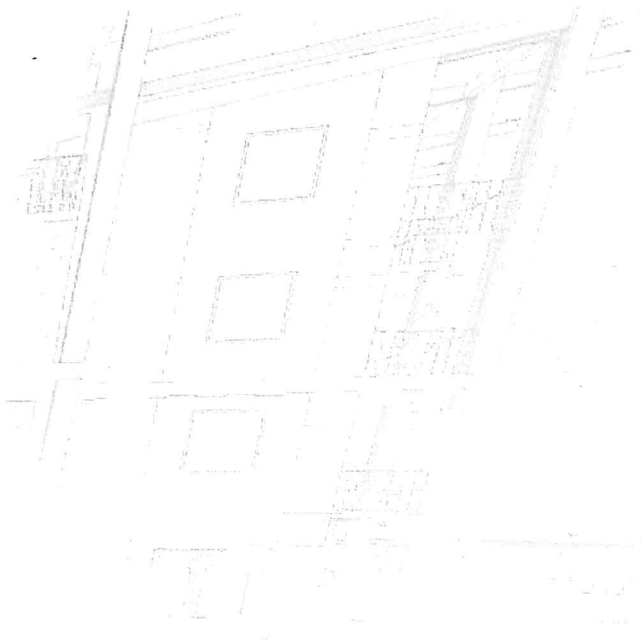

THESIS REPORT

december 2007

ntegrated Community Design and its Influence on Architecture

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contents

introduction

The requirement for this R.A.I.C. Syllabus Thesis was to develop an architectural solution to a stated theoretical position.

The first stage was to compose a Thesis Statement followed by a comprehensive Research Document that together will be used to direct the Thesis.

The second stage was to apply the research and develop a final design solution that satisfies the Thesis Statement. This second stage is divided into three formal presentations, which included:

research, site selection, and site analysis (December 2006),

program, schematic site development, and master site plan (May 2007), and

schematic building design, design development, and final design (December 2007).

thesis statement

There are several significant aspects of quality urban design that form the basis for creating and maintaining healthy environments.

Smart growth strategies that advocate mixed land uses, compact building design, walkable communities, transportation varieties, open spaces, and place-making ingenuity can inform a building's shape, function and essence. This, in turn, will enhance its community and create a more diverse, pedestrian-friendly neighbourhood.

This thesis will prove that the adaptive reuse of an existing shopping mall as a mixed-use facility within a Transit-Oriented Redevelopment can re-establish a sense of place, increase public transit use and become a catalyst for smart growth developments in the City of Edmonton.

The Research Document Integrated Community Design and its Influence on Architecture is a widespread research exercise that explores the relatively novel concept of smart growth as it relates to urban design.

The document is divided into two parts. The first is comprised of seven chapters that address significant urban design issues ranging from greyfield sites, the evolution of urbanism, sprawl, smart growth, New Urbanism, transit strategies, and transit-oriented development (TOD). It is followed by a series of three precedent studies: distinct projects that have applied various smart growth strategies that are analysed in the previous chapters. Each project offers its own unique insight towards smart growth redevelopment that can be used to inform and influence subsequent stages for this thesis project.

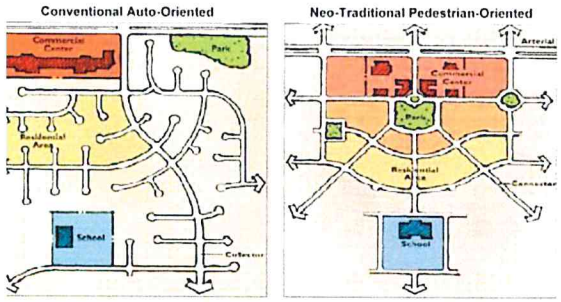
EYFIELD SITES:

- **Abandoned or derelict former commercial sites that are not significantly contaminated.**
- **Are relatively uniform in condition.**
- **Are usually the most obvious and accessible redevelopment sites.**
  - **Some examples include strip mall shopping centres, shopping malls, and "big box" retail districts.**

While the term "greyfields" may not be as well-known as "brownfields" or "greenfields," it is certain that most everyone has seen a greyfield site. Finding them doesn't require much expertise. Fenced-in parking areas or storefronts converted into centers for community policing and health clinics are telling signs. The term greyfield has been coined to describe underperforming or declining shopping malls and strip malls that do little if any business, occupying vast tracks of land surrounded by a sea of empty parking lots, creating segregated wastelands within their own communities. Outclassed by newer malls and shopping centres, these dying business districts are failing to generate the necessary revenue that will sustain their use. Some of them are no longer suitable for regional retail. However, the land that greyfields occupy can be very useful and economically profitable to the local communities. The concept of mixed-use redevelopment can turn these greyfields into vibrant city centers that will be both profitable and sustainable. Many of these shopping centers are ideal sites for transit-oriented developments which can include housing, retail, office, services and public space.

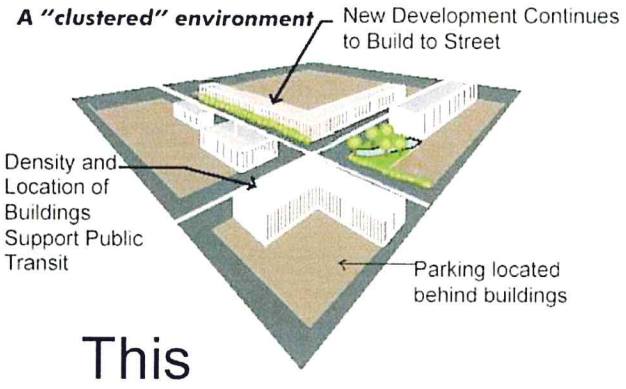
EW URBANISM PRINCIPLES

- Walkability
- Connectivity
- Mixed-Use and Diversity
- Create Walkable Communities
- Mixed Housing
- Quality Urban Design and Architecture
- Traditional Neighbourhood Structure
- Increased Density
- Smart Transportation
- Sustainability



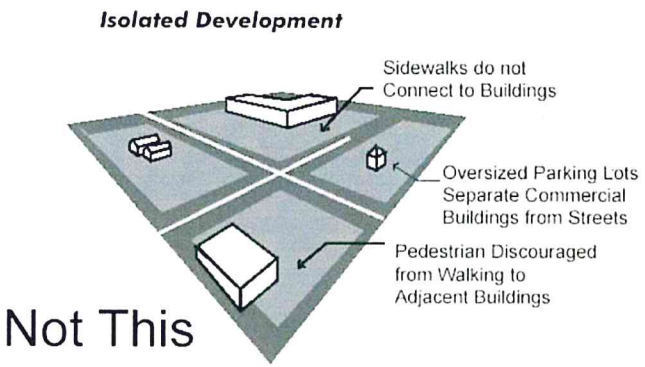
Makes travel by foot or bike difficult
Expensive to service with transit

Balances auto & pedestrian access
Easy to bike or use transit



This

Orienting buildings along the street helps establish a "park once" environment where people are encouraged to walk between buildings.



Not This

Buildings too far from street, resulting in long walks through parking areas.

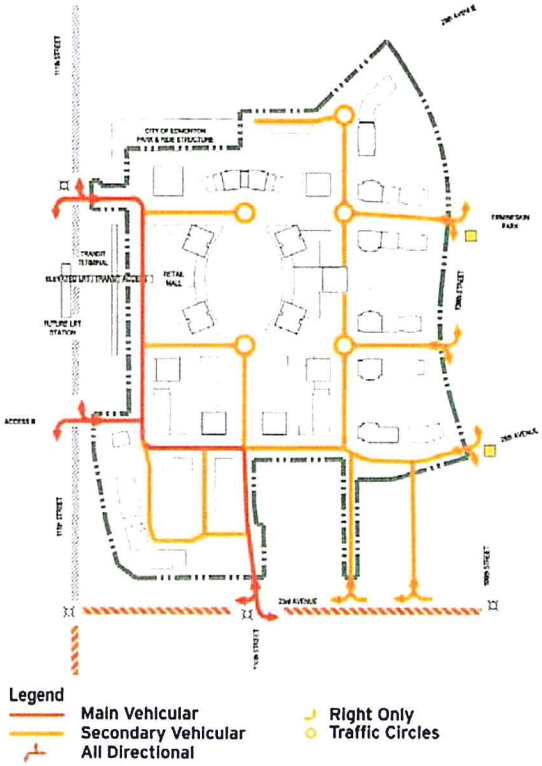
Many principles of smart growth support those principles of New Urbanism, a movement that aims at creating more attractive, efficient, and livable communities as compared to current development trends.

CENTURY PARK

EDMONTON, ALBERTA

research document

PRECEDENT STUDY 1



DESIGN FEATURES:

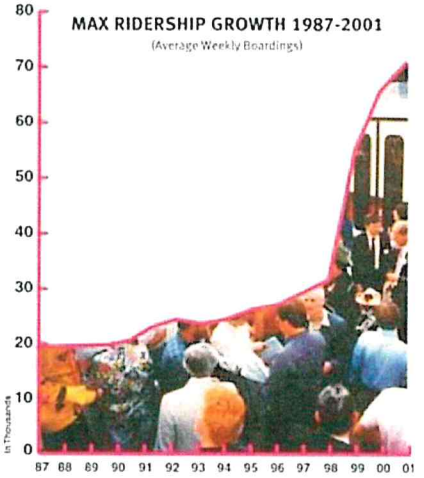
- Greyfield T.O.D. adjacent to new light-rail transit station.
- High-density residential (67 units/acre).
- Mixed uses (residential, commercial & office).
- Pedestrian-only streets / avenues (pedestrian mews).
- Oriented around a public park / lake.
- On-street & underground parking.

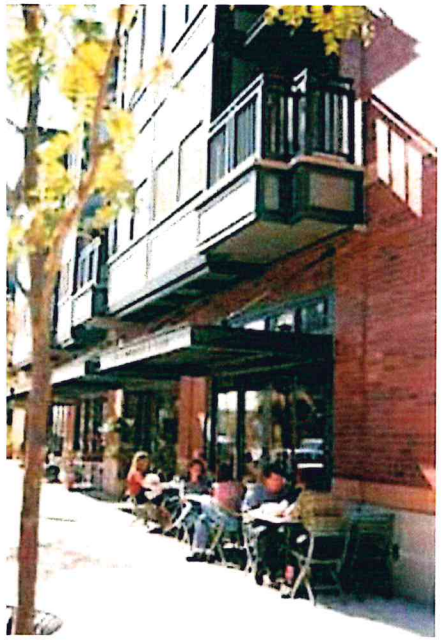
ORENCO STATION

research document

PRECEDENT STUDY 3

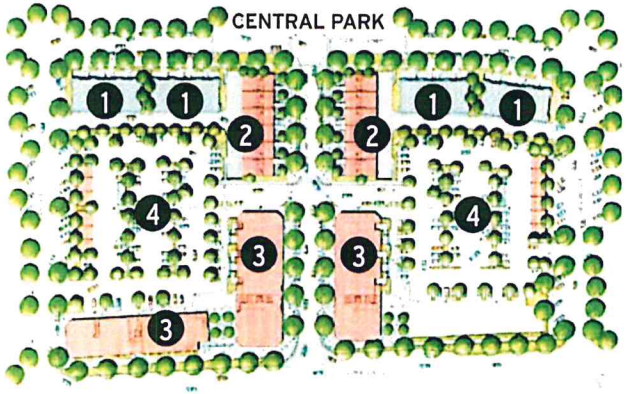
HILLSBORO, OREGON





DESIGN FEATURES:

- Suburban, Transit-oriented Development (TOD).
- Mixed-use buildings (residential & office over retail).
- Town centre configuration.
- Street-front retail.
- Oriented around a public park / piazza.
- Neo-traditional plan (Central pedestrian spine from light-rail station to town centre).
- Varied housing options (single family residences, condominiums, townhomes, rowhomes, live/work units, loft apartments above retail).



1 ROWHOMES

2 LIVE/WORK BROWNSTONES

3 MIXED-USE
GROUND-ORIENTED RETAIL / COMMERCIAL
OFFICES & LOFTS ABOVE RETAIL

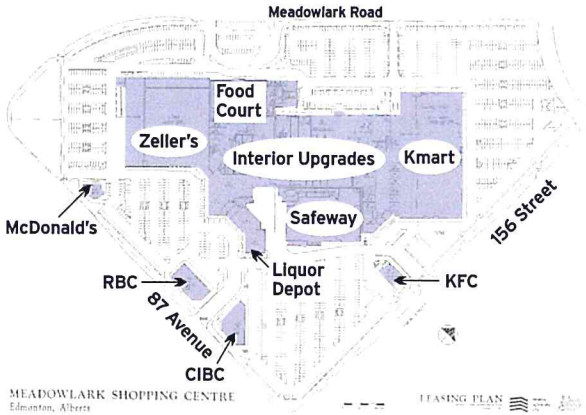
4 PUBLIC / PRIVATE PARKING

Unlike most aging regional shopping centres, Meadowlark Health & Shopping Centre has actually survived low utilization rates by adapting to better suit the community's needs by physically down-sizing the existing mall and incorporating non-retail tenants, such as office space and professional services. A section of the mall was demolished allowing for a portion of the site to be parcelled and sold to a developer who built a mid-density, 55+ residential development in the form of four condominium buildings. As a result, tenant occupancy is relatively high and the mall is surviving.

However, for a shopping centre that prides itself as a community centre "that caters to your every need", the site still possesses large tracts of surface parking and insufficient mixed-use developments that together contribute to reduced street activity (particularly after hours), resulting in vacant sidewalks. A new model for reuse is needed. One that will go beyond face-lifts and conventional regional, auto-oriented retail. One that will better integrate transit. One that will help revitalize the community's image and establish as sense of place. One that can become a catalyst for smart growth developments in the City of Edmonton.

ISTORICAL CONTEXT

63-1991



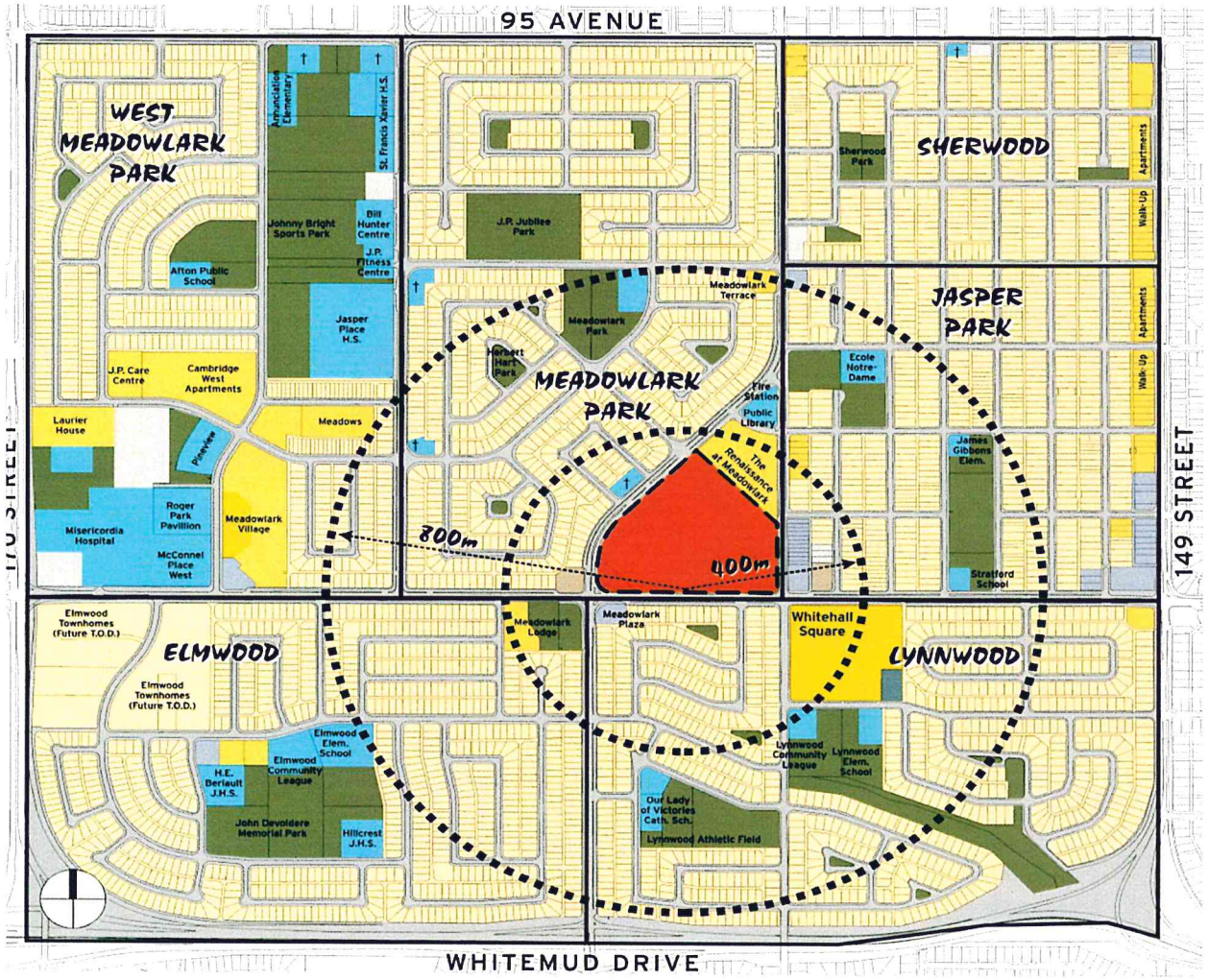
1991-1997

1997-PRESENT

Zeller's, Safeway, and Sears were the retail anchors where the mall opened its doors in 1963. The site also accommodated a bus transit station off meadowlark road.

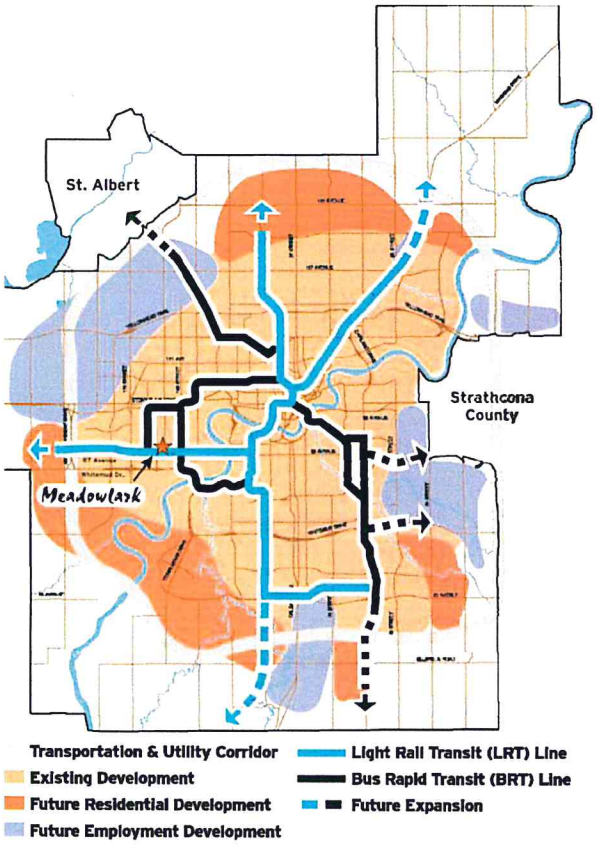
From 1981 to 1991, the mall struggled to compete with West Edmonton Mall and the owners sold the property to a developer who relocated financial institutions (banks) and fast food establishments from the mall's interiors to CRU pads scattered throughout the parking lots. The Mall's interiors and exteriors were also given a modern face-lift.

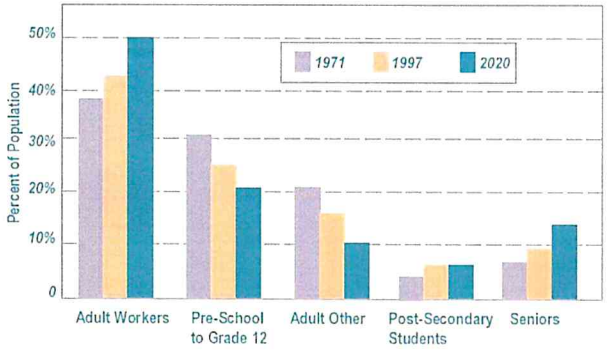
In 1997, the owners parceled off the site's north end and sold it to another developer who built a +55 adult condo community. Kmart was gone and nearly all of the mall's interior retail tenants were replaced with doctor's offices and medical labs. This innovative approach has kept the mall alive however, it is still mainly a large single-storey professional building that is auto-oriented, does not support public transit, and contributes to urban decay.



- Meadowlark Centre
- Residential - Low Density
- Residential - Medium Density
- Residential - High Density
- Commercial / Retail
- Professional Services
- Public Parks / Green Space
- Institutional
- Vacant Lots
- Epcor Sub-Station

The site is surrounded by low density housing and is well within a five-minute walking radius (400m). Transit-oriented redevelopment is planned for lands directly south of the Misericordia Hospital. In addition, a high-speed transit (HST) stop is slated for the Meadowlark site, which sets the stage for "bulls-eye zoning", which means locating highest densities around a transit stop, then tapering down to medium density, and then again to lower density housing. This urban design strategy helps to blend higher densities into surrounding neighbourhoods while integrating mass transit. Except for the lack of density to support public transit, the Meadowlark site is an ideal candidate for transit-oriented redevelopment.





Transportation is the backbone of smart growth. It plays an important role in all our lives and is directly linked to livability: how we get to work, how children get to school, and how we conduct our daily activities.

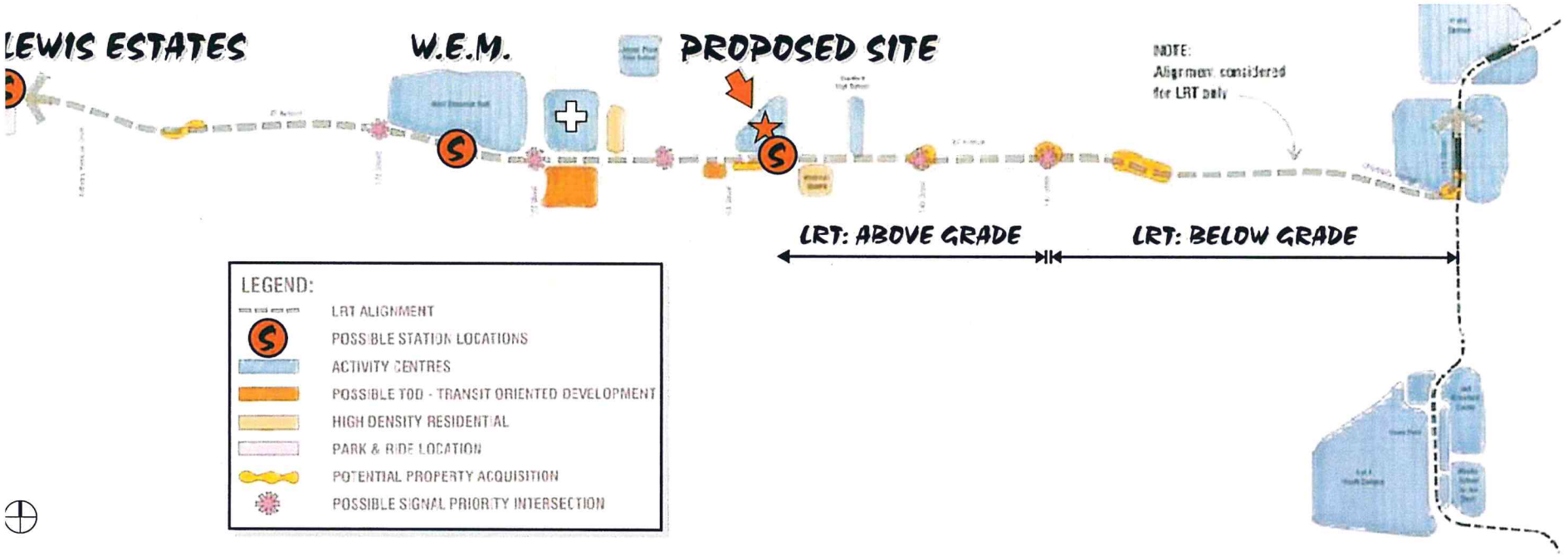
In the case of greyfield redevelopments, public transit can be successfully implemented as transit hubs, typically in the form of light-rail or rapid bus transit, which can be the nucleus for a transit-oriented community. These projects have the potential to perform as gateways into the transit system.

As Edmonton's population grows, so does the need to commute. Therefore, if Edmonton wants to continue to thrive, it is important that the City establishes effective, efficient, and sustainable ways of moving people. High-speed Transit is an alternative to freeways for moving people across town quickly and reliably.

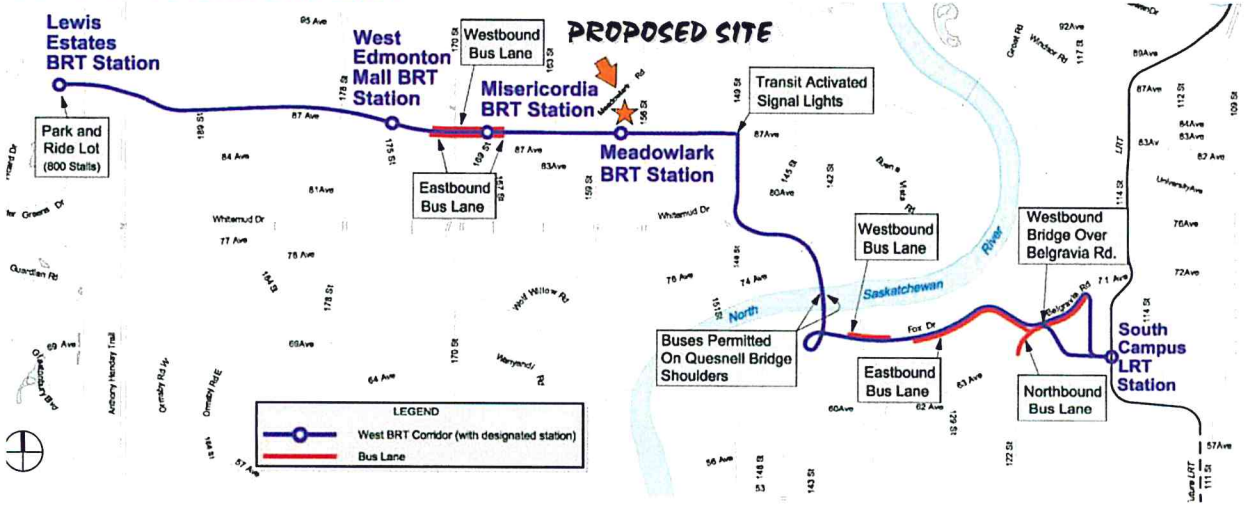
While there are a multitude of reasons why people do not use transit, the primary reason is that it is hard to serve sprawling suburban development effectively with transit. Metropolitan areas are served by extensive rail, light-rail, and bus transit systems, but development continues unchecked into the surrounding suburban and exurban areas where transit stations remain isolated from people and surrounded by parking. Herein lies the problem - stations need to be developed as a "place" that is fully integrated within its community.

Meadowlark's south edge is defined by 87th Avenue, which is slated for High Speed Transit (HST) in the form of Bus Rapid Transit (BRT). Light-rail Transit (LRT) was initially planned along this arterial, however, The City states that residential densities are not high enough to support LRT. For now, the West LRT Expansion Project has been postponed indefinitely until residential densities are dramatically increased.

'EST LRT EXPANSION (2020-2040)

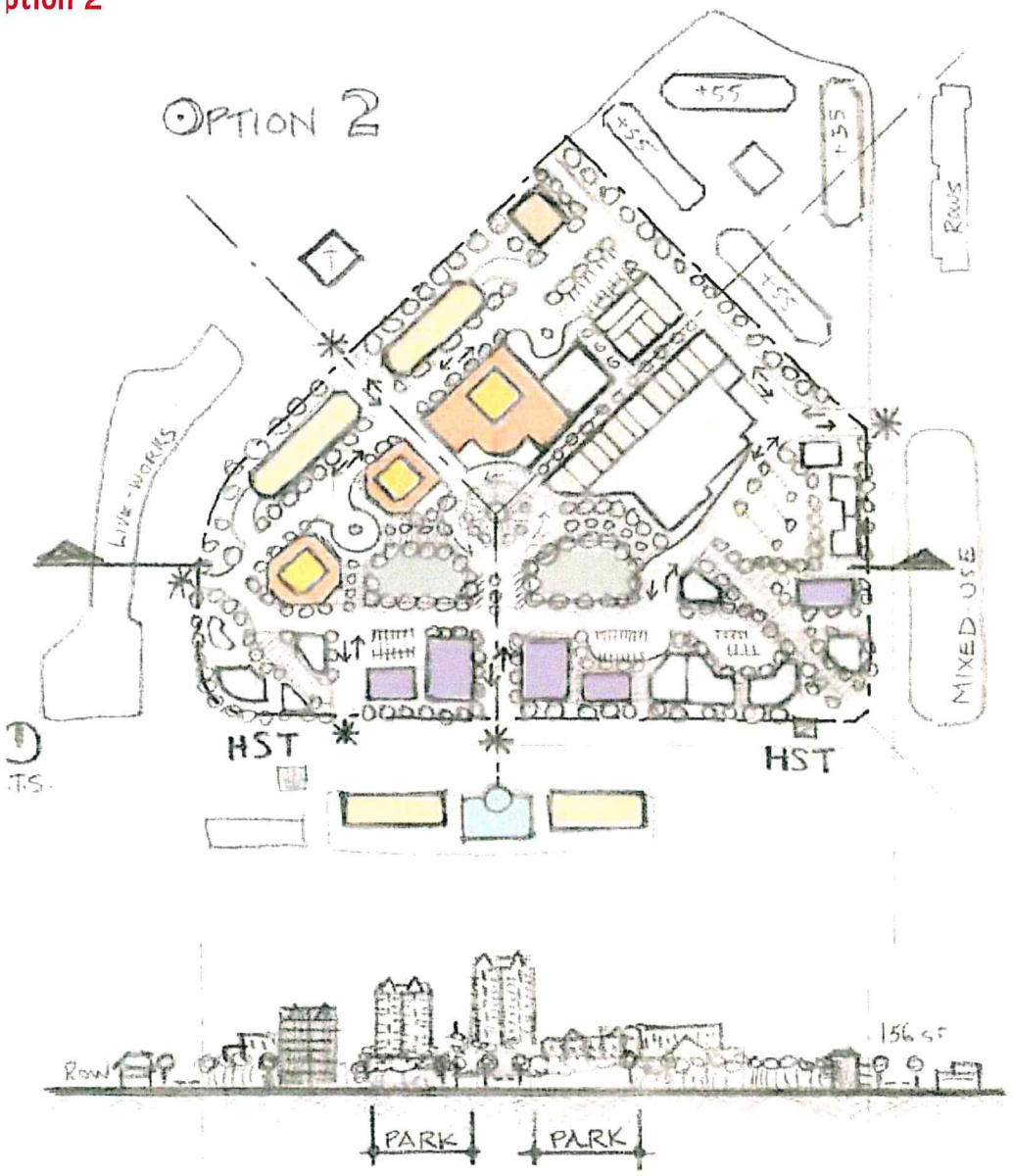


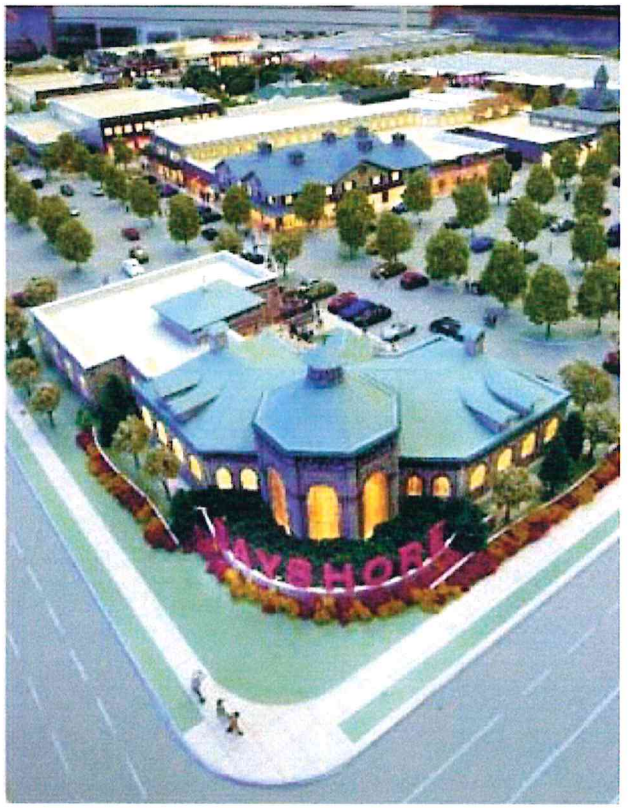
'EST BRT CORRIDOR PLAN



The City-run Edmonton Transit ("ETS") runs both a bus fleet and a light-rail transit system (the "LRT"). According to the City's 1999 Transportation Master Plan, potential HST corridors have been identified, with plans to expand HST to Edmonton's West, North and Southeast regions. This system will enable quick cross-town commuting to a wide range of popular destinations. The City wishes to adopt a staged approach to HST, introducing BRT on all lines except South LRT first. A staged approach can reduce initial costs and realize HST sooner, but long-term costs will be greater.

ption 2

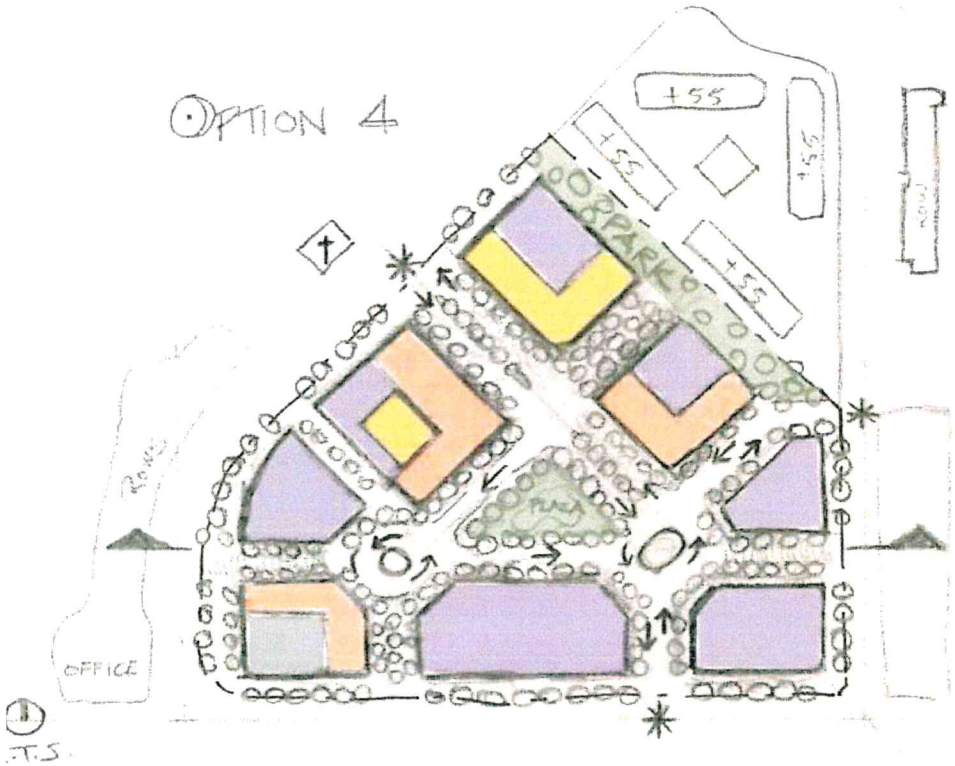


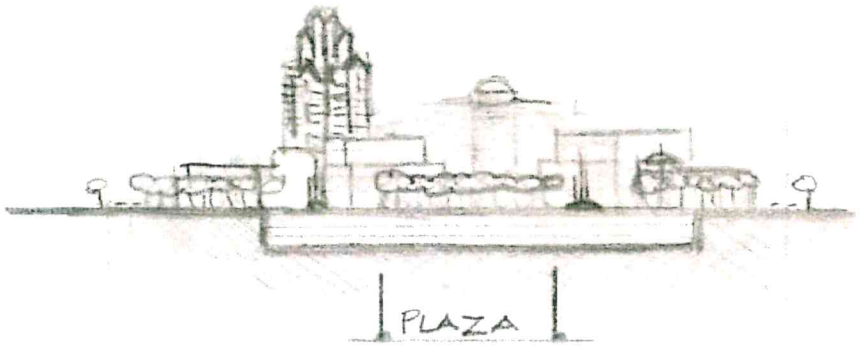


Option 2 proposed converting the Mall's internal circulation into an exterior sidewalk with development around the Site's perimeter.

Options 1 and 2 concluded that by retaining the physical building component of the mall, many smart growth principles would be compromised.

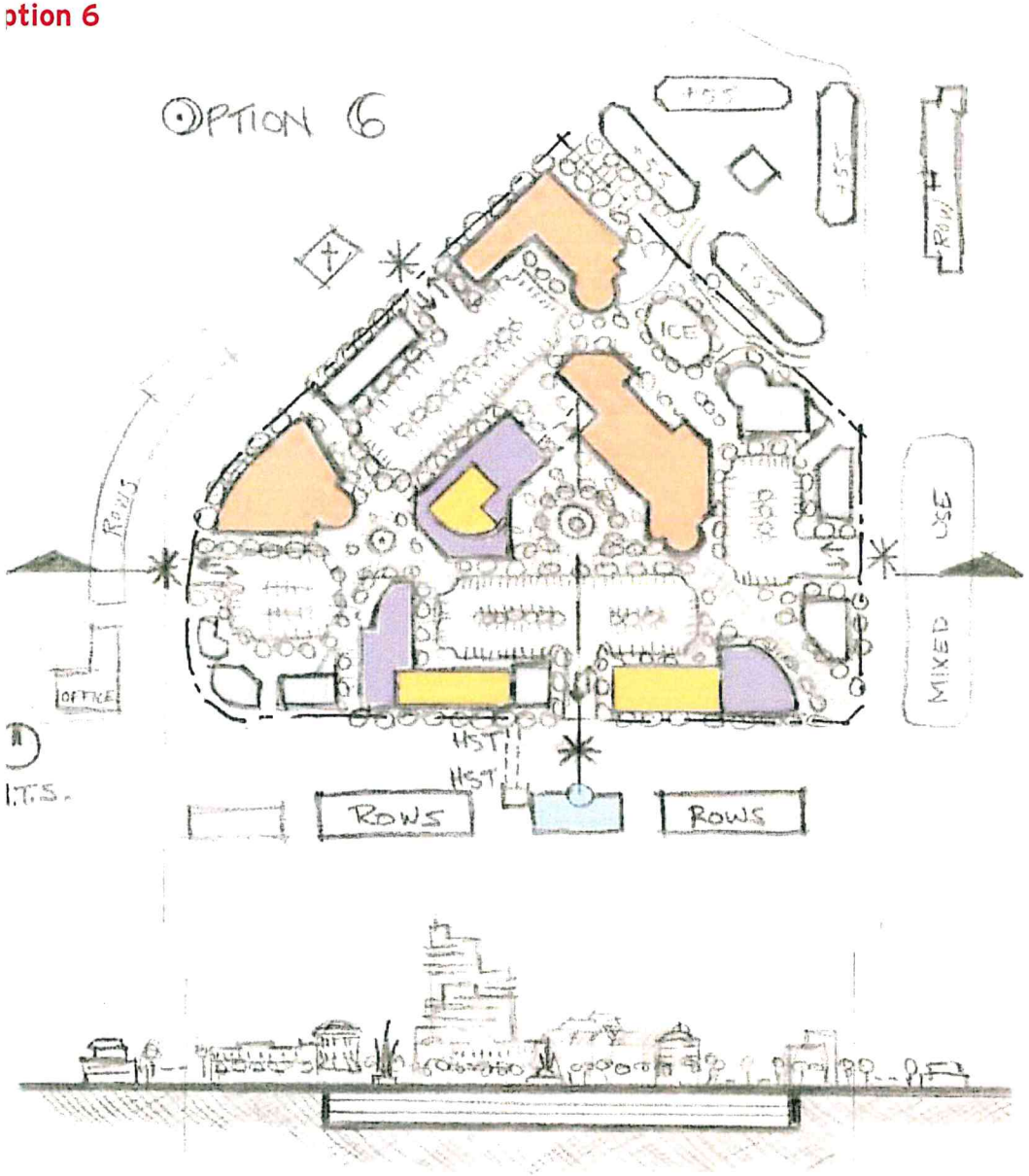
ption 4

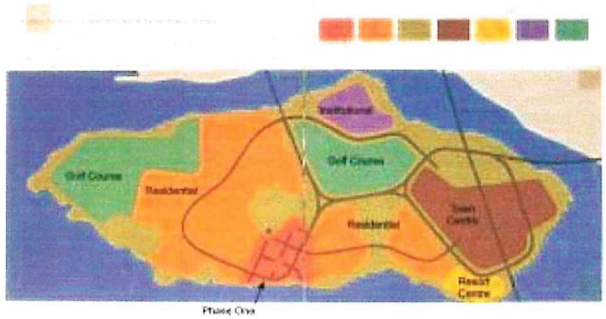




Option 4 slightly changed on-site circulation and added traffic circles.

ption 6

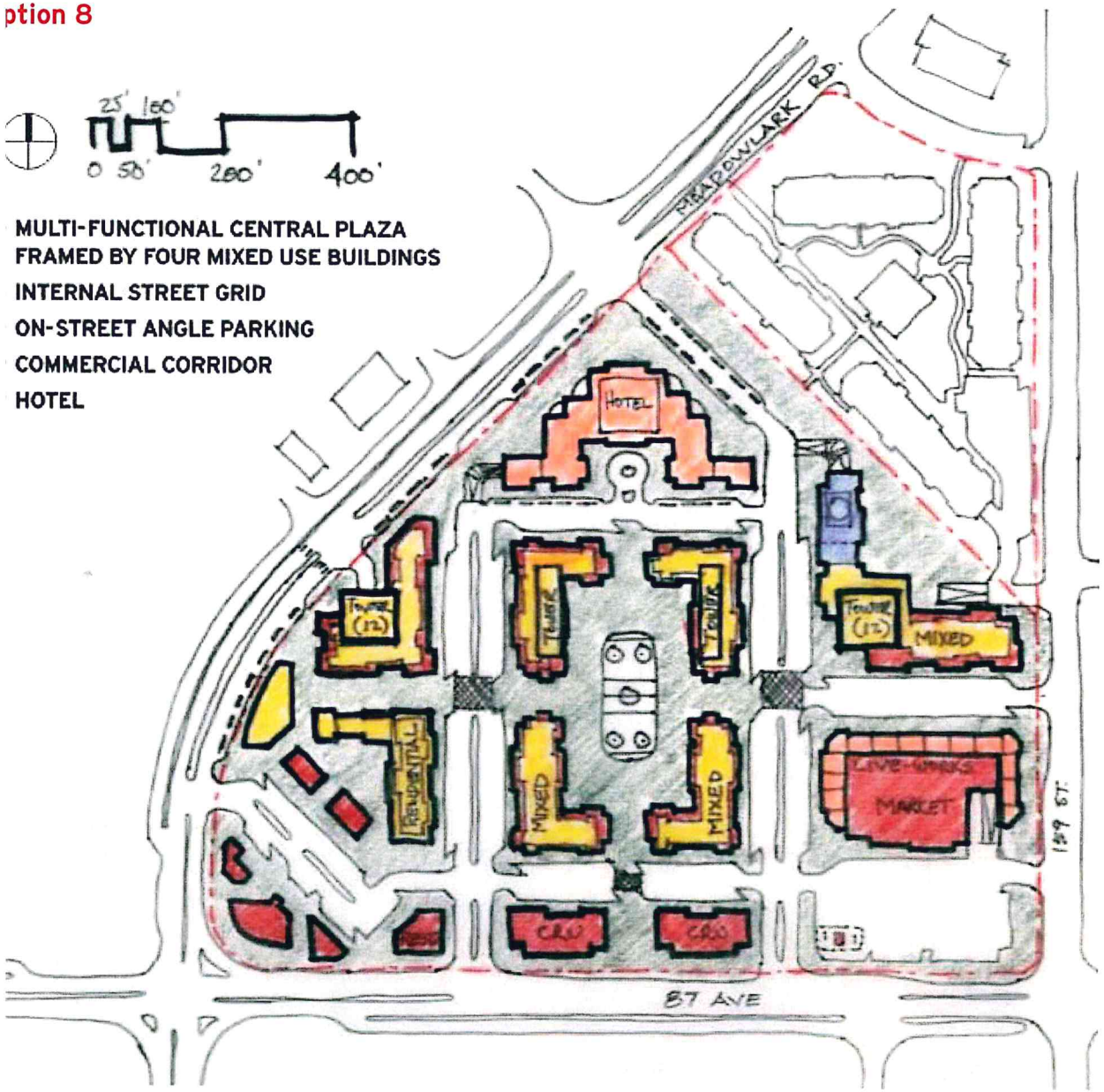




Inspired by Nun's Island in Montreal, Option 6 explored segregating parking lots and automobiles from pedestrian circulation.

Options 1 to 7 concluded that the development needed an unconventional design that opposed current auto oriented developments, one that celebrates the pedestrian environment and supports transit use and one that accommodates smart growth and New Urbanist principals, such as diversity of uses, housing options, increased density, open space, infill development, connectivity, compact building design, sustainability, and place-making ingenuity, which includes active streets, community pride, character, and flexibility.

ption 8



MULTI-FUNCTIONAL CENTRAL PLAZA FRAMED BY FOUR MIXED USE BUILDINGS

INTERNAL STREET GRID

ON-STREET ANGLE PARKING

COMMERCIAL CORRIDOR

HOTEL

APPLIED SMART GROWTH PRINCIPLES

1 :Infill Development
2 :Mixed Land Uses
3 :Different Housing Options
4 :Walkable Communities
5 :A Variety of Transportation Choices
6 :A Sense of Place

APPLIED NEW URBANIST PRINCIPLES

1 :Walkability
2 :Connectivity
3 :Mixed-Use and Diversity
4 :Walkable Community
5 :Mixed Housing
6 :Quality Urban Design and Architecture
7 :Traditional Neighbourhood Structure
8 :Increased Density
9 :Smart Transportation

Option 8 introduced an internal street grid with a central multi-functional gathering space framed by four mixed-use buildings. A large hotel is located at the north end to bring an important visitor demographic to the site while a commercial presence along the south edge is maintained.

ption 10

INTERNAL STREETS WITH PEDESTRIAN MEWS

TRANSIT-ORIENTED DEVELOPMENT

HIGH DENSITY

PEDESTRIAN ORIENTED

APPLIED SMART GROWTH PRINCIPLES

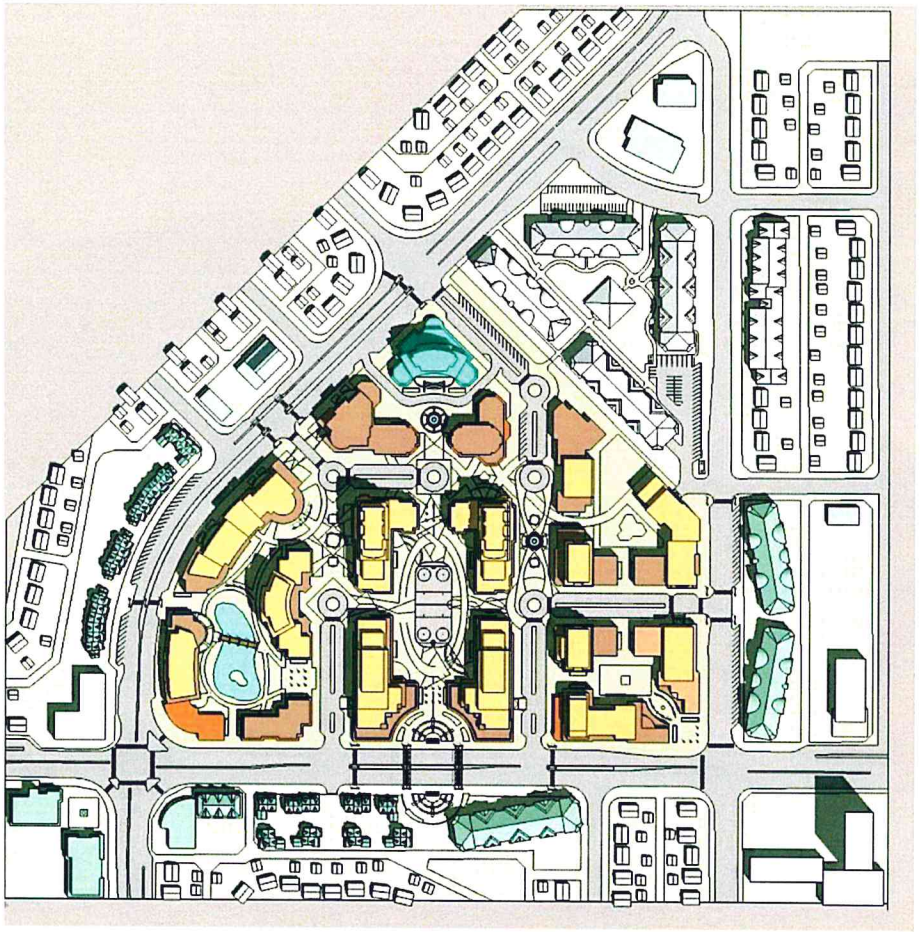
1 :Infill Development
2 :Mixed Land Uses
3 :Different Housing Options
4 :Walkable Communities
5 :A Variety of Transportation Choices
6 :A Sense of Place

APPLIED NEW URBANIST PRINCIPLES

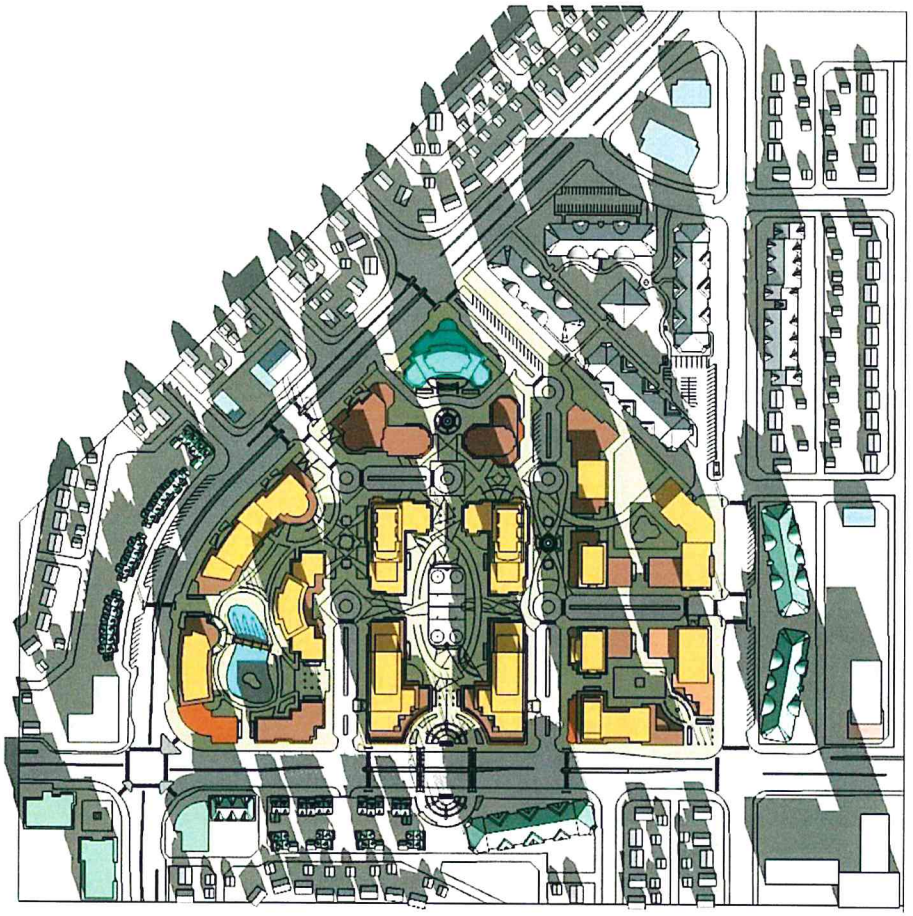
1 :Walkability
2 :Connectivity
3 :Mixed-Use and Diversity
4 :Walkable Community
5 :Mixed Housing
6 :Quality Urban Design and Architecture
7 :Traditional Neighbourhood Structure
8 :Increased Density
9 :Smart Transportation

Option 10 became the scheme to be developed into the master plan. This design takes the previous option one step closer to a pedestrian-friendly development by manipulating circulation patterns. The primary difference is how vehicular circulation has been limited to restrict "through traffic" with the introduction of pedestrian-only avenues.

HADOW STUDY: JUNE 21



SHADOW STUDY: DECEMBER 21



OPEN SPACES A
BUILDING HEIGHT (BY FLOORS) 12
SITE SECTION
RESIDENTIAL
OFFICE / PRACTITIONERS
COMMERCIAL RETAIL
HOTEL
SITE BOUNDARY
STORM WATER RETENTION POND
OUTDOOR ICE RINK
EXISTING BUILDINGS
FUTURE DEVELOPMENT

OPEN SPACES

- A TRANSIT HUB
- B VILLAGE SQUARE
- C LEISURE PARK
- D PEDESTRIAN MEW
- E HOTEL PLAZA
- F PLAYGROUND
- G FORMAL COURT

FORMAL COURT

The leisure park at the southwest corner houses a storm water retention pond. It is intended as a quiet leisure green space. The hotel plaza on the north end brings hotel drop-off access as well as a formal fountain. The playground to the northeast incorporates an open field as well as playground equipment for children. The formal court to the southeast will facilitate outdoor eating areas such as patios, sidewalk cafes, and public art.

The pedestrian in this development is free to walk throughout the entire site without having to cross the street. Pedestrian mews are adorned with hard and soft landscaping, water features, public art, as well as architectural elements. They can also facilitate interesting street activities such as street games like sidewalk chess for example.

Transition spaces from streets to courtyards are created by the clustering of buildings which have a "pinch and release" effect.

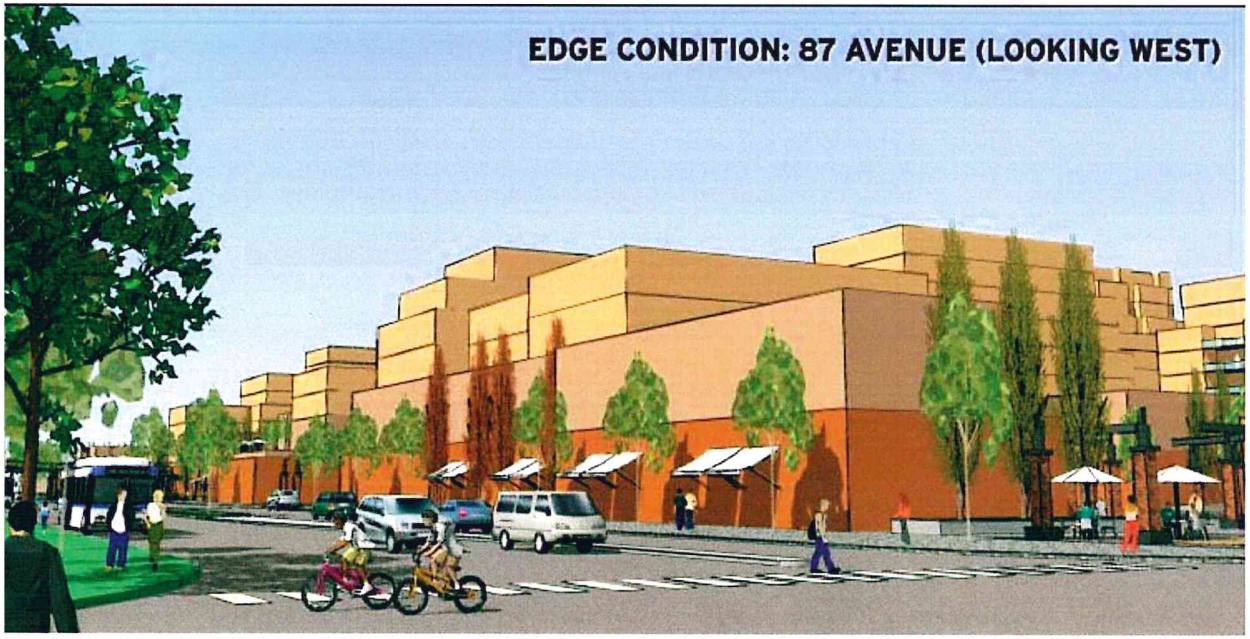
Access to the site is also defined by architectural elements at sidewalk crossings and transitional nodes.

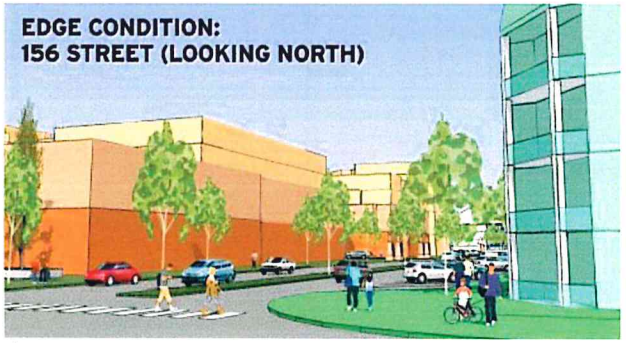
ITERNAL STREET | STREETSCAPES & CHARACTER

XISTING MALL OVERLAY

CONSTRUCTION PHASING

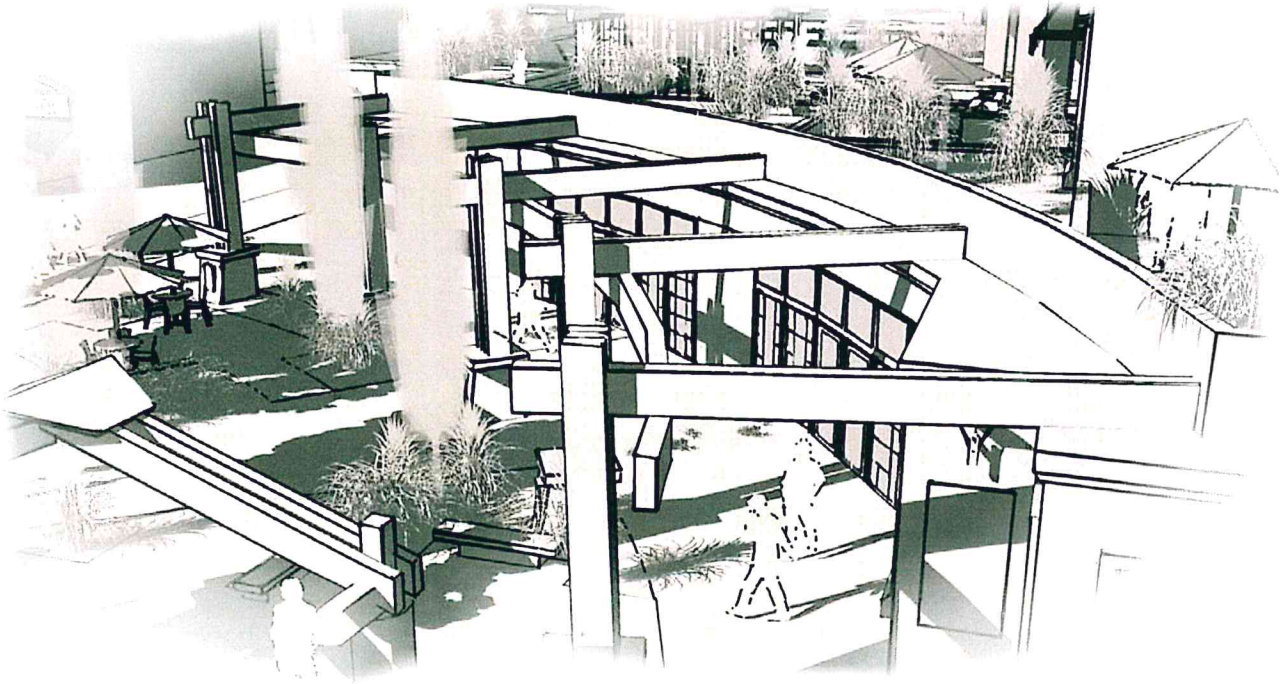
UNDERGROUND PARKING





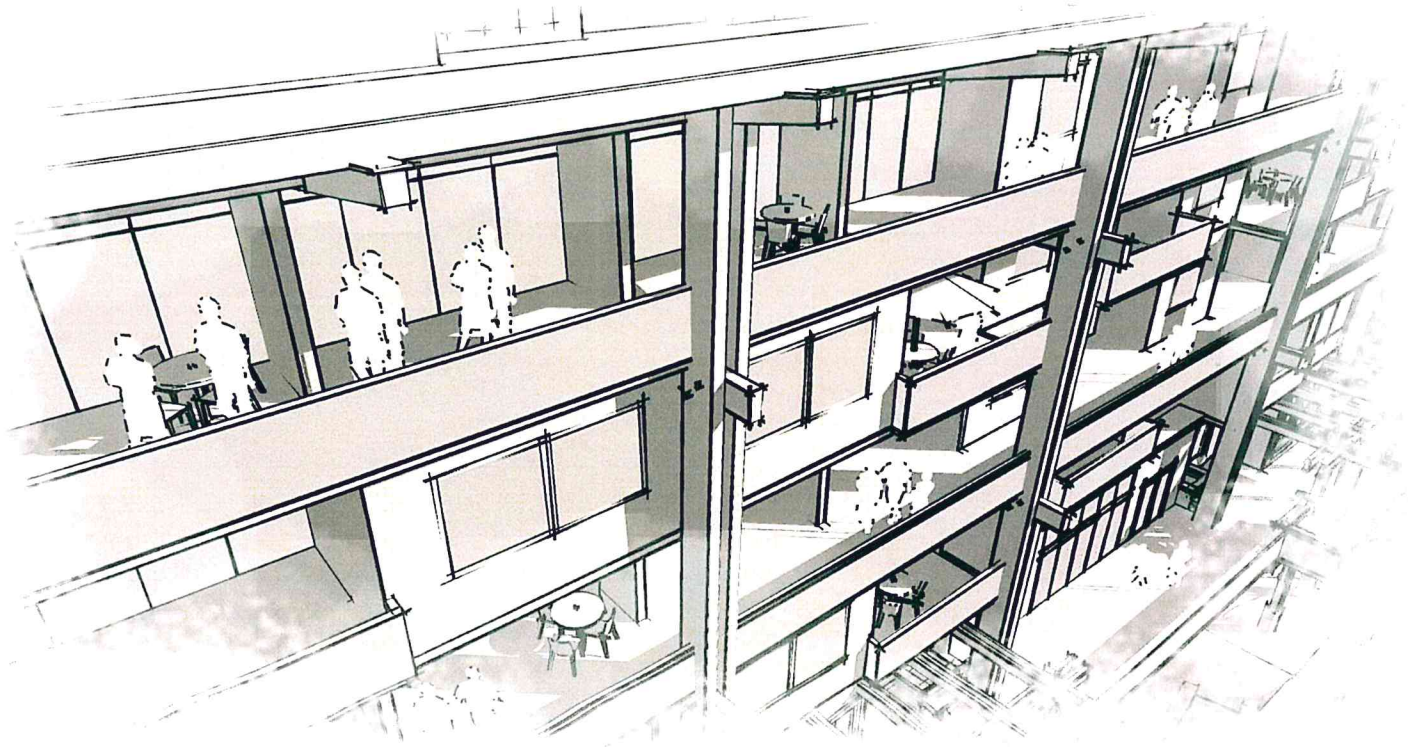
ACADES

- VISUALLY ENGAGING
- STRUCTURAL ELEMENTS TO DEFINE SPACES & CREATE A SENSE OF ENCLOSU RE
- PROMOTE "EYES ON THE STREET"
- ARCHITECTURAL DETAILING / FAMILIAR MATERIALS
- STRUCTURAL ELEMENTS TO HELP DEFINE SPACES
- SENSE OF PLACE
- PROVIDE WEATHER PROTECTION FOR PEDESTRIANS
- NCORPORATE LANDSCAPING



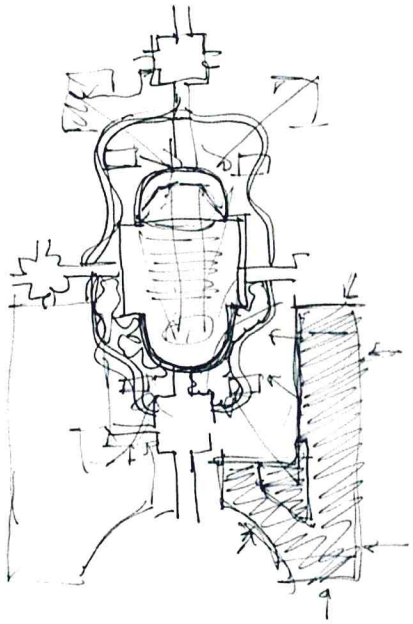
ESIDENTIAL

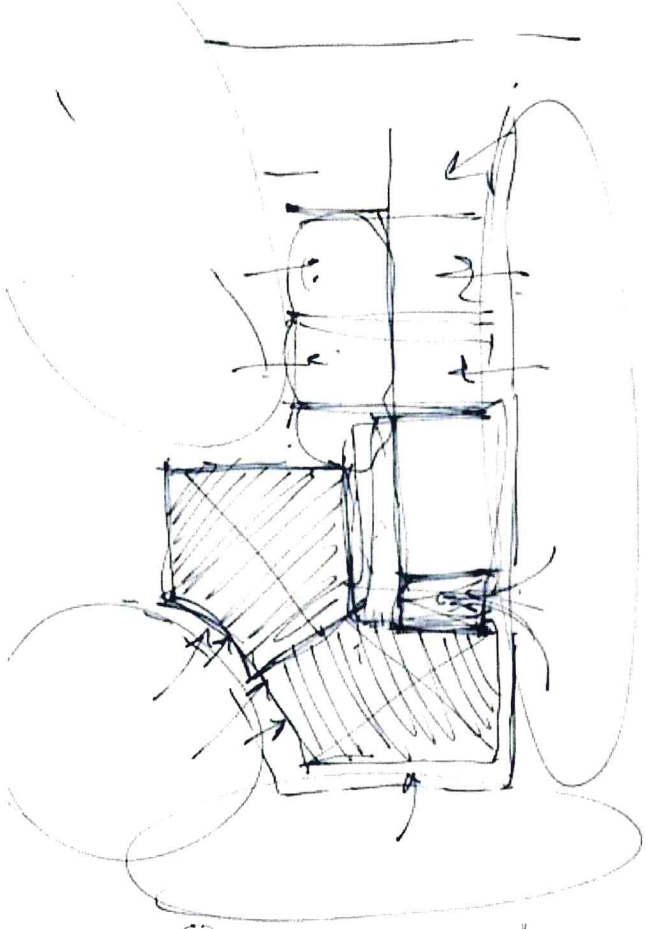
- ROMOTE INTERRACTION AMONG RESIDENTS
- ONNECTIVITY TO THE STREET BELOW (UP TO 6 STOREYS)
- OCATE ABOVE COMMERCIAL AND RETAIL
- ID-HIGH DENSITY TO SUPPORT PUBLIC TRANSIT (MINIMUM 20 UNITS/ACRE)
- IVERSITY AMONG RESIDENTIAL UNITS

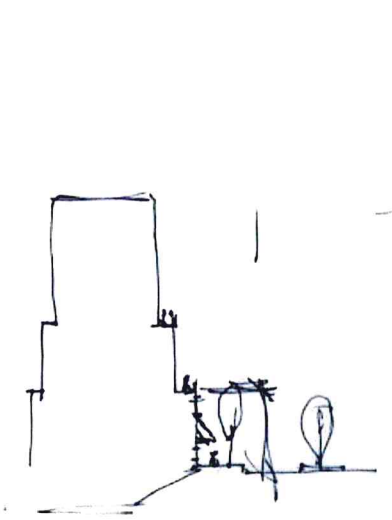


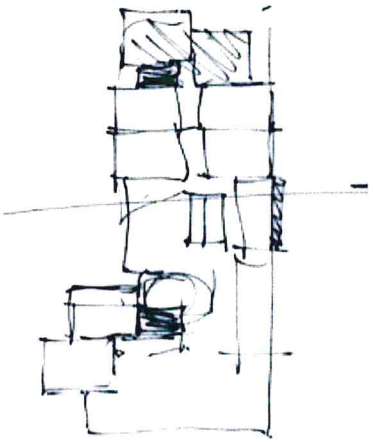
presentation two | meadowlark station

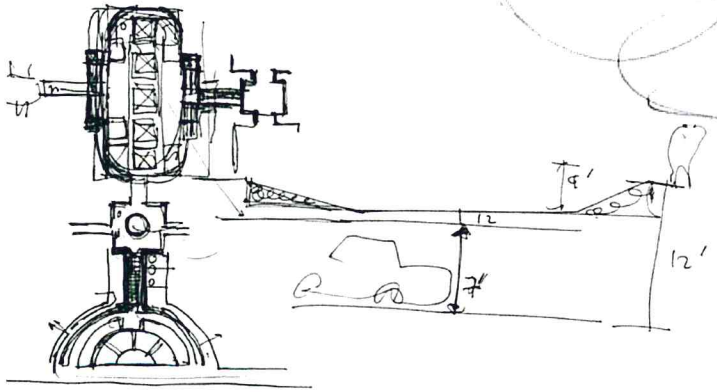
Presentation Two concluded that to satisfy the requirements for the Thesis, a building should be designed with careful attention towards how urban design strategies utilized in the master plan will inform the architecture of the building as well as how the building will contribute to its surroundings and support Meadowlark Station's longevity. The design should be focused and concentrated towards the first four to six storey's of the building.

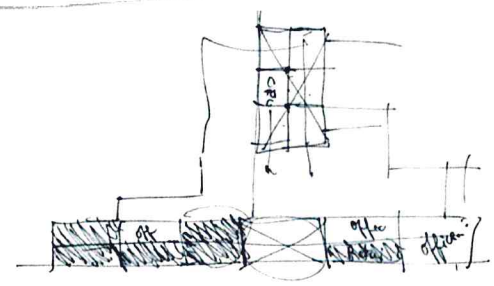








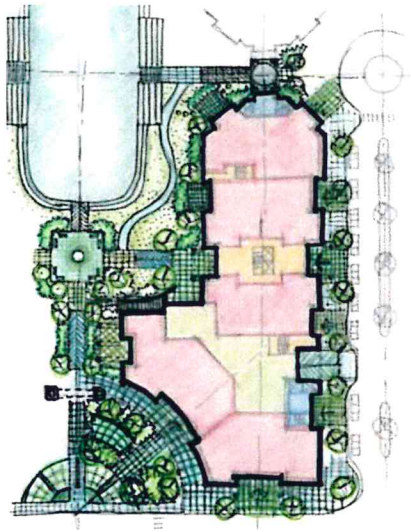




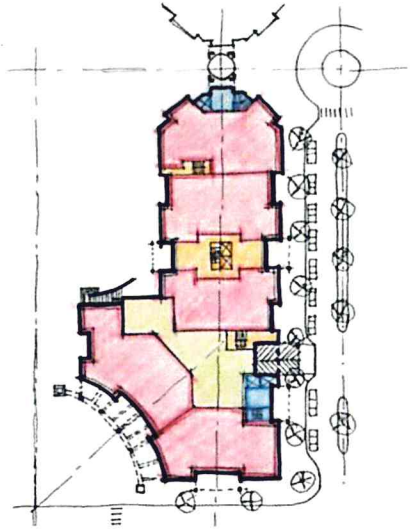
The building to be developed brings many challenges based on its location and surrounding context. First, the building frames and defines the southeast corner of Meadow Square, the outdoor living room of Meadowlark Station as well as the primary outdoor amenity for residents and potentially office tenants. Secondly, the building fronts onto two streets: the main vehicular arterial of 87th Avenue to the south and the quiet internal 157th Street to the east. The building's north facade and extreme west facade will play an important part as a transitional node from street to Meadow Square. And lastly, the building will also address and define one half of the BRT Station Plaza.

Planning, scale, massing, views, and materials all must carefully be considered to promote active streets and sidewalks, diversity, density, and sustainability for professional and commercial retail tenants as well as residents and visitors to Meadowlark Station.

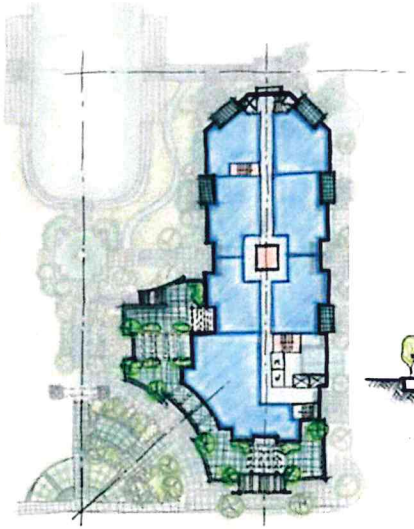
OPTION 1



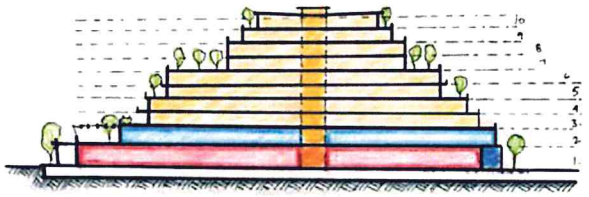
SITE

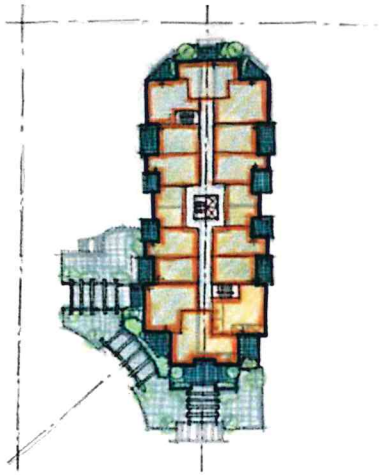


GROUND

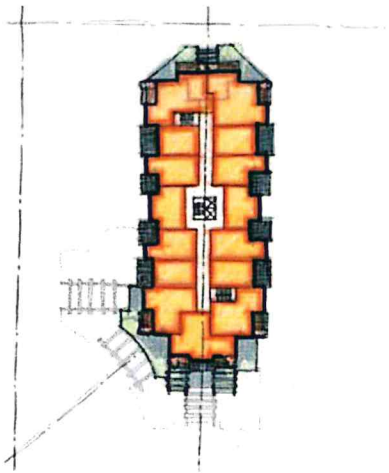


SECOND

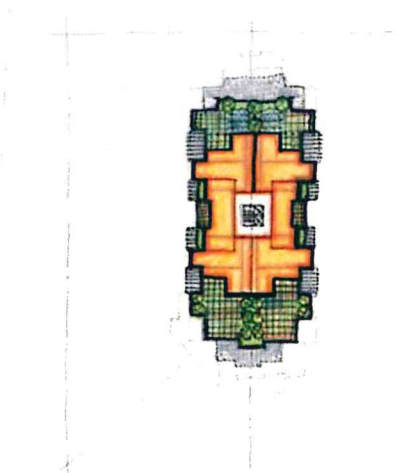




THIRD



FOURTH

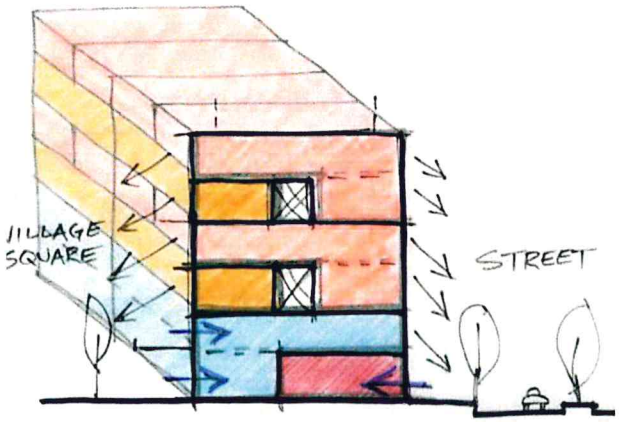


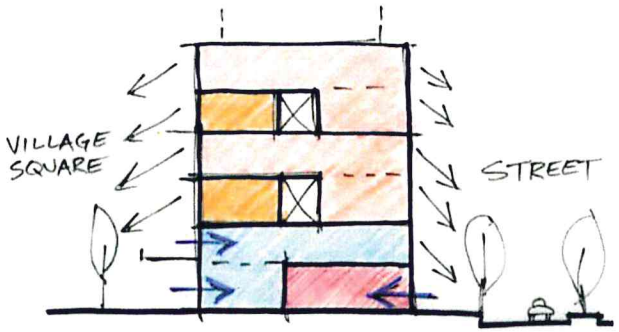
SEVENTH

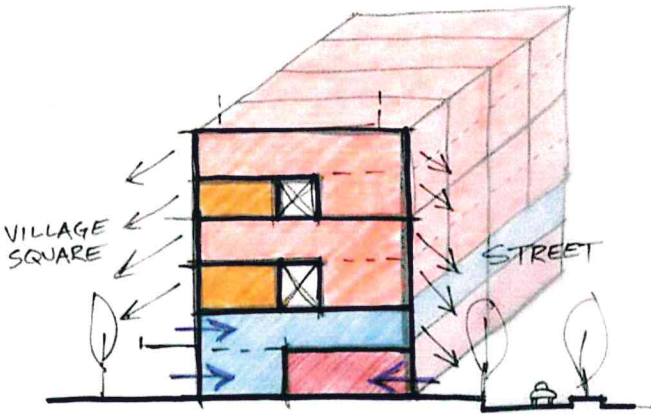
Option 1 took a conventional approach towards how this mixed-use building could be designed. Retail was restricted to the ground level with office and professional lease space on the second floor, accessible by lobbies and an internal, central corridor. Residential units were located above. Floor plates stepped back at nearly every level to maximize views and to minimize shadows.

The design left much to be resolved, such as practicality, diversity, and flexibility. Retail units were relatively the same size and most addressed both 157th street and Meadow Square, limiting retail interior layouts. The second floor closely resembled that of a typical professional building. A central corridor also limited spatial manipulation to only one direction. Residential units were diverse in type and sizes, but less than half had direct visibility to Meadow Square.

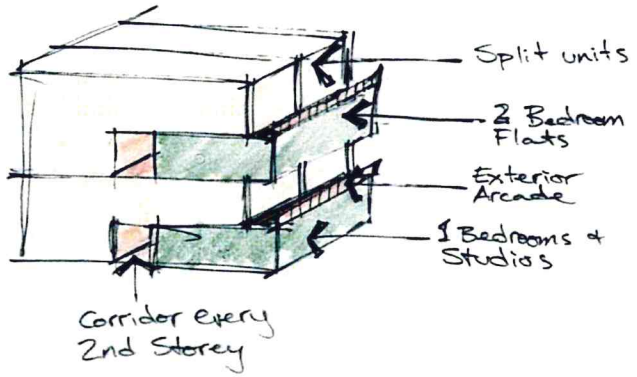
PARTI







* Split Units: "2 Sides to Every Storey"
(Urban Street ~ Village Square)



* More liveable floor space in lieu of interior corridors

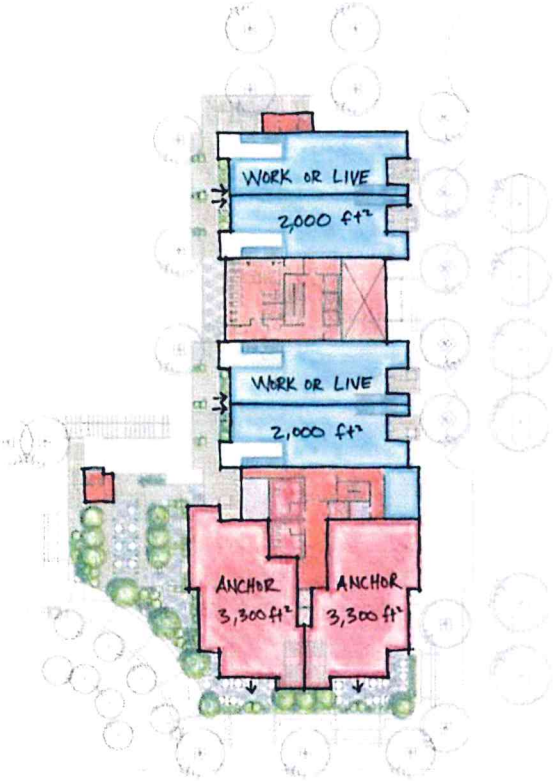
* Exterior Arcade promotes interaction among residents, thus a healthy + stronger community

For commercial retail to thrive, it must be located at ground level and be easily visible and accessible from the street. Since consumer market trends are volatile, scale and versatility are important factors for attracting and maintaining retail tenants.

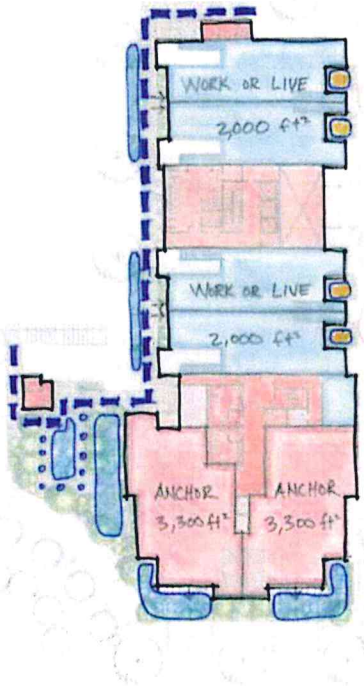
In addition, offices and professional spaces are usually accessible from one or two entry points which direct occupants, visitors, and employees up an elevator or stairwell to a circulation corridor before reaching their destination. Issues of consideration for offices include quiet areas for productivity, flexibility, amenity areas for staff, and daylight and views. Residential can be located above retail and office space but maintaining connectivity to the street level and Meadow Square is crucial, especially for the first four to six floors.

Meadow Square is the largest amenity to Meadowlark Station and maximizing the number of residential units to have direct visibility and connectivity to the space will be an issue of importance for not only residents but also for the developer, in terms of marketability, property values, and lifestyle.

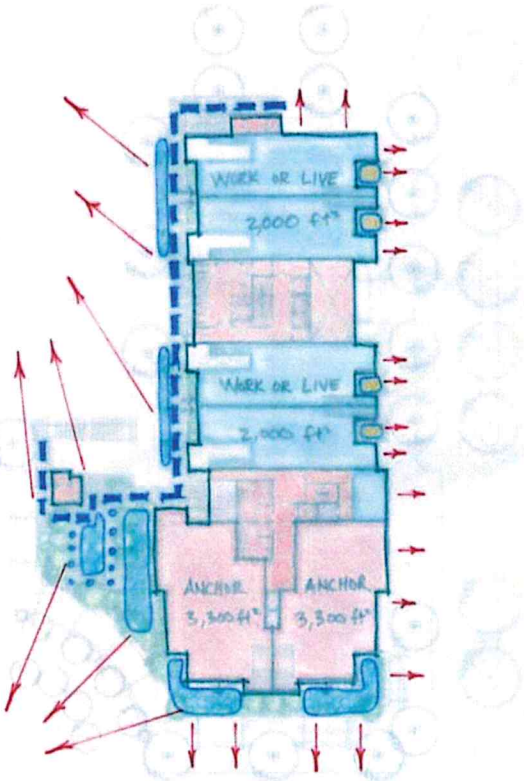
OPTION 3



ECOND FLOOR: AREAS

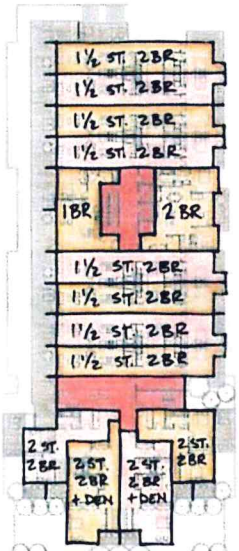


SECOND FLOOR: CIRCULATION

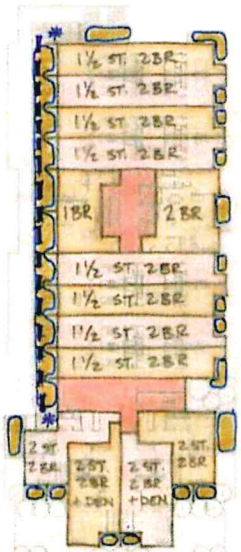


SECOND FLOOR: VIEWS

The modular bays are adequately designed for offices and professional spaces. They are accessible from grade along the Meadow Square and 157th Street, however, primary and barrier free access is from a second storey exterior boardwalk, serviced by an elevator at the north and west ends of the building.

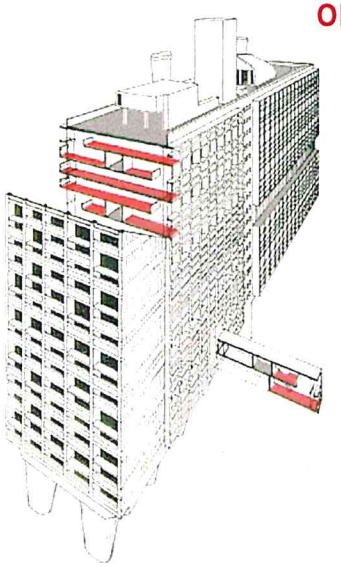


OURTH FLOOR: AREAS



FOURTH FLOOR: CIRCULATION

OPTION 3

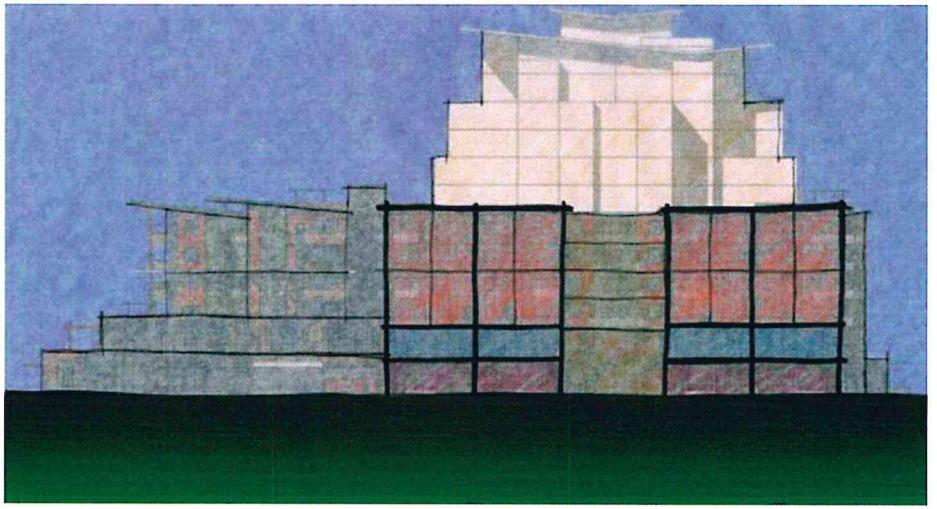


UNITE d'HABITATION

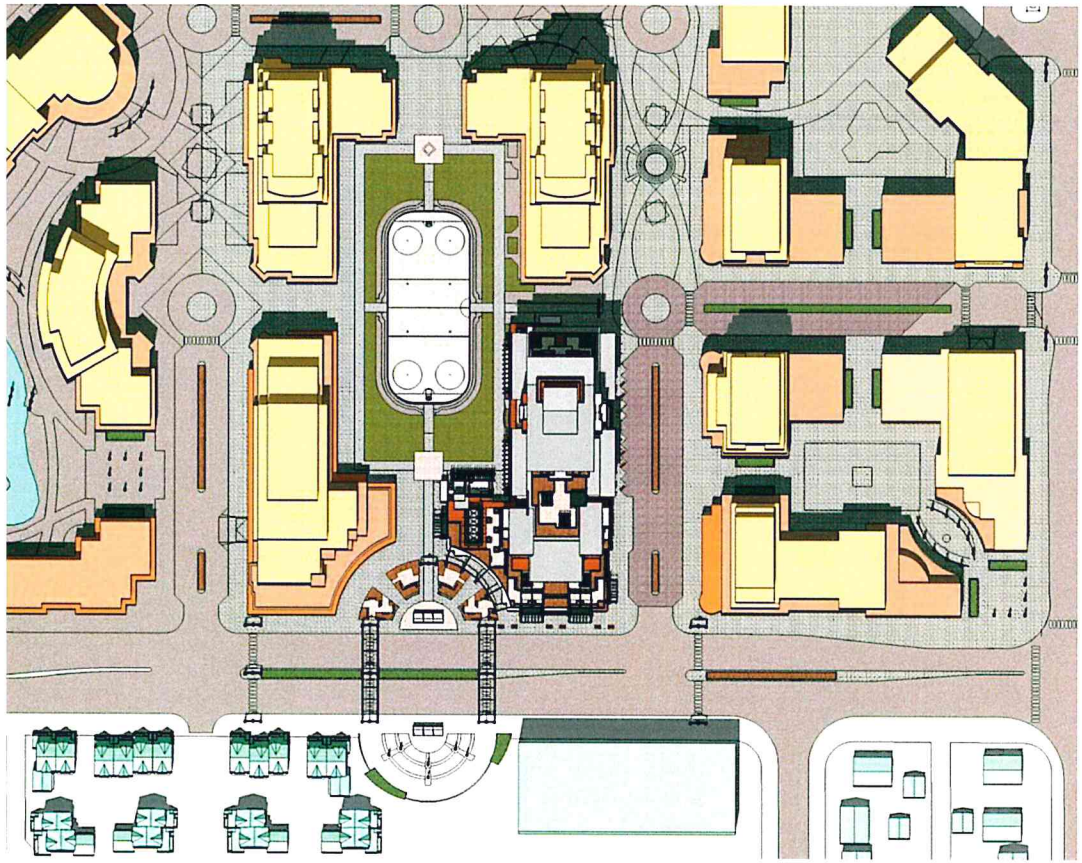
Inspired by Le Corbusier's Unite d'Habitation in Marseille, the fourth level somewhat mimics that of the second floor. The upper level of each "split" unit extends the entire width of the floor plate, facilitating these units to have views and connectivity to both 157th Street and Meadow Square. In addition, their slender widths maximize the number of units addressing the central Square. With the removal of the internal corridor, exiting is achieved via a wide exterior arcade with secured staircases at each end.

This exterior sidewalk is multi-functional. Not only does it solve exiting issues for the upper level of the "split" units, but it also becomes an extension of the resident's balcony space, physically removing the barrier between residents in an attempt to encourage interaction. Residents can lounge outside their unit and intermingle with their neighbours while taking in events from the Square below.

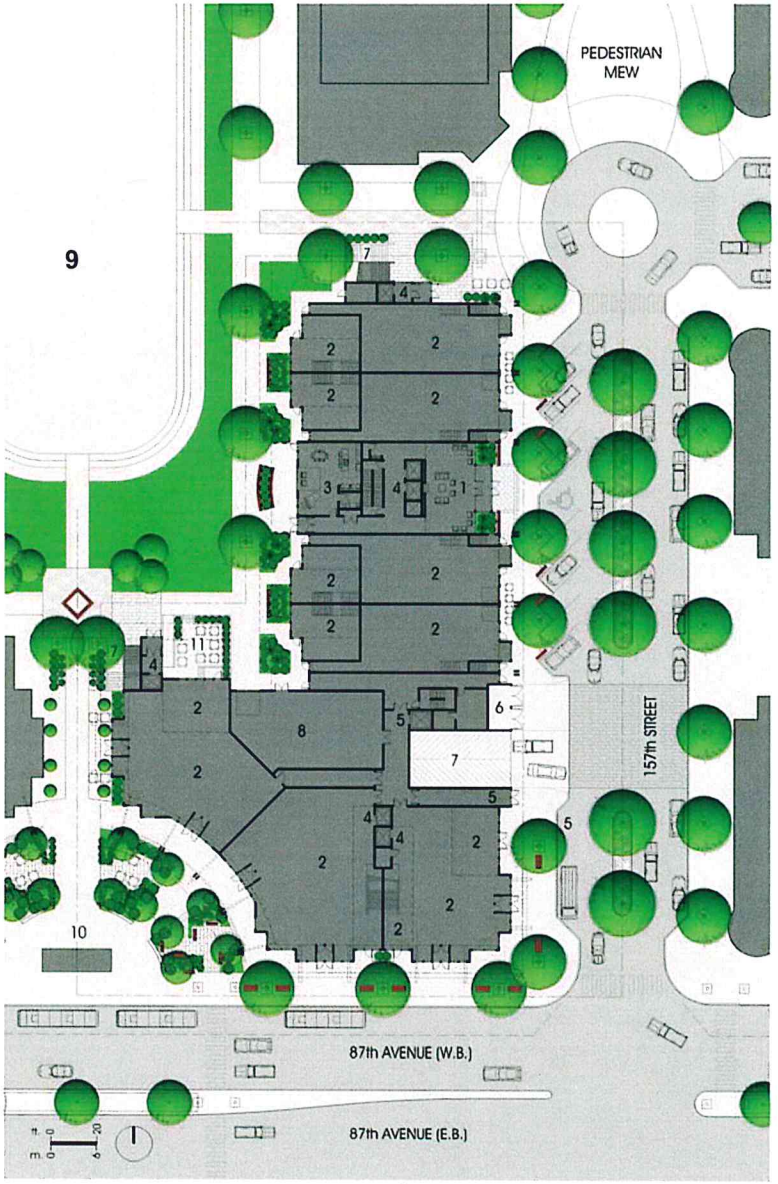
EAST ELEVATION STUDIES (157th STREET)



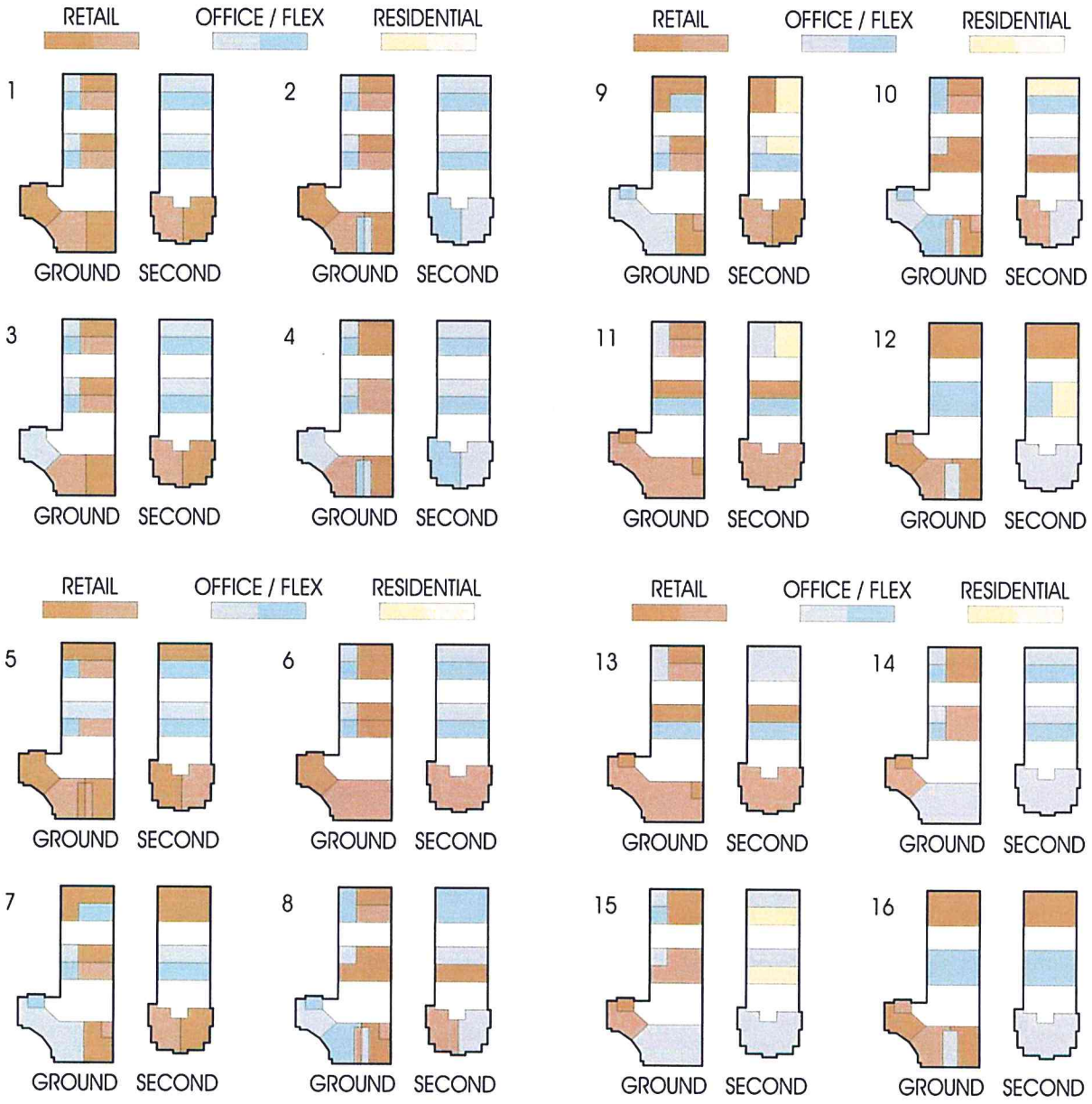
1 LOBBY
2 LEASE SPACE
3 AMENITY
4 ELEVATOR(S)
5 LOADING
6 REFUSE
7 PARKADE ACCESS
8 COMMUNITY SERVICE SPACE
9 MEADOW SQUARE
10 B.R.T. PLAZA
11 PATIO / TERRACE
12 BOARDWALK
13 COURTYARD
14 MANAGEMENT
15 BACHELOR'S SUITE
16 "FLAT" UNIT
17 "SPLIT" UNIT
18 TWO-STOREY SUITE
19 GALLERY TERRACE



ONTEXT PLAN



SITE PLAN

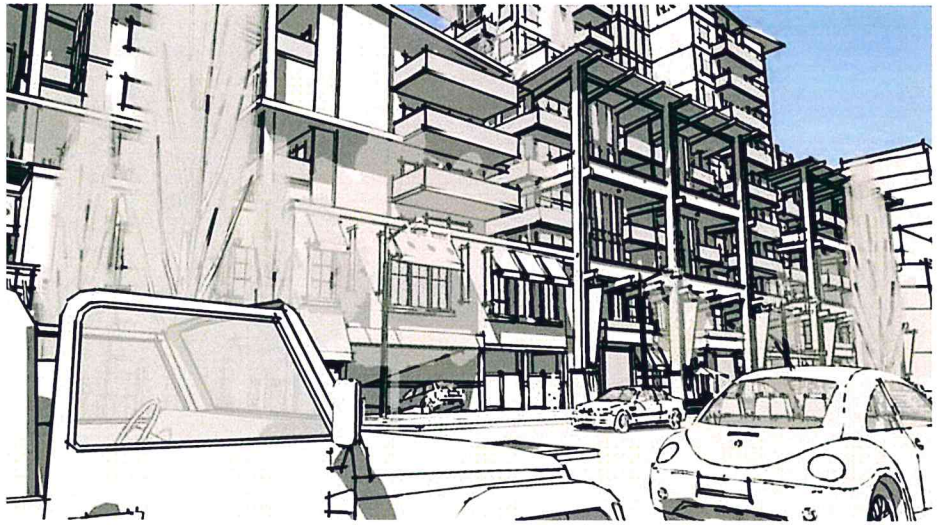


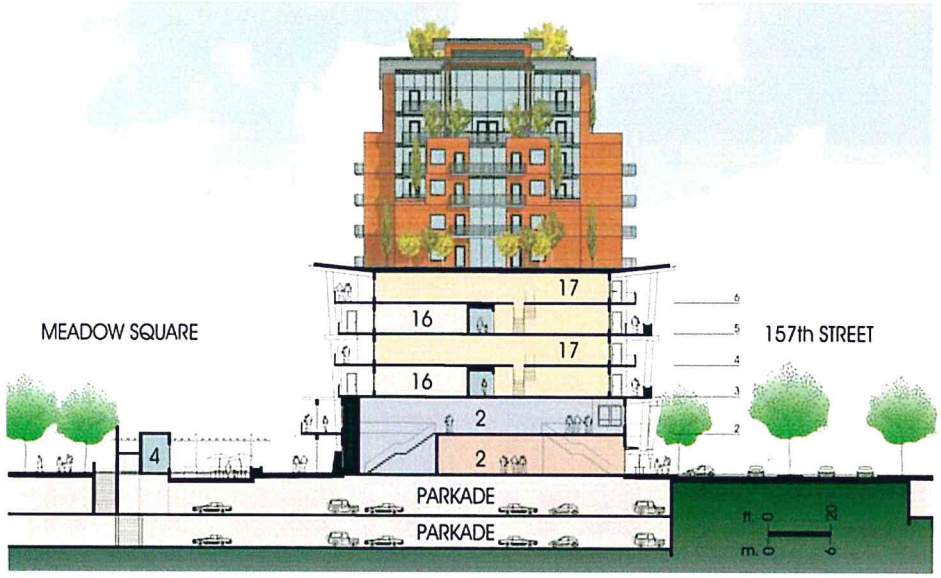
FLEXIBILITY PLANS

By carefully designing and utilizing modular bays at an appropriate size, spaces are flexible to accommodate future expansion or contraction with ease and minimal tenant improvement costs to the owner. These diagrams illustrate the design's versatility to accommodate future fluctuations of spaces and uses. The design allows for several different ways a developer can demise a space, both laterally and vertically, from retail, to office, to residential.

The design can facilitate a ground floor retail boutique to grow to a single storey, double wide outlet. Or perhaps to expand further to occupy the entire width of the floor plate. Or even spread up to the second floor, which can be partitioned off to include living quarters. The options are unlimited. The building's south end can accommodate a food market with elevator access to the second floor and parkade levels below. Or a restaurant on the second floor above the neighbourhood pub. These spaces are also designed to facilitate sub-lease tenants, a current market trend that once again provides an added mix for consumers - such as coffee shops within bookstores, or small food chains within convenience stores.

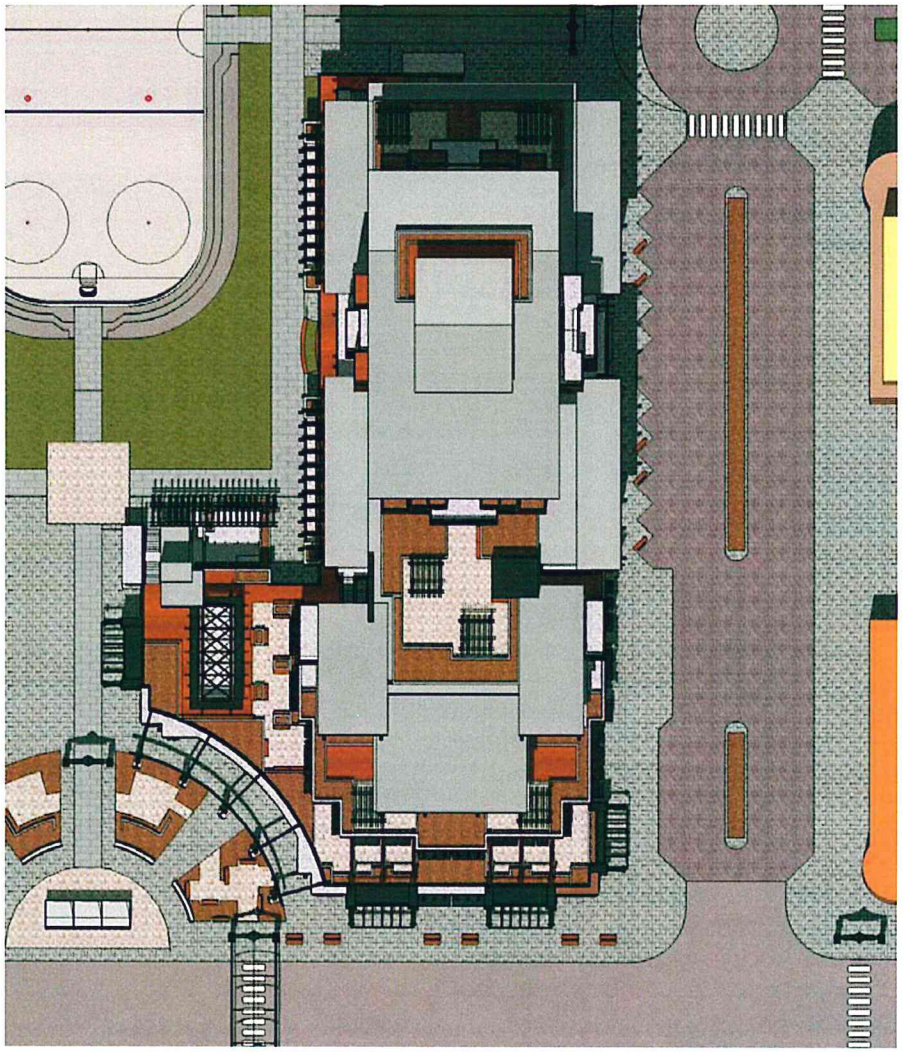
Office space can be arranged to accommodate studio or traditional office layouts. Businesses can shrink down to a small one-person outfit, or grow to accommodate franchise establishments, practitioner offices, medical labs, daycares, and even live-work opportunities. Quick and easy accessibility to the second floor provides a simple connection to the street below which strengthens opportunities and sustainability.

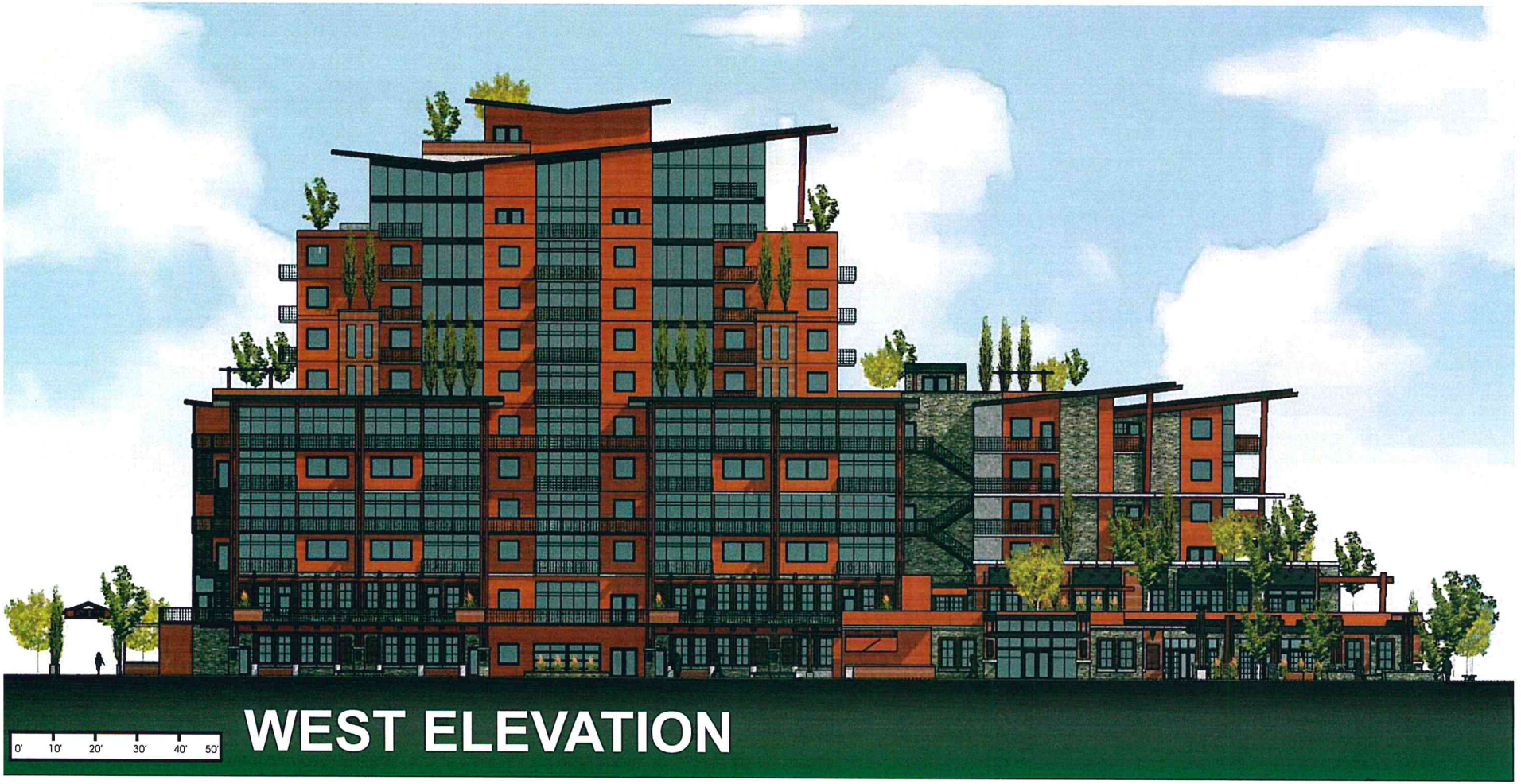




UILDING SECTION

ROOF PLAN



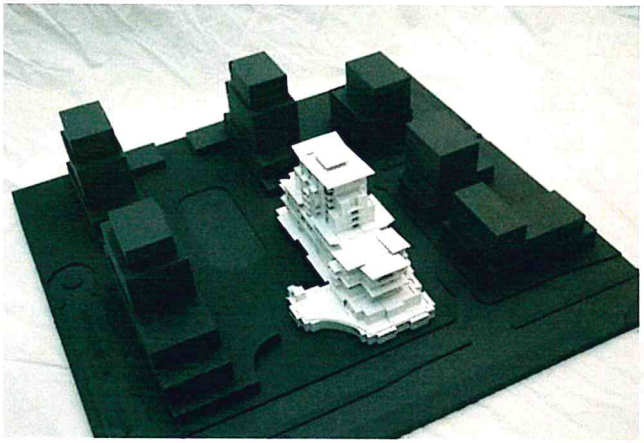

0'
10'
20'
30'
40'
50'
WEST ELEVATION

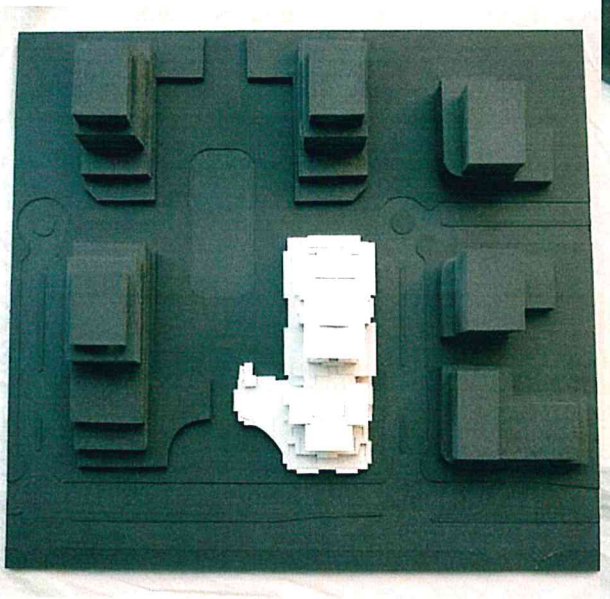

0'
10'
20'
30'
40'
50'
EAST ELEVATION

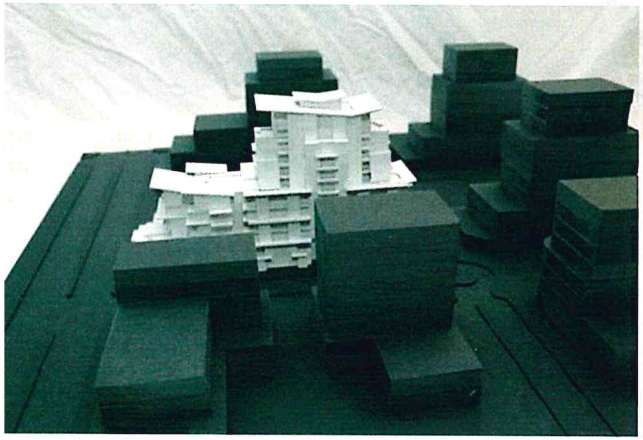

157th Street

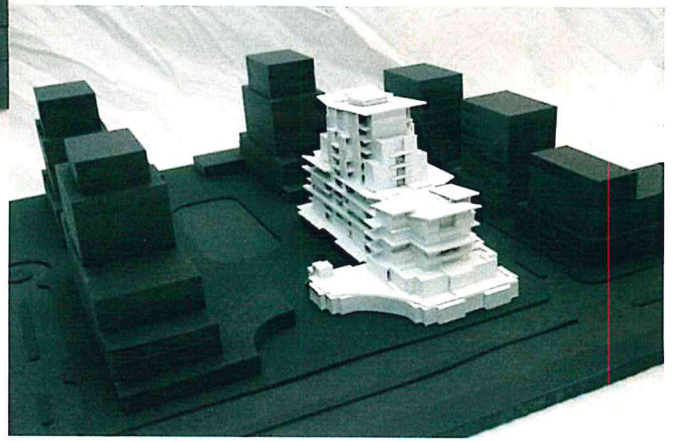

East Gate


Meadowlark Station

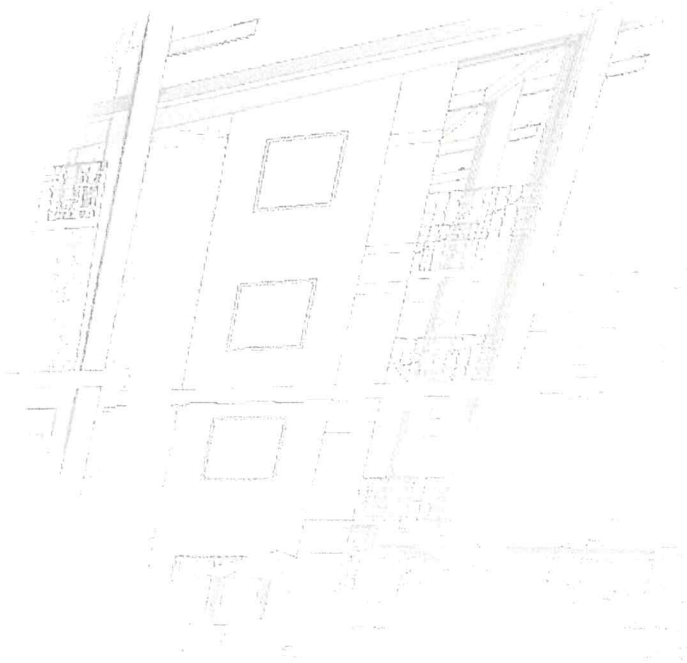








thesis statement and conclusion



here are several significant aspects of quality urban lesign that form the basis for creating and naintaining healthy environments.

mart growth strategies that advocate mixed land ıses, compact building design, walkable :ommunities, transportation varieties, open spaces, ınd place-making ingenuity can inform a building's hape, function and essence. This, in turn, will enhance its community and create a more diverse, ›edestrian-friendly neighbourhood.

his thesis will prove that the adaptive reuse of an xisting shopping mall as a mixed-use facility within a ransit-Oriented Redevelopment can re-establish a ense of place, increase public transit use and ›ecome a catalyst for smart growth developments in ıe City of Edmonton.

Extensive research on current development patterns, smart growth, New Urbanism, the link between transportation and livability, transit-oriented developments, and relative precedent studies helped guide the selection of a greyfield site in the form of an underutilized mall in Edmonton's west end.

This Thesis explored several solutions before finalizing a master site plan that would once again become the social and cultural center of the community, using good urban design strategies to create unique spaces that foster street activity, walkability, community pride, and sense of place.

These strategies not only influenced the site and surrounding context, but also the first building to be developed on the site - one that would become a springboard for the remaining buildings within the development, one that promotes interaction among residents, one that facilitates an appropriate mix of uses, one that supports public transit, and one that is sustainable. But more importantly, one that can become a model for future developments in the war against current patterns that contribute to urban sprawl and a reduced quality of life.

acknowledgements

A sincere thanks to my Thesis Committee - Jan, Carol and David who, during these countless months in which this endeavor lasted, challenged and provided me with useful, helpful guidance.

However, a special thank you to Jan, who without your constant dedication and support, this Thesis would likely not have concluded.

And to my ever-patient wife Laura. Words simply cannot express my gratitude for all your love and support throughout this long... LONG... journey. With all my heart, thank you.