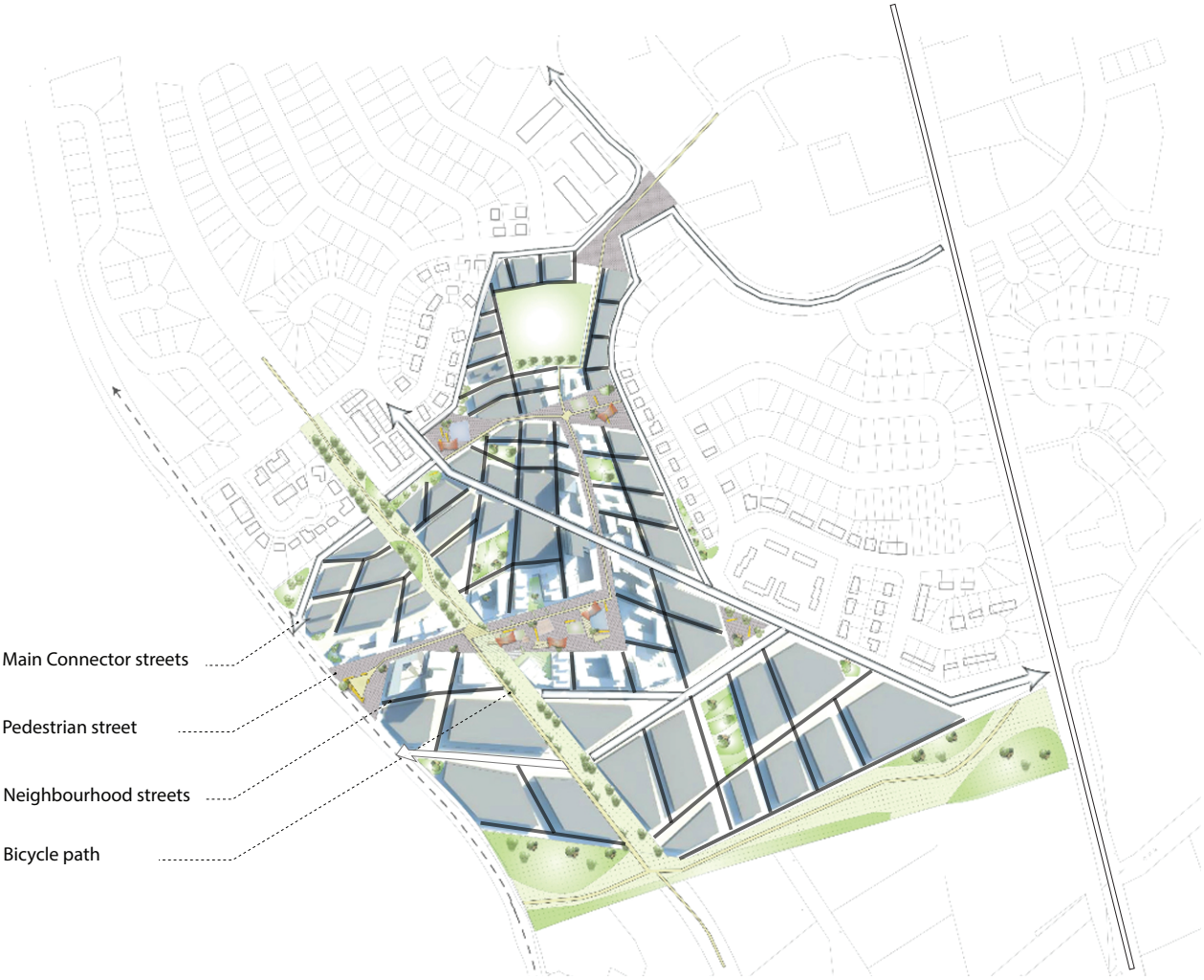
Primary Connector Streets have a wide reaching function for vehicular traffic and are less traveled by pedestrians. Connector streets are often used to provide vehicular access to primary existing streets, connecting the new development to Don Mills and Leslie Street (figure 64).

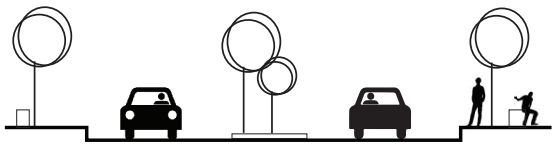
PRIMARY PEDESTRIAN STREETS

Primary Pedestrian Streets are like Primary Urban Streets in their need to insure the comfort and visual interest of the pedestrian. However, reinforcement of the human scale, a vibrant street life, including sidewalk cafe and spill-out retail activities, and pedestrian priority are dominant.

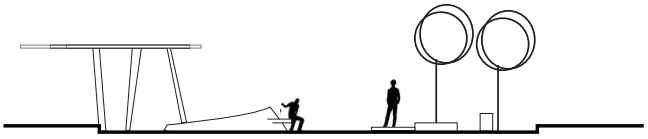
NEIGHBOURHOOD STREETS

Neighbourhood Streets support stable residential neighbourhoods and should reinforce the residential scale of the street. These streets are the secondary connectors that run through the new developments, connecting the inner streets.

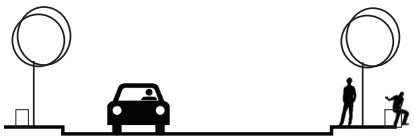




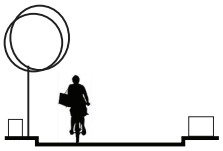
20 m - same as Don Mills Main streets



Pdestrian street- Min 10 m/ Max 40 m



10 m - same as Don Mills inner sreets



3 m

Figure 65- Streets typology and connections - *Source: self driven*

7.2.7 Public spaces

The public spaces are developed by the space in between the built forms. A Variety of public, semi-public and private courtyards have been introduced to create the diversity within the open spaces. A public plaza goes through the site connecting Leslie Street to the Shops at Don Mills, intersecting with the existing pedestrian trail. In terms of the program the plaza offers variety of amenities such as, an outdoor amphitheater, water-park, basketball court, Skate Park, cafe and restaurants. The area also acts as a large inner courtyard for the neighbourhood to hold community gatherings and markets. Semi-public courtyards also placed along the public plaza to encourage the pedestrians to walk through the complexes and get engaged with the neighbourhood activities. Public gardens are also placed close to the plaza, along dense areas to balance the hierarchy of built and open spaces (Figure 66).

Figure 66- Communal spaces - *Source: self driven*

Figure 67 - *Rendering showing the central plaza - Source: self driven*

The surrounding context with parks, forestry, courtyards and green fields can be stitched together to create a network of pedestrian accessible green space appropriate for walking and biking. The central amenity space becomes a unifying point where neighbourhoods and existing commercial areas can converge, creating a vibrant public area with gardens, sports, public plazas and other leisure activities. Within the development, connective green corridors run in-between housing areas acting as communal areas where they become areas of high social interaction (Figure 67).

Figure 68 -Rendering planters showing built in seatings and functions

7.2.7.1 Planters

The planters are designed following the same strategies as the street and blocks. The attractor lines which in this case are defined by pedestrian and bicycle pathways are mingling through gathering spaces and shape the planters (Figure 69).

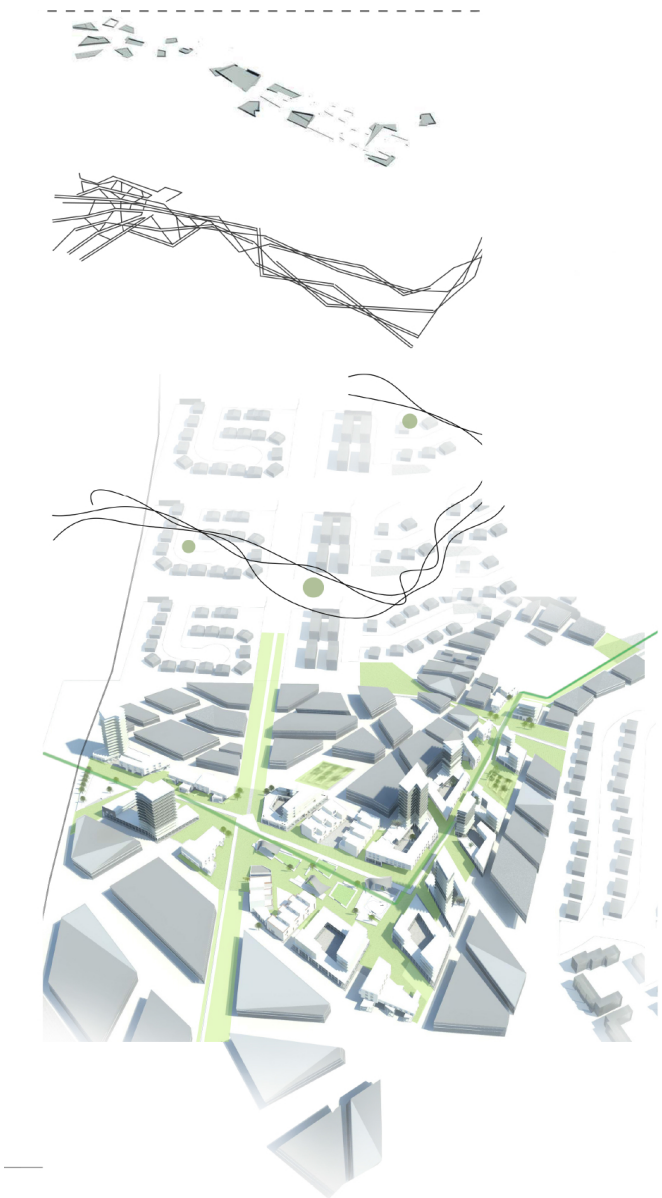


Figure 69 - *Attractor lines shape the planters - Source: self driven*

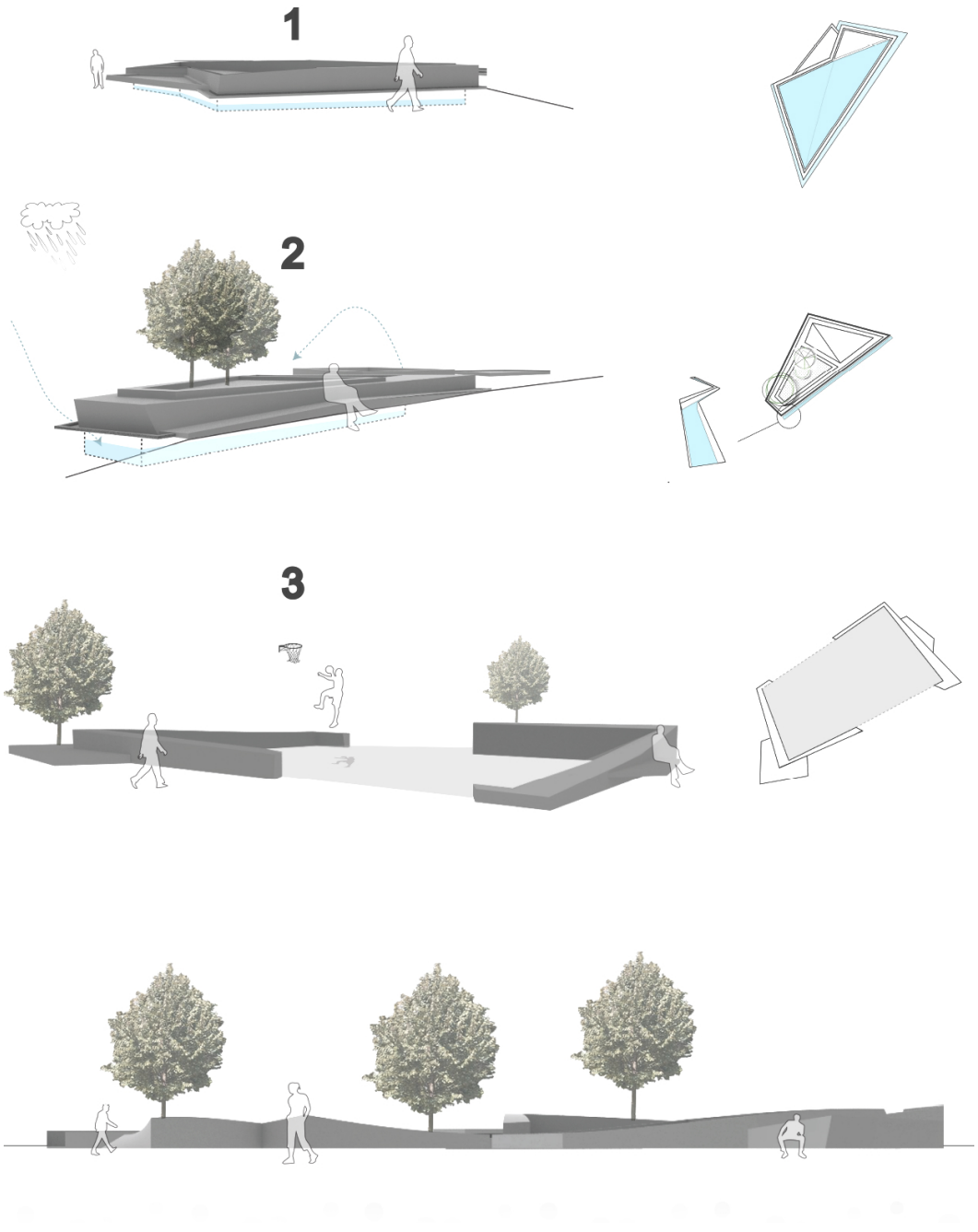


Figure 70 - Planters typology - *Source: self driven*

The planters are designed to satisfy variety of programs, for instance a planner also serves as a water collector, playground, public garden or bicycle rental. Each planter also provide built in seatings (Figure 68,69,70).

Figure 71 - Rendering of the Planters- - Source: self driven

8.0

Conclusion

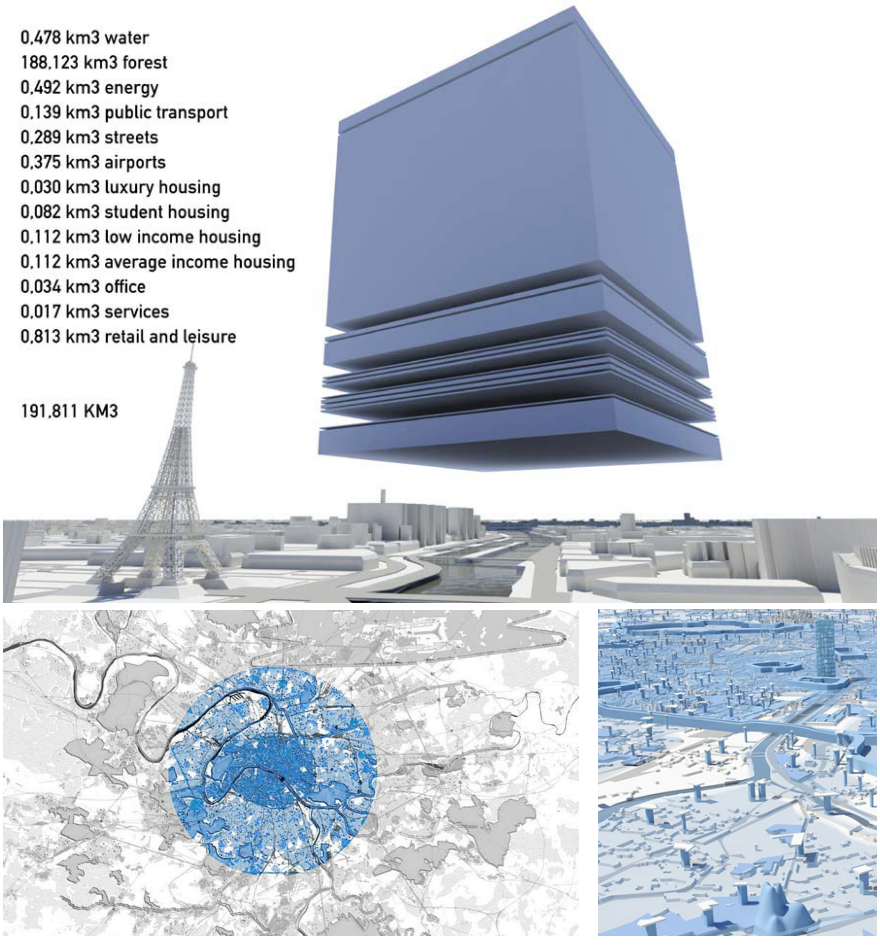
What is being proposed is a polycentric suburbia; where cities will become a network of multiple dense urban nodes in which people will live, explore, work, educate and play. The focus of this thesis is to create a next layer in the evolution of Don Mills and sprawling cities everywhere. This thesis investigates strategies to create compact, interdependent spaces within built environment and re-forms neighbourhoods as a hub for the communication network. Introducing a neighbourhood-within-a-neighbourhood, the ultimate aim is to increase the flow of activities to enhance the economy and development of the area, in hopes of fostering a sense of place, identity and affordability. Although the design principles are set the formation of each and every Node is unique in terms of specific input and data for each site. The purpose of this thesis is to examine the impact of data analysis on formation of neighbourhoods. The variables that are chosen may vary and define a different formation. What is being proposed is a systematic way of designing neighbourhoods yet a more fluid adaptable approach that is also sensitive to the context. The variables that have been adapted through the design part are the basics and the approach can go further by introducing more variables.

Appendix A

GRAND PARIS by MVRDV

Year: 2008
Client: French Ministry of Culture and Communication
Program: Urban vision for greater Paris, 2030
“Paris Plus stands for more: more ambition, more optimism, more density, more efficiency, more ecology and more compactness. Greater Paris needs a strong combination of responsibility and ambition to continue its development, to ensure its consistency and to develop a cohesion that can build a base for a collective enterprise to solve its problems, to enlarge its presence and attractiveness, to create an even more remarkable, exemplary city “ (MVRDV, 2008).

The design/research process proposes a series of 17 large scale interventions. Based on an analysis of the city’s fabric, its future programmatic needs and spatial possibilities MVRDV Research Team came up with the volume of desired programs, a 5kmx5kmx5km cube . Further the design team injects the calculated volume within the existing context, the new developments are combination of infill, add on, new structures, infrastructures, parks and public plazas. In this project MVRDV inserts the calculated volume of programming to the existing city. What have been proposed is an agenda, a tool to collaborate, a method to construct the future cities.



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