THE REVITALIZATION OF EDMONTON CN TOWER LANDS INTO A SOCIAL HOUSING AND SOCIAL SERVICES SUPPORT HUB THROUGH THE UTILIZATION OF DECONSTRUCTIVIST ARCHITECTURE

RAIC 690A/B Syllabus Diploma Project

Final Diploma Project Submission (Graduate Thesis)

Submitted in Fulfilment of the Requirement for the:

RAIC PROFESSIONAL DIPLOMA IN ARCHITECTURE

AT

RAIC Syllabus Edmonton Chapter

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Royal Architecture Institute of Canada

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END OF THE RAIL: EXPLORATION OF DECONSTRUCTISITIC URBAN PLANNING AND ARCHITECTURE IN THE EVOLUTION AND ENHANCEMENT OF A SOCIAL HOUSING/SERVICE NETWORK WITHIN THE DOWNTOWN CORE OF THE CITY OF EDMONTON

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RAIC 690 Syllabus Diploma Project

Research Proposal

Royal Architecture Institute of Canada

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ABSTRACT

This project involves the exploration of deconstructive urban planning and architecture in the development and evolution of the Canadian National (CN) building to enhance the social housing/service network. The objective is to revitalize the CN Lands into a livable, workable social housing complex within the downtown urban fabric. Deconstruction architecture has been happening since the 1980s, but the theory behind it was brought up 30 years prior. In this study, literature review will be conducted to summarize background and historical information of the existing CN Lands site in Edmonton Alberta. It will also include deconstruction principles; theoretical framework, methodology, and related topics will be discussed, and also a brief understanding of the requirements and needs of social housing/services. Precedent studies will also be shown with some of the most iconic deconstructive architects and their works, including Bjarke Ingels Group, Coop Himmelb(L)Au, Peter Eisenman, Rem Koolhaas, and Daniel Libeskind. Additional precedent studies based on social housing will also be reviewed. The purpose of this study is to demonstrate that the CN lands can be reintegrated through social housing designs into the new downtown Edmonton fabric by the principles of deconstruction architecture.

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IMAGES

THESIS HYPOTHESIS / STATEMENT

Deconstructivism architecture and urban planning can be applied to the successful evolution and enhancement of a social housing and associated service network within the downtown core on the CN lands site within the City of Edmonton. Redevelopment of the existing site to suit a new use while utilizing the principles of deconstructivisim.

BACKGROUND
CN TOWER LANDS

Figure 1. CN Tower lands aerial. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhlgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

DETAILS

ARCHITECT ABUGOY & SUNDERLAND ARCHITECTS
LOCATION EDMONTON, ALBERTA
BUILDING GFA 26,040m^2

SITE HISTORY

The CN Lands, located in Edmonton, Alberta, originally housed the Canada Northern Railway (CNR) Edmonton station in 1905. This was the main train station of the time. The CNR Edmonton station went through an addition in the 1928, as shown in figure 2, but was later demolished in 1950s to give way to the CN Tower.

Figure 2. CNR Edmonton Train Station. Reprinted from Postcard 14020 by Gowen Sutton Co. Ltd, 1960, adapted from http://peel.library.ualberta.ca/postcards/PC014020.html

PROJECT HISTORY

The CN tower represents a historic part of the Edmonton downtown fabric and growth. The tower was designed by Abugov and Sunderland architects, and construction was completed in 1966 by Hashman Construction Ltd. The tower was built and formerly owned by the CNR Company. At the time of construction, it was the tallest tower west of Toronto, and was the first major highrise that defined the Edmonton Skyline. The tower itself only occupies a portion of the proposed site, whereas the remaining site is asphalt and gravel parking.

In recent years the tower has shown indicative ageing signs with some structural damages, including falling panels in 2008. The parking area also needs significant upgrades , due to the rejuvenation around the site, such as EPCOR Tower, Ice District, and Royal Alberta Museum, etc. Details on the rejuvenation can be found in sections Importance of the Site and Site Adjacencies.

BUILDING FORM

The original tower's style was modern at the time, with a defined podium, first seen in New York's Lever house by SOM in 1953. Figure 3 shows diagrams of International Style, by which the current CN Tower was designed.

> *"The podium rests on a glass-enclosed tall ground floor railway stations and consists of a 3-storey concrete parking structure, which is fully clad in pre-cast panels for the appearance of solidity. This solidity is countered by the verticality of the tall, thin office tower with slightly curving facades. The 22-storey tower is clad in glazed curtain wall with pre-cast fins that exaggerate the height of the building."*

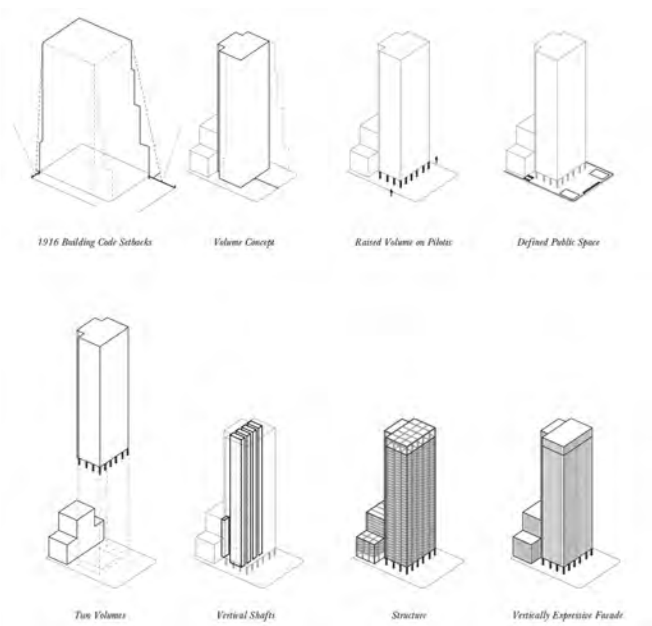


Figure 3. International Style Building Diagram. Reprinted from SEAGRAM BUILDING, MIES VAN DER ROHE, 1958 // ANALYSIS
, by Fallon Walton, 2018, adapted from http://www.fallon-walton.com/new-page-1/

IMPORTANCE OF SITE

The location defines the importance of this site. The current site is located within the downtown core of the City of Edmonton, where revitalization has begun since early 2015. Directly north of the site is the EPCOR Tower that was completed in 2012, whereas west of the site is the new Rogers Place that wascompleted in 2016. On the east is the new Royal Alberta Museum that was completed in 2018, and on the south is the redevelopment for the ice district. The surrounding revitalization makes the site located at the crossroads of these four landmarks.

CONNECTIVITY

As mentioned in the section of Importance of Site, the proposed site can be transformed to a main hub of connectivity to the new downtown core and its surrounding features. The site is located along the 101st street and the 104th avenue in Edmonton. The 101st street has become one of the major connections/arterial road ways into the downtown core, as shown in Figure 4 in dark red, whereas the 104th avenue, also a major arterial roadway, has become a very cultural connection roadway. On the104th avenue, there are Rogers Place, Royal Alberta Museum, City Hall, Grant McEwan University, and the Edmonton Ice district (Section Site Context). Additionally, the Light Rail Transit(LRT), as shown in Figure 5, runs directly below the site and a possible station connection could be complete, which would increase the pedestrian traffic through and around the proposed site.

Figure 4. Map denoting the major vehicular routes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Figure 5. Map of Edmonton Light Rail Transit. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SITE ZONING

Site location is currently zoned Core commercial Arts Zone, by the City of Edmonton. The total site area of all parcels is 42,881m^2, as shown in Figure 5a.

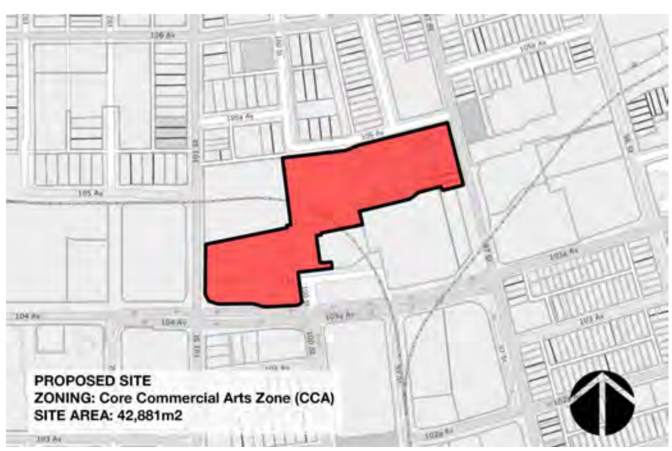


Figure 5a. Zoning Map denoting site location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SITE ADJACENCIES

As stated above, the site's proximity and location make it an excellent redevelopment candidate. Figure 6 below shows the major developments and major buildings in proximity to the proposed site (red: proposed site, green: mixed use developments, blue: cultural items, orange: recreation, yellow: civil).. The current site is also located adjacent to a major LRT line. With all the surrounding development and the nearby major LRT station, this site shows importance and possibility to provide better connectivity to the area.

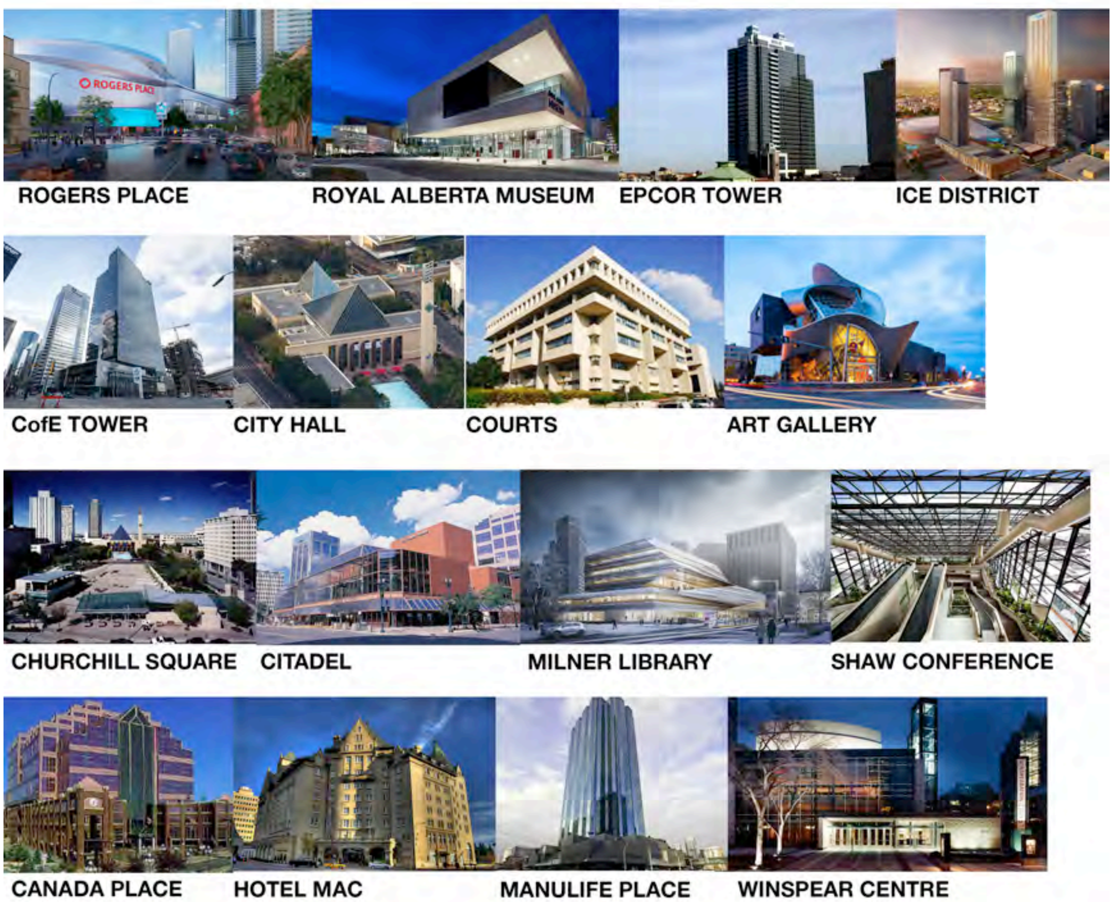


Figure 6. Site context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhlgYWJiZTA3ZGNkODM3MTFlNmlzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

EDMONTON SOCIAL HOUSING

For years, City of Edmonton has attempted to accommodate the homeless and the less fortunate citizens of the city, and currently there are six shelter accommodations being used However, with the growing tread of large scale commercial properties development in the downtown core, those in need are shuffled further and further away from resources. A centralized location (proposed site in red), could combine the necessities required, along with affordable housing, which is defined by Canada Mortgage and Housing Corporation as below:.

Figure 7. Shelter, Housing and Hospital Locations. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

“housing is considered “affordable” if it costs less than 30% of a household’s before-tax income. Many people think the term “affordable housing” refers only to rental housing that is subsidized by the government. In reality, it’s a very broad term that can include housing provided by the private, public and non-profit sectors. It also includes all forms of housing tenure : rental, ownership and co-operative ownership, as well as temporary and permanent housing.” (CMHC, 2018, par. 1)

The development of a shelter and/or affordable housing complex would benefit not only those who need affordable housing, but also those who need emergency support. Below in Figures 7-9 are statistics showing the current shelter/affordable housing needs.

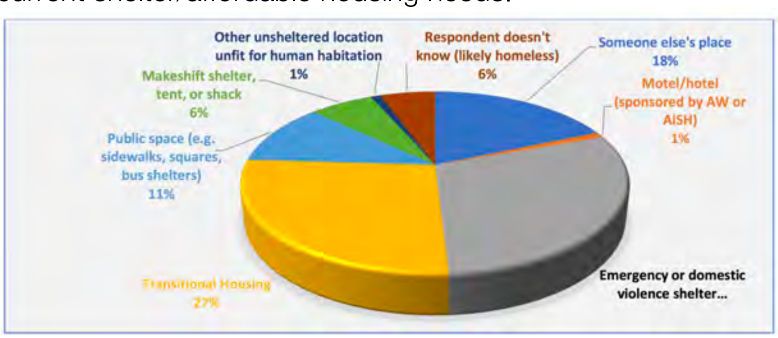


Figure 8. Diagram of social needs. Reprinted from 2016 Edmonton Point in Time Homeless Count Final Report, by Homeward Trust Edmonton, 2016, adapted from http://homewardtrust.ca/wp-content/uploads/2016/11/2016-Edmonton-Homeless-Count-Final-Report.pdf

	Where the respondent spent the night	Male (N=1205)	Female (N=396)
Unsheltered (N=352)	Public space (e.g. sidewalks, squares, bus shelters)	11%	11%
	Vehicle (car, van, RV, truck)	2%	1%
	Makeshift shelter, tent, or shack	5%	7%
	Abandoned/vacant building	1%	1%
	Other unsheltered location unfit for human habitation	1%	1%
	Respondent doesn't know (likely homeless)	2%	3%
Sheltered (N=710)	Emergency or domestic violence shelter	42%	38%
	Motel/hotel (sponsored by AW or AISH)	2%	6%
Provisionally Accommodated (N=539)	Someone else's place	9%	16%
	Hospital, jail, prison, remand centre	0%	1%
	Motel/hotel (NOT sponsored by AW or AISH)	0%	1%
	Transitional Housing	23%	15%
Total (valid, N=1,601)		100%	100%

Figure 9. Survey of social needs. Reprinted from 2016 Edmonton Point in Time Homeless Count Final Report, by Homeward Trust Edmonton, 2016, adapted from http://homewardtrust.ca/wp-content/uploads/2016/11/2016-Edmonton-Homeless-Count-Final-Report.pdf

Facility
Addiction Recovery Centre
Alberta Works (hotel vouchers)
Bent Arrow Iskwew
Catholic Social Services Alpha for Men
Catholic Social Services La Salle
Catholic Social Services Safehouse
Catholic Social Services Valeda House
E4C Crossroads Downtown
E4C WEAC
Edmonton John Howard Society NOVA
Edmonton John Howard Society The Loft
George Spady Detox
George Spady Place of Dignity
George Spady Shelter
Henwood
Hope Mission Herb Jamieson
Hope Mission Intox
Hope Mission Mat
Hope Mission Women's
Hope Mission Youth
Jellinek Society
Lurana Shelter
McDougall House
Recovery Acres
Sage Seniors Safe House
Salvation Army Addictions and Residential Centre
Urban Manor
Wings of Providence
WIN House
YESS Nexus
YESS Shanoa's Place / Graham's Place

Individual Agencies	Transit	Parks	Bottle Depots
Bissell Centre Drop-in	LRT Stations	Airway	Capilano
Bissell Centre Intake	Bay/Enterprise Sq.	Capilano	City Centre
Boyle McCauley Health Centre	Belvedere	Dawson	Clareview
Boyle Street Community Centre	Central	Forest Heights	Fort Road
Christian Care Centre	Century Park	Hermitage	Millwoods
City Centre Mall	Churchill	Kinnaird	Quasar
Downtown YMCA Housing	Coliseum	Kinsmen	Strathcona
Elizabeth House/WEAC	Corona	Louise McKinney	
Father's House	Health Sciences/Jubilee	Mill Creek Ravine	
George Spady Detox	McKernan/Belgravia	Queen Elizabeth	
Hope Mission Main Building	Southgate	Queen Mary	
Hope Mission: Herb Jamieson Centre	Stadium	Rundle/Gold Bar	
Hope Mission: Mat Program	University	Victoria	
Hope Mission: Women's Shelter			
Marian Centre	Transit Centres		
Mustard Seed	Jasper Place		
OSYS	West Edmonton Mall		
Operation Friendship			
Prime Staffing			
Rock Lutheran Inner City Society			
Salvation Army: Addiction/Residential Centre			
Stanley Milner Library			
YESS Armoury			

Figure 10. Facilities and Shelter agencies and locations. Reprinted from 2016 Edmonton Point in Time Homeless Count Final Report, by Homeward Trust Edmonton, 2016, adapted from http://homewardtrust.ca/wp-content/uploads/2016/11/2016-Edmonton-Homeless-Count-Final-Report.pdf

ADDITIONAL SOCIAL HOUSING MATERIAL

Affordable Housing Strategy
The City of Edmonton
https://www.edmonton.ca/programs_services/housing/affordable-housing-strategy.aspx

Canada's National Housing Strategy
Government of Canada
https://www.placetocallhome.ca/pdfs/Canada-National-Housing-Strategy.pdf

National Housing Strategy
Canada Housing and Mortgage Corporation
https://www.cmhc-schl.gc.ca/en/nhs

MAKING LIFE BETTER: Alberta's Provincial Affordable Housing Strategy
Government of Alberta
http://www.seniors-housing.alberta.ca/documents/Provincial%20Affordable%20Housing%20Strategy.pdf

Affordable Housing
Federation of Canadian Municipalities
https://fcm.ca/home/issues/affordable-housing.htm

Catholic Social Services
https://www.cssalberta.ca/Our-Services

Homelessness Partnering Strategies
Government of Canada
https://www.canada.ca/en/employment-social-development/programs/communities/homelessness.html

Strategies for Preventing Homelessness
Canadian Observatory on Homelessness
http://homelesshub.ca/resource/strategies-preventing-homelessness

New Ear Begins for Social Housing Services in Alberta
Canada Housing and Mortgage Corporation
https://www.cmhc-schl.gc.ca/en/Media-Newsroom/News-Releases/2016/New-Era-Begins-for-Social-Housing-Services-in-Alberta

Where to Find Affordable Housing
The City of Edmonton
https://www.edmonton.ca/programs_services/housing/where-to-access-affordable-housing.aspx

Housing Programs
The City of Edmonton
https://www.edmonton.ca/programs_services/programs-housing.aspx

Website
Capital Regional Housing
https://www.crhc.ca

Website
Bissell Centre
https://bissellcentre.org/programs/individual/housing-services/

THEORETICAL FRAMEWORK

DECONSTRUCTION

The definition of Deconstruction from Merriam-Webster is "A theory used in the study of literature or philosophy which says that a piece of writing
does not have just one meaning and that the meaning depends on the reader"
(Deconstruction, 2016, par. 1)

Deconstruction initiated as a theory by Jacques Derrida, with inspiration from Ferdinand de Saussure. He was "most celebrated as the principal exponent of deconstruction, a term he coined for the critical examination of the fundamental conceptual distinctions, or 'oppositions', inherent in Western philosophy since the time of the ancient Greeks." (Jacques Derrida, 2016, par.2) The theory of deconstruction revolved around an idea against modernism rigid standards, as noted byMr. Derrida:

"to 'deconstruct' an opposition is to explore the tensions and contradictions between the hierarchical ordering assumed or asserted in the text and other aspects of the text's meaning, especially those that are indirect or implicit. Such an analysis shows that the opposition is not natural or necessary but a product, or 'construction,' of the text itself." (Jacques Derrida, 2016, par.2)

From these theories, architects during the late 1970 and early 1980 created a new form of architecture that known as deconstructivism. Deconstructivism would "reflect two sources of influence for the type of postmodern work exhibited: the philosophical deconstruction of Jacques Derrida and Russian constructivism." (Nesbitt, 1996, p.27)

The definition of Deconstructivism from Merriam-Webster is"An architectural movement or style influenced by deconstruction that encourages radical freedom of form and the open manifestation of complexity in a building rather than strict attention to functional concerns and conventional design elements (as right angles or grids)" (Deconstructivism, 2016, par. 1).

One of the first architects to translate Jacque Derrida's theory into a design principle is Peter Eisenman. Peter "argued that a building should be made up of differing 'texts' that need not, indeed should not, be resolved into a unified whole" (Wiseman, 2000, p. 305). This would become one of the founding principles of deconstructivism and fragmentation, and "the source of which may lie in the rejection of anthropomorphic embodiment" (Nesbitt, 1996, p.31). The idea was rather than, having a building systematically designed, architects would design individual forms to create an overall structure. Mr. Eisenman "thought outside the traditional parameters of 'built work', concerning himself instead with a conceptual form of architecture, in which the process of architecture is represented through diagrams rather than through actual construction" (Peter Eisenman, 2016, par. 3).

In 1988, Mark Wigley, a New Zealand born architect, and Philip Johnson, an American born architect, curated the 1988 Museum of Modern Art exhibition Deconstructivist Architecture, which cemented the style into architectural history. Deconstruction architects from all over the world were invited to present their work, including Peter Eisenman, Frank Gehry, Rem Koolhaas, Daniel Libeskind, Bernard Tschumi, Zaha Hadid, and Coop Himmelblau. Some of the most common deconstructisim traits, such as fragmentation, surface manipulation, non-rectilinear shapes, curvilinear and bold shapes, stimulating unpredictability, and distort and dislocate, were exhibited in the museum.

PRINCIPLES

Layering
Deconstructivism architecture explored the practice of layering, where fragmenting pure basic volumes into vertical and horizontal planes, and creating different layers.

Figure 11. Example of Layering. Reprinted from Scene 4 AE7 Archexteriors, by Evermotion, 2018b, adapted from https://evermotion.org/shop/show_product/scene-4-ae7-archexteriors/499

Angular
Deconstructivism architecture utilized no right angles in many designs to emphasis building, site, and location.

Figure 12. Example of Angular. Reprinted from Vtira Fire Station / Zaha Hadid, by Luke Fiederer, 2016, adapted from https://www.archdaily.com/785760/ad-classics-vitra-fire-station-zaha-hadid-weil-am-rhein-germany

Organic Curvilinear
Deconstructivism architecture used organic curves to show rhythm and connection to site.

Figure 13. Example of Organic Curvilinear. Reprinted from Zaha Hadid's Heydar Aliyev Center rises from the landscape in Baku, by Amy Frearson, 2013, adapted from https://www.dezeen.com/2013/11/14/zaha-hadid-heydar-aliyev-centre-baku/

Bold Shapes
Deconstructivism architecture implored bold shapes into the design to emphasize certain elements

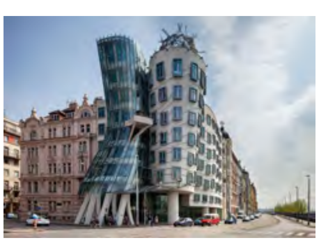
Figure 14. Examples of Bold Shapes. Reprinted from Busan Cinema Center has the Longest Cantilever Roof in the World, by Tekla, 2018, adapted from https://www.tekla.com/references/busan-cinema-center-has-longest-cantilever-roof-world#

Chaos
Deconstructivism architecture merged a form of chaos with building components to create chaotic forms and layouts.

Figure 15. Example of Chaos. Reprinted from Walt Disney Concert Hall, by Jake O'Neil, 2012, adapted from https://commons.wikimedia.org/wiki/File:Walt_Disney_Concert_Hall,_LA,_CA,_jjron_22.03.2012.jpg

Surface Manipulation
Deconstructivism architecture defined classical architectural by imploring surface manipulation through curves and angular designs.

Figure 16. Example of Surface manipulation. Reprinted from Surface Manipulation with Folding Patterns, by Architectural Kinetics , 2013, adapted from https://architecturalkinetics.wordpress.com



Fragmentation
Deconstructivism architecture explored fragmentation where building components were separated to give a feel of fragments of design.

Figure 17. Example of Fragmentation. Reprinted from The Dancing House in Prague, by Lena Sevcikova, 2015, adapted from https://commons.wikimedia.org/wiki/File:The_Dancing_House_in_Prague.jpg

Non-Rectilinear Shape
Deconstructivism architecture engaged in non-rectilinear shapes by utilizing curvilinear and angular designs. Rectilinear designs however can be utilized in fragments.

Figure 18. Example on Non-Rectilinear shape. Reprinted from Toronto's Royal Ontario Museum: The ROM, by TORONTO.COM, 2016, adapted from https://www.toronto.com/things-to-do/attractions/royal-ontario-museum-rom/

Juxtaposes Elements
Deconstructivism architecture meshed non-typical elements together to form a juxtapose composition.

Figure 19. Example of Juxtaposed Elements. Reprinted from Fachadas de vidrio, la piel transparente, by Ipray3, 2018, adapted from https://www.detailerssimon.com/fachadas-de-vidrio-la-piel-transparente/

Abstract Nature
Deconstructivism architecture utilized abstraction such as a natural design element, where scale and perspective were skewed.

Figure 20. Example of Abstract Nature. Reprinted from Abstract Architecture Photo Contest Winner, by Evermotion, 2018a, adapted from https://www.viewbug.com/contests/abstract-architecture-photo-contest

Relation to site
Deconstructivism architecture incorporated site into the design, either through integration or as an opposite connection.

Figure 21. Example of Relation to Site. Reprinted from Guangzhou Opera House / Zaha Hadid Architects, by Archdaily, 2011, adapted from https://www.archdaily.com/115949/guangzhou-opera-house-zaha-hadid-architects

METHODOLOGY

Three methods are selected to comprise of the Methodology section: Iconography and Iconology, Social History, and Visual-Based Studies, as all three are relevant when examining deconstruction's influence on the revitalization of the CN Lands.

- Iconography and Iconology are related directly with deconstructivism. Most buildings by deconstructive Architects become Iconographic buildings with meaningful visual images and symbols from their use and design. They are also icons of their location and most deconstructive buildings became the focal point of their location. One example is the Guggenheim Museum in Bilbao, Spain, which revitalized an industrial city into a major tourist destination.

- Social History plays an important part in deconstruction. Celebrated architects like Robert Venturi has noted that the International Style was boring and bland, and people deserved better designed architecture. Visual-Based Studies is a valuable resource when reviewing deconstructive architecture. Deconstruction architecture is unlike any other type because it is best experienced in person or visually. The way the curves and bold forms react is one of the most interesting architectural designing items as they not only with each other, but also with the surrounding site and building.

Questions for Production:

Below are questions in reference to Deconstructive architecture and its origins.

1. How was Deconstructive architecture constructed?

The theory of deconstructivism arose from the rebellion away from the international modern style, the less is more philosophy, where buildings were designed as rigid structures and linear functions.

2. Who was involved?

Robert Venturi and Peter Eisenman were all noted architects who combated with the international style. They were followed by Jacques Derrida who was a major theorist in regard to deconstruction.

3. Where is Deconstruction? Why is Deconstruction?

Deconstruction now noted all over the world, such as American universities in Princeton and Penn State. It would eventually catch on with younger architects (like Frank Gehry and Zaha Hadid) and spread across the globe.

4. When was it built?

Most deconstructive museum buildings were built between 1995-2015.

5. How was it paid for? Who paid for it? Why?

Deconstructive designs are generally public buildings that weredesigned for the people. In many cases there were private benefactors who aided in the construction, such as the Disney foundation that was for the Disney Concert Hall in Los Angeles.

6. Has it been altered after its original construction?

Deconstruction architecture is always being altered by new designs and ideas. Unlike the International style, deconstruction has no set style, hence no symmetrical plans and linear walls, etc.

7. What are the main intentions of the architects and other producers?

The main intentions of the architect who designs deconstructive buildings are not only to design a functioning building with the interior elements, but also to create a piece of art in the functioning building as a whole.

8. Where did these ideas come from?

The ideas for deconstructive architecture came out of a rejection of the International Style, by architects who wanted to innovate beyond symmetrical buildings.

9. What is the function of the architecture?

The function of deconstructive architecture is to amaze its viewers. Bold shapes and uncommon materials make the buildings stand out and add contrast to the surrounding environment.

10. Who benefited from this architecture? In what way?

The people who benefit from this architecture are the users, they are the ones who enjoy the interior and revel at the exterior. The city would also benefit as this architectural design would contribute to tourism of the city.

PRECEDENTS
VIA 57 WEST

Figure 22. Via 57 West photograph. Reprinted from VIA 57 WEST, by Bruce Damonte, 2018, adapted from https://www.langan.com/portfolio/via-57-west/

DETAILS

ARCHITECT	BJARKE INGELS GROUP
LOCATION	MANHATTAN, NY, NY
BUILDING GFA	77,200 m2

PROJECT

38-Story residential building along the Hudson river in Manhattan. The building includes 709 residential units and multiple ground floor retail spaces. The focal point of the structure is a massive raised outdoor courtyard located on the second floor.

BUILDING FORM

Via 57 West building form is a modern deconstruct representation of classical Highrise, as shown in Figure 23 below. The building is comprised of the basis of a base podium with a Highrise above. The design was tilted to frame some view and allow light to penetrate, and negative space was added to create special spaces, such as the courtyard.

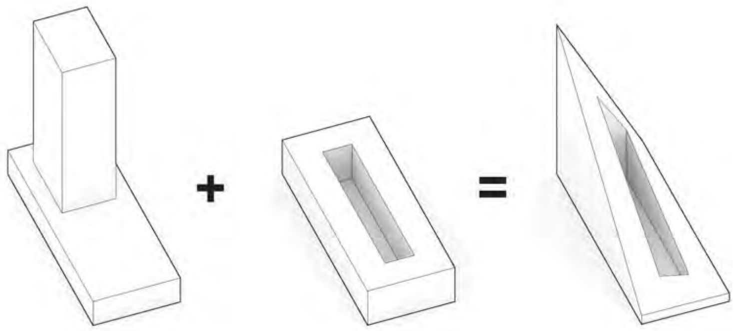


Figure 23. Via 57 West building form creation. Reprinted from VIΛ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

RELATIONSHIP TO SITE

The building itself covers a large portion of the site. It has minimal setback around the entire structure, while creating an interior relationship with site, by an expansive courtyard. The shape and orientation of the building also play an important role, as they utilize the site's location to maximize solar light that goes into the courtyard, and also to minimize wind loading. The main floor is also fully glazed to allow natural light to penetrate into the commercial spaces. As shown in Figure 24, the buildings footprint covers a large portion of the site.

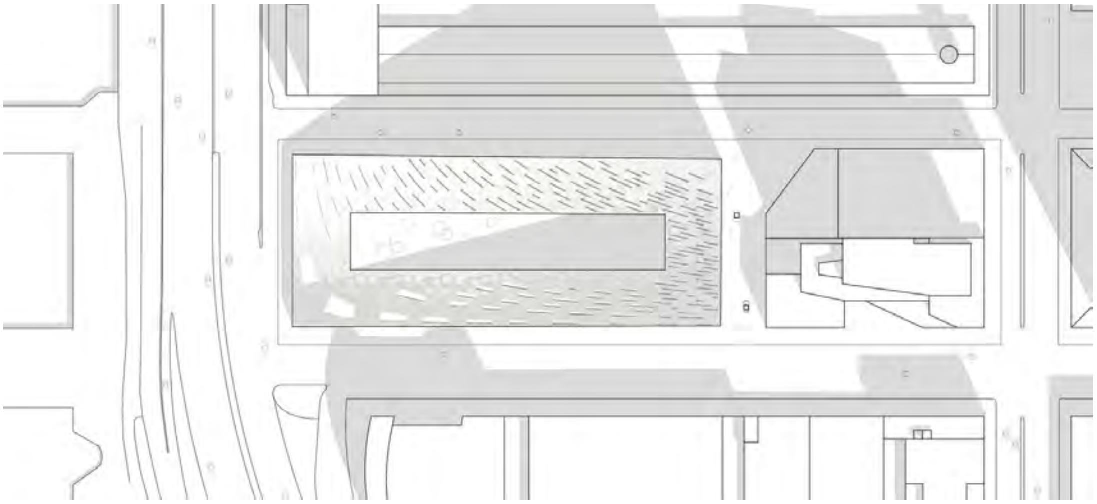


Figure 24. Via 57 West Site Plan. Reprinted from Iwan Baan photographs BIG's completed VIA 57 West tower in New York, by Dan Howarth, 2016, adapted from https://www.dezeen.com/2016/09/10/iwan-baan-photographs-big-via-57-west-tower-new-york/

URBAN INFILL

The residential tower itself was designed to be bold and abstract to the existing surrounding developments. Being an urban infill on the island of Manhattan, the building breaks away from the traditional linear design that shown in Figure 25.

Figure 25. Aerial of Via 57 West. Reprinted from VIΛ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

DESIGN STRATEGIES

Via 57 West design strategies include the analysis of the site and the creation of the design elements, such as framing views, optimizing natural light, creating and ensuring views, and creating natural and private space. Figure 26 below denotes the steps the architect took to create his designing strategy.

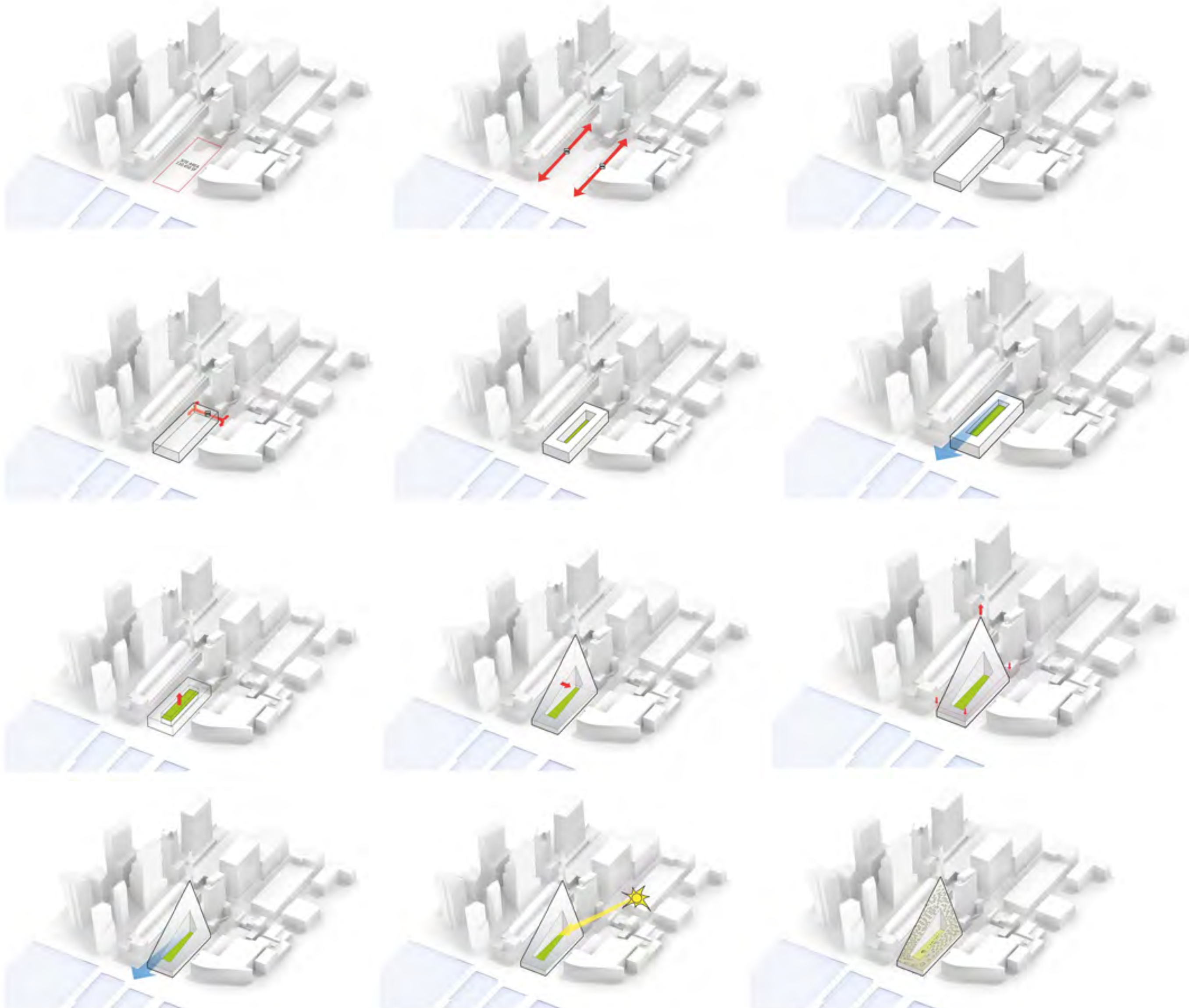


Figure 26. Design strategy for Via 57 West. Adapted from VI/\ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

One interesting element in the design, is the architect not only maximized views of the Hudson river from this building, but also ensured the building behind would retain some views, a feature that is not always considered or achieved.

UNIQUE ELEMENT

Unique element of Via 57 West are the shape, materials, and the raised courtyard. The shape of the building, as seen in Figure 27, is a skewed triangular shape. This was created, as mentioned above, to allow for optimal natural light and views. The materials selected were basic metal panels (stainless steel) to not only allow for some contrast with the surrounding buildings, but also have a minimalistic appearance. The courtyard itself is a unique element as the island of Manhattan is quite dense, and natural park space, while available, is not necessarily close. The courtyard allows residents access to park space and distances them from traffic noise.

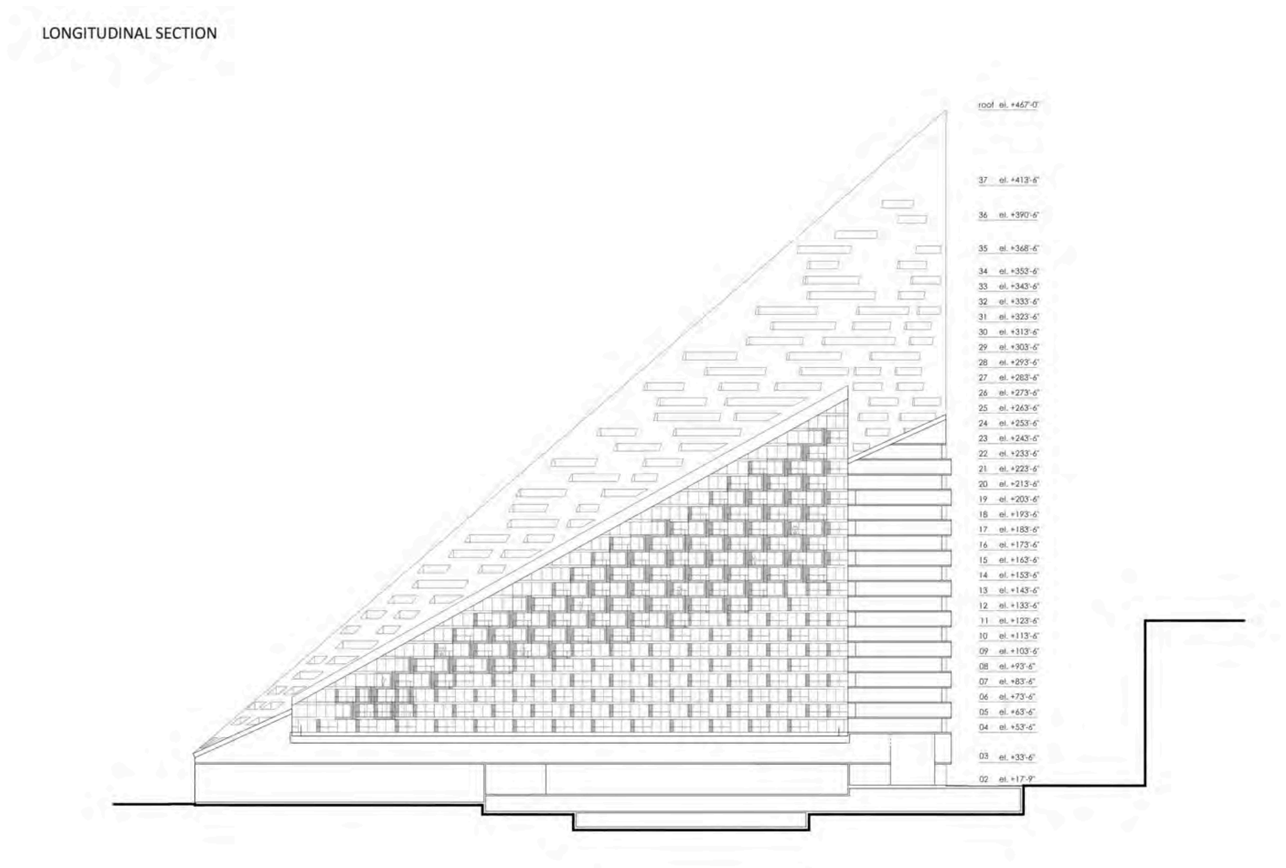


Figure 27. Building Section of Via 57 West. Reprinted from VI/\ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

INFLUENCE

Via 57 West precedent influences the proposed site by the use of deconstructive principles, the type of development, and the urban topography. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, and the relation to site. The type of development is similar to the proposed site- an urban site that is an infill. There are also similarities in urban topography, as both sites are located in high density locations and within a downtown core.

PRECEDENTS
CCTV HEADQUATERS

Figure 28. CCTV Headquarters photograph. Reprinted from CCTV Headquarters / OMA, by OMA, 2012, adapted from https://www.archdaily.com/236175/cctv-headquarters-oma/50181f3528ba0d48240005e0-cctv-headquarters-oma-photo

DETAILS

ARCHITECT	OMA (REM KOOLHAAS)
LOCATION	BEIJING, CHINA
BUILDING GFA	77,200 m2

PROJECT

44-Story commercial building located within the Beijing Central Business District. The building serves as the headquarters for the China Central Television (CCTV). The focal point of the structure is the massive cantilever.

BUILDING FORM

The building form is a subtraction process and an abstract form. One basis for the form is shown below in Figure 29, whereas a section of a pyramid is removed to reveal a skewed like form. The form itself is interesting based on the cantilever, which is quite drastic in size.

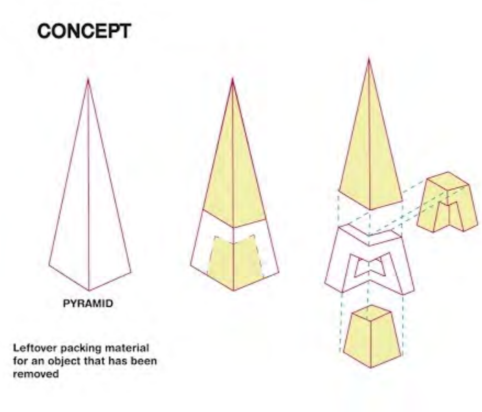


Figure 29. CCTV Building form creation. Reprinted from Site Analysis + CCTV Headquarters, by Mouaz Ghandour - Vanessa Sawaya - Sebastian Itani, 2012, adapted from http://arc531.blogspot.com/2012/10/group-4-cctv-headquarters-mouaz.html

RELATIONSHIP TO SITE

CCTV Headquarters' relation to the site is through its orientation and placement within the site. The building is located in the back half of the site, allowing a much larger front courtyard. The site is representational of the building's form with rectangular and angular lines, as shown in Figures 30 and 31.

Figure 30. CCTV Headquarters Site Plan. Reprinted from CCTV Headquarters / OMA, by OMA, 2012, adapted from https://www.archdaily.com/236175/cctv-headquarters-oma/50181f3528ba0d48240005e0-cctv-headquarters-oma-photo

URBAN INFILL

The location of CCTV headquarters is the Beijing Central Business District, a highly populated area of Beijing. The project involved an urban infill with an existing site. The site was redesigned to accommodate a new plaza park at the entry to the building, as shown in Figure 31.

Figure 31. Aerial of CCTV Headquarters. Reprinted from CCTV Headquarters / OMA, by OMA, 2012, adapted from https://www.archdaily.com/236175/cctv-headquarters-oma/50181f3528ba0d48240005e0-cctv-headquarters-oma-photo

DESIGN STRATEGIES

The design strategies of the building were to incorporate all required program for the CCTV requirements, as shown in Figure 32. The overall building shape is of mass and void, as shown in Figure 33. The buildings design includes a diverse perspective from every angle, allowing the building to be seen differently from each direction, as shown in figure 32. The bottom building also frames the upper building, which is another portion of the CCTV complex.

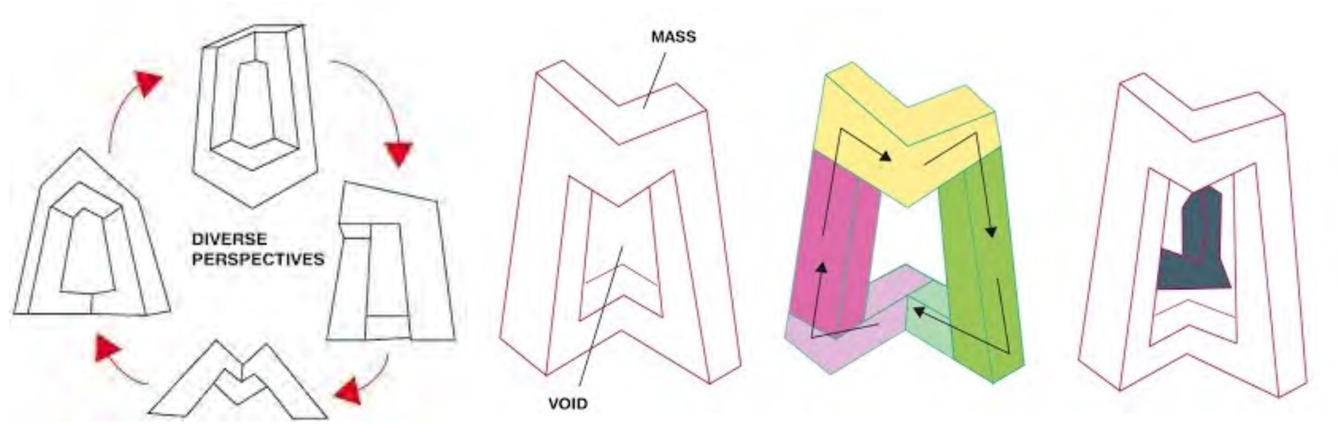


Figure 32. CCTV Building form creation. Reprinted from Site Analysis + CCTV Headquarters, by Mouaz Ghandour - Vanessa Sawaya - Sebastian Itani, 2012, adapted from http://arc531.blogspot.com/2012/10/group-4-cctv-headquarters-mouaz.html

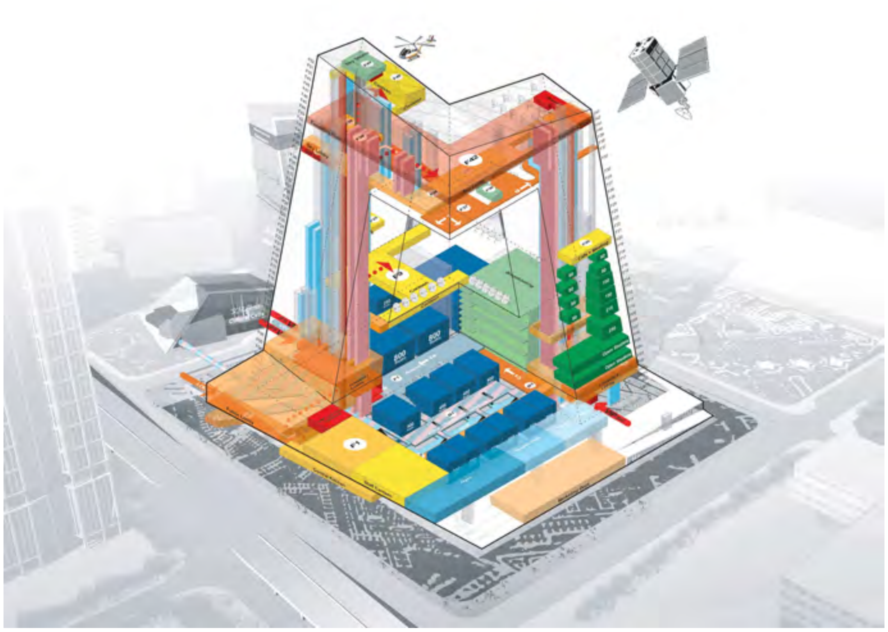


Figure 33. Design Program areas. Reprinted from CCTV Headquarters / OMA, by OMA, 2012, adapted from https://www.archdaily.com/236175/cctv-headquarters-oma/50181f3528ba0d48240005e0-cctv-headquarters-oma-photo

The shape of the building is a design element to incorporate all the required space. The building utilizes an intricate structural design system to accomplish the cantilevered design, and also the interior requirements of movement.

UNIQUE ELEMENT

The most unique element of the CCTV Headquarters is the structural system. Applying a cross grid system for the super structure, the building was capable of creating the drastic cantilever and the angled wall design, as shown in Figure 34.

Figure 34. Unique intricate structural design. Reprinted from CCTV Headquarters / OMA, by OMA, 2012, adapted from https://www.archdaily.com/236175/cctv-headquarters-oma/50181f3528ba0d48240005e0-cctv-headquarters-oma-photo

INFLUENCE

CCTV Headquarters precedent influences the proposed site by the use of deconstructive principles, the design strategies utilized, and the urban topography. The deconstructive principles can be seen throughout by the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, the abstraction, and the relation to site.

The design strategy of different facades would allow for different perspectives, as there are many different angles and connections can be made. There are also similarities in urban topography, for example, both sites are located in high density locations, within a downtown core, and incorporate the site landscape and topography into the building's design and form.

PRECEDENTS
TWO WORLD TRADE CENTER

Figure 35. Two World Trade Center rendering. Reprinted from BIG unveils replacement for Foster's Two World Trade Center design, by Jenna McKnight, 2015, adapted from https://www.dezeen.com/2015/06/09/big-two-world-trade-center-skyscraper-new-york-city-oust-foster-partners/

DETAILS

ARCHITECT	BJARKE INGELS GROUP
LOCATION	MANHATTAN, NY, NY
BUILDING GFA	260,000m2

PROJECT

80-Story commercial building located within the Manhattan's World Trade Center site. The building serves as the headquarters for 21st Century Fox, News Corp, and Silverstein Properties.

BUILDING FORM

Two World Trade Center's form is a combination of curtain wall highrise construction and small brick row housing. Both these elements are a staple of the Manhattan character. The building form merges the two towers together, as shown in Figure 36, to create a hybrid skyscraper that acts as its own neighborhood.

Figure 36. Two World Trade Center form creation. Reprinted from BIG unveils replacement for Foster's Two World Trade Center design, by Jenna McKnight, 2015, adapted from https://www.dezeen.com/2015/06/09/big-two-world-trade-center-skyscraper-new-york-city-oust-foster-partners/

RELATIONSHIP TO SITE

The relationship to site is an important point, as the design impacts the surrounding area. Below, Figure 37, is a site plan of the existing World Trade Center development. Two World Trade Center is the building located in the north-east corner. This location is straddling the financial district of New York, Wall Street, and the neighborhood of Tribeca. This characteristic is developed throughout the design. The building itself, similar to most New York highrises, fills the majority of the site and allows for some hard landscape areas and some vegetation.

Figure 37. Two World Trade Building Site Plan. Reprinted from 9/11 MEMORIAL, by PWP Landscape Architecture, 2015, adapted from http://www.pwpla.com/national-911-memorial

URBAN INFILL

Two World Trade Center is an exact definition of urban infill, where a highly dense area is redeveloped to accommodate future requirements. The site is a historic site with significant importance not only to New York, but also to the entire United States. The building utilizes the characteristic form allows light penetration and also matches scale of surrounding buildings, as shown in Figure 38 below.

Figure 38. Aerial of Two World Trade Building. Reprinted from BIG Replaces Foster, Unveils Plans for 2 World Trade Center, by Karissa Rosenfield(x), 2015, adapted from https://www.archdaily.com/640530/big-replaces-foster-unveils-plans-for-2-world-trade-center

DESIGN STRATEGIES

The design strategies include the design of a neighborhood but vertically. Below in Figure 39 shows the design strategies utilized. With verticality of stepping, it allows light to penetrate to the streets and also allows natural light to surround the building. To ensure maximum profit and exposure, the building utilizes the majority of the site. The angled walls even allows natural light to penetrate to a church located at street level. The stepping of the building was created to complement the design of One World Trade Center. The angles also complement the surrounding buildings and parks.

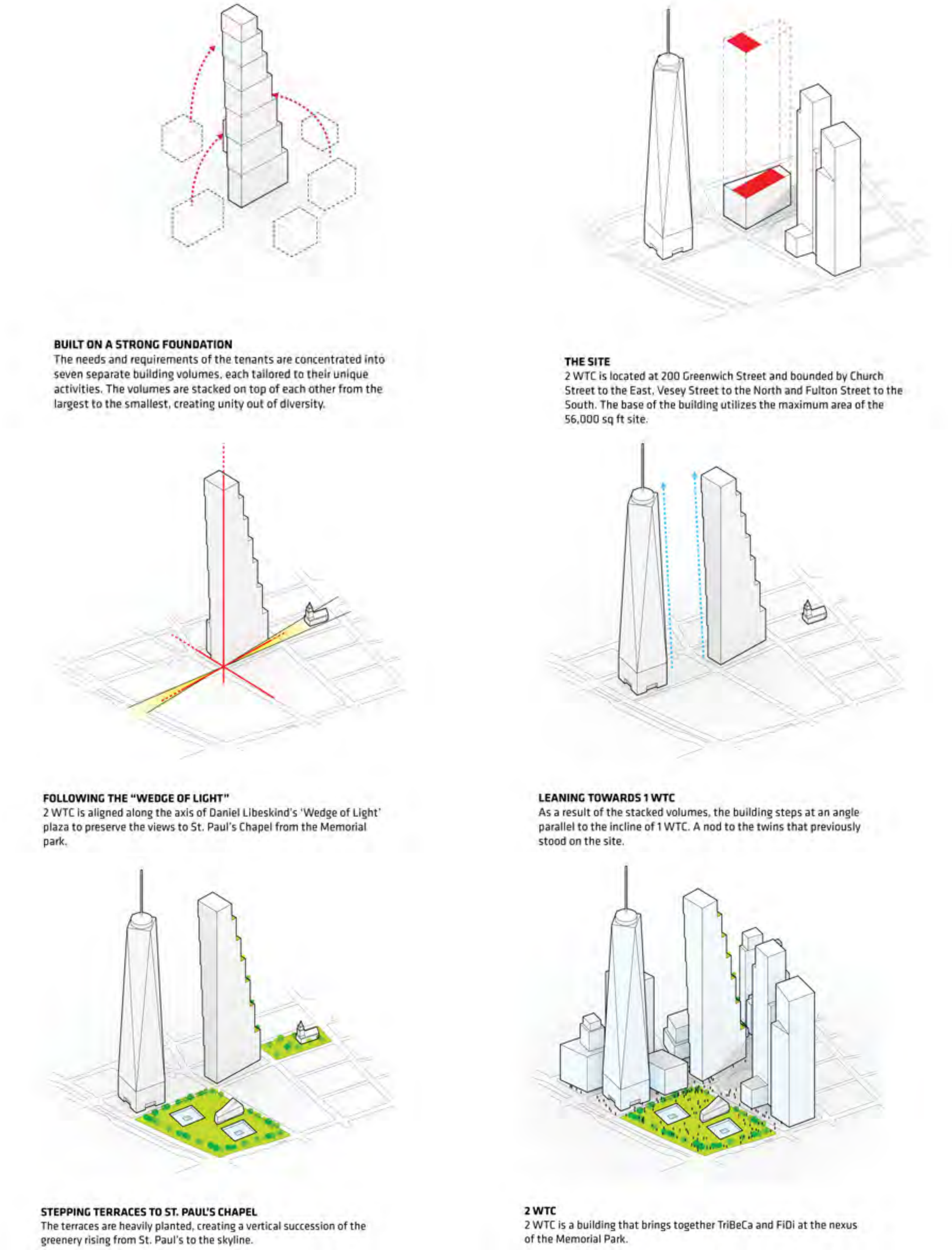


Figure 39. Two World Trade Center design strategies. Reprinted from BIG unveils replacement for Foster's Two World Trade Center design, by Jenna McKnight, 2015, adapted from https://www.dezeen.com/2015/06/09/big-two-world-trade-center-skyscraper-new-york-city-oust-foster-partners/

The design strategy for the site was to incorporate it into the full design for the World Trade Center area, including complementing all five other buildings.

UNIQUE ELEMENT

A unique element of Two World Trade Center is the merging of two styles to create a skyscraper that reacts to two different topographies, Wall Street and Tribeca. Another important character is the utilization of natural elements, including green roof decks and patios, shown in Figure 40.

Figure 40. Two World Trade Center roof top gardens. Reprinted from BIG unveils replacement for Foster's Two World Trade Center design, by Jenna McKnight, 2015, adapted from https://www.dezeen.com/2015/06/09/big-two-world-trade-center-skyscraper-new-york-city-oust-foster-partners/

INFLUENCE

Two World Trade Center precedent influences the proposed site by the use of deconstructive principles, the design strategies implored and the urban topography. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, the abstraction, and the relation to site. The design strategy of creating two separate styles to merge into one composition, while creating a different perspective from each facade. This could be a vital part of the CN Lands Redevelopment. In addition, there are similarities in urban topography. Both sites are located in high density locations within a downtown core, by incorporating the site landscape and topography to complement the buildings design and form.

PRECEDENTS
EUROPEAN CENTRAL BANK (ECB)

Figure 41. European Central Bank Photograph. Reprinted from European central bank, by Seele, 2018, adapted from https://seele.com/references/european-central-bank/

DETAILS

ARCHITECT	COOP HIMMELB(L)AU
LOCATION	FRANKFURT, GERMANY
BUILDING GFA	185,000m2

PROJECT

45-Story and 43-Story commercial building located in Frankfurt, Germany. The building serves as the headquarters for the European Central Bank. The focal point of the structure is the creation of two towers joint by a galleria space.

BUILDING FORM

The building's form comes from the traditional highrise tower that has been cut and manipulated to allow natural light, as shown in Figure 42. Then the two towers were joined by a glass atrium that allows transparency through the building.

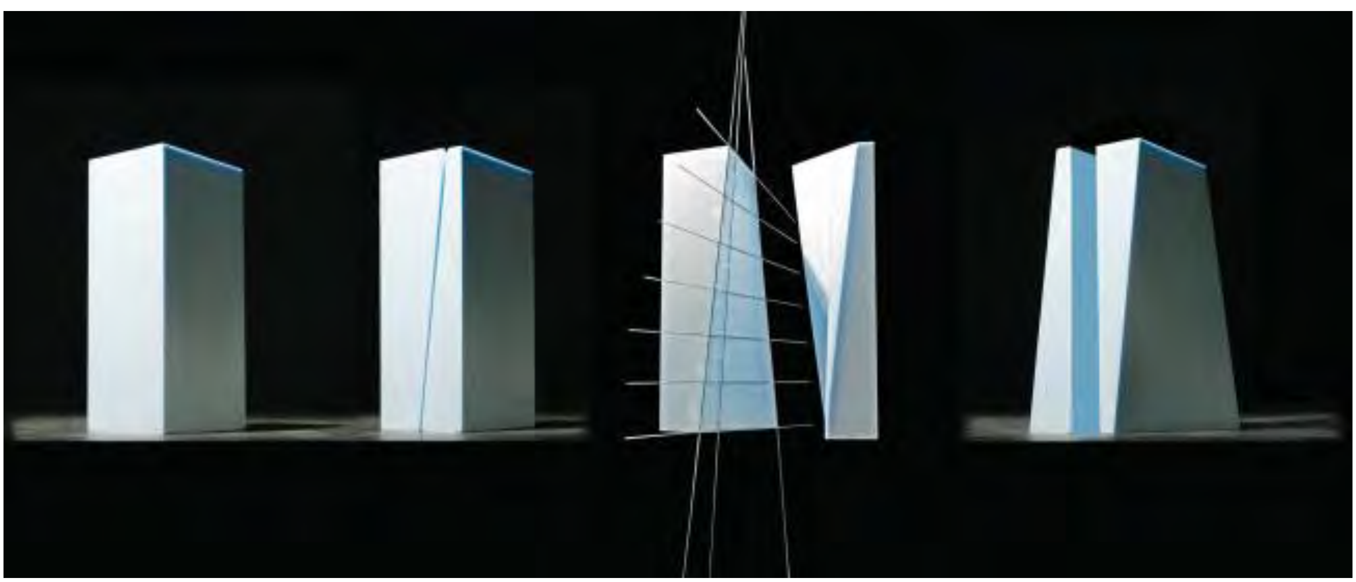


Figure 42. European Central Bank form. Reprinted from European Central Bank (ECB), by COOP HIMMELB(L)AU, 2014, adapted from http://www.coop-himmelblau.at/architecture/projects/the-new-premises-of-the-european-central-bank-ecb

RELATIONSHIP TO SITE

The European Central Bank headquarters is located in a lower density location. The building blends with the site by accenting the shape. The site has a triangular shape, as shown in Figure 43. The site is designed to complement the building while also allowing access from the surrounding areas.

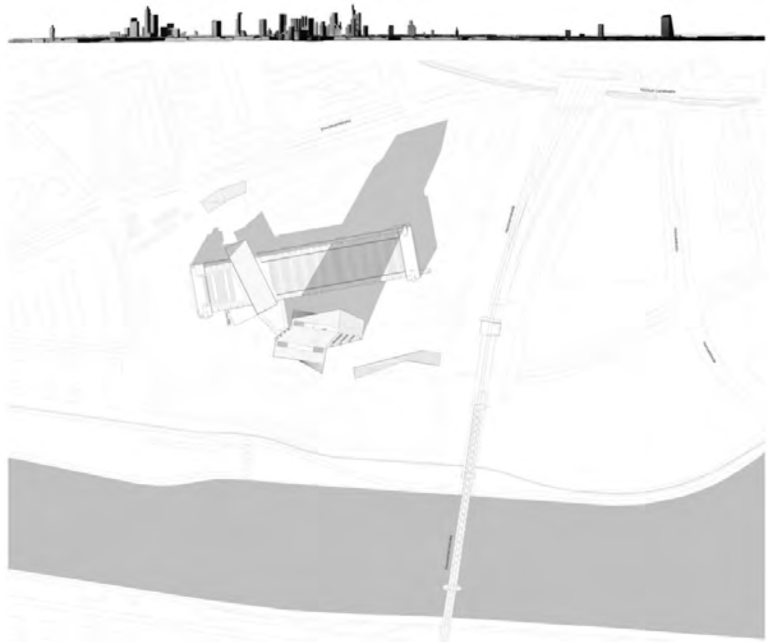


Figure 43. European Central Bank. Reprinted from European Central Bank / Coop Himmelb(l)au, by Robert Metsch, Paul Raftery, 2018, adapted from https://www.archdaily.com/799210/european-central-bank-coop-himmelb-l-au

URBAN INFILL

The European Central Bank is located within a residential area with medium density, as shown in Figure 45. The site is large enough that there is separation between topographies. The building's structure rises significantly higher than the surrounding areas, as shown in Figure 44.

Figure 44. European Central Bank photograph. Reprinted from European Central Bank / Coop Himmelb(l)au, by Robert Metsch, Paul Raftery, 2018, adapted from https://www.archdaily.com/799210/european-central-bank-coop-himmelb-l-au

Figure 45. European Central Bank Surroundings. Reprinted from European Central Bank (ECB), by COOP HIMMELB(L)AU, 2014, adapted from http://www.coop-himmelblau.at/architecture/projects/the-new-premises-of-the-european-central-bank-ecb

DESIGN STRATEGIES

European Central Bank is designed utilizing again the basic rectangular shape, then it was divided and rotated to provide parallel surfaces, to which the fully glazed galleria portion is added. These shapes allow for natural light to penetrate and also provide multiple views, all shown in Figure 46.

Figure 46. European Central Bank design strategies. Reprinted from European Central Bank (ECB), by COOP HIMMELB(L)AU, 2014, adapted from http://www.coop-himmelblau.at/architecture/projects/the-new-premises-of-the-european-central-bank-ecb

UNIQUE ELEMENT

The unique element to the building is the galleria portion dividing the two main towers which connects to a smaller entrance and has a dramatic canopy, as shown in Figure 47.

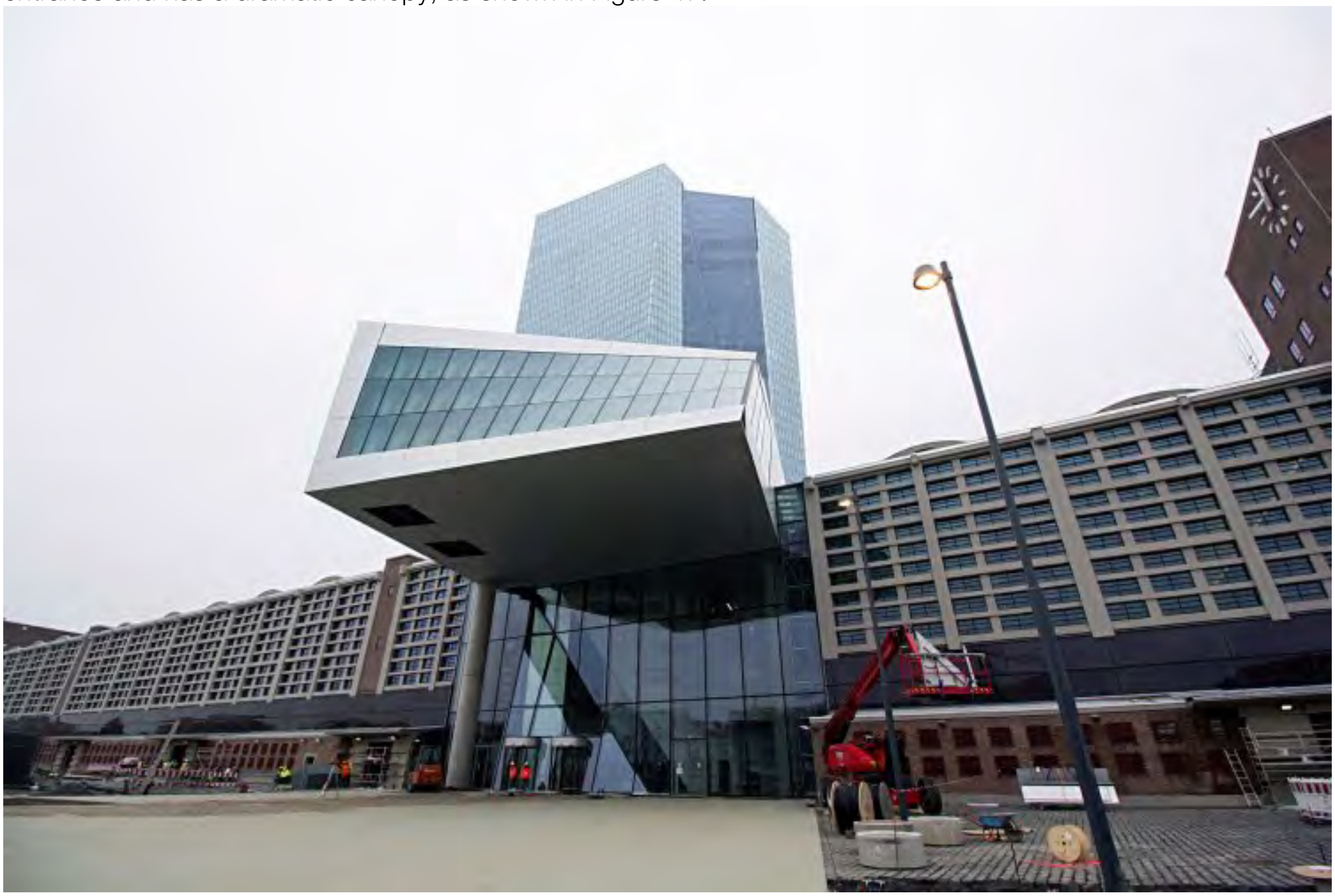


Figure 47. European Central Bank canopy. Reprinted from European Central Bank / Coop Himmelb(l)au, by Robert Metsch, Paul Raftery, 2018, adapted from https://www.archdaily.com/799210/european-central-bank-coop-himmelb-l-au

INFLUENCE

European Central Bank precedent influences the CN Tower Lands by the use of deconstructive principles and design strategies. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, the abstraction, and the relation to site. The design strategy of creating two separate towers then combining them together to create a vast interior space would be vital in colder climate areas.

PRECEDENTS
YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK

Figure 48. Yenikapi Archaeological museum rendering. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

DETAILS

ARCHITECT	EISNMAN ARCHITECTS
LOCATION	ISTANBUL, TURKEY
BUILDING GFA	185,000m2

PROJECT

Urban development site including organizing 20 hectares of site into a new commuter rail station, active archeological site, as well as two new museums and research centres.

BUILDING FORM

Yenikapi Archaeological Museum and Archeo-park are a creation of square building forms rotated and connected to create spaces. Figure 49 demonstrates how the building was manipulated to give its form.

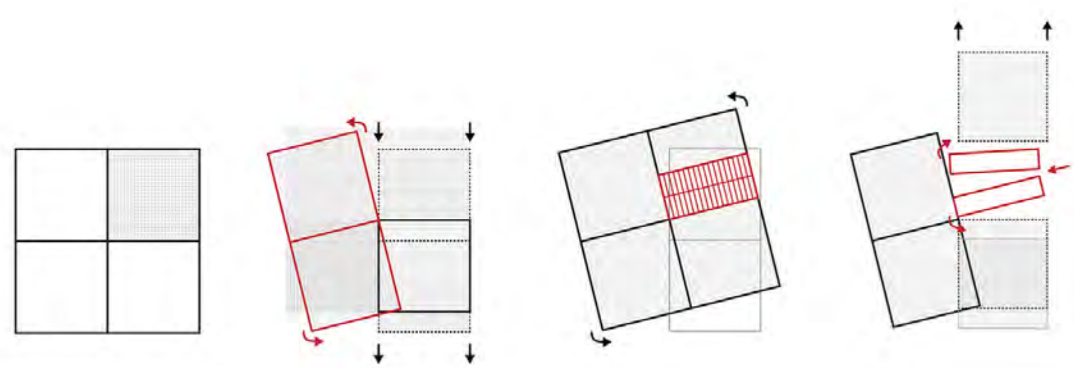


Figure 49. Yenikapi Archaeological museum building formation. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

RELATIONSHIP TO SITE

The building relationship to site is strong, as the building is mimicked through the site. It also is connected through the site to the adjacent areas, as shown in Figure 50. The use of hard landscaping mixed with vegetation areas also gives the site a natural feeling, while also complementing the building's form.

Figure 50. Yenikapi Archaeological museum site plan. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

URBAN INFILL

The building is located in the coastal portion of the city and surrounded by a multiple variety of densities, as shown in Figure 51. The site appears to be an infill of existing demolition areas. The infill allows for a stronger link to the existing city and surrounding areas through pedestrian connections.

Figure 51. Yenikapi Archaeological museum aerial. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

DESIGN STRATEGIES

The design strategy for the design of the building and site related to the city's vehicular and pedestrian grids. As shown in Figure 52, the basis for the design incorporated the angular and curved roads of the existing city. Andthe grid of the roads are overlaid onto the building to create connections and emphasis through entrances. The scale of the building is also related to the surrounding areas, where the building is not overpowering in height.

Figure 52. Yenikapi Archaeological museum design strategies. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

The connectivity through the use of road grids allows the design to become not only a building, but also a destination.

UNIQUE ELEMENT

The unique element of Yenikapi Archaeological Museum and Archeo-park is angled façade and materials, as the building has many different angles and connection points. It also incorporates glazing throughout the façade to allow for natural light, as shown in Figure 53.

Figure 53. Yenikapi Archaeological museum facades. Reprinted from YENIKAPI ARCHAEOLOGICAL MUSEUM AND ARCHEO-PARK, by Eisenman Architects, 2018, adapted from https://eisenmanarchitects.com/Yenikapi-Archaeological-Museum-and-Archeo-park-2012-current

INFLUENCE

Yenikapi Archaeological Museum and Archeo-park precedent influences the CN Tower Lands by the use of deconstructive principles and the relation to site. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, the chaos, the fragmentation, and the relation to site. The building's relationship to the site is a significant example of how architecture can be merged with the existing circulation of urban fabric.

PRECEDENTS
BÂTIMENT HOME, ZAC MASSÉNA, PARIS XIII

Figure 54. Batiment Home Photograph. Reprinted from IMMEUBLE HOME, ZAC PARIS RIVE GAUCHE, SECTEUR MASSÉNA, PARIS 13, by PAVILLON DE L'ARSENAL, 2018, adapted from http://www.pavillon-arsenal.com/en/blog/10044-immeuble-home-zac-paris-rive-gauche-secteur-massena-paris-13.html

DETAILS

ARCHITECT Hamonic +Masson Associes
Comte Vollenwider Architects

LOCATION PARIS, FRANCE

BUILDING GFA 14,000m^2

PROJECT

13-storey residential tower and a 17-storey commercial tower connected through a main base 3- storey high building

BUILDING FORM

Batiment Home is divided into three major forms: the rectangular base which houses three floors, the slanted angular residential tower that is stepped back, and the commercial tower that creates a random pattern from floor to floor, all shown in Figure 55.

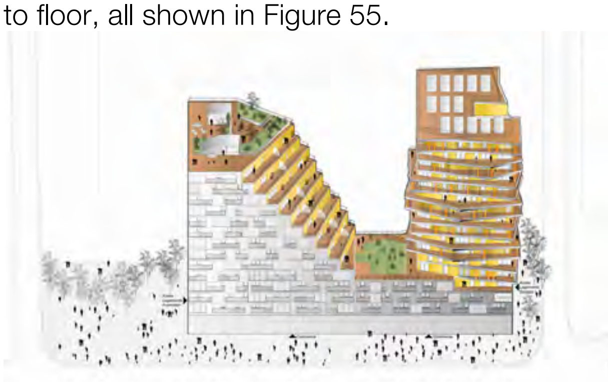


Figure 55. Batiment Home building form. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

RELATIONSHIP TO SITE

The building's relationship to site is observed from an elevated level. The building's main floor connection is minimal, with concrete sidewalks representing the setbacks on the site. On the third floor there is a courtyard, utilized by the tenants of the building, as shown in Figure 56.

Figure 56. Batiment Home Site plan. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

URBAN INFILL

The building is located within a tightly spaced residential area, that consists of multiple highrises, as shown in Figure 57. The building is in contrast with the existing urban fabric with itstwo-tower shape.

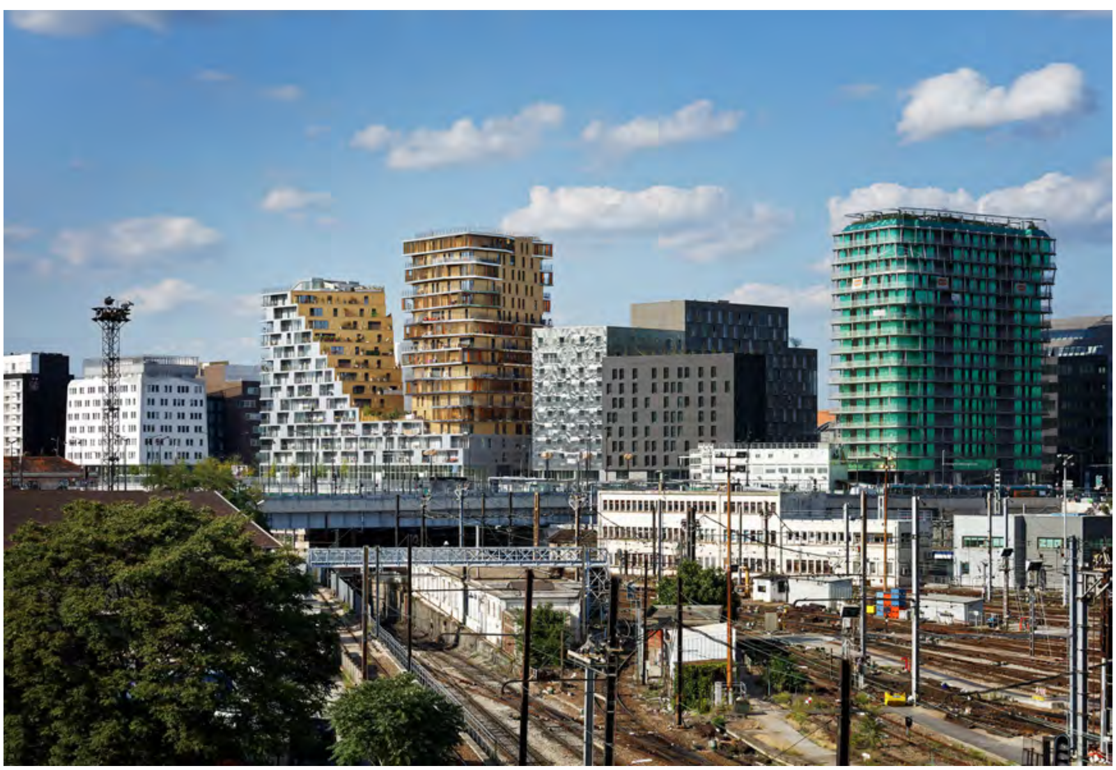


Figure 57. Batiment Home urban surrounding. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

DESIGN STRATEGIES

The design strategy for the building relates mainly to the control of natural light, and accessibility to the green space, as shown in Figure 58. The design originated as a rectangular form, before alterations for sun and park area.

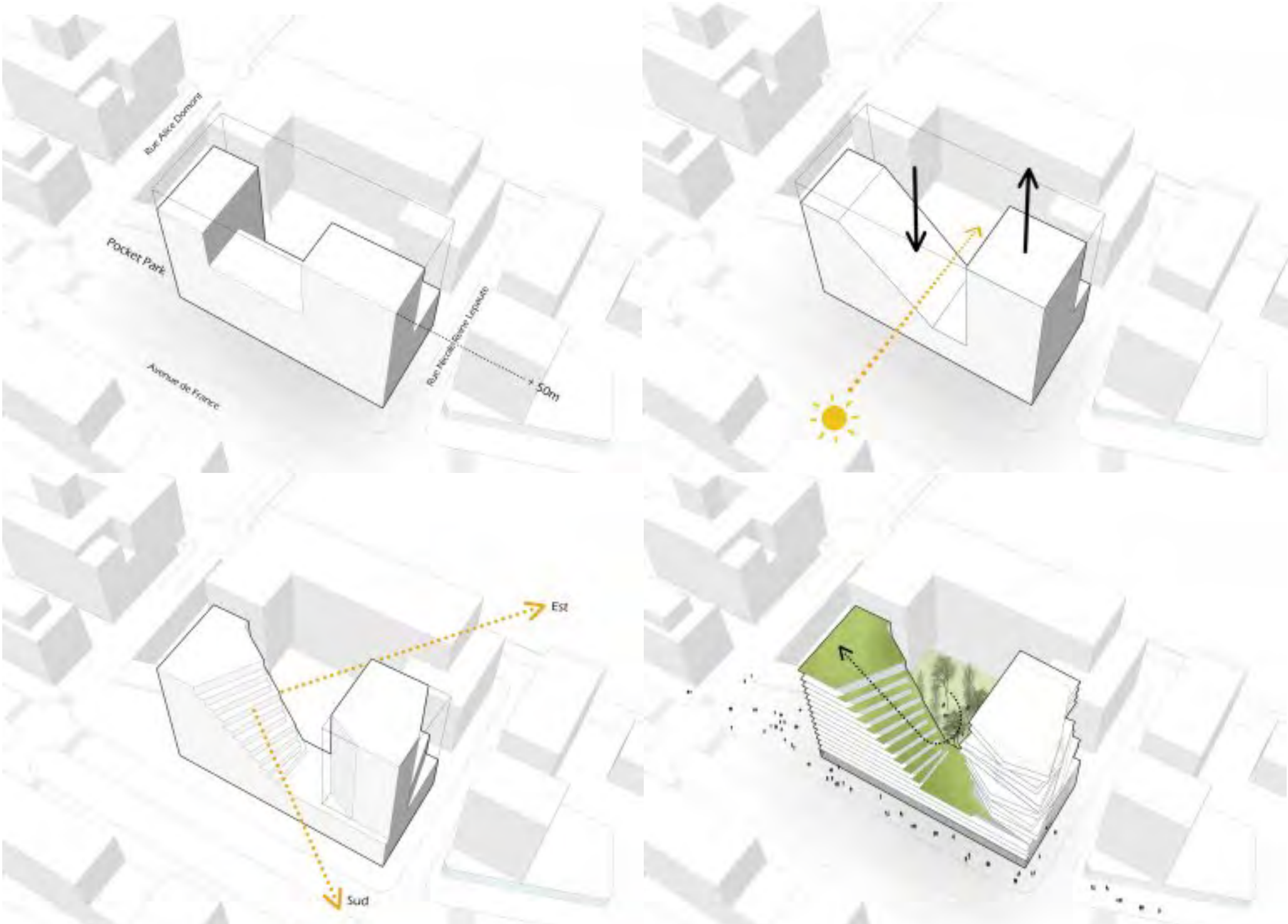


Figure 58. Batiment Home design strategies. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

The design strategy also incorporates scale to ensure that the building was not overbearing on adjacent structures, and not too small to be enclosed. The design utilizes negative space to enhance the design and emphasize areas of importance, such as green spaces.

UNIQUE ELEMENT

The unique element of Batiment Home is the definition of green space and the sculptural form of the residential tower in comparison with the commercial tower. The green spaces are well defined throughout the design, from the third level all the way to the roof of the residential tower, as shown in Figure 59. The forms are similar with slight differences. Both buildings are sloped and twisted, but it appears the residential is sloped more gradually than the commercial tower.

Figure 59. Batiment Home roof plan. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

INFLUENCE

Batiment Home precedent influences the CN Tower Lands by the use of deconstructive principles, social housing initiatives and the relation to site. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, and the relation to site. The social hosing design with the incorporation of commercial and retail space creates a community-like appeal. The relationship to site where the majority of park space has been incorporated into the buildings form above grade.

PRECEDENTS
SAVONNERIE HEYMANS

Figure 60. Savonnerie Heymans Photograph. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

DETAILS

ARCHITECT	MDW ARCHITECTS
LOCATION	BRUSSELS, BELGIUM
BUILDING GFA	6,500m2

PROJECT

Social housing complex built on the former site of a soap factory. The complex provides a village-like environment with 42 sustainable accommodations.

BUILDING FORM

Savonneire Heymans building form is very rectangular but is also layered with different elevation planes. The majority of the form is based on rectilinear shapes, and these positive and negative spaces play an important role in the form, as shown in Figure 61.

Figure 61. Savonnerie Heymans Form. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

RELATIONSHIP TO SITE

There is a strong relationship between the building's relationship and the site, with the creation of ample green space and vegetation throughout the site and building, as shown in Figure 62. The surrounding areas only access to the site by the main entrance that facing the street.

Figure 62. Savonnerie Heymans Site Plan. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

URBAN INFILL

The building is located within a densely-populated neighborhood, as shown in Figure 63. The surrounding buildings are mostly multi-family residential homes. The site is tightly packed within the overall neighborhood plan.

Figure 63. Savonnerie Heymans Urban Environment. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

DESIGN STRATEGIES

The strategy for the design of the building and site is related to the block style design which is combined, subtracted, and altered. The existing site as a soap factory also added some characteristics to the design as fragments of the building's historic past remain. Figure 64 shows the design strategies utilized in the overall design.

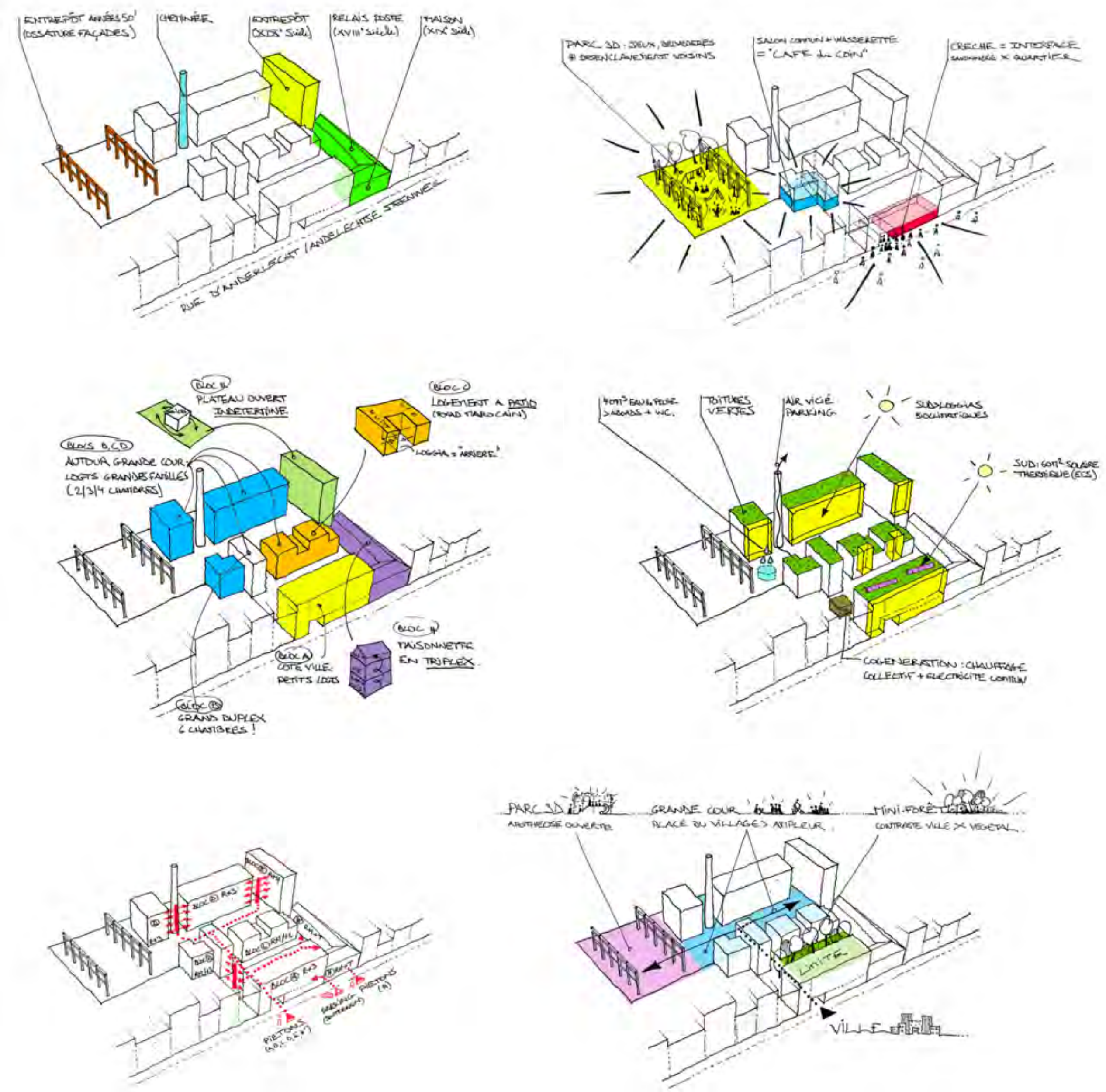


Figure 64. Savonnerie Heymans design strategies. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

The connectivity shown in the last diagram represents how the site interacts with the surrounding city, and how the design strategy incorporates it into the important urban fabric.

UNIQUE ELEMENT

The unique element of Savonnerie Heymans is the existing soap factory structure that can be seen throughout the site and design, as shown in Figure 65 below.

Figure 65. Savonnerie Heymans existing structure. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

INFLUENCE

Savonnerie Heymans precedent influences the CN Tower Lands by using deconstructive principles, social housing concepts, and the relation to site. The deconstructive principles can be seen throughout with the boldness, the surface manipulation, the juxtaposed elements, and the relation to site. The social housing concept includes the addition of green spaces throughout the existing soap factory structure, as shown in Figure 65. Another example of housing concept is its versatility in rooms layouts, from one bedroom all the way to six bedrooms. The influence can also be translated into revitalization of an existing building.

PRECEDENTS
LE LORRAIN

Figure 66. Le Lorrain Photograph. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

DETAILS

ARCHITECT	MDW ARCHITECTS
LOCATION	BRUSSELS, BELGIUM
BUILDING GFA	835m^2

PROJECT

The development includes the renovation of a Brumetal dealer of old iron into a social housing complex. This complex composes of 4 apartments and 3 houses that are connected by a large common space.

BUILDING FORM

Le Lorrain is a creation of two types of dwelling units that stacked to create vertical elements. These two volumes are then connected through a main courtyard, that emphasizes slope and natural wood, as shown in Figure 67.

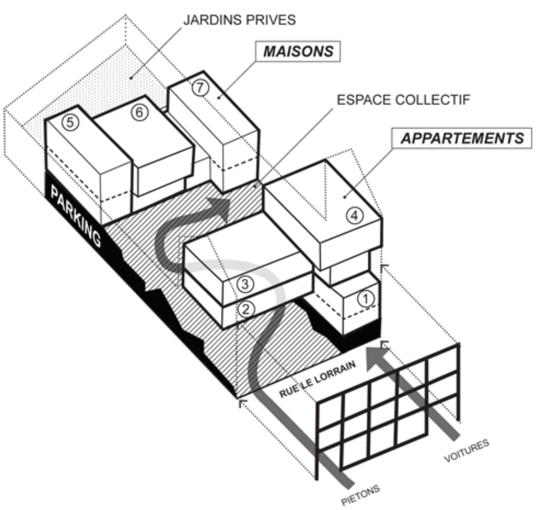


Figure 67. Le Lorrain Building Form. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

RELATIONSHIP TO SITE

The building's relation to site begins at the entry to the site, where the site itself climbs into the building, as the courtyard rises within to create a unique space, as shown in Figure 68. The site has only one entry and one exit facing the street.

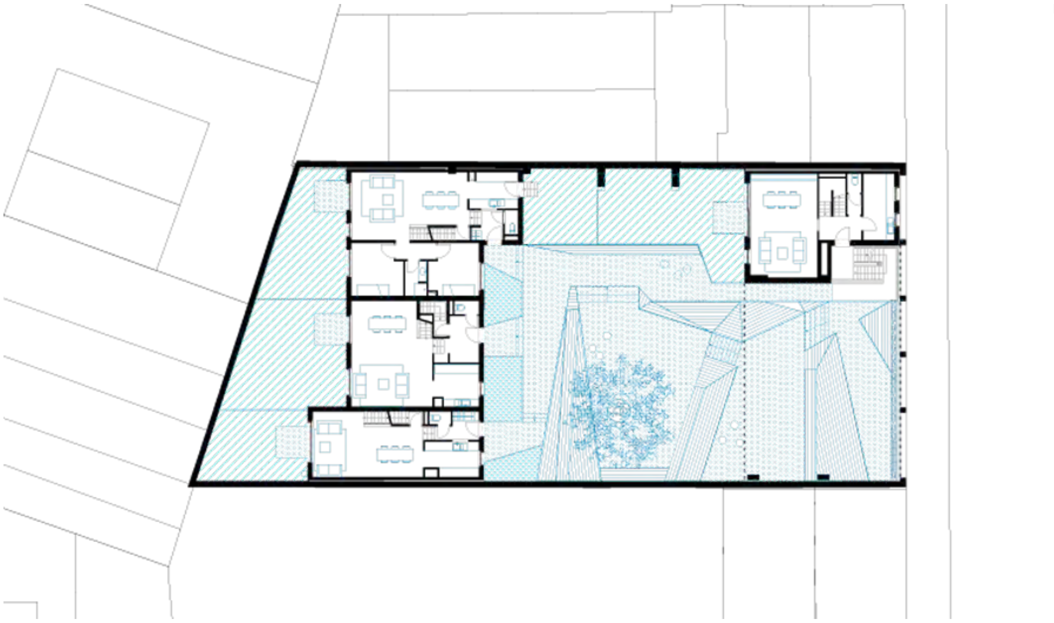


Figure 68. Le Lorrain Site. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

URBAN INFILL

The site is tightly packed with medium urban density. The scale of the building matches and complements the adjacent structures as seen in Figure 69. The setbacks of the site are minimal and the buildings frontages align.

Figure 69. Le Lorrain urban environment. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

DESIGN STRATEGIES

The design strategy, as shown in Figure 70, was to create a small community that encloses the two types of residences. The higher density apartment buildings are located closer to the street to give a better front presence, and also allow for stairs to be the direct access, while the houses are located at the rear of the site. The raised portions of the building above the courtyard allow natural light to penetrate into the buildings and courtyard, and also allow for natural ventilation.

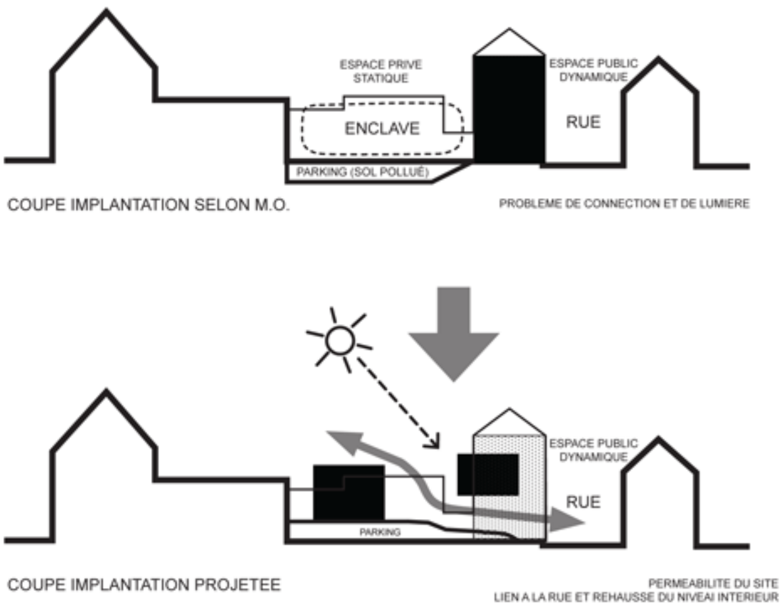


Figure 70. Le Lorrain design strategies. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

As shown in Figure 70, parking is located at the rear of the apartment complex and below the building. This is to alleviate the parking located directly in front of the building and also to allow more natural space.

UNIQUE ELEMENT

The unique element of the Le Lorrain design is the incorporation of natural vegetation throughout the site, as shown in Figure 71, and also the natural wood courtyard that utilizes slopes and angles to give contrast to the solid rectangular structure of the dwelling units.

Figure 71. Le Lorrain Design Strategies. Reprinted from Le Lorrain by MDW Architecture, by Alyn Griffiths, 2011, adapted from https://www.dezeen.com/2011/11/25/le-lorrain-by-mdw-architecture/

INFLUENCE

Le Lorrain precedent influences the CN Tower Lands by the use of deconstructive principles, the social housing concept, the natural vegetation and the relation to site. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the boldness, the surface manipulation, the juxtaposed elements, and also the relation to site. The social housing concept to divide the site into two usable dwellings, houses and apartments, and incorporate them into the same courtyard that seconds as circulation. The incorporation of natural vegetation throughout the site and the building design emphasizes human emotions, including comfort. The site utilizes natural materials, as shown in Figure 71, to complement and connect the site to the interiors and exterior of the buildings.

ADDITIONAL PRECEDENTS

CRYSTALS AT CITYCENTER
Las Vegas, Nevada, USA
Studio Libeskind
2009

Transbay Block 8
San Francisco, California, USA
OMA
2018-

88 Seaport
Boston, Massachusetts USA
OMA
2018-

Telus Sky Tower
Calgary, Alberta, Canada
Bjarke Ingels Group
2018-

Tour Montparnasse
Paris, France
Nouvelle AOM
2018-

MacKimmie Complex and Professional Faculties Building Redevelopment
Calgary, Alberta
Dialog Architects
2018-

WSP Place
Edmonton, Alberta
Manasc Isaac Architects
2017

First and Jasper
Edmonton, Alberta
Dialog Architects
2013

601 West Hastings
Vancouver, British Columbia
B + H Architects
2018-

Rideau Center Revitalization and Expansion
Ottawa, Ontario
B+H Architects (Architect of Record), BBB Architects (Façade Concept Design)
2018

180 Wellington West
Toronto, Ontario
Stantec & IBI
2013

CenterPoint
Winnipeg, Manitoba
Stantec Architects
2017

Edmonton Federal Building
Edmonton, Alberta
Kasian
2017

Yonge Eglinton Centre
Toronto, Ontario
IBI
2016

Cn Tower Plaza
Toronto, Ontario
IBI
2013

AMP Center
Sydney, Australia
3XN
2018-

Mercury Tower Redevelopment
St. Julian, Malta
Zaha Hadid Architects
2018-

PROPOSED SCHEDULE

DATE	DESCRIPTION
SEPTEMBER 10, 2018	TOPIC SELECTION
OCTOBER 5, 2018	**PROPOSAL SUBMISSION**
OCTOBER 5, 2018	**REGISTER FOR RAIC690A**
NOVEMBER 23, 2018	RESEARCH COMPLETED
NOVEMBER 30, 2018	COMMITTEE MEETING
DECEMBER 7, 2018	DRAFT COMPLETED
DECEMBER 14, 2018	COMMITTEE MEETING
DECEMBER 31, 2018	**FINAL THESIS PAPER COMPLETED**
JANURAY 22, 2018	**REGISTER FOR RAIC690B**
JANUARY 29, 2018	COMMITTEE MEETING
FEBRUARY 28, 2018	PRELIMINARY DESIGN
MARCH 7, 2018	COMMITTEE MEETING
MARCH 15, 2018	**PRELIMINARY DESIGN PRESENTATION**
MARCH 21, 2018	COMMITTEE MEETING
MARCH 31-APRIL 29	VACATION / WORKING
MAY 6, 2018	COMMITTEE MEETING
MAY 27, 2018	**FINAL DESIGN PRESENTATION**

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THE REVITALIZATION OF EDMONTON CN TOWER LANDS INTO A SOCIAL HOUSING AND SOCIAL SERVICES SUPPORT HUB THROUGH THE UTILIZATION OF DECONSTRUCTIVIST ARCHITECTURE

Jason McConaghie
AB090001EDM

RAIC 690A Syllabus Diploma Project

Graduate Thesis

Submitted in Partial Fulfilment of the Requirement for the:

RAIC PROFESSIONAL DIPLOMA IN ARCHITECTURE

AT

RAIC Syllabus Edmonton Chapter

January 2019

Royal Architecture Institute of Canada

RAIC
SYLLABUS

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Croy Yee, AAA

ABSTRACT

The thesis is an exploration of deconstructive urban planning and architecture through the redevelopment of the CN Tower Lands to enhance Edmonton's social housing/service network.

In this study, the history of the CN Tower Lands site in Edmonton Alberta has been reviewed through extensive literature research. Deconstruction principles, theoretical framework, methodology, and related topics are discussed to provide a better understanding of the requirements and needs of social housing/services. Precedent studies are conducted on two criteria; social housing, social services, and deconstruction architecture. Criteria one is on iconic deconstructive architects and their works, including Bjarke Ingels Group. The second criteria is a review of modern social housing/social services developments. The objective of this study is to demonstrate that the CN Tower Lands can be reintegrated through social housing designs into the new downtown Edmonton fabric according to the principles of deconstructivist architecture.

Chapter One focuses mainly on the background information in regard to social housing and services in the Edmonton area, along with the troubles the city has encountered to remediate and aid those in need. This chapter also summarizes the deconstruction styles and relevant theories, provides rationales of applying deconstructivist architecture on the selected study site, and discusses the methodology used in the study.

Social housing is defined as housing, houses or apartments, made available for rent or purchase from a government subsidized program, or non-profit organization. Social Services are government or non-profit programs dispensing aid to those in need: disability, medical, counselling. Deconstructivist architecture is the practice of architecture through the teachings of Jacques Derrida, that “encourages radical freedom of form and the open manifestation of complexity in a building rather than strict attention to functional concerns and conventional design elements” (Merriam-Webster Learners Dictionary, 2018)

Deconstructive Architecture became prominent after “A third MoMA [Museum of Modern Art] exhibition in the post-modern period, which [Philip] Johnson curated with Mark Wigley.” (Nesbitt, Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965 - 1995, 1996) This exhibition was entitled “Deconstructivist Architecture” which took place in 1988.

The Second Chapter focuses on the theoretical frame work of the study and the in-depth research of the two main topics: social housing/services and deconstructivist architecture. In this section, extensive literature review has been done on the elements that create a well-established and operational social service complex, as well as the influence of deconstructivist architecture on social housing design.

Chapter Three includes case studies of five existing projects. Three projects demonstrate modern social housing and social services developments, while two represent residential developments utilizing deconstructivist architecture.

The Fourth Chapter utilizes the findings of chapter three implemented onto the CN Tower Lands, utilizing the findings from social housing developments and deconstructivist architecture. This chapter incorporates problem, site, analysis, and preliminary concepts for the evolution and enhancement of the social housing/service networks in the CN Tower Lands within the Edmonton downtown core. This chapter also paves the way for the future work to be completed in the second portion of this thesis project, RACI 690B.

Deconstructivist architecture will play an important part in revitalizing the site to meet the study objectives. Deconstructivist architecture mimics the chaotic, non-structured, and non-conventional. The unique, artistic quality of architecture in the Edmonton downtown core is increasing with the revitalization and replacement of social and public architecture. An approach to architecture that recognizes the significance and importance of

improving the social housing and social services network in the community and important core locations is essential to bringing this sector of the community to the forefront of society. The site has been a focal point in Edmonton for decades due to its location and proximity to important Edmonton landmarks, such as Edmonton City Hall, Royal Alberta Museum, Art Gallery of Alberta, Epcor Tower, and the Edmonton Ice District development. The analysis section reviews current site conditions and explores the possibilities that can be created by applying deconstructivist architecture principles and designs.

The open access to the site from all directions facilitates the development of connectivity to surrounding amenities. Through the process of site Layering; zoning, pedestrian networks, vehicular networks, bicycle network, green spaces, connectivity can be completed on more than a singular plane. Interconnectivity can be achieved on multiple levels, including pedways and tunnels.

The current site circulation is accessible from multiple access points. The alterations suggested by this study establish a new circulation that addresses the importance of the existing city streets and blends with the existing downtown grid. The connection to the north allows people to access the site while creating a gateway into the downtown core. The south portion of the CN Tower Lands creates a buffer space while connecting to city hall.

Chapter five consists of the conclusion and a synopsis of the report's total findings.

ACKNOWLEDGMENTS

I wish to thank my family for their enduring support, patience, tolerance and understanding in this long journey, especially my darling wife Villa, without whom this would not be possible, and my mother-in-law Xinhua. To my children, Jude and Brooklyn – without your lovely existence this work would have been completed two years ago.

I wish to express my deepest gratitude and appreciation for the support provided by my mentors, Mr. Steven Bushnell, Mr. Darryl Rewniak and Mr. Ron Nemeth.

Mr. Steven Bushnell to whom I owe a debt of gratitude for all the hours, discussions, guidance, understanding, and patience. Without him this journey would not have been possible. Thank you for nurturing the aspirations of a young student and teaching him the ropes of architecture.

Mr. Darryl Rewniak for your tireless support and guidance in the RAIC syllabus journey.

Mr. Ron Nemeth for your commitment during my thesis stage.

I also wish to acknowledge my academic coordinators, including Mr. Avery Temofychuk, Mr. Grant Moore, and Mr. Croy Yee, for your unwavering dedication to the RAIC Syllabus and its students.

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APPROVALS & ENDORSEMENT LETTER

Proposal

Name: Steven Bushnell **Date:** October 5, 2018 **Signature:**____________________

Name: Ron Nemeth **Date:** October 5, 2018 **Signature:**____________________

Thesis Research Paper

Name: Steven Bushnell **Date:** January 22, 2019 **Signature:**____________________

Name: Ron Nemeth **Date:** January 29, 2019 **Signature:**____________________

BR2 ARCHITECTURE

January 22, 2019

To Whom It May Concern:

Re: Mr. Jason McConaghie – Thesis Approval and Endorsement

As a Thesis Committee Advisor for Mr. Jason McConaghie, I am endorsing his thesis research project entitled, "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub through the Utilization of Deconstructivist Architecture".

This thesis prepared and submitted by Jason McConaghie has been approved to contribute to Mr. McConaghie's fulfillment of the requirements for a professional diploma in architecture, based on the requirements of the Royal Architecture Institute of Canada Syllabus Program.

Yours truly

BR2 ARCHITECTURE

Steven Bushnell, Architect, AAA
Senior Partner
SB/cw

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Derek Sampson
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ACI ARCHITECTS INC

January 29th 2019

Approval and Endorsement of Thesis
Jason McConaghie

Committee Members – Madam, Sir,

I have followed and supported Jason McConaghie through the development of his thesis research project "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub through the Utilization of Deconstructivist Architecture" since he began this effort.

This letter constitutes my acknowledgement and endorsement of Jason's thesis towards fulfillment of the requirements for a professional diploma in architecture through the Royal Architectural Institute of Canada's Syllabus Program.

Please do not hesitate to contact me through nemeth@aci-arch.com or at 780 486 6400 ext. 385 for any further information.

Sincerely,

Ron Nemeth, Architect, B. Arch., AAA, OAA
Thesis Committee Advisor

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DARRYL REWNIAK, ARCHITECT, AAA, B.E.S., M.ARCH., MRAIC

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LIST OF FIGURES

INTRODUCTION

1.1 INTRODUCTION (Annotated Visual Argument)

This project involves the revitalization of the Edmonton CN Tower Lands into a social housing and support services hub through the integration of deconstructivist architecture. The revitalization will include a master plan mixed used site with a core of social housing. Deconstructivist architecture was selected as a style to be explored based on its principles and previously designed complexes. The mixed used site will consist of the following elements:

Social Housing
- Bachelor to Four Bedrooms Rental Suites (Variety of Suite Sizes)
- Laundry Services
- Gathering / Communal Spaces
- Green Spaces
- Community Gardens
- Men's Emergency Shelter
- Women's Emergency Shelter
- Family Emergency Shelter
- Warming Centre

Social Services
- Employment Service Centre
- Medical Clinic complete with Triage
- Violence Support Centre with Shelter
- Financial Planning and Income Support Centre
- Family Support Centre
- Disabilities Support Centre

Mixed Use
- Commercial Retail Units
- Public Green Space

1.2. RATIONALE FOR THE STUDY

The rationale for the study revolves around the need for social housing in the Edmonton downtown core. The current affordable housing situation needs to be improved significantly. Recent developments in the downtown core are based on economic benefits, rather than social benefits. Therefore, there is an urgent need for social housing within the city's main hub - downtown fabric. The development of a major social housing project adjacent to the Edmonton Ice District, the University Downtown campus, Grant MacEwan campus, and Norquest college, provides opportunities for both jobs and education in close proximity. The advantages of deconstructivist architecture also weigh heavily on the project. Deconstructivist architecture applied to a social housing project could contribute to the development of the downtown core, to the city's image and to tourism growth. There is a long history of deconstructive buildings that have transformed a city's image and boosted tourism, as page 12 examples include the Guggenheim Museum in Bilbao, Spain, Art Gallery of Alberta in Edmonton, Alberta, CCTV Headquarters in Beijing, China, and the Jewish Museum in Berlin, Germany. The combination of social housing, social services, education, and jobs, with the benefits of deconstructive architecture, can boost the city's image and tourism, ultimately improving economic development in this area.

CHAPTER ONE BACKGROUND

1.3 SOCIAL HOUSING AND SERVICES BACKGROUND

For years, the City of Edmonton has been attempting to accommodate the homeless and less fortunate citizens, and is currently operating six shelter accommodations. However, with the growing trend of large-scale commercial property development in the downtown core, those in need are shuffled further and further away from resources. A centralized location (proposed site in grey) can combine the required necessities with affordable housing, which is defined by Canada Mortgage and Housing Corporation as:

"Housing is considered "affordable" if it costs less than 30% of a household's before-tax income. Many people think the term "affordable housing" refers only to rental housing that is subsidized by the government. In reality, it's a very broad term that can include housing provided by the private, public and non-profit sectors. It also includes all forms of housing tenure: rental, ownership and co-operative ownership, as well as temporary and permanent housing." (Canadian Mortgage and Housing Corporation, 2018)

As Edmonton's current social housing and services are spread over Edmonton downtown area, they are disconnected from each other. This creates problems in a climate with long and cold winters. Therefore, a centralized complex that contains all services and housing would be more beneficial and efficient to the individuals that are in need of more than one type of assistance.

A map of the existing social housing and social services infrastructure is shown in Figure 1. A detailed view of each building is shown in Figure 2 to Figure 5.

Figure 1. Shelter, Housing and Hospital Locations. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

CAPITAL REGIONAL HOUSING - COMMUNITY

Towne House Apartments

Parkdale One

Ashton Apartments

Central Manor

Renfrew Arms

CAPITAL REGIONAL HOUSING - NEAR MARKET RENTALS

The Haven

Central Village

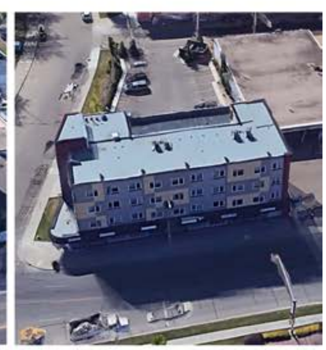
Robin Manor

Parkdale Apartments

McDougall Manor

Matheson Manor

Inglewood Manor



Stadium Manor

Figure 2. Existing Social Housing. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Figure 3. Existing Social Housing and Shelters. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

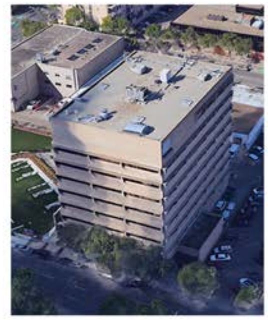
YMCA

Bill Rees Center

SALVATION ARMY

Headquarters

GOV. ALBERTA



Support Centre

HOPE MISSION

The Hope Mission Centre

AB COUNCIL WOMENS SHELTER

Headquarters

Figure 4. Existing Social Services. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SALVATION ARMY

Centre of Hope

E4C

Women's Shelter

HOPE MISSION

Herb Jamieson Centre

Figure 5. Existing Shelters. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

1.3.1 Diminishing Social Housing Needs

The development of a shelter or affordable housing complex would benefit not only those who need affordable housing, but also those who need emergency supports. Figure 6 shows 2013 statistics in regard to homelessness. Figure 7 denotes the total homeless population, estimated by count, of several Canadian cities. Amongst these cities, Edmonton has a large homeless population. The City of Edmonton has attempted to develop social housing, social services and community engagement, to reduce homelessness and addiction. Figure 8 shows 2016 facilities, agencies, transportation, parks and bottle depots utilized in Edmonton, Alberta.

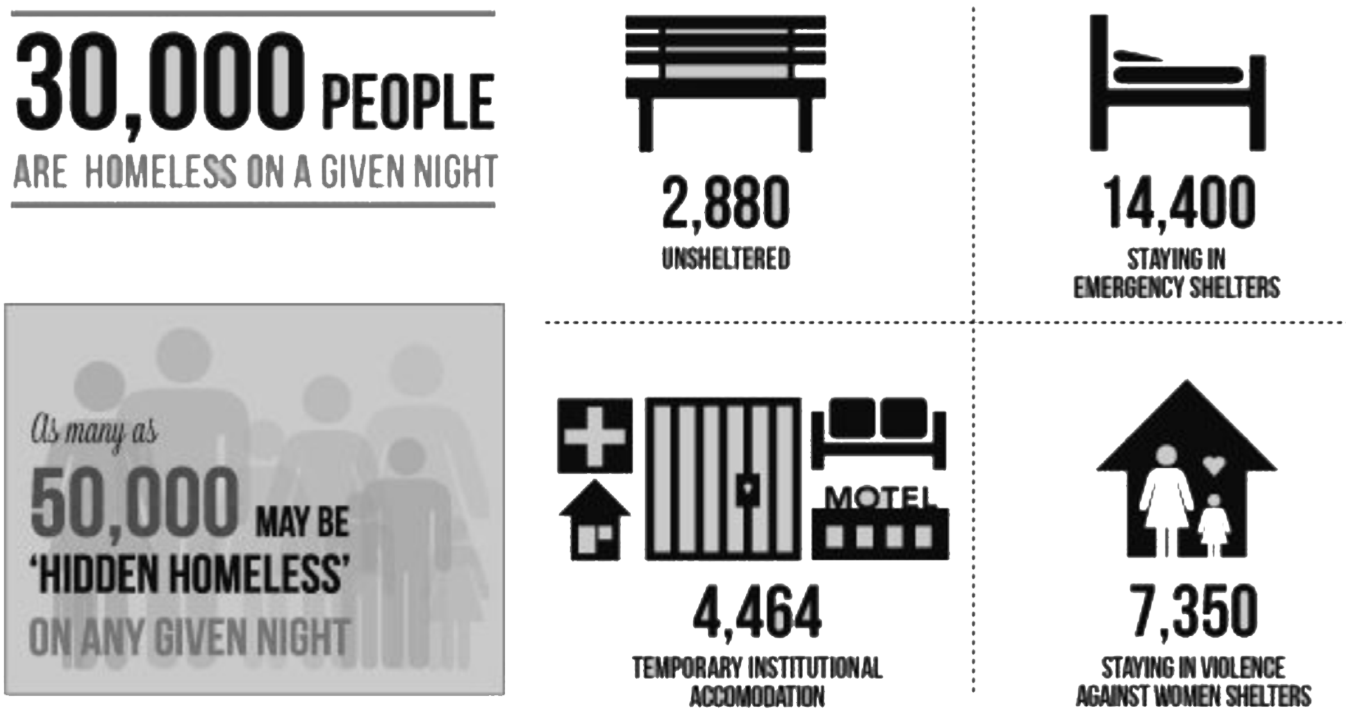


Figure 6. Diagram of homelessness. Reprinted from The State of Homelessness in Canada 2013, by Homeless Hub, 2013, adapted from https://www.homelesshub.ca/resource/state-homelessness-canada-2013

	Year of Count	City Population	Total # Homeless	As a % of the total population	Unsheltered	Sheltered	Other	# of known published street counts	# of Emergency Shelter Beds
Vancouver	Mar-12	603,502	1602	0.27%	306	1296		6	1390
Kelowna	Apr-07	117,312	279	0.24%	150	119	10	4	80
Calgary	Jan-12	1,096,833	3190	0.29%	64	1715	1411	10	1606
Red Deer	Oct-12	90,564	279	0.31%	184	93	2	1	51
Edmonton	Oct-12	812,201	2174	0.27%	1070	1104		10	957
Lethbridge	Oct-12	83,517	99	0.12%	5	94		9	93
Saskatoon	May-08	222,189	260	0.12%	44	199	17	2	127
Toronto	Apr-09	2,615,060	5086	0.19%	400	4175	511	2	3253

Figure 7. Diagram of homelessness. Reprinted from The State of Homelessness in Canada 2013, by Homeless Hub, 2013, adapted from https://www.homelesshub.ca/resource/state-homelessness-canada-2013

Facility
Addiction Recovery Centre
Alberta Works (hotel vouchers)
Bent Arrow Iskwew
Catholic Social Services Alpha for Men
Catholic Social Services La Salle
Catholic Social Services Safehouse
Catholic Social Services Valeda House
E4C Crossroads Downtown
E4C WEAC
Edmonton John Howard Society NOVA
Edmonton John Howard Society The Loft
George Spady Detox
George Spady Place of Dignity
George Spady Shelter
Henwood
Hope Mission Herb Jamieson
Hope Mission Intox
Hope Mission Mat
Hope Mission Women's
Hope Mission Youth
Jellinek Society
Lurana Shelter
McDougall House
Recovery Acres
Sage Seniors Safe House
Salvation Army Addictions and Residential Centre
Urban Manor
Wings of Providence
WIN House
YESS Nexus
YESS Shanoa's Place / Graham's Place

Individual Agencies	Transit	Parks	Bottle Depots
Bissell Centre Drop-in	LRT Stations	Airway	Capilano
Bissell Centre Intake	Bay/Enterprise Sq.	Capilano	City Centre
Boyle McCauley Health Centre	Belvedere	Dawson	Clareview
Boyle Street Community Centre	Central	Forest Heights	Fort Road
Christian Care Centre	Century Park	Hermitage	Millwoods
City Centre Mall	Churchill	Kinnaird	Quasar
Downtown YMCA Housing	Coliseum	Kinsmen	Strathcona
Elizabeth House/WEAC	Corona	Louise McKinney	
Father's House	Health Sciences/Jubilee	Mill Creek Ravine	
George Spady Detox	McKernan/Belgravia	Queen Elizabeth	
Hope Mission Main Building	Southgate	Queen Mary	
Hope Mission: Herb Jamieson Centre	Stadium	Rundle/Gold Bar	
Hope Mission: Mat Program	University	Victoria	
Hope Mission: Women's Shelter			
Marian Centre	Transit Centres		
Mustard Seed	Jasper Place		
OSYS	West Edmonton Mall		
Operation Friendship			
Prime Staffing			
Rock Lutheran Inner City Society			
Salvation Army: Addiction/Residential Centre			
Stanley Milner Library			
YESS Armoury			

Figure 8. Facilities and Shelter agencies and locations. Reprinted from 2016 Edmonton Point in Time Homeless Count Final Report, by Homeward Trust Edmonton, 2016, adapted from http://homewardtrust.ca/wp-content/uploads/2016/11/2016-Edmonton-Homeless-Count-Final-Report.pdf

1.3.2 Current Affordable Housing Situation

As seen in previous sections, Edmonton's social housing requires a large development to aid those in need and to provide the necessary services. It is noted that in 2015 the "tough economic pressures put funding for affordable housing at risk, the corporation saw its waiting list for housing triple, with about 4,500 families waiting for a home." (Theobald, 2016) As of 2011 there were "24,500 one-person households, 12,800 families with children, 4,600 couple families without children, and 5,000 other households" (City of Edmonton) utilizing social housing within the Edmonton Capital Region. In comparison, a "2014 Edmonton Homeless Count estimates that 2,307 people in Edmonton do not have a home of their own." (City of Edmonton) The city's current social housing infrastructure requires a major development to address the growing population and also provide transitioning requirements for the homeless.

1.3.3 Socio-Economic Changes in Downtown Edmonton

With the over whelming developments occurring in the downtown area, social housing is being pushed further and further away, forcing people away from the resources thus creating a gap in the system. Changes are required to ensure people who require the aid are able to get it.

1.3.4 Necessity of Affordable Housing in Downtown Edmonton

The requirement for affordable housing is clear from the state of the existing infrastructure, much of which is reaching the end of its life, and soon will require major repairs and alterations to accommodate every changing social housing needs. The location of the site plays an important role, as to not relocate people further from existing social services.

1.4 SITE BACKGROUND

1.4.1 Existing Site and Infrastructure

“The Canadian Northern Railway reached Edmonton from Fort Saskatchewan in late 1905.” (Herzog, 2011) The area became the Canada Northern Railway (CNR) Edmonton station. The original station, shown in Figure 9, was a “two-and-a-half-storey red brick building [measuring] 118 feet by 33 feet, and was described in the Edmonton Journal as “a magnificent station, handsome and commodious.” (Herzog, 2011) The CNR Edmonton station went through an addition in 1928, also shown in Figure 9, but was later demolished in the 1950s to give way to the CN Tower.

Figure 9. CNR Edmonton Train Station. Reprinted from Postcard 14020 by Gowen Sutton Co. Ltd, 1960, adapted from http://peel.library.ualberta.ca/postcards/PC014020.html

The CN tower represents a historic part of the Edmonton downtown fabric and growth. The tower was designed by Abugov and Sunderland architects, and construction was completed in 1966 by Hashman Construction Ltd. The tower was built and formerly owned by the CNR Company. At the time of construction, it was the tallest tower west of Toronto, and was the first major high-rise that defined the Edmonton skyline. The tower itself only occupies a portion of the proposed site, whereas the remaining site is asphalt and gravel parking.

In recent years, the tower has shown indicative ageing signs with some structural damage, including falling panels in 2008. The parking area also needs significant upgrades due to the rejuvenation around the site, such as EPCOR Tower, Ice District, and Royal Alberta Museum, etc. Details on the rejuvenation can be found in sections Importance of the Site and Site Adjacencies.

1.4.2 Location of The Site

The current site is located within the downtown core of the City of Edmonton, where revitalization began in early 2015. Directly north of the site is the EPCOR Tower that was completed in 2012, whereas west of the site is the new Rogers Place completed in 2016. On the east is the new Royal Alberta Museum completed in 2018, and on the south is the redevelopment for the ice district. The surrounding revitalization highlights this site at the crossroads of these four landmarks, as shown in Figure 10.

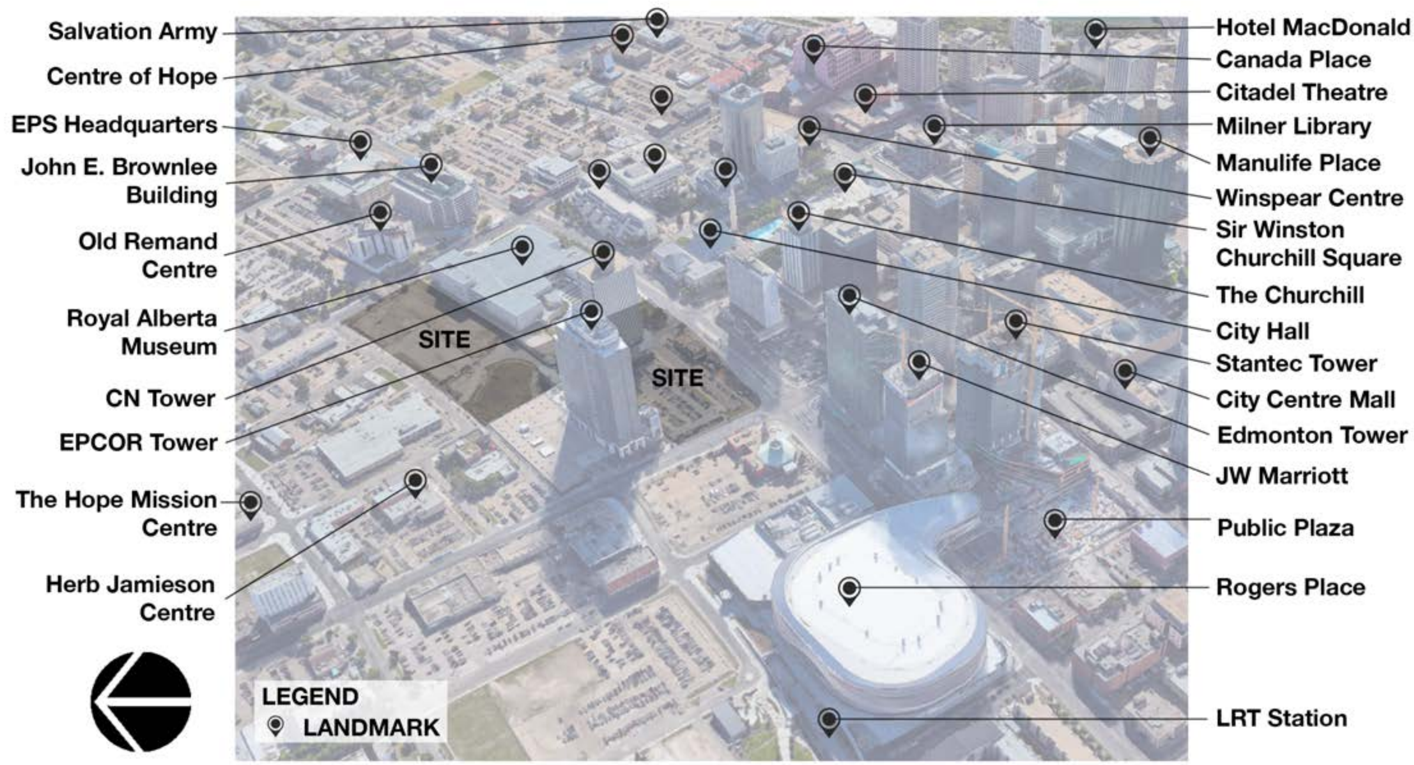


Figure 10. Site Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Site location is currently zoned Core Commercial Arts Zone, by the City of Edmonton. The total site area of all parcels is 42,881m^2 , as shown in Figure 11.

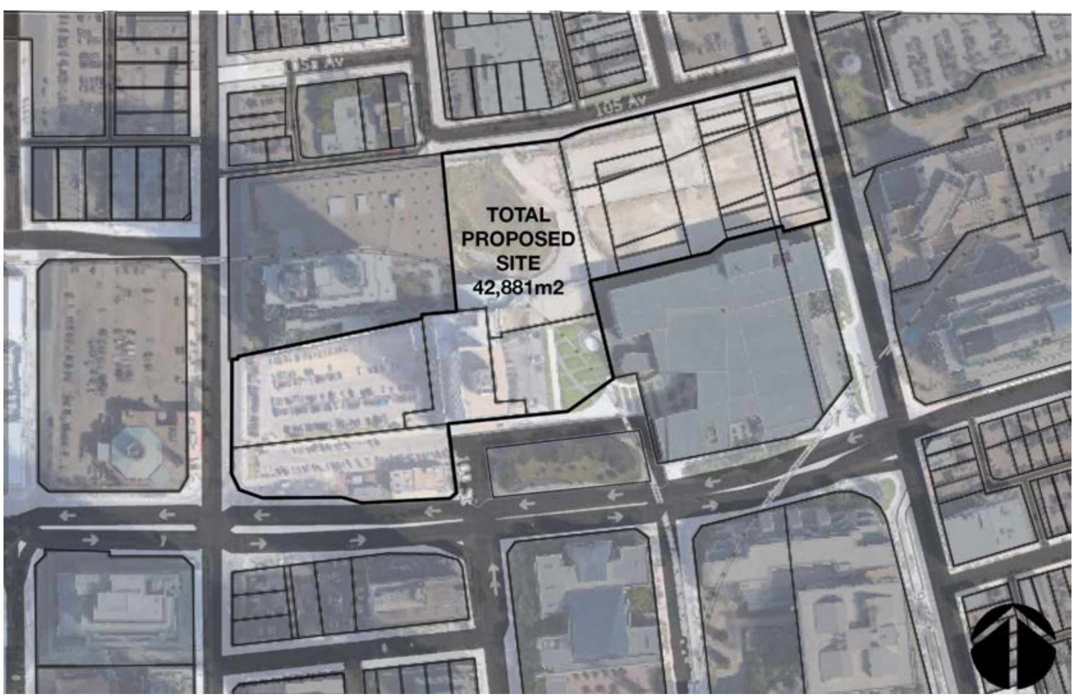


Figure 11. Existing Site Area. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

As mentioned in the section on Importance of Site, the proposed site can be transformed to a main hub of connectivity to the new downtown core and its surrounding features, shown in Figure 14. The site is located along

101st street and 104th avenue in Edmonton. 101st street has become one of the major connections/arterial road ways into the downtown core, (shown in Figure 12 in dark grey), whereas 104th avenue, also a major arterial roadway, has become a cultural connection. On 104th avenue is Rogers Place, Royal Alberta Museum, City Hall, Grant McEwan University, and the Edmonton Ice district (Section Site Context). Additionally, the Light Rail Transit (LRT), (shown in Figure 12), runs directly below the site and a possible station connection could be completed, which would increase the pedestrian traffic through and around the proposed site.

The site's location makes it an excellent redevelopment candidate. With the surrounding development and the nearby major LRT station, this site shows much potential to provide valuable connectivity to its neighbours.

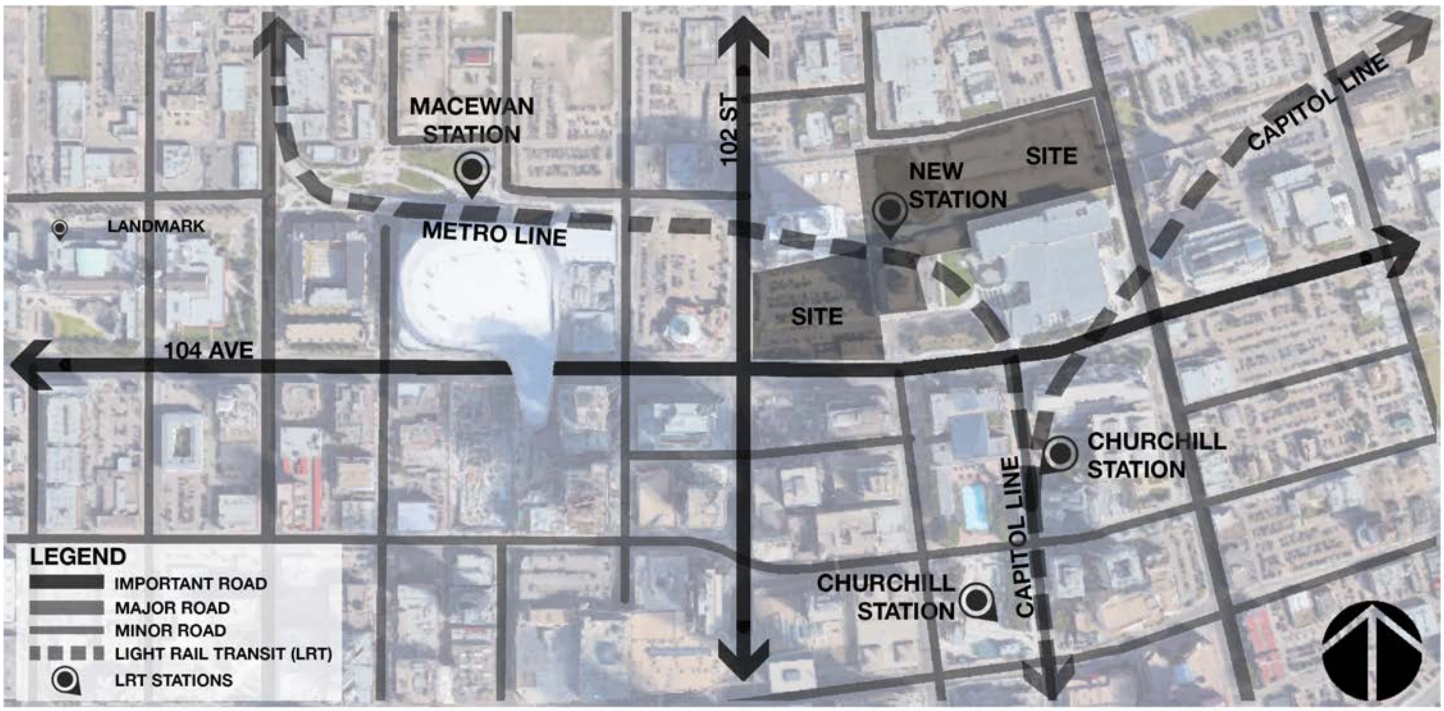


Figure 12. Map Denoting the Major Transportation Routes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

1.5 TRAITS OF DECONSTRUCTIVIST ARCHITECTURE

Deconstructivist Architecture became prominent after "A third MoMA [Museum of Modern Art] exhibition in the post-modern period, which [Philip] Johnson curated with Mark Wigley." (Nesbitt, Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965 - 1995, 1996) This exhibition was entitled "Deconstructivist Architecture" which took place in 1988. In this study, literature review is conducted to summarize background and historical information of the existing CN Lands site in Edmonton Alberta, as well as deconstruction theories, social housing, and services requirements.

The defining principles of deconstructivist architecture are against formal design. It emphasizes design aspects that will showcase the buildings form and its occupants. It will depart from the normalcy of simple rectangular utilitarian forms, to something that will excite and engage the public.

1.5.1 Deconstructivist Architecture Principles

Layering

Deconstructivist architecture explores the practice of layering, which is fragmenting pure basic volumes into vertical and horizontal planes thus creating different layers.

Figure 15. Example of Layering. Reprinted from Scene 4 AE7 Archexteriors, by Evermotion, 2018b, adapted from https://evermotion.org/shop/show_product/scene-4-ae7-archexteriors/499

Angular

Deconstructivist architecture avoids right angles in many designs to emphasize building, site, and location.

Figure 16. Example of Angular. Reprinted from Vtira Fire Station / Zaha Hadid, by Luke Fiederer, 2016, adapted from https://www.archdaily.com/785760/ad-classics-vitra-fire-station-zaha-hadid-weil-am-rhein-germany

Organic Curvilinear

Deconstructivist architecture uses organic curves to show rhythm and connection to site.

Figure 17. Example of Organic Curvilinear. Reprinted from Zaha Hadid's Heydar Aliyev Center rises from the landscape in Baku, by Amy Frearson, 2013, adapted from https://www.dezeen.com/2013/11/14/zaha-hadid-heydar-aliyev-centre-baku/

Bold Shapes

Deconstructivist architecture includes bold shapes in the design to emphasize certain elements

Figure 18. Examples of Bold Shapes. Reprinted from Busan Cinema Center has the Longest Cantilever Roof in the World, by Tekla, 2018, adapted from https://www.tekla.com/references/busan-cinema-center-has-longest-cantilever-roof-world#

Chaos

Deconstructivist architecture merges a form of chaos with building components to create chaotic forms and layouts.

Figure 19. Example of Chaos. Reprinted from Walt Disney Concert Hall, by Jake O'Neil, 2012, adapted from https://commons.wikimedia.org/wiki/File:Walt_Disney_Concert_Hall,_LA,_CA,_jjron_22.03.2012.jpg

Surface Manipulation

Deconstructivist architecture defies classical architectural by exploring surface manipulation through curves and angular designs.

Figure 20. Example of Surface manipulation. Reprinted from Surface Manipulation with Folding Patterns, by Architectural Kinetics , 2013, adapted from https://architecturalkinetics.wordpress.com

Fragmentation

Deconstructivist architecture explores fragmentation where building components are separated to convey a disconnect between the parts.

Figure 21. Example of Fragmentation. Reprinted from The Dancing House in Prague, by Lena Sevcikova, 2015, adapted from https://commons.wikimedia.org/wiki/File:The_Dancing_House_in_Prague.jpg

Non-Rectilinear Shape

Deconstructivist architecture avoids rectilinear shapes by utilizing curvilinear and angular designs. Rectilinear designs however can be utilized in fragments.

Figure 22. Example on Non-Rectilinear shape. Reprinted from Toronto's Royal Ontario Museum: The ROM, by TORONTO.COM, 2016, adapted from https://www.toronto.com/things-to-do/attractions/royal-ontario-museum-rom/

Juxtaposes Elements

Deconstructivist architecture meshes non-typical elements together to form a composition of juxtaposed volumes.

Figure 23. Example of Juxtaposed Elements. Reprinted from Fachadas de vidrio, la piel transparente, by Ipray3, 2018, adapted from https://www.detailerssimon.com/fachadas-de-vidrio-la-piel-transparente/

Abstract Nature

Deconstructivist architecture utilizes abstraction as a natural design element, where scale and perspective are skewed.

Figure 24. Example of Abstract Nature. Reprinted from Abstract Architecture Photo Contest Winner, by Evermotion, 2018a, adapted from https://www.viewbug.com/contests/abstract-architecture-photo-contest

Relation to site

Deconstructivist architecture incorporates site into the design, through integration.

Figure 25. Example of Relation to Site. Reprinted from Guangzhou Opera House / Zaha Hadid Architects, by Archdaily, 2011, adapted from https://www.archdaily.com/115949/guangzhou-opera-house-zaha-hadid-architects

1.5.1 Deconstructivist Architecture Edmonton Background

Deconstructivist architecture has been on the rise in Edmonton and it has been utilized to create a buzz around a development by emphasizing its design techniques. Figure 13 demonstrates some deconstructivist modern developments in the Edmonton area. Many of these examples use curved facades, bold drastic shapes, angled, and skewed walls.

EDMONTON ARCHITECTURE

Figure 13. Examples of Edmonton Modern Architecture. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

1.6 PROJECT STATEMENT

Deconstructivist architecture and urban planning can be applied to the successful evolution and enhancement of a social housing and associated service network within Edmonton’s downtown core on the CN Tower Lands site. This redevelopment will provide a new purpose to the existing site, while also exploring deconstructivist architecture.

1.7 METHODOLOGY

Three methods are selected to comprise the Methodology section: Iconography and Iconology, Social History, and Visual-Based Studies, as all three are relevant when examining deconstruction’s influence on the revitalization of the CN Tower Lands.

Iconography and Iconology are related directly with deconstructivism. Most buildings by deconstructive architects become iconographic buildings with meaningful visual images and symbols from their use and design. They are also icons of their location and most deconstructive buildings became the focal point of their location. One example is the Guggenheim Museum in Bilbao, Spain, which revitalized an industrial city into a major tourist destination.

Social History plays an important part in deconstruction. Celebrated architects like Robert Venturi have noted that the International Style was boring and bland, and people deserved better designed architecture. Visual-Based Studies is a valuable resource when reviewing deconstructivist architecture. Deconstructivist architecture is best experienced in urban areas that allow for contrast against other forms of architecture. The way the curves and bold forms interact can be a most interesting architectural dialogue as they not only compete and contrast with each other, but also with the surrounding site and building.

1.8 QUESTIONS FOR PRODUCTION

Below are questions in reference to Deconstructivist Architecture and its origins.

How was Deconstructivist Architecture constructed?

The theory of deconstructivism arose from the rebellion away from the international modern style, the "less is more" philosophy, where buildings were designed as rigid structures and linear functions.

Who was involved?

Robert Venturi and Peter Eisenman were all noted architects who struggled with the international style. They were followed by Jacques Derrida who was a major theorist in regard to deconstruction.

Where is Deconstruction? Why is Deconstruction?

Deconstruction is now noted all over the world, such as American universities in Princeton and Penn State. It would eventually catch on with younger architects (such as Frank Gehry and Zaha Hadid) and spread across the globe.

When was it built? When was deconstructivist architecture at its peak?

Most deconstructive buildings were built after 1995, and the trend continues today. One could say the 1980's to 2010 was the peak of deconstructivist architecture.

How was it paid for? Who paid for it? Why?

Deconstructive designs are generally public buildings. In many cases there were private benefactors who aided in the construction, such as the Disney foundation that funded the Disney Concert Hall in Los Angeles.

Has it been altered after its original construction?

Deconstruction architecture is always being altered by new designs and ideas. Unlike the International style, deconstruction has no set style, hence no symmetrical plans and linear walls, etc.

What are the main intentions of the architects and other producers?

The main intentions of the architect who designs deconstructivist buildings is not only to design a functional building, but one that elevates the cities design standards and boost tourism.

Where did these ideas come from?

The ideas for deconstructive architecture came out of a rejection of the International Style, by architects who wanted to innovate beyond symmetrical buildings.

What is the function of the architecture?

The function of deconstructive architecture is to entertain its viewers. Bold shapes and uncommon materials make the buildings stand out and add contrast to the surrounding environment.

Who benefits from this architecture? In what way?

Those who benefit from this architecture are primarily the users, they are the ones who enjoy the interior and marvel at the exterior. The city or jurisdiction would also benefit as this statement design would contribute to increasing exposure and ultimately tourism itself.

CHAPTER TWO THEORETICAL FRAMEWORK

2.1 INTRODUCTION

With the overwhelming developments occurring in the downtown area of Edmonton, social housing is being pushed further and further away, thus creating a gap in the system. Changes are required to ensure people who require the aid are able to get what they need.

2.2 DEFINITIONS

2.2.1 Social Housing

The definition of social housing from Merriam-Webster is “houses or apartments that are made available to be rented at a low cost by poor people” (Merriam-Webster, 2018)

Social housing or assisted housing began in Canada in 1918, at the Dominion-Provincial conference. It was at this conference that “Sir Thomas White, Minister of Finance and· acting Prime Minister, offered to make available to all the provinces federal loans that in turn could be released to municipalities as mortgage money for individual home buyers.” (Oberlander & Fallick, 1992) This program, known as the Federal Housing Program, would result in the “6,242 dwellings in 179 municipalities over four years”, however it was not considered a success for it “left behind an impression of incompetence among officials in all levels of government. The plan lacked a clearly defined administrative structure.” (Oberlander & Fallick, 1992)

Following the Federal Housing Program was The Dominion Housing Act. At the beginning, it operated “As traditional market forces and mechanisms apparently responded to the nation's residential needs after 1923, no further federal initiatives appeared.” (Oberlander & Fallick, 1992) During this period of home construction many middle-class homes were completed, as the country was in an economic boom. However, “By 1933, house construction fell to 31 % of the 1929 level. Incomes dropped, and vacancy rates climbed as households doubled up. Thousands of homeless unemployed men moved across the country in search of work and wages.” (Oberlander & Fallick, 1992) With the drastic rise in unemployment and homelessness due to the great depression, the federal government had no choice but to step in and aid the ailing population. “In June 1935, the government presented its bill for the Dominion Housing Act to the House of Commons.” (Oberlander & Fallick, 1992), thus making the act a federal commodity. It was during this act that social housing was established. The dominion housing act would continue operations well into the 1930’s.

“In July 1938, Mackenzie King's government continued its efforts to increase employment, to stimulate the construction industry, and to expand the housing supply by replacing the [Dominion Housing Act] with a new National Housing Act.” (Oberlander & Fallick, 1992) It was within the National Housing Act that low-income housing would be realized. The National Housing Act would be supported by the creation of the Canadian national bank. “Eventually, Clark's promotion of better housing conditions for Canadians through a government assisted market-place would find its realization with the establishment in 1946 of the Central Mortgage and Housing Corporation.” (Oberlander & Fallick, 1992) The National Housing Act would not be completed until 1949.

“From 1949 to 1963, the federal government was not significantly involved in the provision of social housing. During this period, only 12,000 public housing units were built, largely to offset public criticism regarding the lack of housing for low-income Canadians” (Sawatsky & Stroick) During the early beginning phases of the act the development of homes was substantially low, but change would come quickly. During the next 20 years of the act, “from 1964 to 1984, the federal government built 200,000 public housing units and established a variety of housing initiatives, including non-profit and co-op housing programs, as well as a native housing program.” (Sawatsky & Stroick) Following the boom of social housing construction “1984 to 1993 saw a withdrawal of the federal government from providing housing assistance for low-income Canadians" (Sawatsky & Stroick), this was also occurring at the provincial level in Alberta. Eventually the federal government realized the requirements of social housing and *"one of the first signs [that it] was interested in getting back into affordable housing was the 1999 announcement of the Supporting Communities Partnership Initiative (SCPI)."* ((Falvo, 1 April 2007) This funding was the beginning of an almost 1-billion-dollar investment in social housing in Canada. From that point, major investment in social housing has become a priority of the federal, provincial, and municipal governments.

Housing is a human necessity required by all. Over the years social housing has become an important program to the city's less affluent population. Adequate Housing can be defined as "housing that is in good physical condition, has adequate bedrooms and costs less than 30% of before-tax household income. Those living in poor-quality housing and/or spending more than 30% of their income are said to be "in core need." (Mcafee, 2009)

2.2.2 Social Services

The definition of Social Service from Merriam-Webster is "an activity designed to promote social well-being" (Merriam-Webster, Social Service, 2018). Social services, also known as social work, were established in the late 1800's within Canada. The formatting was a carbon copy of the British and American social services network, where social services were to aid the poor. Through the years social work had evolved and came into heavy demand during the great depression. One of the greatest changes occurred after World War Two, when "health care, hospital insurance, old age pension, social security, homes for the aged and special services for those with disabilities" (Drover, 2006) were incorporated into the social services branch. Originally "the family was expected to care for its members with assistance from the church, private charity and workplace associations when the family's own resources were insufficient." (Albert & Kirwin, 2006) With the industrial revolution, social service needs grew rapidly, and the government became the main administrator.

Currently social services are provided primarily by government and non-profit organizations. These organizations offer many different services, including employment services, medical services, prevention/violence support services, income support services, family services, and disability services.

2.3 FUNDAMENTALS

2.3.1 Social Housing

Fundamental requirements for social housing can be broken down into three sub-sections: Physical, Economic, and Social. Physical requirement denotes how the social housing is operated, ownership/rental, and proximity to the physical city elements. Economic requirement refers to income/cost ratio on the unit needed by the relevant occupants. Location is considered to be part of economical requirement because it is in reference to the cost of construction and economic feasibility. Social requirement is how the occupants will be merged with the existing city fabric. It also pertains to social interaction developed by occupants.

2.3.1.1 Physical

Housing Types (Rental vs Ownership)

Social housing types can be broken down into two forms: Rental and Ownership. Rental housing incorporates lower fees to rent the living space, typically from government owned or subsidized properties. While ownership relates to the occupants purchasing the property, it often comes with a subsided fee or lower development fee. Figure 14 denotes the current City of Edmonton housing situation.

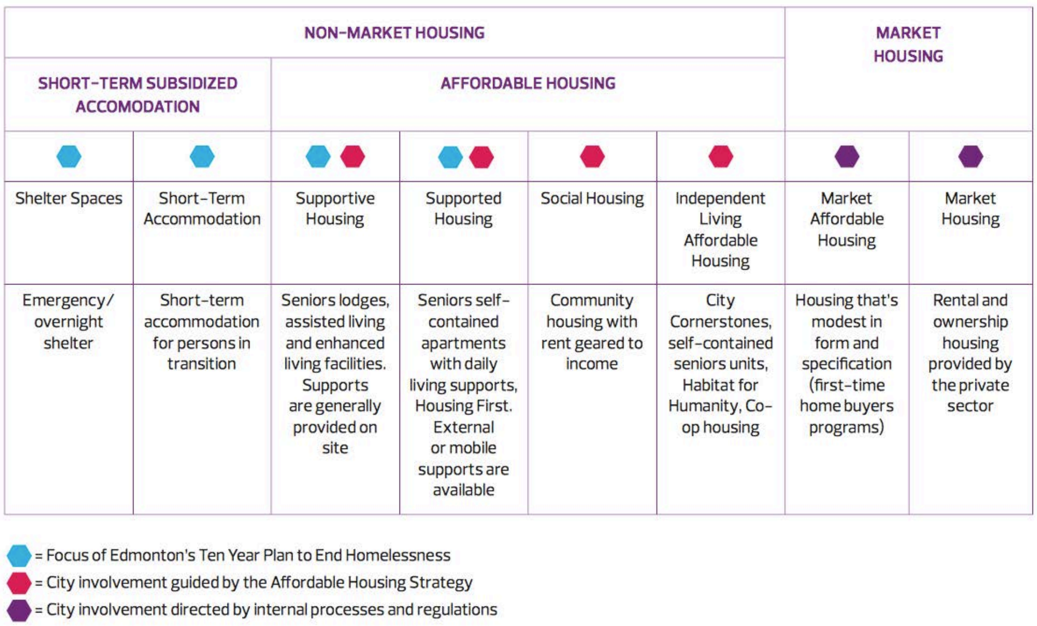


Figure 14. Diagram of Edmonton Housing. Reprinted from Affordable Housing Strategy 2016-2025, by City of Edmonton, 2016, adapted from https://www.edmonton.ca/programs_services/documents/PDF/City%20of%20Edmonton%20Affordable%20Housing%20Strategy%20(2016-2025).pdf

Proximity

One of the most fundamental necessities in social housing is proximity to everyday requirements: food, transportation, education, and work. This is vital to ensure the success of the housing developments.

2.3.1.2 Economic Affordability

Cost/Income Ratio

Economic affordability plays an important role in social housing. Through subsided properties those in need can purchase or rent a home at below-market costs. The cost/income ratio is important in the calculation of living expenses. When one lives in the downtown core, housing prices are typically higher than in the suburbs. However, with proper planning, costs can be lowered with sophisticated site development. Construction and material cost affect the economic development of social housing.

Location

As each plot of land in every city has a price, review of the land cost versus its proximity is crucial. The cost may be outweighed by the availability of other services or connections. Typically, social housing developments were created with minimal fees associated to the project. In the right location, social housing can become a focal point and a part of the cities most developed fabric. It can also offer people-in-need more opportunities to work, study, and ultimately improve their quality of life.

2.3.1.3 Social

Community

Community and a sense of community are parts of a successful social housing project. With the proper location and programming, a social housing complex can be an important part of the city core's urban community, and can offer its residents the sense of being part of a family. This community also provides convenience and connections to people's lives.

Services

One benefit of social housing is often the availability of social services: in most cities, these are two programs that work closely together. Employment services, medical services, income support services, family services, and disability services are examples of such programs. To ensure a vibrant social housing community, services must be available and located nearby.

2.3.2 Social Services

Similar to the framework for social housing, the fundamental requirements for social services can be broken down into three sub sections: Physical, Economic, and Social. Physical requirement of social services refers to the actual services, and the needs to be met. Economical requirement of social services refers to the costs associated with the operations and those who utilize them. Social requirements of social services are in reference to the community based approach, and how the services interact with the neighbourhood.

2.3.2.1 Physical

Requirements

Social services requirements can range from seniors' care to medical treatment. Federal, Provincial, and Municipal Governments typically will establish the selection of services required within city limits. These services are based on population requirements, and also future growth.

Services

Social services assist not only those in need, but also citizens requiring emergency help. The services range from Violence Prevention/support, Disability services, Family and community Services, Financial support, and Housing support. Locating the services close to other services utilized by the population would aid in creating a more convenient service system.

Proximity

As discussed above, proximity is an important aspect of social services. Social services need to be close and accessible to those who may need them. People who need social housing may also need additional social services or aids.

2.3.2.2 Economic

Cost/Income Ratio

Social services are provided through the government and are typically subsidized to keep costs low. The governments - Federal, Provincial, and Municipal - all contribute to the required fundamental, Violence Prevention/support, Disability services, Family and Community Services, Financial support, and Housing support, social services. The cost of construction of the infrastructure also typically falls within the government systems.

2.3.2.3 Social

Community

The deployment of social services must also be accepted within the community. If people are more familiar and welcomed they will more likely utilize the services. The social services network would also foster a community within the site, where all elements work together to aid its residents.

2.4 STRATEGIES

2.4.1 Social Housing

A consideration of social housing is the type, scale, and density of development. This includes the infrastructure and circulation. The type of development denotes the density and scale of the project, for example, multifamily developments are typically denser social housing and will require a higher density site location with more services available. This entails a circulation system that is not only site driven but also neighborhood driven.

2.4.1.1 Develop Appropriate Housing

Multi-Family Development

Multi-Family housing can be defined “as any building that contains more than one dwelling unit, and it can be stacked or side by side with a shared exterior wall” (Schmitz, 2000). In any form of connection, multi-family developments can be classified into five types: condominium, cooperative, rentals, fractional, and timeshare ownership. Condominiums utilize a sole individual ownership method, where each unit is individually owned within a building. There are some typical shared elements within the building structure, such as fitness room, rec room, etc. A cooperative condominium is a building that is owned by a corporation. It can also be a non-profit building which means the occupancy would purchase shares or stocks in the corporation. Typically, the number of stocks required is based on the size of the unit being purchased. A rental condominium is where in a tenant rents a property from an owner, typically known as a landlord. Landlord can be a private investor or a government owned company. A fractional condominium is where one buys a certain portion of the property, and is entitled to its use for the portion they have purchased. A timeshare condominium is a joint ownership of a property, which entitles the owner a time-based use. The time allocated to each owner is reflected by the amount purchased - weekly, monthly, or yearly.

Multi-family developments are an excellent way of intensifying urban areas and achieving affordable housing. Many cities’ bylaws, including Edmonton, regulate the construction of large-scale multi-family developments, mainly in the downtown core. In Edmonton, the developments are typically found in suburban areas with a medium density. The location of multi-family developments is determined by the surrounding residents in suburban area who usually do not want to live nearby a large-scale high-density development.

High-Rise and High-Density Development

“High-density and high-rise residential building is commonly placed in the category of multi-family housing, and these two terms are strongly correlated” (Schmitz, 2000). High-rise structure has been used in developing residential housing. Three of the most influential architects in the design of high-rises are Le Corbusier, Mies van der Rohe and Walter Gropius. All of these modernist architects searched for an answer to resolve urban housing and social problems through high-rise developments. Le Corbusier’s 1925 proposed Plan Voisin in Paris, France, was an ambitious solution for the city’s overpopulation. Le Corbusier’s “concept was to provide affordable housing within a healthy environment that allowed low-income households to enjoy natural sunlight, ventilation to fresh air and large open spaces" (Kwon, 2012). This idea was translated into the public housing typology throughout the world thereafter.

One failure of a high-rise complex was the Pruitt-Igoe social housing designed by Minoru Yamasaki in 1954. Built in St. Louis, Missouri, the complex would fall on hard times, when poverty, crime, and racial segregation became a focal point of the developments. By 1972, all 33 buildings designed for Pruitt-Igoe social housing had been demolished. From this time, "historians and post-modern architects denounced modernism's idealism as a symbol of architectural failure because it had created other serious urban problems" (Millais, 2009). Responsibility for the rise and fall of the Pruitt-Igoe social housing lies with more than just its architect, Minoru Yamasaki, but with the entire development process. The main faults of the development were the design, economical shortcomings and services. The original design was "a mixed-rise cluster of buildings" (Marshall, 2015) however this was not the final design, rather budgetary constraints changed the development. One such change was the Public Housing Administration's insistence on a cost-saving uniform tower height of 11 storeys." (Marshall, 2015) With this design change the overall concept devolved into a series of high-rises. With the onset of the Korean war "squabbles in Congress ensured that the construction budget only got more stringent thereafter, resulting in poor build quality and cheap fixtures that showed strain not long after the first occupants arrived." (Marshall, 2015) All these factors played into the design of the building, and most likely the failure of the buildings. The budgets for maintenance and operations were also not part of the project's initial budget, nor any additional budgets. This only compounded the poor workmanship of the buildings. The final straw was the lack of social services or support. The Pruitt-Igoe social housing development was focused mainly on residential units, rather than on the requirements needed by those who use them. Without sufficient support tenants would become vulnerable to increased poverty and crime.

In the context of affordable housing, however, especially in mega-cities, Le Corbusier's utopian ideology is still applicable and provides the baseline for affordable housing design. (Kwon, 2012).

To determine the appropriate density for designing social housing, it must be analyzed in both building (Liu, 2007) density and occupant density. Both can be broken down further to into three categories: regional density, measured as a population, residential density, measured in dwelling units, and occupancy density, measured as floor area ratio. Regional density refers to "a measure of how many dwelling units per acre (hectare) are placed on the site, sharing its land and infrastructure cost" (Friedman, 2005), by this way the entire regional population can be reviewed. These reviews can range from city density, to community density, and to neighborhood density in determining regional density, the population can be quantified according to three forms of land area; city/region, district, and neighborhood. Residential density can be quantified by neighborhood and block or development parcels. Lastly, occupancy density can be quantified by floor, neighborhood, and block or development parcels.

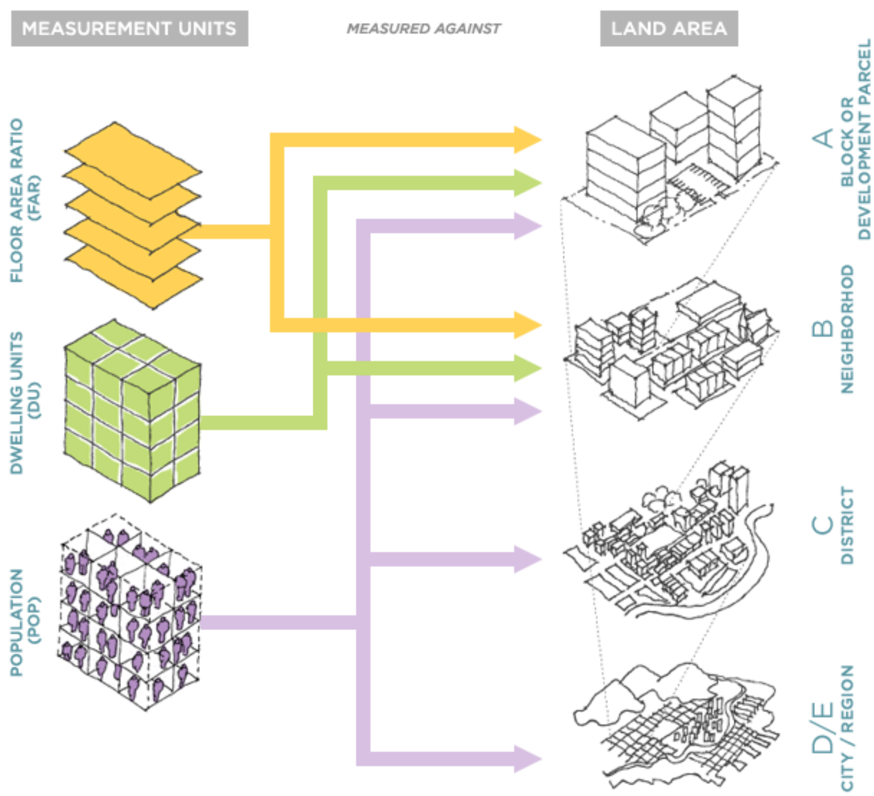


Figure 26. Density Diagram. Reprinted from Introduction to Measuring Density, by Density Atlas, 2011, reprinted from http://densityatlas.org/measuring/

One of the major benefits of high-rise and high-density urban developments is the reduction in urban sprawl. In the western hemisphere, cities are expanding far more horizontally than in the developing world, such as China. This expansion takes over valuable agricultural lands, increases vehicular dependence and greenhouse gas emission. High-rise development can not only reduce these adverse effects, but also promote more public transportation, encourage social contact, and further reduce our environmental footprint. “Furthermore, recent designs for high-rise and high-density housing projects throughout a wide range of urban contexts have avoided the mistakes of modernism while enhancing the urbanity of architectural esthetics and affordable solutions.” (Kwon, 2012)

Mixed-Use Development

Mixed-use developments have been used in urban planning for many years. Before cities implemented zoning, buildings were commonly found to have a mixture of different functions and activities, under a single architectural structure. In the 1970s, mixed-use developments became an important part of Canadian urban planning. The new mixed-use developments are an amalgamation of multiple types of constructions and land uses. “These can include commercial or community space on the ground floor, which is more accessible for public use, and residential space on the upper floors” (Liu, 2007) “In the late twentieth century, urban planners and architects recognized the potential feasible benefits and advantages of mixed-use development after witnessing the fall of utilitarian urban planning” (Liu, 2007). Combining many elements into a single structure allowed residents closer proximity, reduction in travel times, and more walkable/pedestrian friendly environments. All these elements are beneficial to the environment and lead to less dependence on the automobile. Mixed-use developments also encourage a healthier lifestyle with active community engagement and a reduction in environmental impact, as the developments typically encompass a smaller building footprint.

“The biggest advantage of mixed-use development in old urban centers is the urban revitalization that improves livability of the area through enhanced walkability from one space to another. If working places, commercial spaces, services, and recreational spaces are close to homes, people prefer to leave their car and walk to their destination; this naturally creates an economic boost in the area." (Liu, 2007)

2.4.1.2 Infrastructure

Infrastructure is vital to the success of a housing development. "Efficient use of infrastructure, which is defined as tangible and intangible systems including roads, transportation systems, running water, storm drainage, sewers, electricity and communications systems to provide necessary utilities and comfort, is also one of the cost reduction strategies for affordable housing." (Friedman, 2005)

2.4.1.3 Circulation

Similar to transportation, circulation plays an important role in the success of any housing development. Circulation systems for residential developments need to be connected to the existing circulation grid to ensure there is efficient transportation for all occupants. In addition, design of circulation systems has to be considered carefully for social housing as it has a significant impact on the total cost.

2.4.1.4 Site

The location of the site is a major factor when developing social housing/services, especially when there are existing facilities and services that would benefit the future development. Other important factors include connections to major arterial roadways, to the light rail transit system and to other existing and functioning social housing and social services networks.

2.4.1.5 Existing Housing

Existing social housing structures have the ability to become a secondary satellite service, or the possibility to be combined within the new development. With the existing social housing network that close to the site in development, the transformation could be completed more easily with less disruption to the surrounding environment.

2.4.1.6 Transportation

Transportation as noted previously is an important part of circulation and infrastructure. The City of Edmonton currently provides two methods of mass transportation: light rail transit (LRT) and bus. Both options are available on the proposed site. Another benefit is the additional light rail transit stops being created within the City of Edmonton.

2.4.1.7 Facilities

The facilities located in proximity to the selected site are multiple social housing buildings, social services buildings, and recreation facilities. All these facilities will be well within the area for patrons of the new development to utilize, or even be incorporated into the design of site development.

2.5.1 Social Services

The strategies associated with social services revolve around the city's requirements, and these requirements vary with the city's size. Important aspects of social services include medical care, counseling, senior care, infrastructure, and circulation. With a population of 986,000 [2016 census] inhabitants, the required social services for Edmonton are: Violence Prevention/support, Disability Services, Family and Community Services, Financial support, and Housing support. A full list of the requirements can be found on the Alberta Government Human Services Website.

2.5.1.1 Safety

Safety is the top priority in any design and development, especially for social housing/services development that incorporates many different functions. Each function, refer to above paragraph, has to be carefully designed and evaluated based on necessities and relevant requirements. One has to realize the importance of each function and their required necessities.

2.5.1.2 Inclusion

When safety requirements are met, inclusion should also be considered in design as people want to and should be included in society and community. Thus, sufficient social services are vital to make people feel they are welcome and safe where they are.

2.5.1.3 Necessities

As the objective of social housing/services is to help people meet basic living requirements, social housing strategies have to be implemented to ensure that these necessities are accessible to all occupants. This requires an in-depth look into the requirements of previous social housing establishments, current necessity requirements, and current site conditions.

2.5.1.4 Engagement

Stakeholder engagement is a basis for not only the social service developments, but also for the success of surrounding communities. The communities have to be fully involved in the development and utilize the new facilities to their full potential. Social services function as a basis for needs and help, communication and recovery. Appropriate community engagement can further improve the social services network.

2.6.1 Deconstructivist Architecture

Deconstructivist architecture strategies lay in challenging the norm. The main point can be presented by "Deconstruction gains all its force by challenging the very values of harmony, unity, and stability, and proposing instead a different structure; the view of the flaws are intricate to the structure." (Johnson, Deconstructivist architecture, 1988) This represents how deconstructive style can utilize uncommon elements to create a pleasurable composition.

2.6.1.1 Challenge

Deconstruction architecture strategies began from Russian constructivism. This is where "The Russian avant-garde posed a threat to traditions by breaking the classical rule of composition, in which the balanced, hierarchical relationship between forms created a unified whole" (Johnson, Deconstructivist architecture, 1988). And "projects can be called de-constructivist because they draw from constructivism and yet constitute a radical deviation from it" (Johnson, Deconstructivist architecture, 1988). Deconstruction grew from this to create a characteristic of elements that are non-uniform. It was where "Pure form was now used to produce impure skewed, geometric compositions" (Johnson, Deconstructivist architecture, 1988) These skewed and impure forms were blended together, showing "there were no single axis or hierarchical forms but a nest of competing and conflicting axes and forms." (Johnson, Deconstructivist architecture, 1988) These nested and conflicting forms have become a feature on their own. These forms against the typical rectilinear design and merging/changing elements, thereby displacing the design in reference to the surrounding areas. “Derrida’s deconstruction proceeds by way of displacement, a strategy which is a violent situation of difference.” (Mugerauer, 1986)

2.7 INNOVATIONS

2.7.1 Social Housing & Social Services

As cities grow and population expands, social housing and services have to find innovative ways to ensure they keep up with the growing trends. Below are some innovations that can be implemented into the design and use of these social facilities.

2.7.1.1 Level of Affordability

With any development, the level of affordability is crucial. Social housing is dedicated not only to those without homes, but also those who require assistance. Therefore, social housing encompasses a wide variety of family sizes, from single to various multi-family types. A single homeless person coming in from the streets may only need a single bed, while a family with children would require more assistance. These dictate different levels of affordability - a successful social housing complex needs a variety of rooms and amenities to ensure it is able to meet different needs. Social service also requires levels of affordability that can be attained by all and readily available. Innovation in flexibility and affordability is one of the core elements to developing a successful social housing/service system. Figure 27 denotes the path and level of affordability in housing.

Figure 27. Housing transition diagram. Reprinted from About Affordable Housing in Canada, by Canadian Mortgage and Housing Corporation, 2018, adapted from https://www.cmhc-schl.gc.ca/en/developing-and-renovating/develop-new-affordable-housing/programs-and-information/about-affordable-housing-in-canada

2.7.1.2 Building Supportive Networks

Building a supportive network within the complex is vital, and it can be met through innovations that connect with neighbour communities such as shared areas for common space and gardens. A supportive network can be the basis of a healthy community, supportive networks can consist of the following: common interior and exterior spaces, libraries, on-site clinic or medical facility, family support centers, family aid (child care, senior care), and exterior space connectivity.

2.7.1.3 Engaging Local Authorities

Building a supportive network is achieved by engaging local authorities to be a part of the development. Developing a strong connection to local authorities provides security, mentorship, and community outreach to not only the occupants of the building but also the surrounding area,

2.7.1.4 Non-Governmental Organizations to Develop Services for Homeless People.

One innovation is utilizing non-governmental organizations to develop services within the complex. This could include activities, education, and necessary skill training. An example would be Homeward Trust Edmonton. This organization tries to prevent and end homelessness within the City of Edmonton. The organization works "to identify community needs, plan and implement solutions for some of our most vulnerable citizens." (Homeward Trust, 2018) Homeward Trust utilizes donations and volunteers to complete the necessary work.

2.7.1.5 Planning

As with any development, innovation starts at the planning stage to ensure the development meets the future needs of its occupants. An excellent example of planning to support social housing is Community Land Trusts (CLT). Community Land Trust is "a non-profit organization that develops and maintains affordable homes, community gardens, civic buildings, shops and other community assets" (CLT, 2018). This organization creates affordable housing in community areas, while also maximizing the engagement with surrounding environments. As an example of CLT, East London will construct "23 new homes in June at a third of the open market "value" by linking the price of the home to local rent. A further 229 homes will be sold at market price to help fund the scheme." (Roberts, 2016) This planning will provide sufficient units while also encouraging connections among the diversity of residents.

2.7.1.6 Housing First Model

A new innovation in social housing is the "housing first model". The "'Housing First' is a recovery-oriented approach to ending homelessness that centers on quickly moving people experiencing homelessness into independent and permanent housing and then providing additional supports and services as needed." (Canadian Observatory on Homelessness, 2018) There are five core principles that are followed in the housing first model (Canadian Observatory on Homelessness, 2018):

1. Immediate access to permanent housing with no housing readiness requirements.
2. Consumer choice and self-determination.
3. Recovery orientation.
4. Individualized and client-driven supports.
5. Social and community integration.

2.7.1.7 Prefabrication

One initiative that is taking shape is the use of prefabricated structures for the buildings' components. This innovation allows for the following benefits: "unit design construction, materials, transportation, housing form, integration, emergencies, and sustainability" (BC Housing; BC Real Estate Institute; Manufactured Housing Association of BC; the Real Estate Foundation of BC. , 2014) Unit design construction in prefabrication allows for a more precise price and budget with more efficiency, as they are constructed in a controlled environment. Materials are more easily installed and can be selected based on the efficiency of the unit design. Transportation to site allows for a more precise scheduling and construction phase, minimizing waste. Prefabrication does not limit the building in design form. Prefabrication suits any building form, units can be stacked, side-by-side and perpendicular. Integration is also available within the building system, allowing prefabrication to be combined with traditional construction methods. One major benefit of prefabrication is the time to create a building, in times of emergency a building can be created to suit the needs of those in conflict. Because prefabrication takes place in a controlled environment there is less waste, but also less pollution into the environment. An excellent example of prefabricated social housing is Star Apartments, located in Los Angeles, as shown in Figure 28. The building "provides permanent supportive housing to 100 formerly homeless individuals using innovative modular pre-fabricated units that are cantilevered over a two-story concrete superstructure." (Trust, 2013)

Figure 28. Example of Prefabricated Housing. Reprinted from STAR APARTMENTS, by Skid Row Housing Trust, 2013, reprinted from http://skidrow.org/buildings/star-apartments/

2.8 DECONSTRUCTIVIST ARCHITECTURE

2.8.1 Deconstruction Theories Review

The definition of Deconstruction from Merriam-Webster is "A theory used in the study of literature or philosophy which says that a piece of writing does not have just one meaning and that the meaning depends on the reader" (Merriam-Webster Learners Dictionary, 2018)

Deconstruction was initiated as a theory by Jacques Derrida, with inspiration from Ferdinand de Saussure. He was "most celebrated as the principal exponent of deconstruction, a term he coined for the critical examination of the fundamental conceptual distinctions, or 'oppositions', inherent in Western philosophy since the time of the ancient Greeks." (Britannica, 2018) The theory of deconstruction revolved around an idea against modernism's rigid standards, as noted by Derrida:

"…to 'deconstruct' an opposition is to explore the tensions and contradictions between the hierarchical ordering assumed or asserted in the text and other aspects of the text's meaning, especially those that are indirect or implicit. Such an analysis shows that the opposition is not natural or necessary but a product, or 'construction,' of the text itself." (Britannica, 2018)

From these theories, architects during the late 1970's and early 1980's created a new form of architecture known as deconstructivism. Deconstructivism would "reflect two sources of influence for the type of postmodern work exhibited: the philosophical deconstruction of Jacques Derrida and Russian constructivism." (Nesbitt, Theorizing a new agenda: an anthology of architectural theory, 1996)

The definition of Deconstructivism from Merriam-Webster is "An architectural movement or style influenced by deconstruction that encourages radical freedom of form and the open manifestation of complexity in a building rather than strict attention to functional concerns and conventional design elements (as right angles or grids)" (Merriam-Webster, deconstructivism, 2018)

One of the first architects to translate Jacques Derrida's theory into a design principle is Peter Eisenman. Peter "argued that a building should be made up of differing 'texts' that need not, indeed should not, be resolved into a unified whole." (Wiseman, 2000) This would become one of the founding principles of deconstructivism and fragmentation, and "the source of which may lie in the rejection of anthropomorphic embodiment." (Nesbitt, Theorizing a new agenda: an anthology of architectural theory, 1996) The idea was that rather than having a building systematically designed, architects would design individual forms to create an overall structure. Mr. Eisenman "thought outside the traditional parameters of 'built work', concerning himself instead with a conceptual form of architecture, in which the process of architecture is represented through diagrams rather than through actual construction" (Zukowsky, 2018)

In 1988, Mark Wigley, a New Zealand born architect, and Philip Johnson, an American born architect, curated the 1988 Museum of Modern Art exhibition Deconstructivist Architecture, which cemented the style into architectural history. Deconstruction architects from all over the world were invited to present their work, including Peter Eisenman, Frank Gehry, Rem Koolhaas, Daniel Libeskind, Bernard Tschumi, Zaha Hadid, and Coop Himmelblau. Some of the most common deconstructivism traits such as fragmentation, surface manipulation, non-rectilinear shapes, curvilinear and bold shapes, stimulating unpredictability, distortion, and dislocation, were exhibited in the museum.

2.8.2 Deconstructivist Architecture Influences

Deconstructivist architecture has many influences on the architectural practice, from the overall design, materials used, all the way to software used to achieve these designs. Manipulation of materials, including metal, fiber, glass, and wood, is also critical in a deconstruction design. Deconstruction has utilized cutting edge innovative software to complete today's designs. Examples of software include Revit, Rhino, Enscape, and Grasshopper. Many modern deconstructivist architects such as Frank Gehry utilize their own programs.

2.8.2.1 Manipulation of Materials

Deconstruction architecture allows for the full capability of material uses, where curves, angles and merged forms can be accentuated. It also allows proper materials to be selected based on weather requirements, energy efficiencies, stiffness, sustainability, maintenance, insulation values and durability.

2.8.2.2 Free Design

In designing, architects are not bound by the typical forms and philosophy of architectural elements. Deconstructive architecture is an open concept where no traditional architectural schemes prevail such as symmetry or linear based design. Design utilizing three-dimensional software can mimic and create any form desired.

2.8.2.3 Three-Dimension (3d) Computer Aided Design

With the development of architectural technologies, design can be created to a degree that was never imaginable. Forms can be created digitally through software to create dramatic shapes and curves. This computer aid is vital in the creation of deconstructivist design. Deconstruction design utilizes innovative computer software to create dramatic forms. Three-dimensional modelling enables the creation of intricate design elements, and facilitates future fabrication and completion.

CHAPTER THREE CASE STUDIES

3.1 INTRODUCTION

The case studies found within this section can be divided into two main topics: social housing and deconstructivist architecture. Both topics have a major impact on the re-development of the Canadian National (CN) Tower lands proposal in Edmonton, Alberta. The objective is to analyze and evaluate ideas, concepts, and processes from these case studies and bring them forward.

3.1.1 Selection

The Selection is based on four major criteria: location, use, style, and size.

Location is in reference to a high-density urban setting, that is similar to the proposed CN Tower Lands site in Edmonton, Alberta.

Use is in reference to the occupancy use of the designed structure, such as Social Housing, Mixed Use, Commercial, etc.

Style refers to the architectural style imposed on the buildings' design. Deconstructive building is utilized as the main reference in some of the case studies below. They are reviewed based on templates and concepts. While other case studies focus more on social housing.

Size addresses the buildings' gross floor area and the site area. It is reviewed to gain an understanding of project scales relatable to the CN Tower Lands site scale and area. Size of the surrounding areas and surrounding development is also examined.

3.1.2 Process

The process undertaken is to study and analyze each building and site, interpret and document existing conditions which would be applicable to re-development of urban spaces. Also process review is conducted through predetermined analysis criteria.

3.1.3 Analysis Criteria

Analysis criteria is comprised of the standards and processes through which each case study was reviewed and researched. Below is a list of the criteria utilized:

- Location
- Context
- Climate
- Urban Grid/Relationship to Site
- Development/Building Typology
- Features/Strategies

Context utilizes Kevin Lynch's 5 Principles of architecture; Landmarks, Edges, Nodes, Paths, and Districts. The definitions are as follows: "(1) paths: routes along which people move throughout the city; (2) edges: boundaries and breaks in continuity; (3) districts: areas characterized by common characteristics; (4) nodes: strategic focus points for orientation like squares and junctions; and (5) landmarks: external points of orientation, usually an easily identifiable physical object in the urban landscape" (Lange, 2009)

3.1.4 Methodology

Case study methodology consists of research and analysis of existing social housing and deconstruction developments. A set of criteria was established to review and analyze the selected developments, buildings, and site. This set of criteria will be utilized throughout this entire study.

3.2 VIA VERDE

Figure 29. Via Verde photograph. Reprinted from VIA 57 WEST, by Bruce Damonte, 2018, adapted from https://www.langan.com/portfolio/via-57-west/

3.2.1 Project Details

ARCHITECT	Grimshaw Architects & Dattner Architects
DEVELOPER	Phipps Houses / Jonathan Rose Companies
PROJECT BUDGET	99,000,000.00 USD (131,125,995.00 CAD)
DEVELOPMENT TYPE	Mixed Use Social Housing
NUMBER OF UNITS	222 units (71 co-op units / 151 low-income rental units)
LOCATION	South Bronx, NY, NY
BUILDING GFA	26,942 m2
COMPLETION	2012
SUSTAINABILITY	LEED Gold
PRECEDENT TOPIC	Housing

3.2.2 Project Description

Via Verde is a large residential development that utilizes sustainability to create affordable living spaces. The towers are “comprising 222 apartments in three distinct building types—a 20-story tower at the north end of the site, a 6- to 13-story mid-rise duplex apartment component in the middle, and 2- to 4-story townhouses to the south.” (ArchDaily, 2014) The design was to incorporate a new social housing project within a developed community. It reflects a public commitment to create the next generation of social housing and seeks to provide a setting for healthy, sustainable living.” (ArchDaily, 2014)

3.2.3 Location

Via Verde is located in Brooklyn, New York. The site is located along East 156th Street and Brook Avenue, as shown in figure 30. The building is oriented almost north to south, but with a slight axis turn to the east. The orientation allows for natural lighting from the sun’s path, and provides protection from the prevailing winds. Being located in a residential district, the landmarks surrounding the site consist of buildings for institutional, religious, commercial and residential uses.

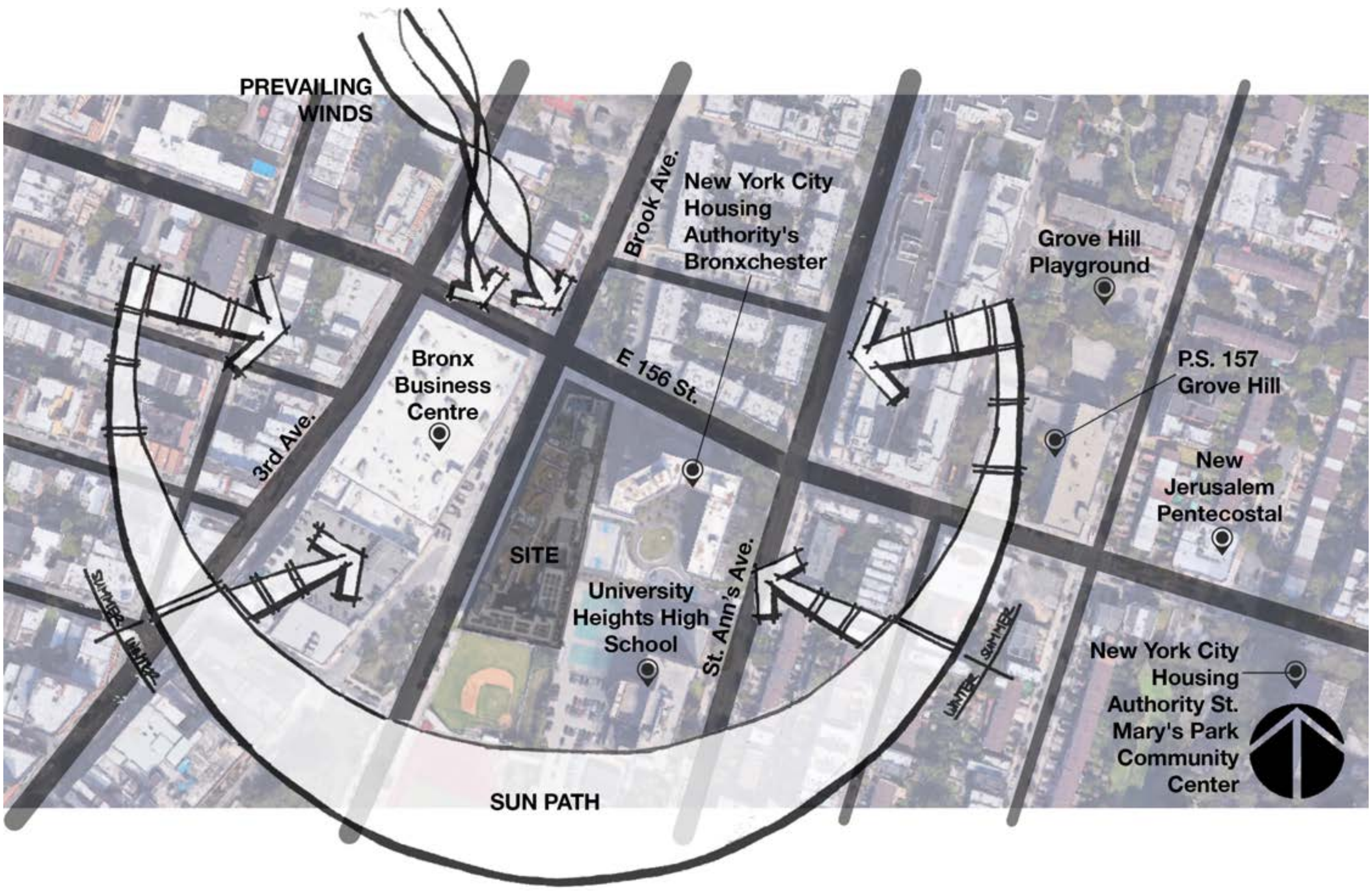


Figure 30. Via Verde Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.2.4 Climate

Via Verde is located in New York where temperatures can fluctuate. New York’s average yearly temperature is displayed below in figure 31.

Figure 31. New York Annual Weather. Reprinted from Untitled, by Author, 2018.

3.2.5 Context

Via Verde is on one large development site that is designed to step down towards the southwest. The development fills the site completely with minimum setbacks. The design of multiple staggered levels allows for ample natural light to illuminate the central courtyard. Below, in Figure 32, is a sketch of the site and the relation to Kevin Lynch's five principles of architecture.

Figure 32. Via Verde Site Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Landmarks

The location of Via Verde contains numerous housing landmarks, including St. Mary's Park Community Center and housing, Bronxchester housing, and Bronx Business Center. These landmarks can be seen in Figure 33.

Edges

The main edges within the Via Verde site consist of vehicular roadways and two adjacent site connections, as shown in Figure 34. The main vehicular traffic is along Brooks Avenue, which divides the residential development from the vehicular traffic and the commercial development beyond. The site is divided from the adjacent two properties by main edges. One divides Via Verde from a seniors housing centre, while the other divides Via Verde from the adjacent sports fields.

Nodes

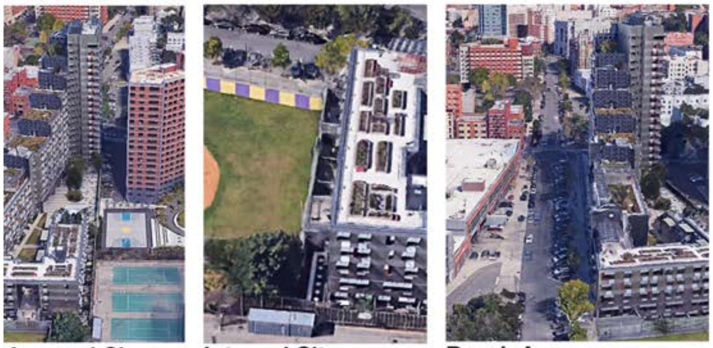
Via Verde main nodes are the intersections of the adjacent and surrounding streets, as shown in Figure 35. There are some smaller nodes connecting the housing development to the east, and another one to the south connecting the sports fields. Nodes can be more than vehicle intersections, they are also gathering places for people, such as bus stops, street corners, and parks.

Paths
Via Verde main paths are the surrounding streets, East 156th Street and Brook Avenue, shown in Figure 36.

District
The districts in which Via Verde resides can be seen in Figure 37.

Figure 33. Via Verde Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

VIA VERDE EDGE



Internal Site　Internal Site　Brook Ave.

Figure 34. Via Verde Edge. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VIA VERDE NODES

E 156 St. & Brook Ave.　E 156 St. & St. Ann's Ave.　Minor Nodes　Secondary Nodes

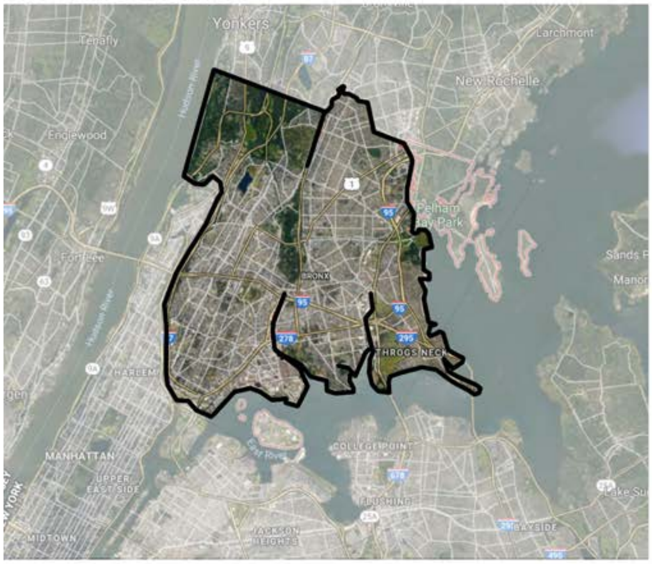
Figure 35. Via Verde Nodes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VIA VERDE PATHS

St. Ann's Ave　Brooks Ave　E 156 St.

Figure 36. Via Verde Paths. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VIA VERDE DISTRICT



BRONX DISTRICT

Figure 37. Via Verde District. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.2.6 Site Relationship

The site plan integrates with the site through raise and division. The site begins on grade with landscape and hard surface areas, children's play area, then with the building, to become integrated within the roofing systems, as shown in figure 38. The connectivity within the site is achieved through hard surface walkways and paver systems.

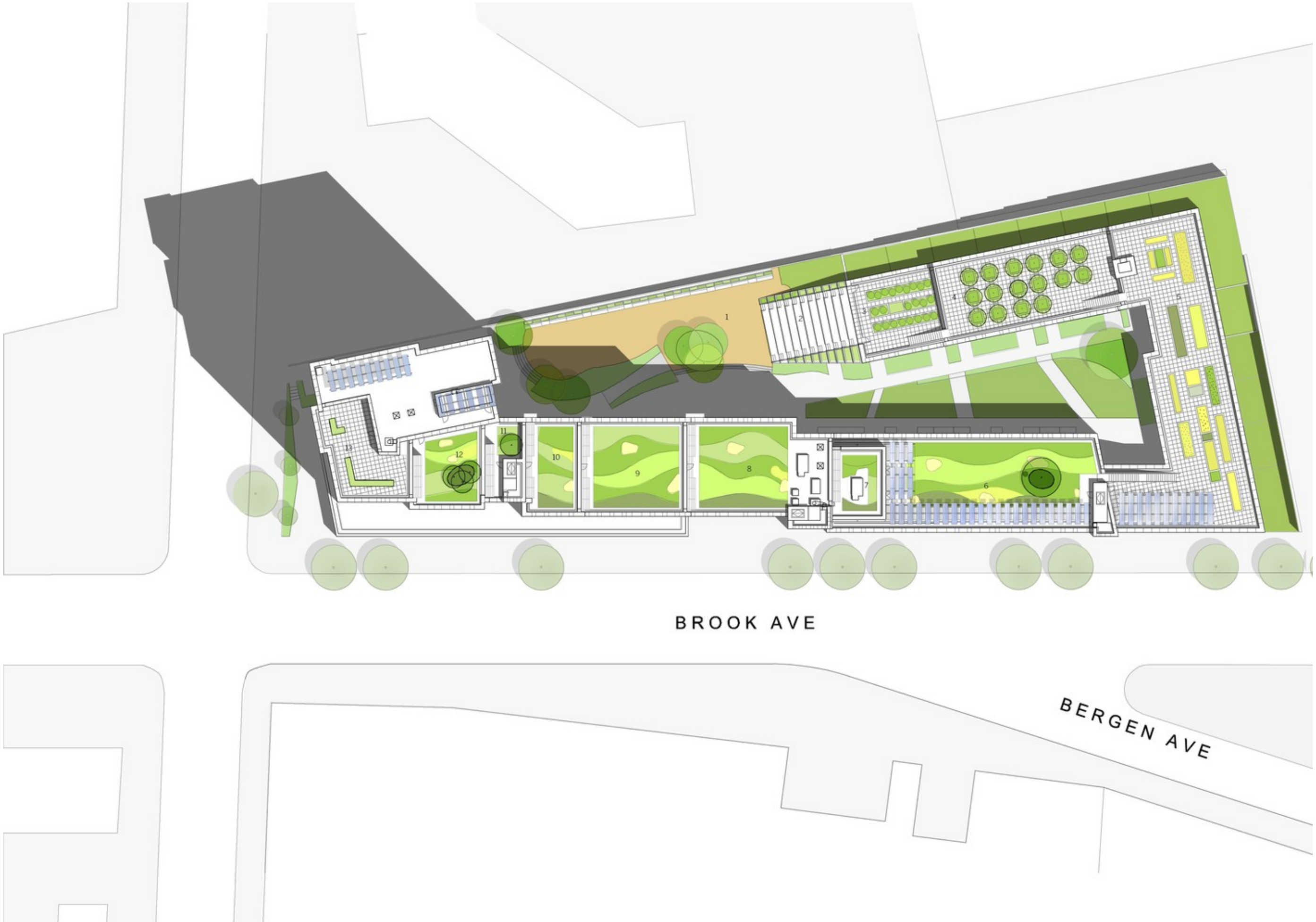


Figure 38. Site Plan. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects

3.2.7 Unit / Floor Plate Layout

The development itself is situated onto of a raise main floor plan. Within the main floor are "retail, a community health center, and live-work units, creating a lively street presence." (ArchDaily, 2014) The design was to create a support space for the residents who live above the lower three floors. Raising for the main floor are the residential units. These residential floor plans are created in the form of a curve, where the interior of the curve is the circulation corridor. Figure 39 is a representation a floor plan within the Via Verde development. Notice the division in space separating the units and the uses. The units themselves are setup in the traditional living and sleeping spaces, figure 40 denotes unit layouts.

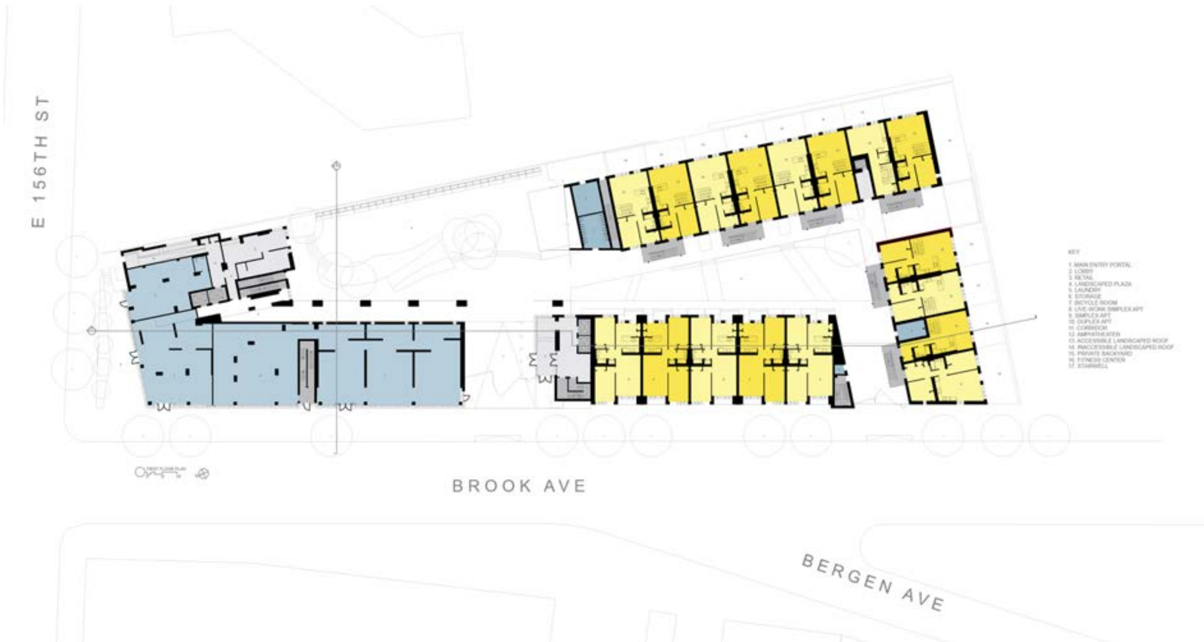


Figure 39. Floor Plan. Reprinted from ULI Case Studies: Via Verde – The Green Way, by ULI New York, 17 January 2014, adapted from https://newyork.uli.org/news/uli-case-studies-via-verde-the-green-way/

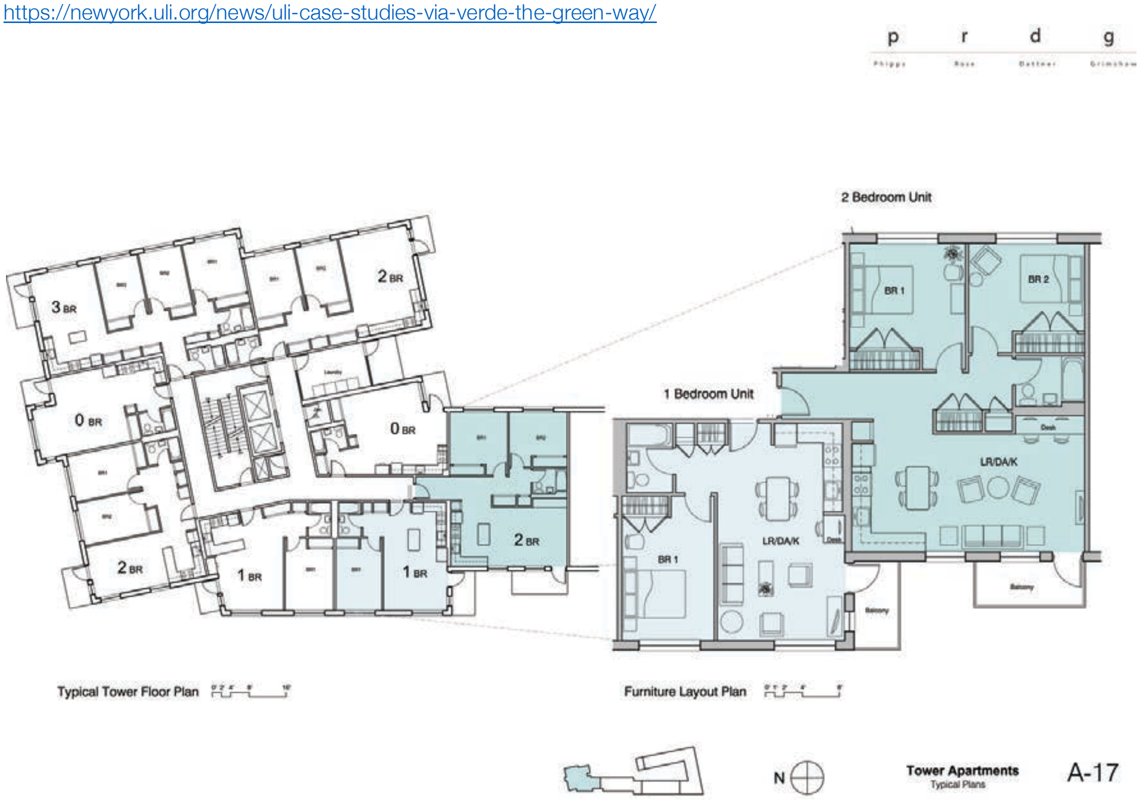


Figure 40. Unit Layouts. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects

3.2.8 Development/Building Type

The building type is a mixture of residential, commercial, and support spaces. Within the main floor are “retail, a community health center, and live-work units, creating a lively street presence.” (ArchDaily, 2014) The design was to create a support space for the residents who live above the lower three floors. The main building development is a combination of high-rise tower, midrise apartments and townhouses, as shown in Figure 41.

The resident floors also have access to exterior space, in the form of courtyards, and also community spaces including a fitness centre. Community was the focal point of the design, with “the penthouse floor of the tower building – for the community common room, open to all tenants.” (ArchDaily, 2014) This is to give the entire community, and building tenants, the most spectacular space for view and community gatherings. Another aspect of development of the site includes “incorporating a shared courtyard and large windows that promote cross ventilation between two outside exposures – increasing the natural circulation of fresh air in the homes and reducing reliance on air conditioning.” (ArchDaily, 2014)

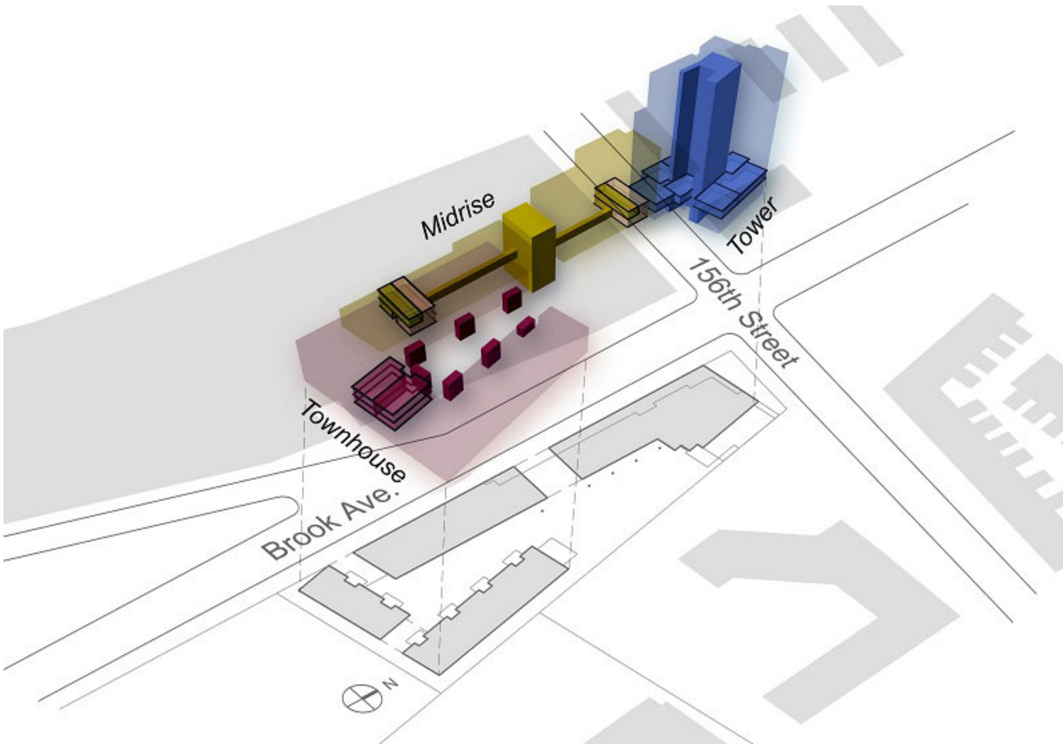


Figure 41. Building Form. Reprinted from Bronx, New York: Innovative Design of Via Verde’s Affordable Housing Development, by Office of Policy Development and Research, 2018, adapted from https://www.huduser.gov/portal/casestudies/study_10012012_1.html

3.2.9 Features/Strategies

Floor plate design utilizes irregular apartment layouts to create efficient, versatile living quarters. As shown in Figure 42 and Figure 43, the units vary in orientation and in size. This creates usable exterior spaces. The development includes an interior garden development, and a sustainable health and wellness program. A priority on the residential levels was the creation of usable outdoor space for the community’s involvement. This includes gardens designed throughout the building on many different levels. “The multifunctional gardens create opportunities for active gardening, fruit and vegetable cultivation, recreation and social gathering, while also providing the benefits of storm water control and enhanced insulation.” (ArchDaily, 2014) This design of terraced plans to create the gardens give the building it’s form. A “form of a “tendril” rising from grade to the tower, as shown in figure 41, enclosing the courtyard and emphasizing a relationship to the natural world.” (ArchDaily, 2014)

Along with the garden motif, the project emphasizes health and wellness. This is completed with “a 5,500-square foot wellness center operated by Montefiore Medical Center” on the main floor. Additionally, each occupant will be given a ""Living Green Guide" with information on how to promote energy optimization and green, healthy living." (ArchDaily, 2014)

Figure 42. Via Verde Room Block Layouts. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects

Figure 43. Via Verde Room Layouts. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects

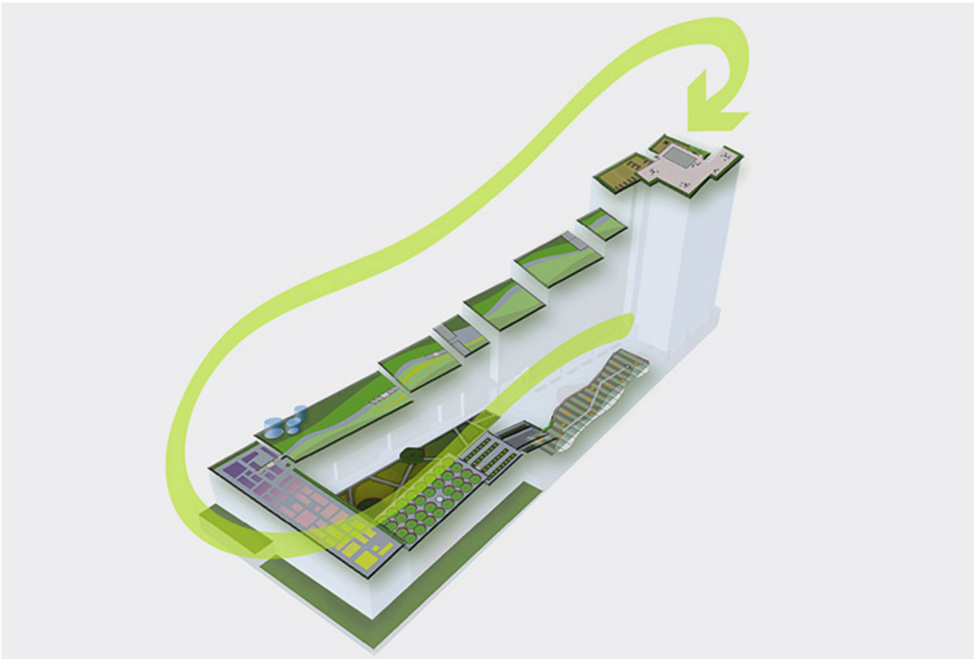


Figure 44. Design Strategies. Reprinted from Via Verde The Green Way, by Grimshaw Architects, 2018, adapted from https://grimshaw.global/projects/via-verde-the-green-way/

3.2.10 Program Amenity Spaces

Via Verde has a variety of amenity space within its development. Located on the ground floor is a pharmacy, shown in figure 45, a medical clinic, shown in figure 46, and live-work apartments, shown in figure 47. Within the building footprint is an Amphitheatre staircase, shown in figure 48, community gardens, shown in figure 99, photovoltaic panels, shown in figure 49, children's play area, shown in figure 50, and ample green roofs, as shown in figure 99.

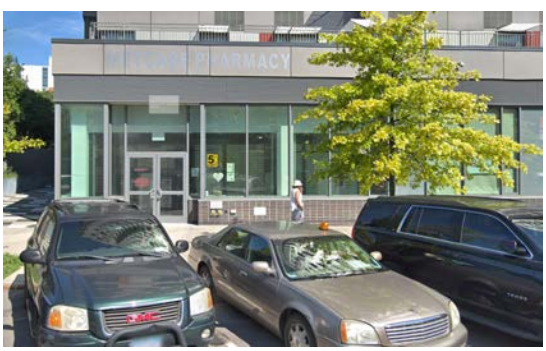


Figure 45 Pharmacy

Figure 46 Medical Clinic

Figure 47 Community Garden

Figure 48 Amphitheatre

Figure 49 Live Work Apartments

Figure 50 Photovoltaic

Figure 51 Children Play Area

Figure 52 Green Roofs

Figure 45. Via Verde Pharmacy. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc
Figure 46. Via Verde Medical Clinic. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc
Figure 47. Via Verde Community Garden. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from
https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 48. Via Verde Amphitheatre. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from
https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 49. Via Verde Live Work Apartments. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from
https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 50. Via Verde Photovoltaics. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from
https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 51. Via Verde Children's Play Area. Reprinted from Via Verde / Grimshaw + Dattner Architects, by Archdaily, 11 March 2014, adapted from
https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 52. Via Verde Green Roofs. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.2.11 Conclusion

The Via Verde precedent relates to the proposed site through its use of housing, the building form and design, and site integration. Similar to VM House, the innovative housing concept of multiple variant sizes and scales adds flexibility and openness to the design. This can be a vital part of a sustainable social housing development in Edmonton's downtown core. The tiered floor plate design allows for natural grass and gardens to be installed for occupants' use. The appealing aspect of its site integration is the previously mentioned garden that allows occupants outdoor space to plant, enjoy, or utilize for their benefit.

KEY PRINCIPLES OF VIA VERDE CASE STUDY

- Social Housing
- Scale
- Configurations
- Community
- Urban Environment
- Site Orientation
- Edges (Adjacencies)
- Support System
- Connectivity
- Flexibility
- Deconstructivist Architecture Principles

3.3 BÂTIMENT HOME, ZAC MASSÉNA, PARIS XIII

Figure 53. Batiment Home Photograph. Reprinted from IMMEUBLE HOME, ZAC PARIS RIVE GAUCHE, SECTEUR MASSÉNA, PARIS 13, by PAVILLON DE L'ARSENAL, 2018, adapted from http://www.pavillon-arsenal.com/en/blog/10044-immeuble-home-zac-paris-rive-gauche-secteur-massena-paris-13.html

3.3.1 Project Details

ARCHITECT	Hamonic +Masson Associes & Comte Vollenwider Architects
DEVELOPER	Bouygues Immobilier
PROJECT BUDGET	Undisclosed
DEVELOPMENT TYPE	Mixed Use
NUMBER OF UNITS	188 units (96 Housing Units / 92 Social Housing)
LOCATION	Paris, France
BUILDING GFA	14,000 m2
COMPLETION	2015
SUSTAINABILITY	None
PRECEDENT TOPIC	Housing

3.3.2 Project Description

The complex contains two residential towers, 13 storeys and 17 storeys, and consists of market housing and social housing units. The first three floors operate as commercial and service spaces.

3.3.3 Location

Bâtiment Home is located in Paris, France. The site is located along Avenue De France and Rue Alice Domon et Leonie Duquet, as shown in Figure 54. The building is situated within a tightly spaced residential area, that consists of multiple high-rises. The building is in contrast with the existing urban fabric with its two-tower shape.

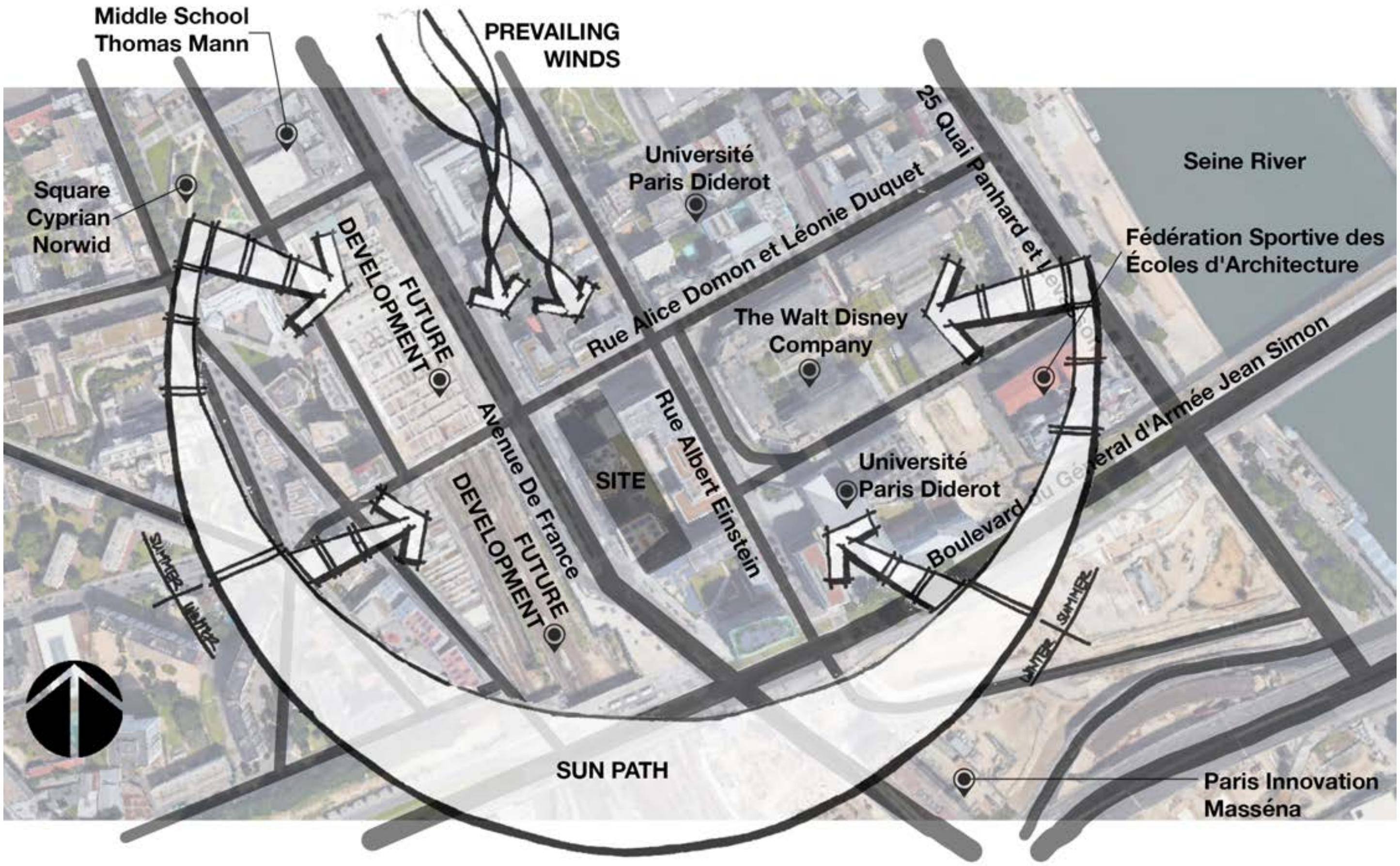


Figure 54. Bâtiment Home, Zac Masséna, Paris Xiii Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

3.3.4 Climate

Paris' temperature fluctuates throughout the year, typically ranging from quite high temperatures in summer to mild winter temperatures in single digits. Figure 55 denotes the average temperature of each month in Paris.

Figure 55. Paris Annual Weather. Reprinted from Untitled, by Author, 2018.

3.3.5 Context

The building's relationship to site is observed from an elevated level. The building's main floor connection to the site is minimal, with concrete sidewalks representing the setbacks on the site. On the third floor there is a courtyard utilized by the tenants of the building, as shown in Figure 56.

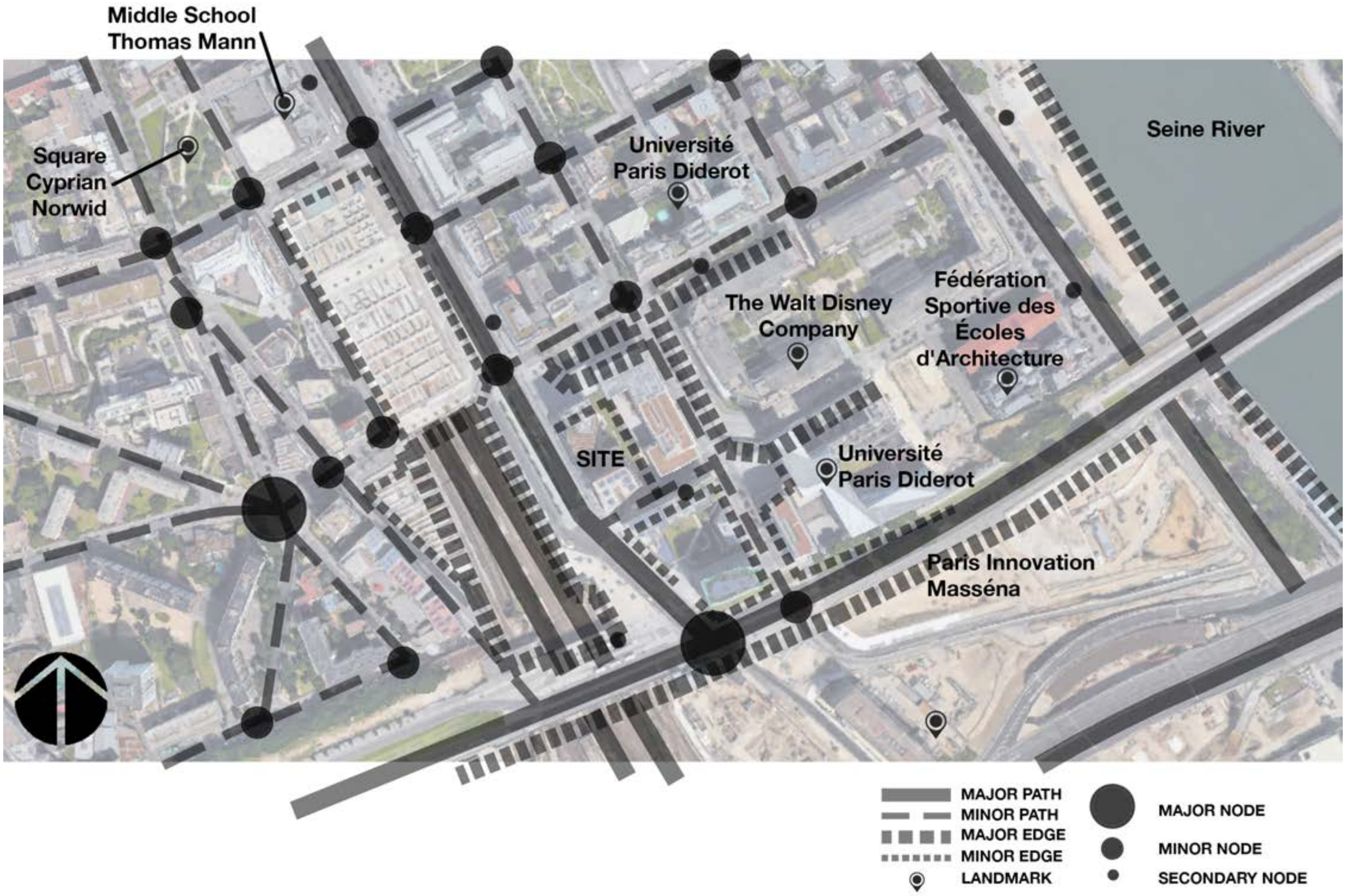


Figure 56. Bâtiment Home, Zac Masséna, Paris Xiii Site Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Utilizing Kevin Lynch's 5 principles of architecture, as shown in Figure 56, the analysis below explains how the site relates to the architecture and the surrounding buildings.

Landmarks
In the vicinity of Bâtiment Home is a substantial number of institutional and university buildings. These buildings include the Walt Disney company, the Universite Paris Diderot, and the Paris Innovation Messena, as shown in Figure 57.

Edges
Bâtiment Home's site is bordered primarily by vehicular traffic routes, as shown in Figure 58. The main edge is Avenue De France which divides the residential development of Bâtiment Home from vehicular traffic and the rail yard. The second edge divides the development from the adjacent residential developments.

Nodes
Bâtiment Home's main nodes are the intersections of the adjacent and surrounding streets, as shown in Figure 59. As the building's footprint takes up much of the site, there are not many interior connection spaces. Another important node to the Bâtiment Home is public transit, mainly bus stations.

Paths
Bâtiment Home's main paths are the surrounding streets, such as avenue de France, as seen in figure 60.

District
Main districts can be seen at Bâtiment Home from the main street grid to the larger district map, as shown in Figure 61.

Figure 57. Bâtiment Home, Zac Masséna, Paris Xiii Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Figure 58. Bâtiment Home, Zac Masséna, Paris Xiii Edges. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

BÂTIMENT HOME, ZAC MASSÉNA, PARIS XIII NODES

Avenue De France | Avenue De France | Minor Nodes | Secondary Nodes

Figure 59. Bâtiment Home, Zac Masséna, Paris Xiii Nodes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

BÂTIMENT HOME, ZAC MASSÉNA, PARIS XIII PATHS

Rail Tracks | Avenue De France | Rue Albert Einstein | Rue Alice Domon et Léonie Duquet | Rue Nicole-Reine-Lepaute

Figure 60. Bâtiment Home, Zac Masséna, Paris Xiii Paths. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

BÂTIMENT HOME, ZAC MASSÉNA, PARIS XIII DISTRICT

PARIS DISTRICT 13

Figure 61. Bâtiment Home, Zac Masséna, Paris Xiii District. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

3.3.6 Site Relationship

The site engages the street with a strong vertical presence, while the interior courtyard creates a tranquil landscape area for its residents, as shown in figure 62. The development "links the strict rigidity of the Avenue de France, the railway landscape, the entrance to the Ivory suburb and finally the transition from a linear city to a vertical one" (ArchDaily, 2015) The site circulation is created mainly by decorative concrete walkways, created in a random pattern. A garden is also centrally located in the green space.

Figure 62. Batiment Home Site Plan. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

3.3.7 Unit / Floor Plate Layout

The main floor consists of leasable retail commercial units, with a large window expanse facing the busy Avenue de France, as shown in figure 63. The main floor also includes vehicular garage access, bike storage, and mechanical items. As the building rises to its residential levels the separation unto two towers becomes apparent. The residential units themselves are created with an entry way leading to a variety of rooms, including living rooms and kitchens, as shown in figure 64.

Figure 63. Batiment Home Main Floorplan. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

Figure 64. Batiment Home Unit Floor Plan. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

3.3.8 Development/Building Type

Batiment Home is divided into three major forms: the rectangular base which houses three floors, the angled residential tower that is stepped back, and the commercial tower that creates a random pattern from floor to floor, all shown in Figure 51.

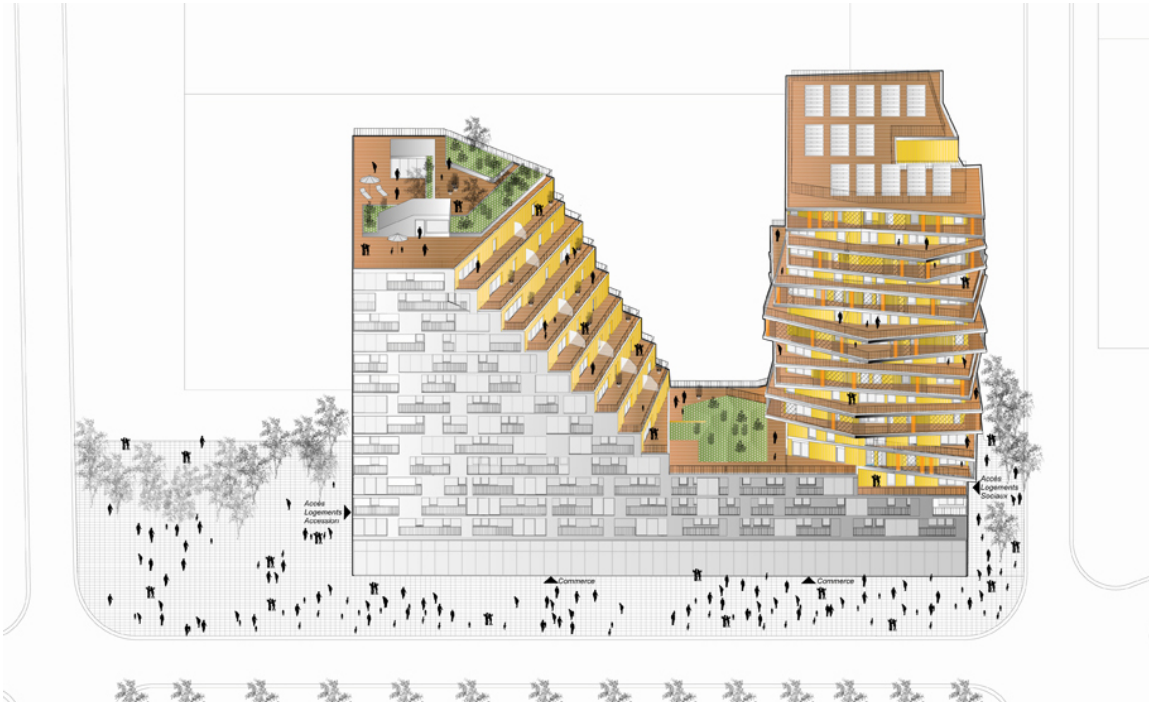
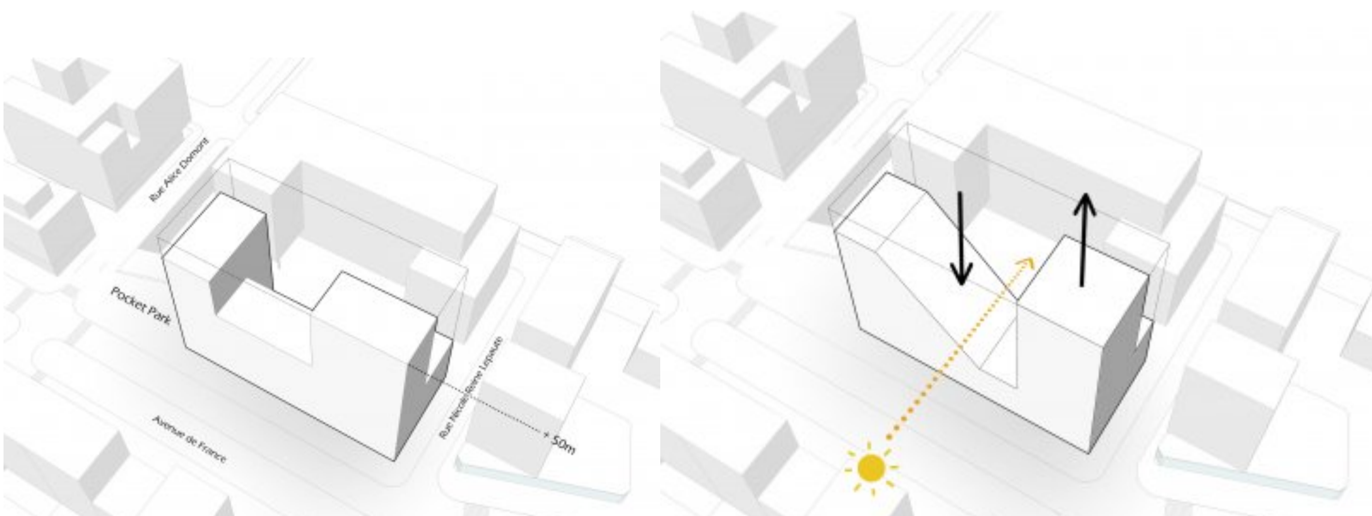


Figure 65. Batiment Home building form. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

3.3.9 Features/Strategies

The design strategy for the building relates mainly to the control of natural light and accessibility to the green space, as shown in Figure 52. The design originated as a rectangular form before alterations for sun and park areas.



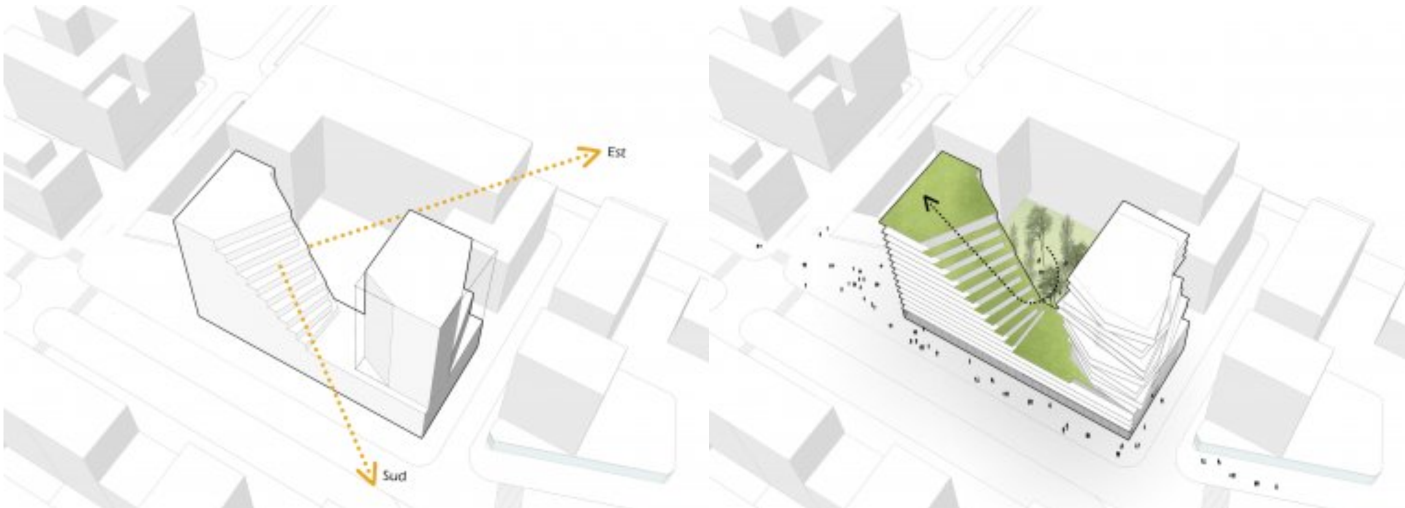


Figure 66. Batiment Home design strategies. Reprinted from Bâtiment Home, ZAC Masséna, Paris XIII, by Hamonic + Masson & Associés, 2018, Reprinted from http://www.hamonic-masson.com/Batiment-Home-ZAC-Massena-Paris?lang=en

The design strategy also incorporates scale to ensure that the building was not overbearing on adjacent structures, and not too small to be enclosed. The design utilizes negative space to enhance the design and emphasize areas of importance such as green spaces.

3.2.10 Program Amenity Spaces

Batiment Home has a variety of amenity space within its development. Located on the ground floor are two leasable commercial retail spaces, as shown in figure 67. Within the building's ground floor footprint are covered bike storage, shown in figure 68, community gardens, shown in figure 69, and a roof top observer platform, as shown in figure 70.

Figure 67 Commercial Retail Units

Figure 68 Covered Bike Storage

Figure 69 Community Garden


Figure 70 Roof Top Observer Platform

Figure 67. Batiment Home Commercial Space Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc
Figure 68. Batiment Home Covered Bike Storage. Reprinted from Housing in Paris / Comte & Vollenweider + Hamonic + Masson & Associés, by Archdaily, 13 March 2015, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 69. Batiment Home Community Garden. Reprinted from Housing in Paris / Comte & Vollenweider + Hamonic + Masson & Associés, by Archdaily, 13 March 2015, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects
Figure 70. Batiment Home Roof Top Observer Platform. Reprinted from Housing in Paris / Comte & Vollenweider + Hamonic + Masson & Associés, by Archdaily, 13 March 2015, adapted from https://www.archdaily.com/468660/via-verde-dattner-architects-grimshaw-architects

3.3.11 Conclusion

Batiment Home precedent principles can be utilized on the CN Tower Lands re-development project through the use of deconstructive principles, social housing initiatives and its relation to site. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the bold shapes, the surface manipulation, the juxtaposed elements and the relation to site. The social housing function with the incorporation of commercial and retail space creates a micro-community and appeals to broad cross section of users. The relationship to site where the majority of park space has been incorporated into the building's form above grade is an innovative feature worthy of exploration.

KEY PRINCIPLES OF BÂTIMENT HOME CASE STUDY

- Social Housing & Market Housing
- Scale
- Mixed use
- Configurations
- Community
- Site Orientation
- Support System
- Connectivity
- Flexibility
- Deconstructivist Architecture Principles
- Green/Park Spaces
- Natural light
- Building Form

3.4 SAVONNERIE HEYMANS

Figure 71. Savonnerie Heymans Photograph. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

3.4.1 Project Details

ARCHITECT	MDW Architects
DEVELOPER	Phipps Houses / Jonathan Rose Companies
PROJECT BUDGET	99,000,000.00 USD (131,125,995.00 CAD)
DEVELOPMENT TYPE	Mixed Use Social Housing
NUMBER OF UNITS	42 units
LOCATION	Brussels, Belgium
BUILDING GFA	6,500 m2
COMPLETION	2012
SUSTAINABILITY	LEED Gold
PRECEDENT TOPIC	Social Housing

3.4.2 Project Description

This is a social housing complex built on the former site of a soap factory. The complex provides a village-like environment with 42 sustainable units.

3.4.3 Location

Savonnerie Heymans development is located along Rue d’Anderlecht, Belgium. The building is located within a densely-populated neighborhood, as shown in Figure 72. The surrounding buildings are mostly multi-family residential homes. The site is tightly packed within the overall neighborhood plan. There is a strong relationship between the building and the site, with the creation of ample green space and vegetation throughout the site and building. The surrounding areas can only access the site by the main entrance that faces the street.

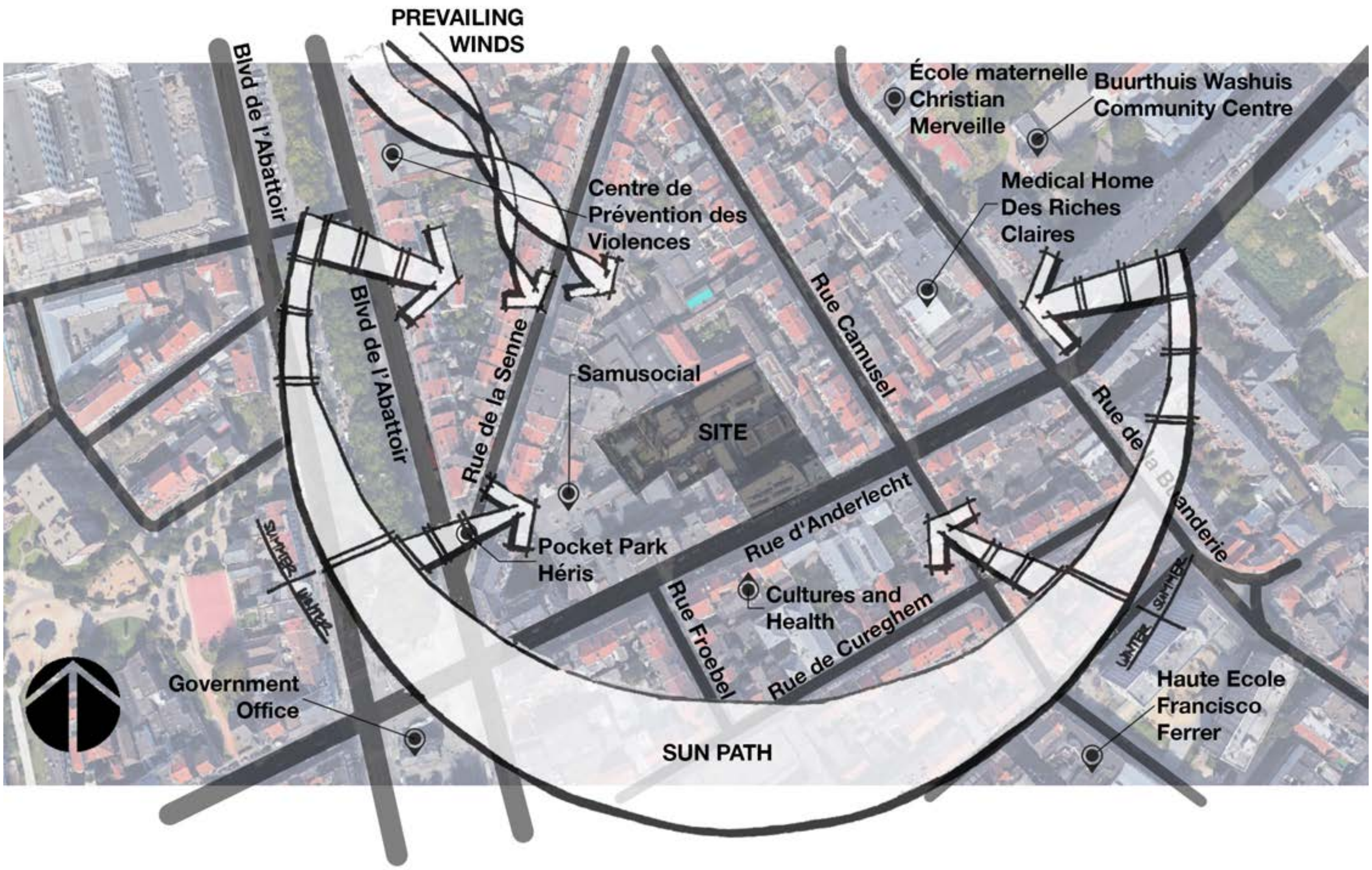


Figure 72. Savonnerie Heymans Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.4.4 Climate

Savonnerie Heymans development located in Brussels, Belgium, has a steady temperature throughout the year. Brussels' climate is typically within a few degrees' variance throughout all months. Figure 73 denotes the average temperature in each month.

Figure 73. Brussels Annual Weather. Reprinted from Untitled, by Author, 2018.

3.4.5 Context

The building is located in a densely-populated neighborhood as shown in Figure 74. The surrounding buildings are mostly multi-family residential homes. The site is tightly packed within the overall neighborhood plan.

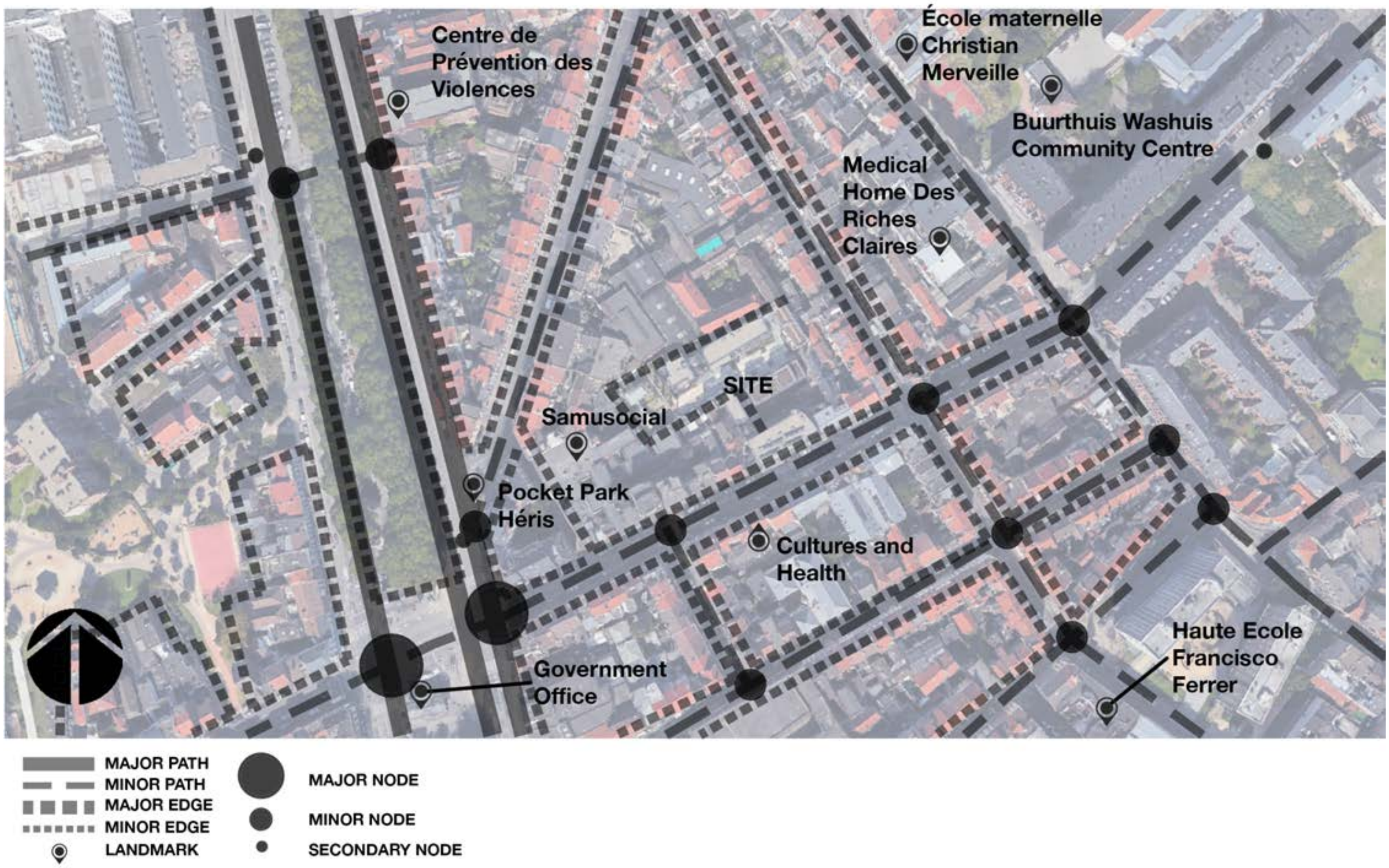


Figure 74. Savonnerie Heymans Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Utilizing Kevin Lynch's five principles of architecture, as shown in Figure 74, the analysis below describes how the site relates to the architecture and the surrounding buildings.

Landmarks
The location of Savonnerie Heymans contains numerous cultural building landmarks, such as *samusocial* shelter, cultural and health centre, *Centre de prevention des violence*, and *Medical Home Des Riches Claires*. Most surrounding landmarks range from government to support services, as shown in Figure 75.

Edges
Savonnerie Heymans has numerous edges along the site and adjacencies, the main edge is located along Rue d'Anderlecht, as shown in Figure 76. The other edges are the building zoning grids which are a little sporadic, based on the site property area.

Nodes
Savonnerie Heymans' main nodes, similar to other developments, are the intersections of the adjacent and surrounding streets, as shown in Figure 77. There is also a node located within the site at the connection of pedestrian and vehicular paths. The public transportation system that surrounds Savonnerie Heymans creates important nodes, the light rail transit stations and the bus stops.

Paths
Savonnerie Heymans main paths are the surrounding streets such as rue d'Anderlecht, as seen in figure 78.

District

Savonnerie Heymans makes up part of the Laeken district of Brussels larger district map, as shown in Figure 79.

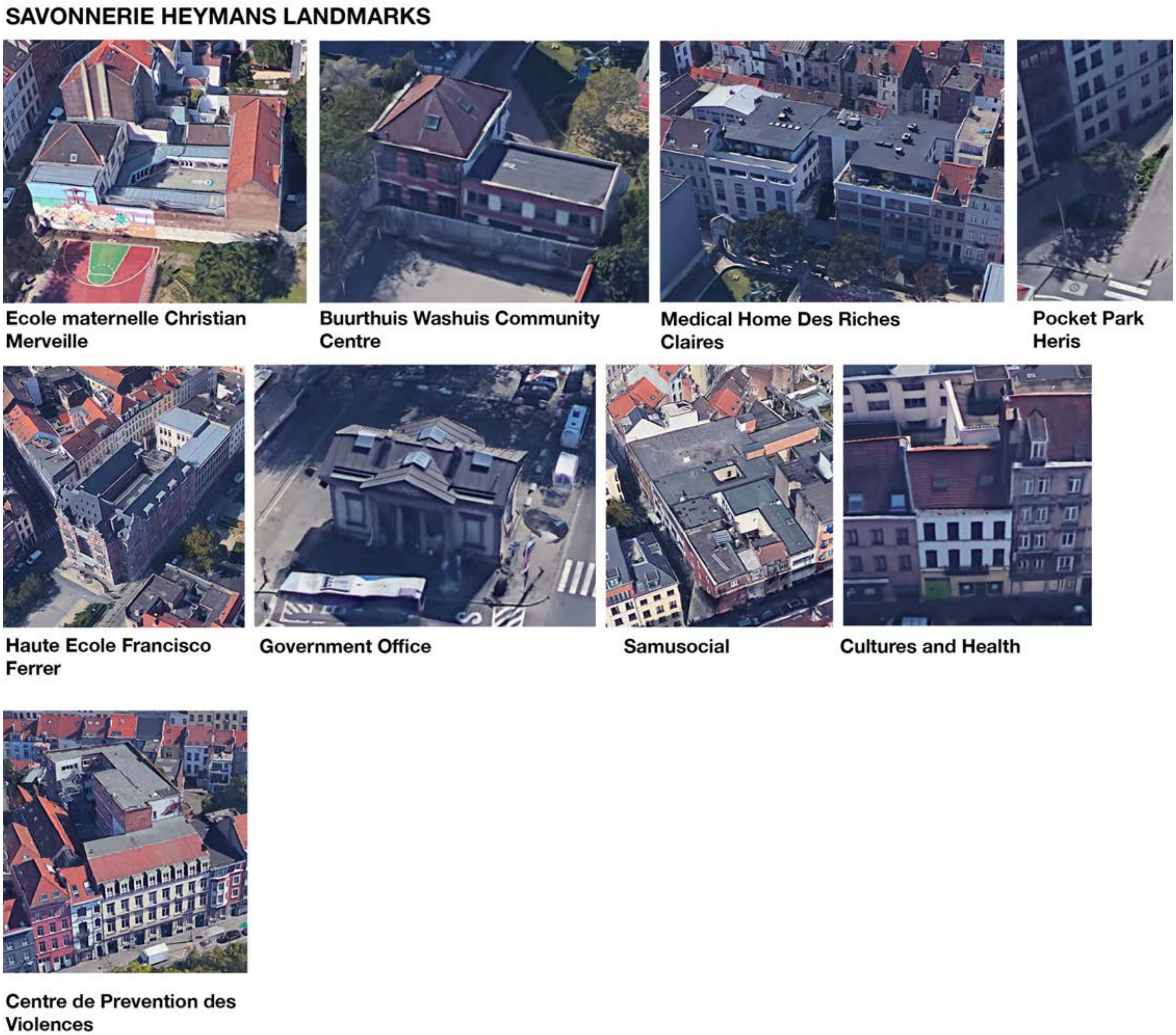


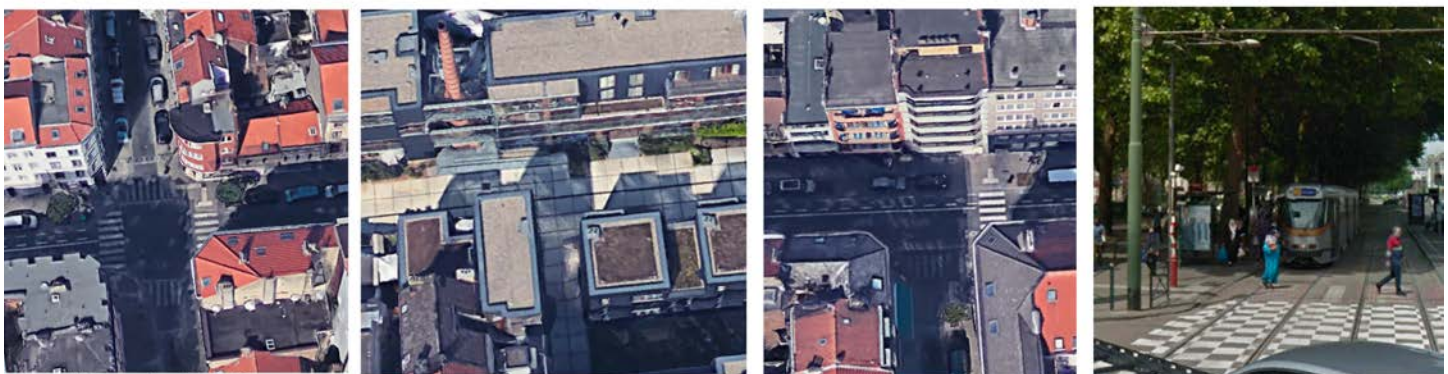
Figure 75. Savonnerie Heymans Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

SAVONNERIE HEYMANS EDGE

Rue d'Anderlecht Boulevard

Figure 76. Savonnerie Heymans Edge. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SAVONNERIE HEYMANS NODES



Rue d'Anderlecht & Rue Camusel Site Courtyard Rue d'Anderlecht & Rue Froebel Secondary Node

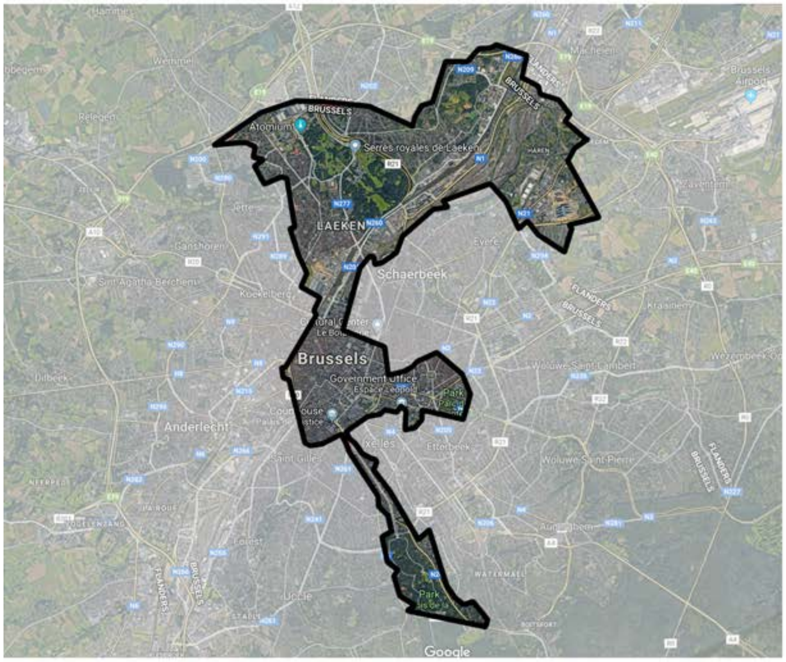
Figure 77. Savonnerie Heymans Nodes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SAVONNERIE HEYMANS PATHS

Rue de la Senne Rue d'Anderlecht Rue Camusel

Figure 78. Savonnerie Heymans Paths. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

SAVONNERIE HEYMANS DISTRICT



LAEKEN DISTRICT

Figure 79. Savonnerie Heymans District.. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.4.6 Site Relationship

The existing soap factory integrates with the sites landscape through hard surface connections. The additional building is primary located around the perimeter of the site allowing for vehicular parking and “mini-forest” within the interior, as show in figure 80. The western portion of the site is dedicated to outdoor playground. The site circulation is based on hard surface drive aisles and concrete walkways.

Figure 80. Savonnerie Heymans Site Plan. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

3.4.7 Unit / Floor Plate Layout

Floor plate design is based on three individual buildings connected by courtyards, and gardens, as shown in figure 81. The floor plans utilize the existing soap factory to create housing, while also creating gathering spaces around the historic chimney. Also located on the main floor are the communal lounges and daycare centre.

Figure 81. Savonnerie Heymans Floor Plan. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

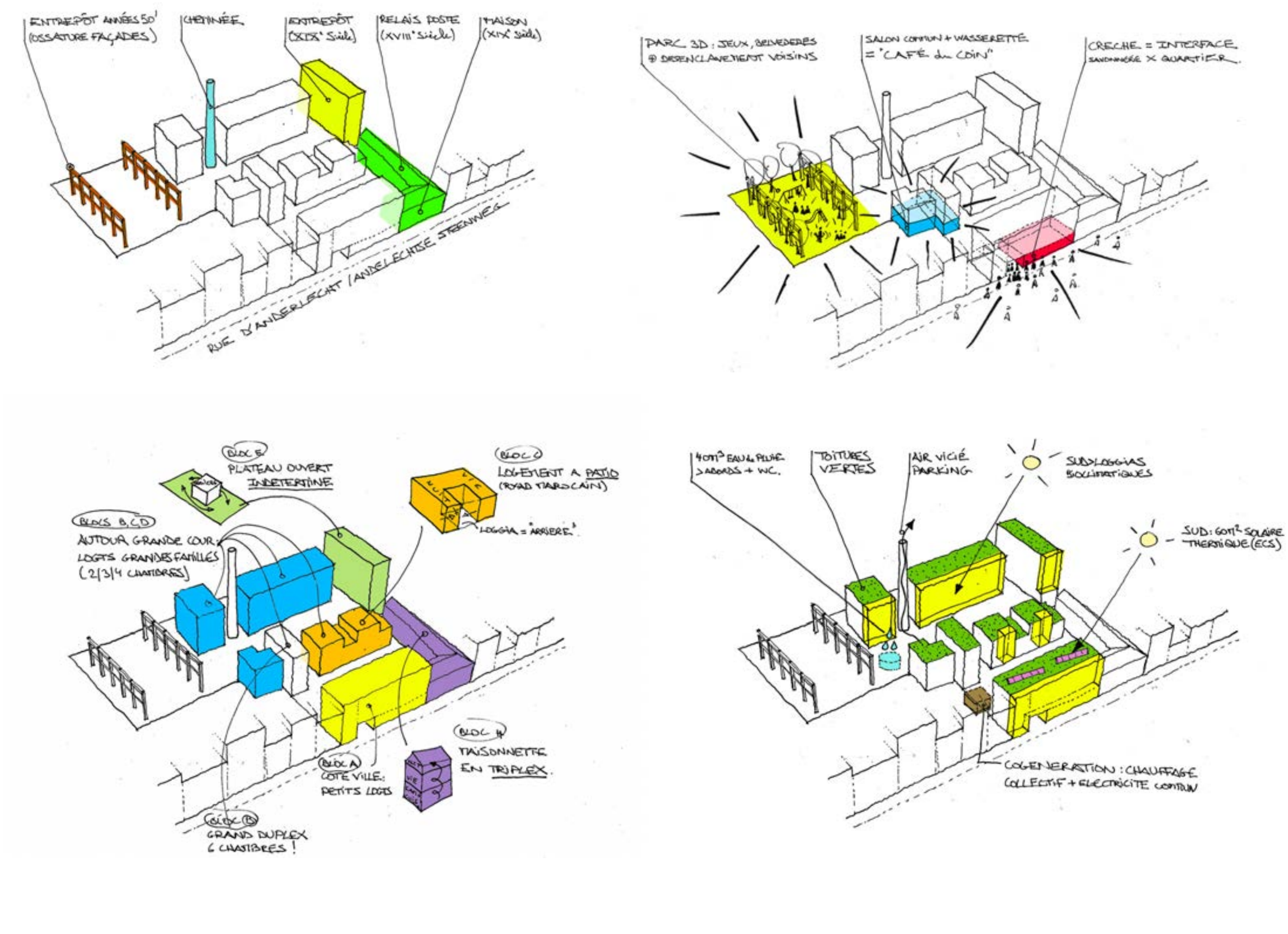
3.4.8 Development/Building Type

Savonnerie Heymans building form is not only rectangular but also layered with different elevation planes. The majority of the form is based on rectilinear shapes, and these positive and negative spaces play an important role in the form, as shown in Figure 82.

Figure 82. Savonnerie Heymans Form. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

3.4.9 Features/Strategies

The strategy for the design of the building and site is related to block style design which is combined, subtracted, and altered. The building's original vocation as a soap factory also contributed some elements to the design through fragments of its historic use. Figure 83 shows the design strategies utilized in the overall design.



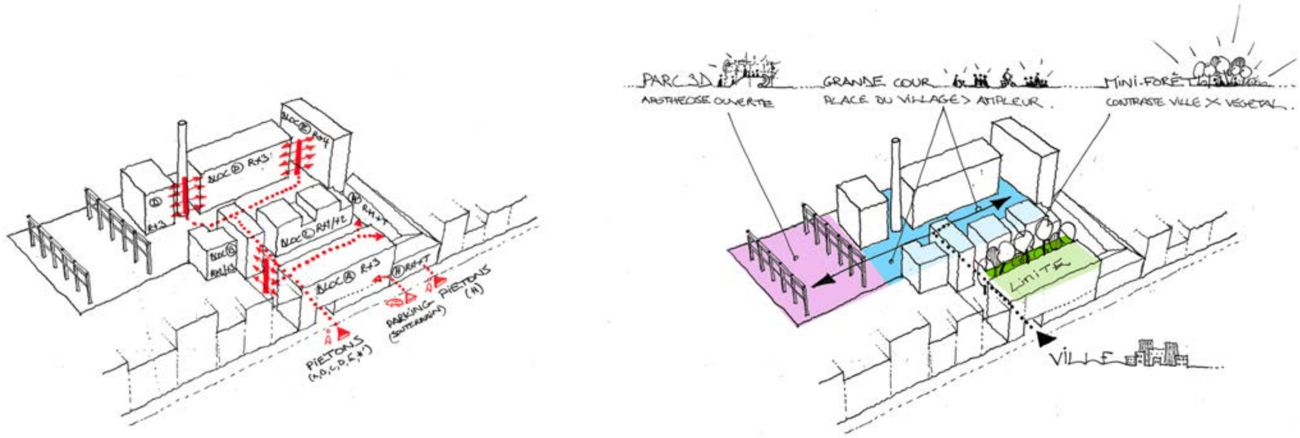


Figure 83. Savonnerie Heymans design strategies. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

The connectivity shown in the last diagram represents how the site interacts with the surrounding city, and how the design strategy incorporates it into the established urban fabric. The design is created within an existing site, that integrates fully with the existing urban fabric. The building utilizes the site's existing shape to create pockets of park in a high-density district. Re-use of the existing soap factory also reinforces a connection to the past.

The unique element of Savonnerie Heymans is the existing soap factory structure that can be seen throughout the site and design, as shown in Figure 84 below.

Figure 84. Savonnerie Heymans existing structure. Reprinted from Savonnerie Heymans / MDW Architecture, by Filip Dujardin, 2012, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

3.2.10 Program Amenity Spaces

Savonnerie Heymans has an open accessible main floor that consists of a playground, as shown in figure 85, “mini forest”, as shown in figure 86, daycare facility, as shown in figure 87, gathering space/communal lounge, as shown in figure 88, and courtyards, as shown in figure 89.


Figure 85 Playground


Figure 86 Mini Forest


Figure 87 Daycare Facility


Figure 88 Gathering


Figure 89 Courtyard

Figure 85. Savonnerie Heymans Playground Reprinted from Savonnerie Heymans, by Archdaily, 2018, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture
Figure 86. Savonnerie Heymans Mini Forest Reprinted from Savonnerie Heymans, by Archdaily, 2018, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture
Figure 87. Savonnerie Heymans Daycare Facility Reprinted from Savonnerie Heymans, by Archdaily, 2018, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture
Figure 88. Savonnerie Heymans Gathering Space Reprinted from Savonnerie Heymans, by Archdaily, 2018, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture
Figure 89. Savonnerie Heymans Courtyard Reprinted from Savonnerie Heymans, by Archdaily, 2018, adapted from https://www.archdaily.com/220116/savonnerie-heymans-mdw-architecture

3.4.11 Conclusion

Savonnerie Heymans precedent influences the CN Tower Lands through its use of deconstructive principles, social housing concepts, and its relation to site. The deconstructive principles can be seen throughout with the bold shapes, the surface manipulation, the juxtaposed elements, and the relation to site. The social housing concept includes the addition of green spaces throughout the existing soap factory structure, as shown in Figure 65. Another example of versatility in its function as housing is in the variety of unit configurations, from one to six bedrooms. The influence can also be translated into revitalization of an existing building: where an existing building is repurposed as housing but maintains its historic identity, an approach that could be considered with the CN Tower Lands in Edmonton, Alberta.

KEY PRINCIPLES OF SAVONNERIE HEYMANS CASE STUDY

- Social Housing & Market Housing
- Housing concepts/layout
- Scale
- Sustainability
- Redevelopment (Soap Factory)
- Community
- Site Orientation
- Urban Environment / Dense
- Flexibility
- Deconstructivist Architecture Principles
- Green/Park Spaces
- Natural light
- Building Form

3.5 VIA 57 WEST

Figure 90. Via 57 West photograph. Reprinted from VIA 57 WEST, by Bruce Damonte, 2018, adapted from https://www.langan.com/portfolio/via-57-west/

3.5.1 Project Details

ARCHITECT	Bjarke Ingels Group
DEVELOPER	The Durst Organization
PROJECT BUDGET	Undisclosed
DEVELOPMENT TYPE	Residential / Commercial
NUMBER OF UNITS	709 Residential Units
LOCATION	Manhattan, NY, NY
BUILDING GFA	77,200 m^2
COMPLETION	2016
SUSTAINABILITY	LEED Gold or Platinum
PRECEDENT TOPIC	Deconstruction/Housing

3.5.2 Project Description

This is a 38-Story residential building along the Hudson river in Manhattan. The building includes 709 residential units and multiple ground floor retail spaces. The focal point of the structure is a larger raised outdoor courtyard located on the second floor.

3.5.3 Location

Via 57 West is located between 58th street and 57th street north to south, and between Joe DiMaggio Highway and West End Ave east to west, as shown in Figure 91. The building is oriented slightly off axis from the sun, while maintaining access to the prevailing winds for natural ventilation. There are some main landmarks located within this district.

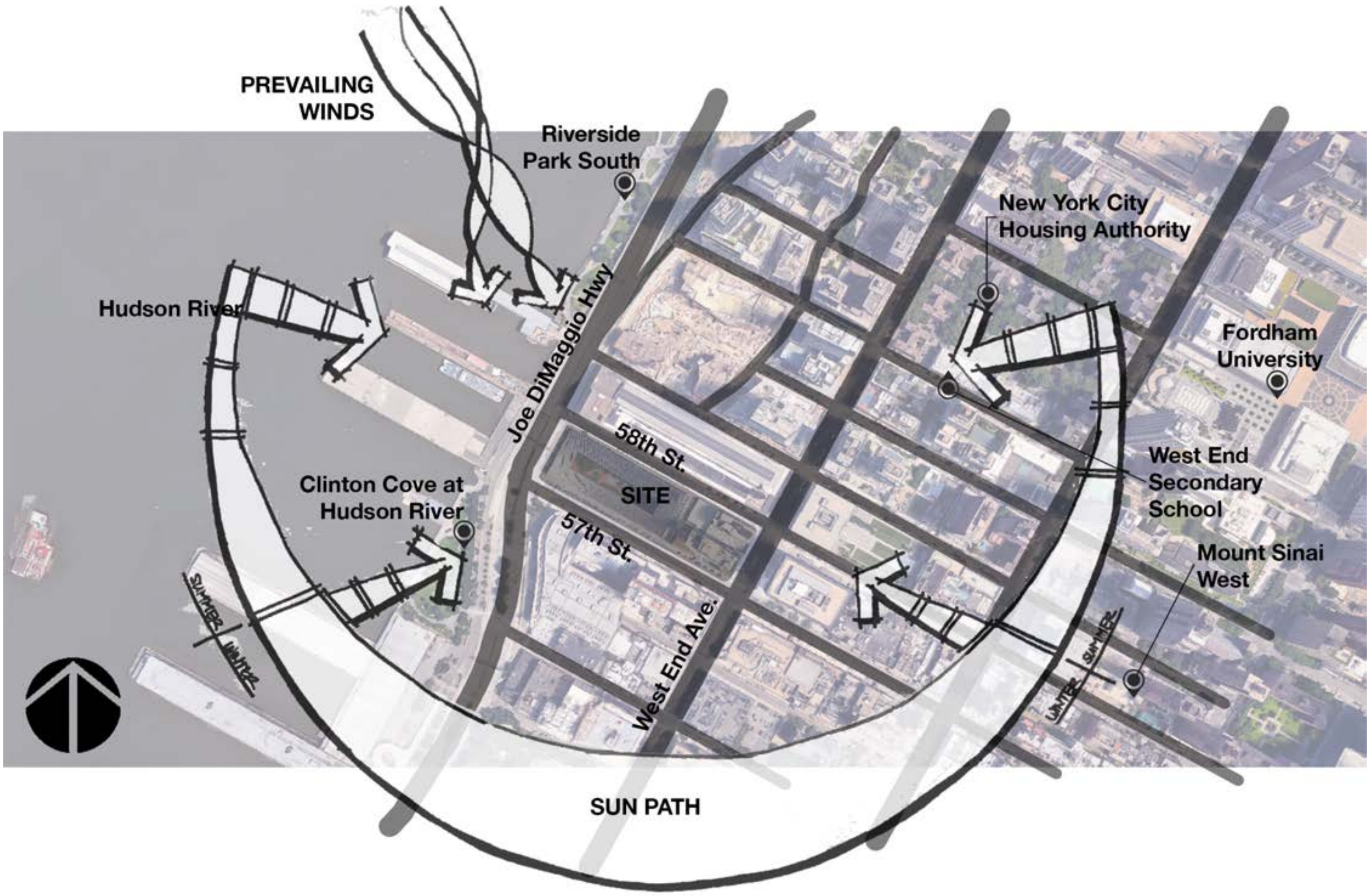


Figure 91. Via 57 West Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.5.4 Climate

New York's climate is typically mild with high temperatures in summer and moderate temperatures (rarely below 0°C) in winter. Figure 92 denotes the average temperature in New York.

Figure 92. New York Annual Weather. Reprinted from Untitled, by Author, 2018.

3.5.5 Context

The building itself covers a large portion of the site (as shown in Figure 93). There is minimal setback around the structure, while creating an interior relationship with the site by an expansive courtyard. The shape and orientation of the building also play an important role, as they utilize the site's location to maximize solar light going into the courtyard, and to minimize wind loading. The main floor is fully glazed to allow natural light to penetrate into the commercial spaces.

Figure 93. Via 57 West Site Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Utilizing Kevin Lynch's five principles of architecture, as shown in Figure 93, an analysis of the site and surrounding buildings can be completed. The five elements are listed below:

Landmarks
The location of Via 57 West adjoins numerous landmarks and notable buildings that are located mainly inland from the Via 57 structure but can be seen in Figure 94.

Edges
Although Via 57 West has numerous Edges within the site and adjacencies, the main one is located along the Joe DiMaggio Highway, as shown in Figure 95. This edge divides the urban fabric of the Via 57 West building from the Hudson river, those are two entirely different developments.

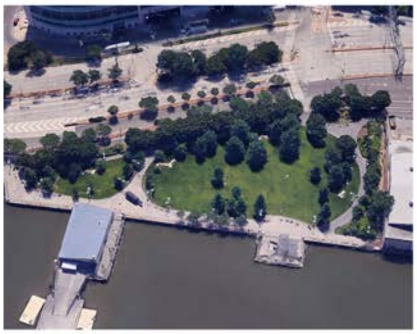
Nodes
Via 57 West's main nodes are the intersections of the adjacent and surrounding streets, as shown in Figure 96. As the building's footprint takes up much of the site, there are not many interior connection spaces. A secondary node to the Via 57 West is public transportation stops, this includes bus stops.

Paths
Via 57 West main paths are the surrounding streets, as seen in Figure 97.

District
Main districts can be seen at Via 57 West from the main street grid to the larger district map, as shown in Figure 98.

VIA 57 WEST LANDMARKS

Riverside Park South



Clinton Cove at Hudson River Park

NY City Housing Authority

West End Secondary School

David H Koch Theater

Metropolitan Opera House

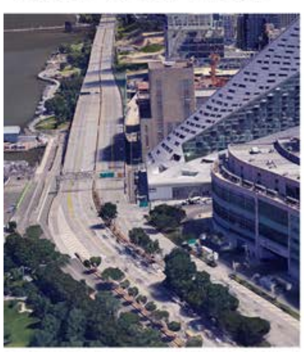
Fordham University

The Church of St. Paul the Apostle

Mount Sinai West

Figure 94. Via 57 West Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

VIA 57 WEST EDGE

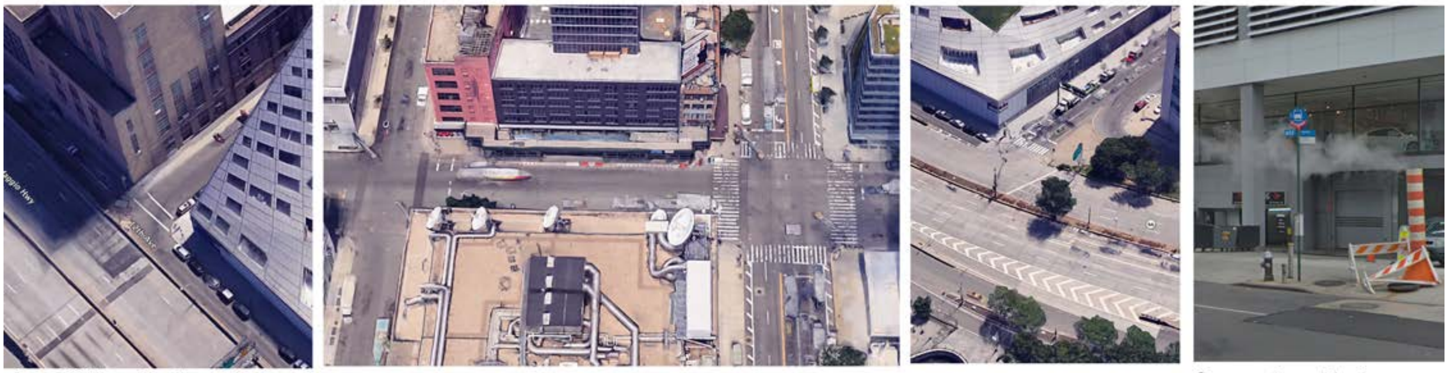


Joe DiMaggio Hwy

58th Street

Figure 95. Via 57 West Edge. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

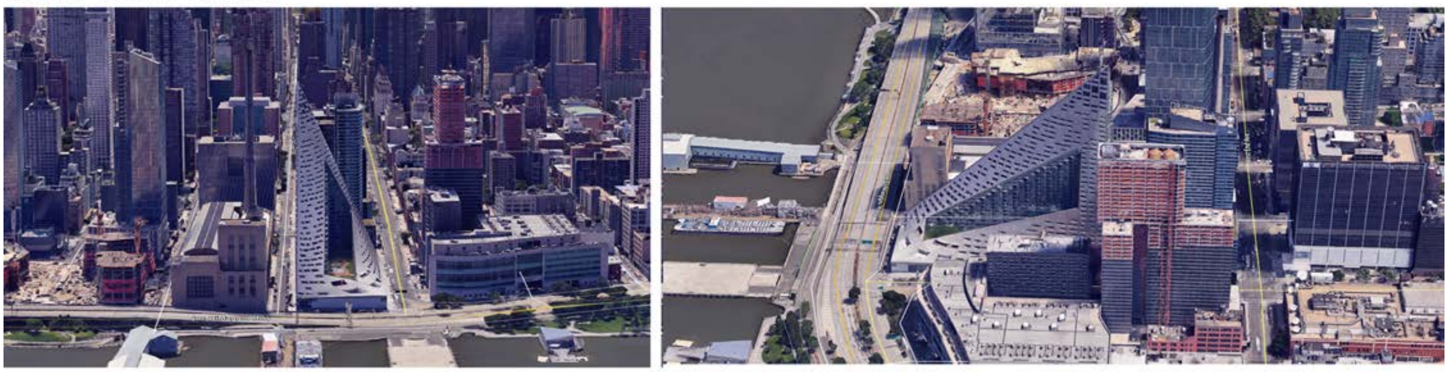
VIA 57 WEST NODES



Joe DiMaggio Hwy & 58th St. **West End Ave. & 57th/58th St.** **Joe DiMaggio Hwy & 57th St.** **Secondary Node**

Figure 96. Via 57 West Nodes. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VIA 57 WEST PATHS



58th St. **57th St.** **Joe DiMaggio Hwy** **West End Ave.**

Figure 97. Via 57 West Paths. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VIA 57 WEST DISTRICT

HELLS KITCHEN DISTRICT

Figure 98. Via 57 West District. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.5.6 Site Relationship

The relationship to site is minimal at Via 57 West, as the building footprint covers most of the site as shown in figure 99. As previously mentioned, the raised courtyard within the building constitutes the site's green space.

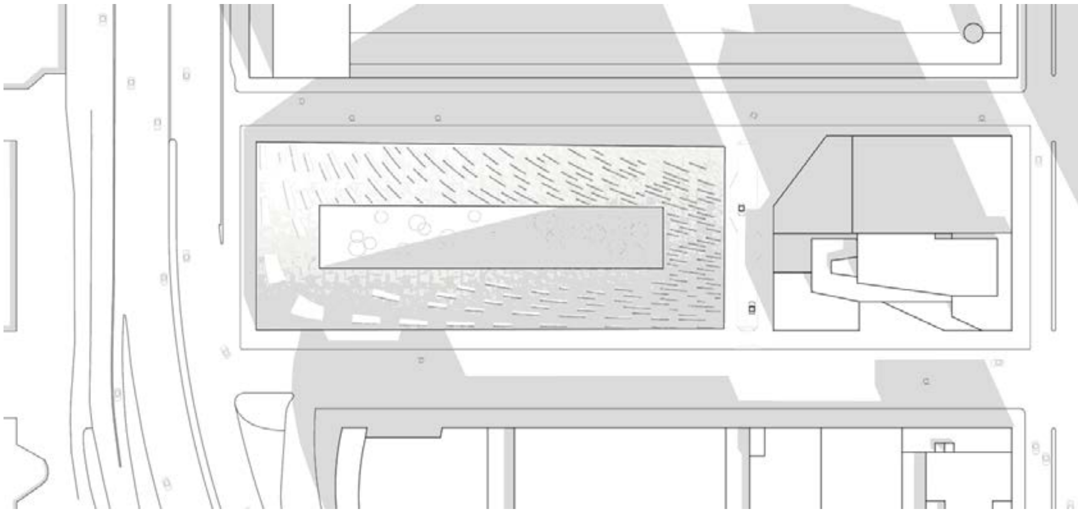


Figure 99. Via 57 West building Site Plan. Reprinted from Iwan Baan photographs BIG's completed VIA 57 West tower in New York by Iwan Baan , Dan Howarth, 2016, adapted from https://www.dezeen.com/2016/09/10/iwan-baan-photographs-big-via-57-west-tower-new-york/

3.5.7 Unit / Floor Plate Layout

The main floor of the development consists of large commercial space. Above the ground floor is where the residential units and amenities begin. The second floor includes the fitness area, courtyard, swimming pool, basketball court, community room and games rooms, as shown in figure 100. The floor plans are designed in a horse shoe pattern, where the residential units are located around the north, east and west perimeters as shown in figure 101. The residential units unfold from entry ways into the living room/foyer entrance and into other living spaces, as shown in figure 102.

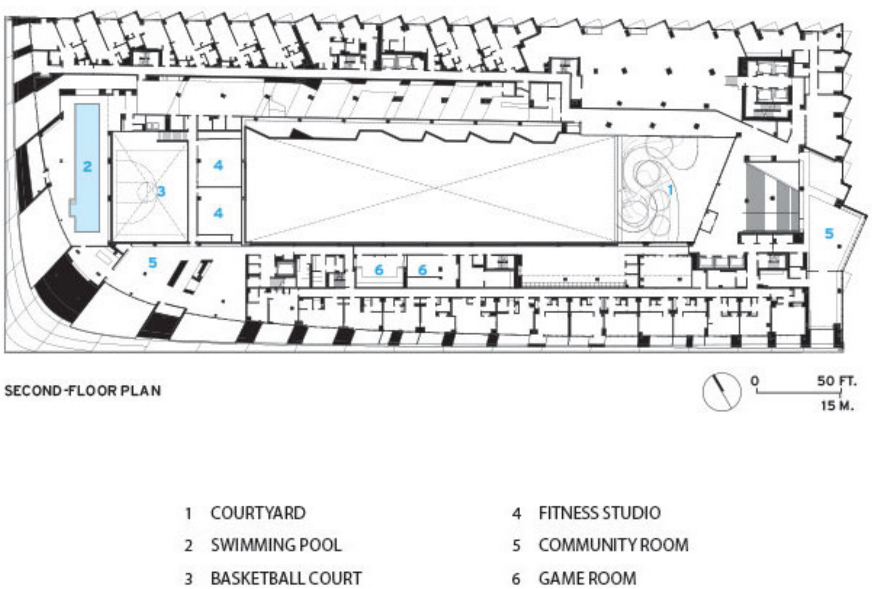


Figure 100. Via 57 West building Second Floor Plan. Reprinted from VIΛ 57 West by Bjarke Ingels Group, Josephine Minutillo, 2016, adapted from https://www.architecturalrecord.com/articles/11860-via-57-west-by-bjarke-ingels-group?

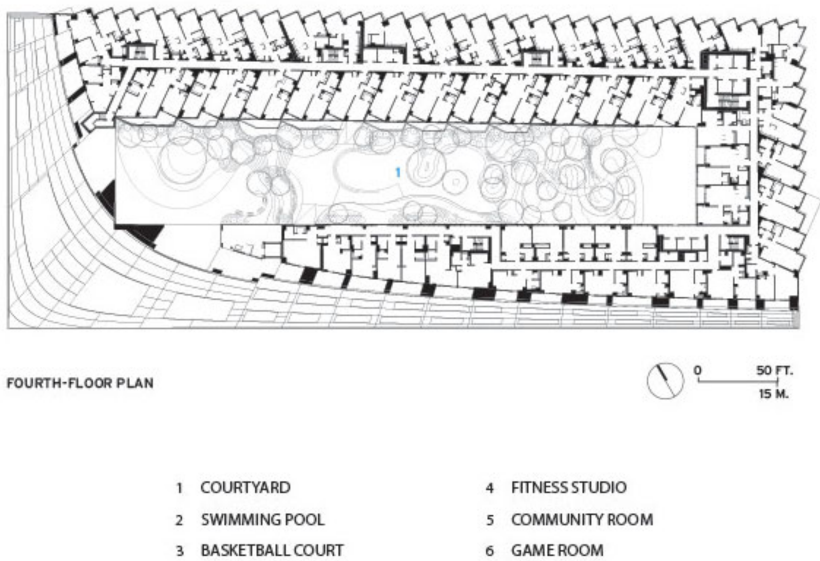


Figure 101. Via 57 West building Second Floor Plan. Reprinted from VIΛ 57 West by Bjarke Ingels Group, Josephine Minutillo, 2016, adapted from https://www.architecturalrecord.com/articles/11860-via-57-west-by-bjarke-ingels-group?

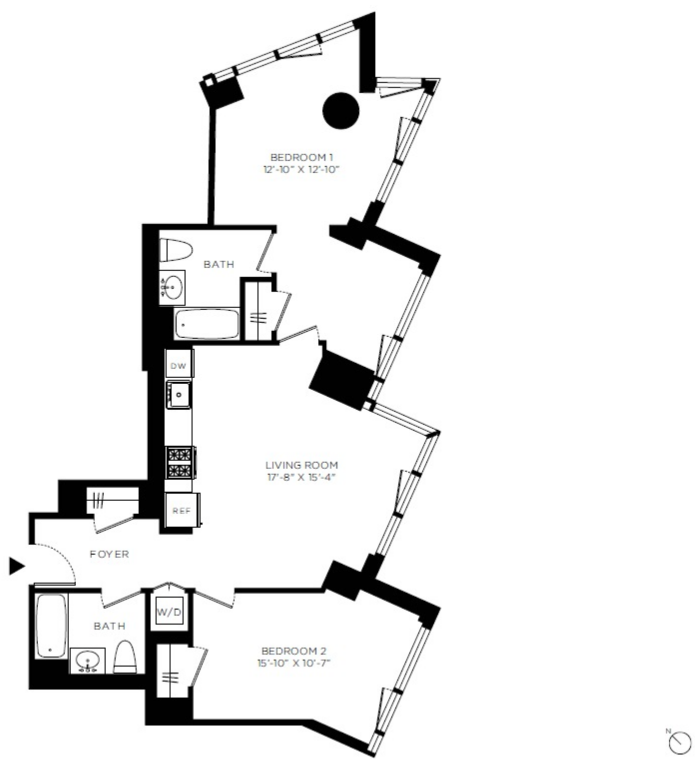


Figure 102. Via 57 West building Unit Layout. Reprinted from Via 57 West – 625 West 57th Street – Upper West Side , NY Nesting, 2018, adapted from https://www.nynesting.com/building/57-west

3.5.8 Development/Building Type

Via 57 West building form is a modern deconstruct representation of a classical highrise, as shown in Figure 103 below. The building is comprised of a base podium with a highrise above. The design was tilted to frame some views and allow light to penetrate. Negative space was added to create special spaces such as the courtyard.

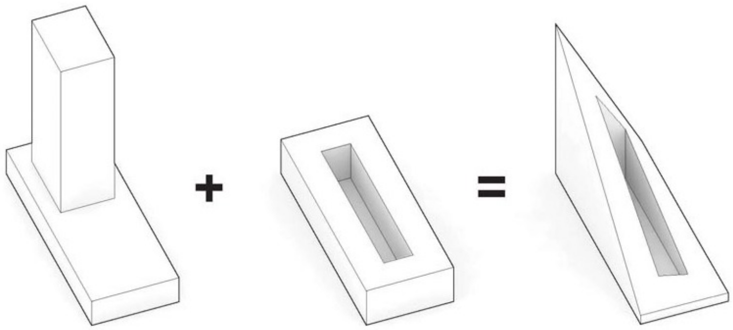


Figure 103. Via 57 West building form creation. Reprinted from VI/\ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

3.5.9 Features/Strategies

Via 57 West design strategies include analysis of the site and creation of the design elements, such as framing views, optimizing natural light, creating and ensuring views, and creating natural and private space. Figure 104 below denotes the steps the architect took to create his design.

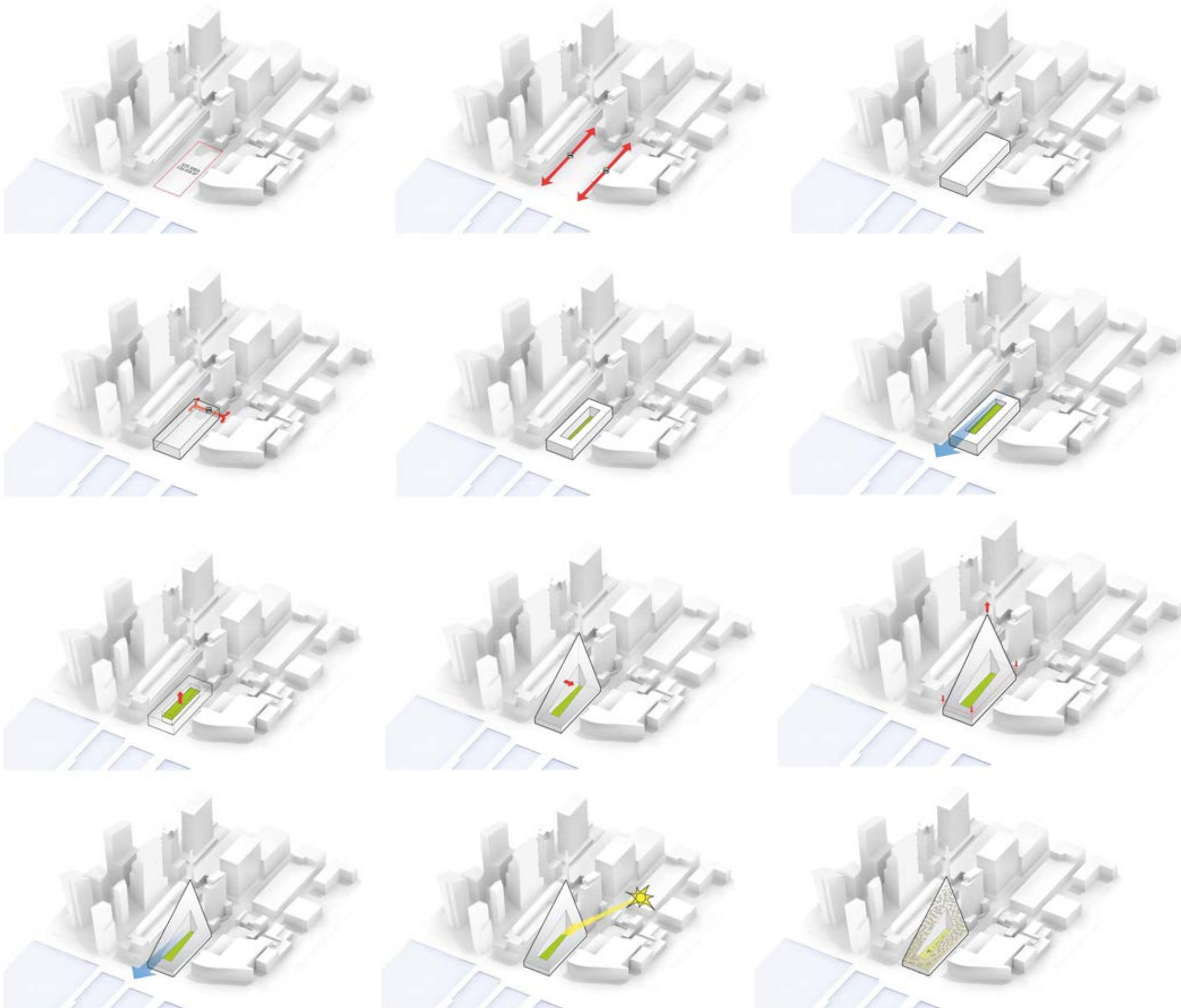


Figure 104. Design strategy for Via 57 West. Adapted from VIΛ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

One interesting element in the design is that the architect not only maximized views of the Hudson river from this building, but also ensured the building behind it would retain some views. This is a feature that is not always considered or achieved.

Unique elements of Via 57 West are the shape, materials, and the raised courtyard. The shape of the building, as seen in Figure 105, is a skewed triangular shape. This was created, as mentioned above, to allow for optimal natural light and views. The materials selected were basic metal panels (stainless steel) to not only allow for some contrast with the surrounding buildings, but also to have a minimalistic appearance. The courtyard itself is a unique element as the island of Manhattan is quite dense, and natural park space is not adjacent. The courtyard allows residents access to park space and distances them from traffic noise.

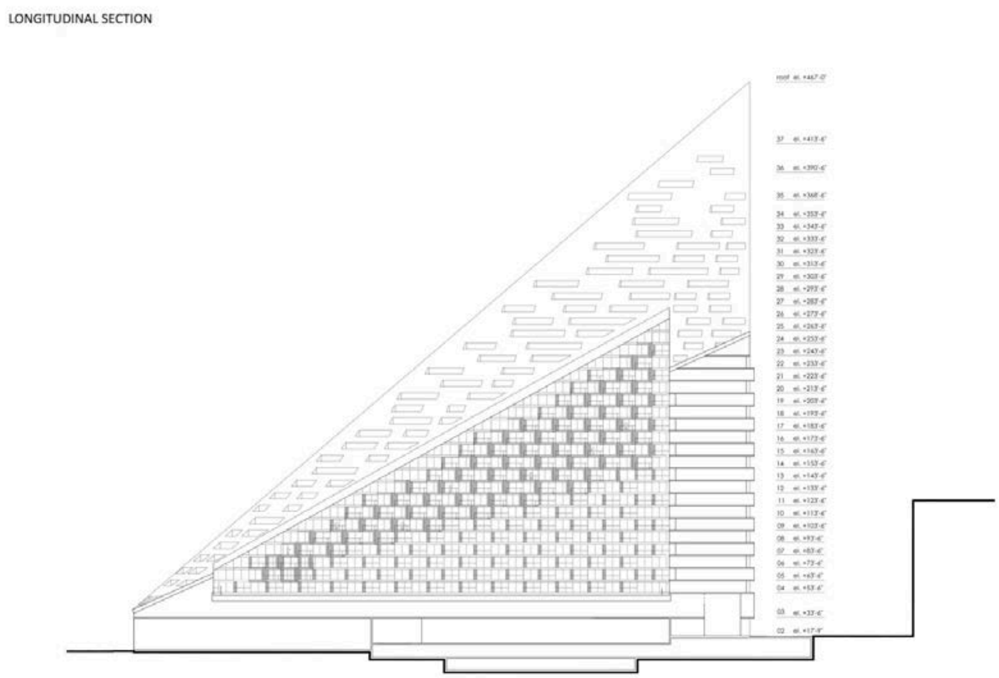


Figure 105. Building Section of Via 57 West. Reprinted from VIΛ 57 West / BIG, by Iwan Baan , Nic Lehoux, 2016, adapted from https://www.archdaily.com/794950/via-57-west-big

3.2.10 Program Amenity Spaces

Via 57 West has a variety of amenities that include recreation, commercial and public uses. The amenities include a fitness area as shown in figure 106, a courtyard as shown in figure 107, swimming pool (figure 108), basketball court (figure 109), community room (figures 110 and 111), games rooms (figure 112), and commercial retail space (theatre) as shown in figure 113.


Figure 106 Fitness


Figure 107 Courtyard


Figure 108 Swimming Pool


Figure 109 basketball Court


Figure 110 Community Room

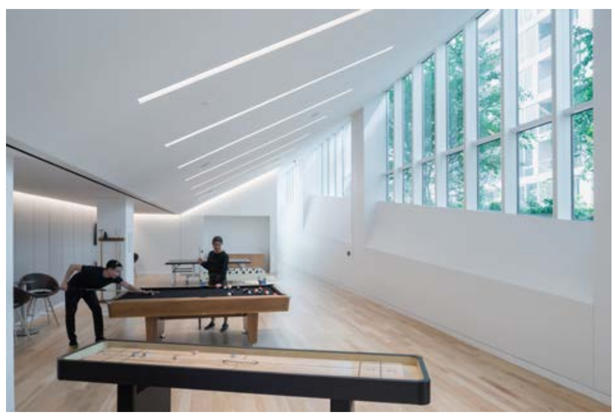


Figure 111 Games Room

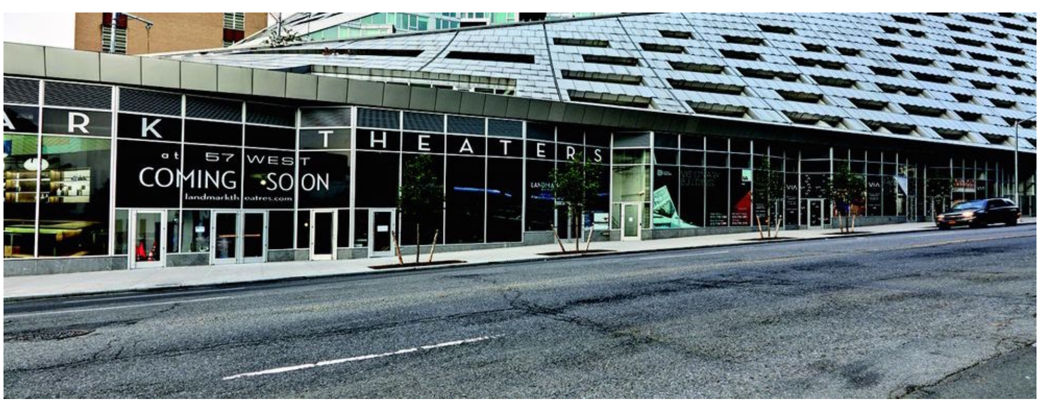


Figure 112 Commercial Space

Figure 108. Via 57 West Fitness, reprinted from Via 57 West (625 West 57th Street), by Durst Organization, 2019, adapted from https://www.durst.org/properties/west-57th-street#
Figure 109. Via 57 West Courtyard, reprinted from Via 57 West (625 West 57th Street), by Durst Organization, 2019, adapted from https://www.durst.org/properties/west-57th-street#
Figure 110. Via 57 West Swimming Pool, reprinted from Via 57 West (625 West 57th Street), by Durst Organization, 2019, adapted from https://www.durst.org/properties/west-57th-street#
Figure 111. Via 57 West Games Room, reprinted from Via 57 West (625 West 57th Street), by Durst Organization, 2019, adapted from https://www.durst.org/properties/west-57th-street#
Figure 112. Via 57 West Commercial Space, reprinted from Via 57 West (625 West 57th Street), by Durst Organization, 2019, adapted from https://www.durst.org/properties/west-57th-street#

3.5.11 Conclusion

Via 57 West precedent influences the proposed site through the use of deconstructive principles, the type of development, and the urban topography. The deconstructive principles can be seen throughout with the angular non-rectilinear shapes, the bold shapes, the surface manipulation, and the relation to site. The type of development is similar to the proposed site - an urban site that is an infill. There are also similarities in urban topography, as both sites are located in high density locations and within a downtown core.

KEY PRINCIPLES OF VIA 57 WEST CASE STUDY

- Housing concepts/layout
- Scale
- Mixed Use
- Sustainability
- Site Orientation / Views
- Urban Environment / Dense
- Deconstructivist Architecture Principles
- Green/Park Spaces
- Natural light
- Building Form
- Importance of Site / Framing Views

3.6 VM HOUSES

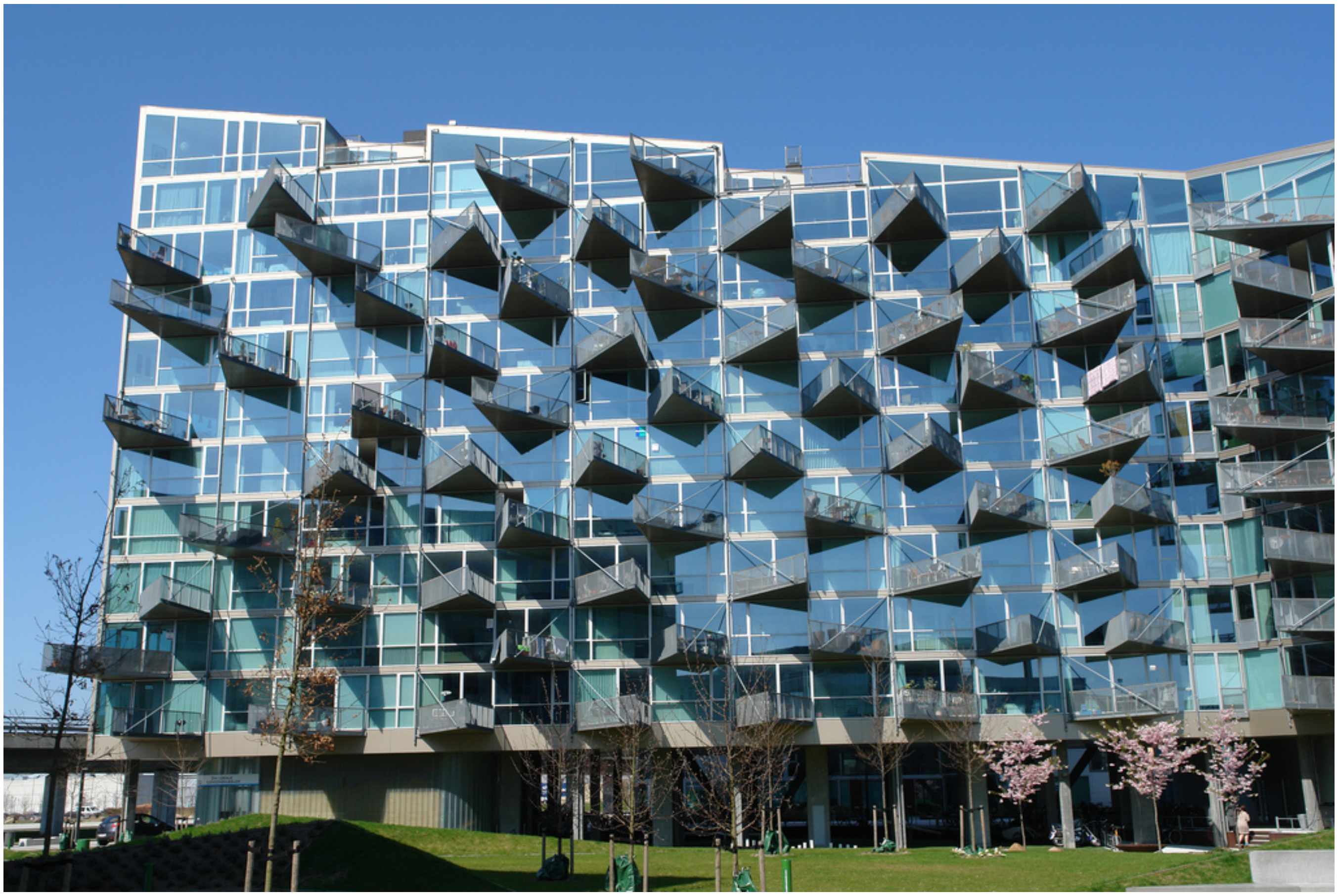


Figure 113. VM Houses Photograph. Reprinted from VM Houses / BIG + JDS, by Archdaily, 19 May 2008, adapted from https://www.archdaily.com/970/vm-houses-plot-big-jds

3.6.1 Project Details

ARCHITECT	BIG + JDS = PLOT (Bjarke Ingels Group + Julien De Smedt Architects)
DEVELOPER	Hopfner A/S, Dansk Olie Kompagni A/S
PROJECT BUDGET	32.500.000 EUR (48,578,352.15 CAD)
DEVELOPMENT TYPE	Residential / Commercial
NUMBER OF UNITS	230 Residential Units
LOCATION	Copenhagen, Denmark
BUILDING GFA	25,000 m2
COMPLETION	2005
SUSTAINABILITY	LEED Gold or Platinum
PRECEDENT TOPIC	Deconstruction/Housing

3.6.2 Project Description

VM houses is a 230-unit residential building located in Copenhagen, Denmark. The building “offers more than 80 different apartment types that are programmatically flexible and open to the individual needs of contemporary life - a mosaic of different life forms.” (Archdaily, 2008)

3.6.3 Location

VM House is located along C. F. Møllers Allé to the north, while between Ørestads Boulevard and Slusevej 32 street east to west, as shown in Figure 114. The building is oriented slightly off axis from the sun while providing shelter from the prevailing winds. The main landmarks within the district are commercial and residential developments.

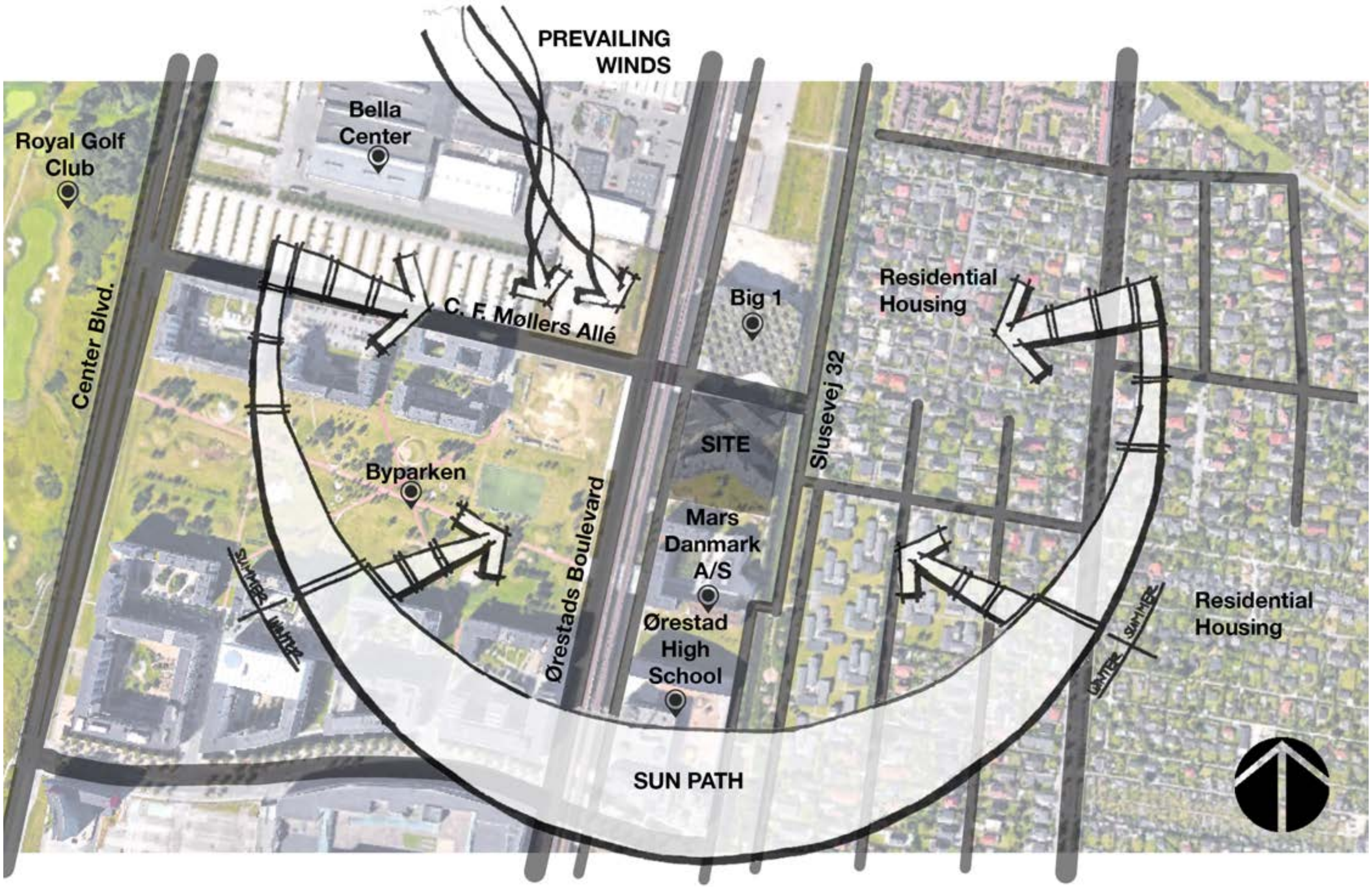


Figure 114. VM House Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.6.4 Climate

Copenhagen's typical climate is steady through the year. Annually the temperatures do not vary more than a few degrees between the months, Figure 115 denotes the average temperatures in Copenhagen in each month.

Figure 115. Copenhagen Annual Weather. Reprinted from Untitled, by Author, 2018.

3.6.5 Context

VM House is comprised of two buildings with related angles. It has a substantial setback to the south with a connecting park, but minimum setback to the remaining site. The shape of the structure, reviewed more in-depth under building type, is two structures that allow maximum solar gains to all elevations of both buildings. The entire building utilizes curtain wall glazing to attract natural light into the interior. Each unit is equipped with a balcony, angled differently than adjacent ones. Figure 116 is a sketch of the site and shows the relation to Kevin Lynch's five principles of architecture, discussed below.

Figure 116 VM House Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Utilizing Kevin Lynch's five principles of architecture, as shown in Figure 116, an analysis of the site and surrounding buildings can be completed. The five elements are listed below:

Landmarks
The landmarks surrounding the VM House are commercial and residential developments. These landmarks are denoted in Figure 117.

Edges
VM House has numerous Edges within the site and adjacencies. There are three main edges to the site, as shown in Figure 118. Firstly, there is the edge of Ørestads Boulevard to the site, which separates vehicular main traffic from the gentle quiet site. Secondly there is the division of the two residential developments with an angular walking trail that separates the two areas. Lastly there is the Slusevej 32 street edge which separates the tall denser VM house from the lower single-family residential development to the east.

Nodes
VM House main nodes are the intersections of the adjacent and surrounding streets, as shown in Figure 119. The intersection of these streets creates the main nodes at the edge of the property.

Paths
VM Houses main paths are associated with Vehicular traffic, as seen in Figure 120. Additionally, there are some residential paths within the site.

District
Main districts can be seen at VM House from the main street grid to the larger district map of Copenhagen, as shown in Figure 121.

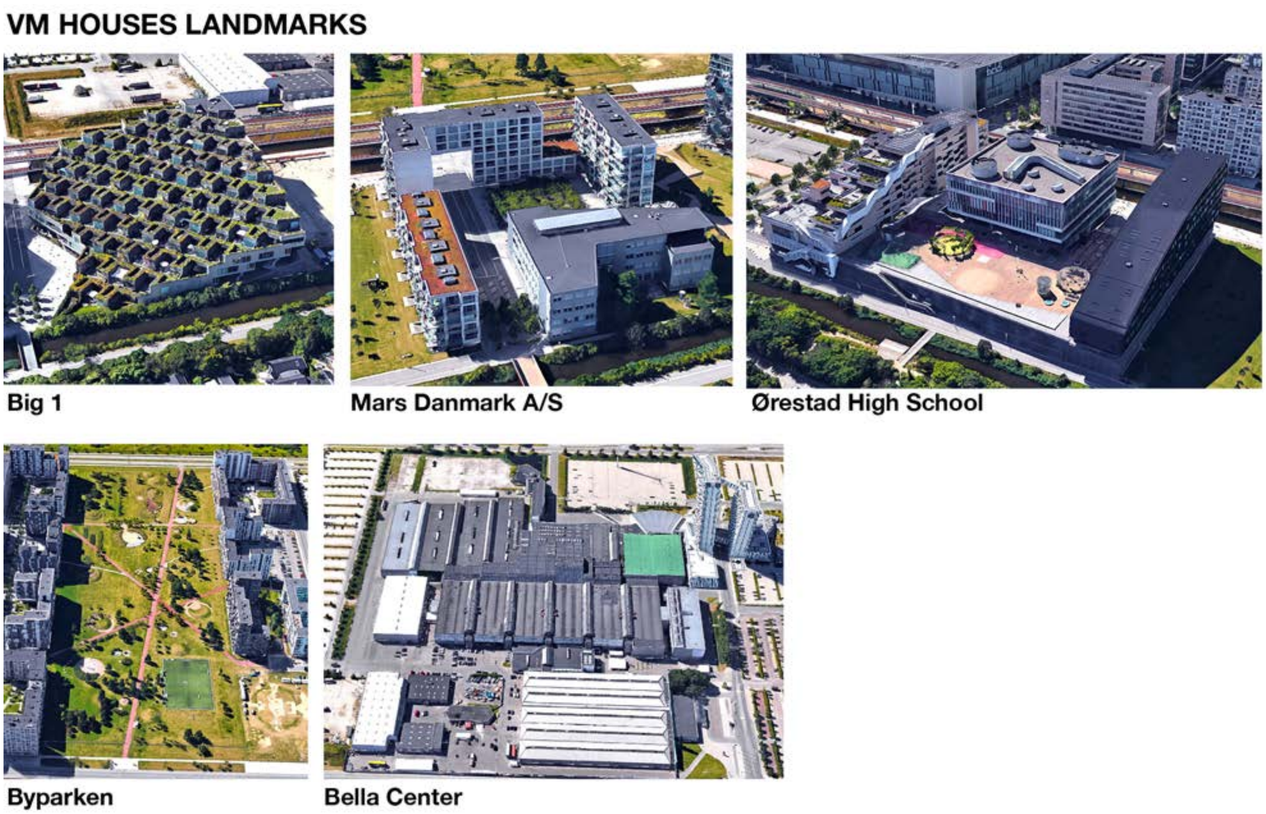


Figure 117. VM House Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

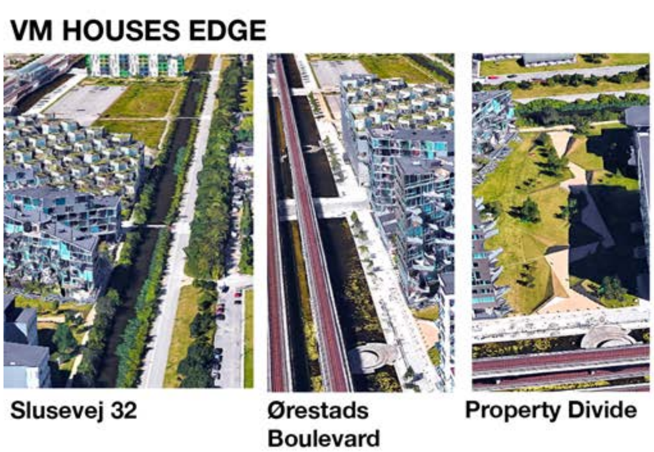


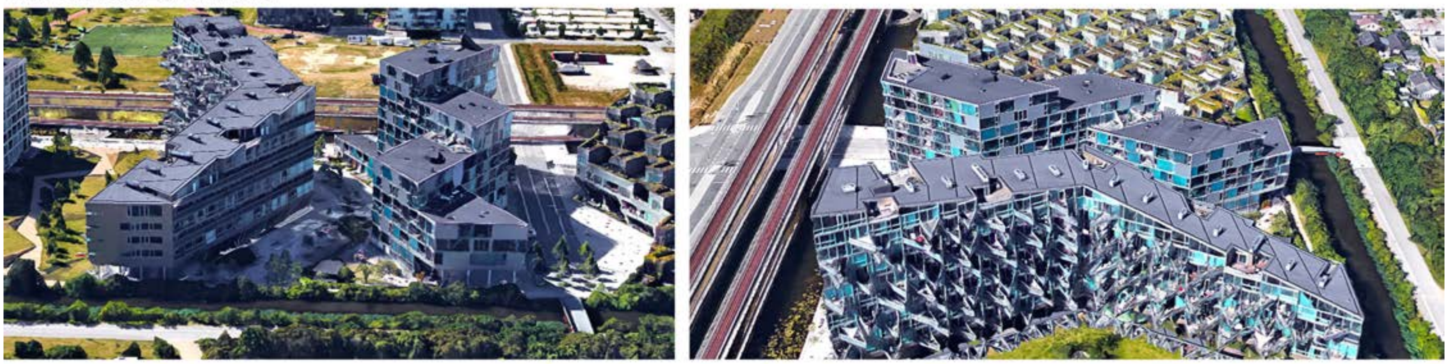
Figure 118. VM House Edges. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VM HOUSES NODES

C. F. Møllers Allé & Ørestads Boulevard **Slusevej 32** **C. F. Møllers Allé & Slusevej 32**

Figure 119. VM House Nodes. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

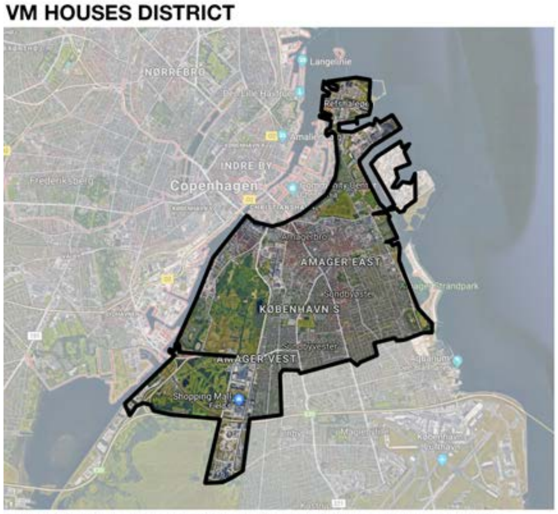
VM HOUSES PATHS



C. F. Møllers Allé **Ørestads Boulevard** **Slusevej 32**

Figure 120. VM House Paths. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

VM HOUSES DISTRICT



AMAGER VEST / KOBENHAVEN / AMAGER EAST DISTRICT

Figure 121. VM House District. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

3.6.6 Site Relationship

The relationship to site is as a divider between landscape surfaces and topography. The southern portion of the site is sculpted landscape, while in-between the two buildings is hard surface vehicular parking. The northern portion of the "v" building is hard surface concrete as shown in figure 122. The site blends with the surrounding elements, with hard surface materials connecting with surrounding roads. Soft sculpted landscape connects to the adjacent site and creates a pathway.

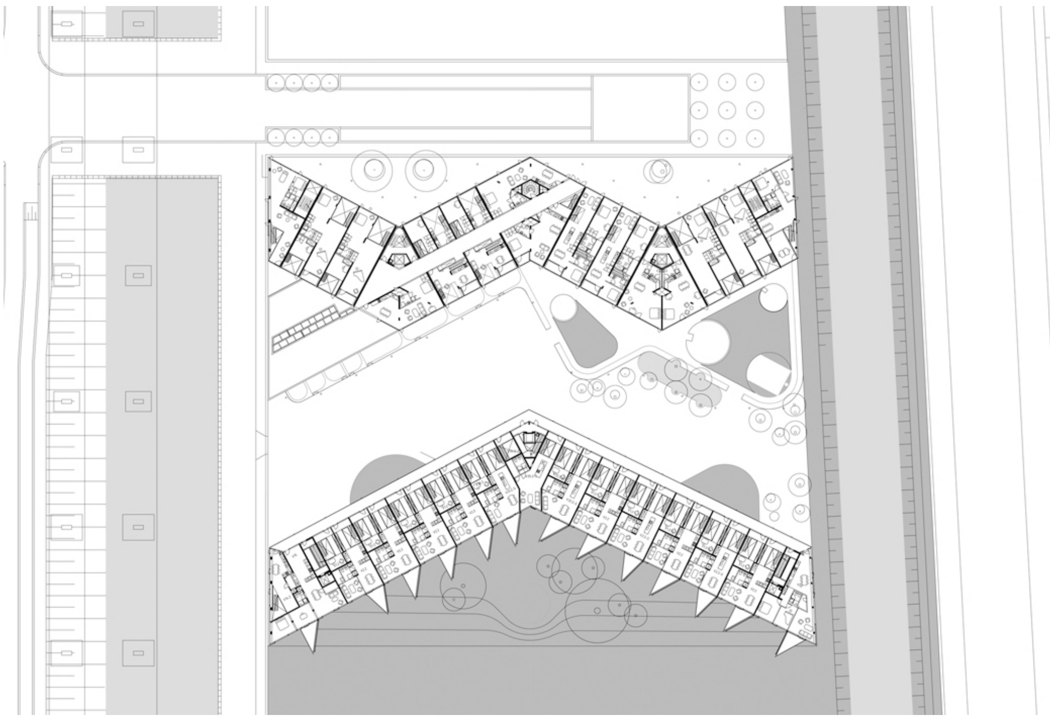


Figure 122. VM House Site Plan. Reprinted from JDS Architects I VM House, by architectural, 2018, adapted from https://www.arthitectural.com/jds-architects-vm-house/

3.6.7 Unit / Floor Plate Layout

VM houses floor plan layout is interesting based on the variety and design of each suite. Figure 123 demonstrates the expansive number of options in regard to suite layout, size, and orientation. Each suite is strategically placed with the structure to create a puzzle-like building. Most units span the entire width of the building to allow for cross ventilation. The units are mostly all accessed through an exterior corridor.

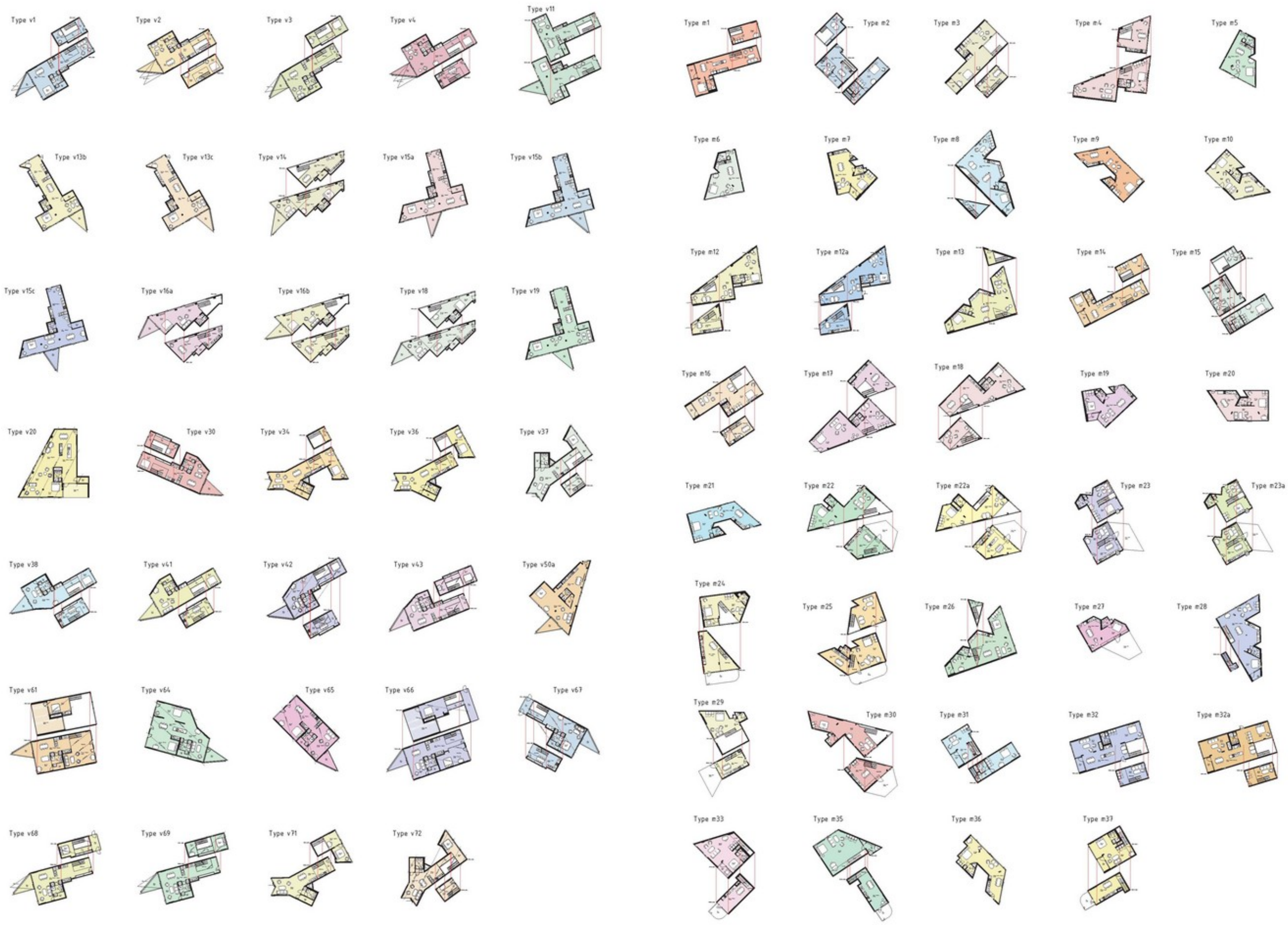


Figure 123. VM House Suite plans. Reprinted from JDS Architects I VM House, by architectural, 2018, adapted from https://www.arthitectural.com/jds-architects-vm-house/

3.6.8 Development/Building Type

VM Houses is a development of smaller units pieced together to create a larger residential building. The creation of the building form is a combination of push and pulls with a rectangular figure to create the letters V and M. These two buildings create living quarters blocks. “The blocks are formed as such to allow for daylight, privacy and views.” (ArchDaily, 2008) The height of the structure is dictated by the height of each unit, which gives each occupant a two-story space within their living quarters. The design of VM has been influenced by “Unite d' Habitation by Le Corbusier where “the central corridors are short and receive light from both ends, like bullet holes penetrating the building.” (ArchDaily, 2008) The layout of the living quarters also plays an important role, not only in the building type, but also its function. The VM Houses offer a wide variety of apartment types as shown in Figures 124 & 125.

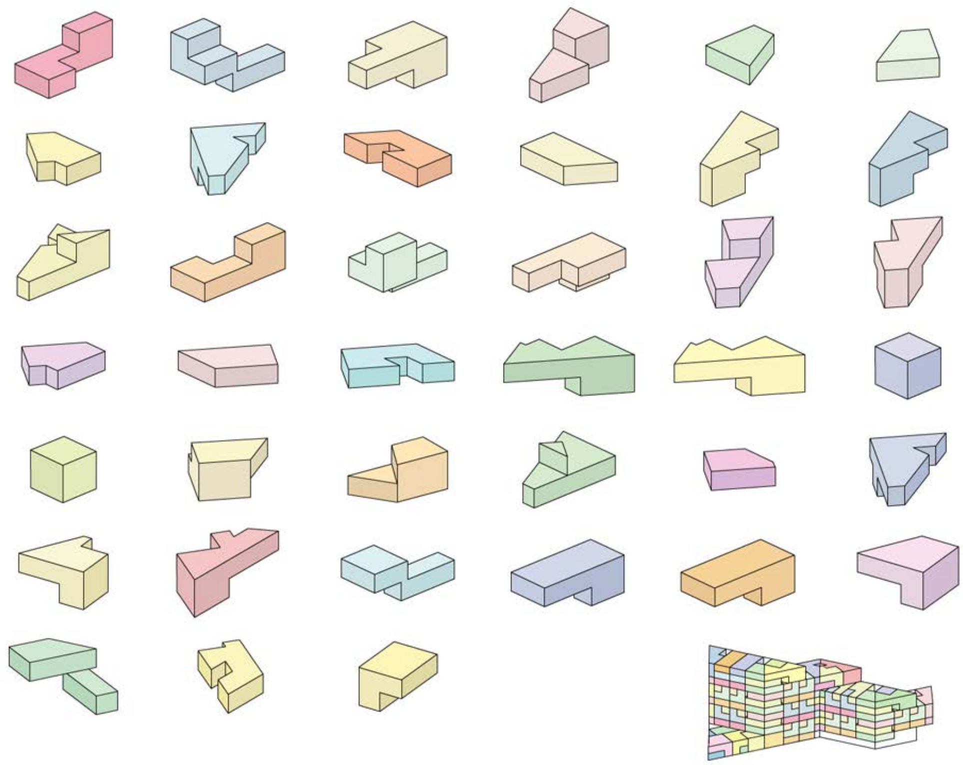


Figure 124. Building Forms. Reprinted from VM Houses / BIG + JDS, by Archdaily, 19 May 2008, adapted from https://www.archdaily.com/970/vm-houses-plot-big-jds

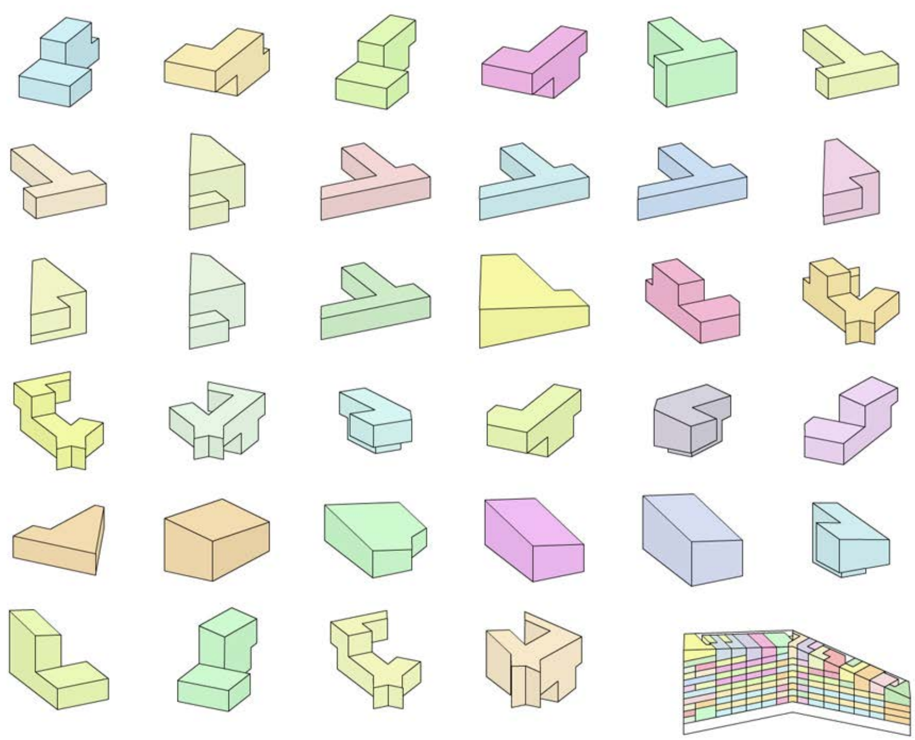


Figure 125. Building Forms. Reprinted from VM Houses / BIG + JDS, by Archdaily, 19 May 2008, adapted from https://www.archdaily.com/970/vm-houses-plot-big-jds

3.6.9 Features/Strategies

The main feature of VM Houses is the building's skewed design. As shown in Figure 126, the building began as a simple standard rectangular form that was manipulated and pushed to create two very dynamic complementing shapes. "As a result of the zigzagging, stepping, sloping, intricate circulation and multilevel apartments, the VM Houses are populated by a swarm of different apartments." (Bjarke Ingels Group, 2018)

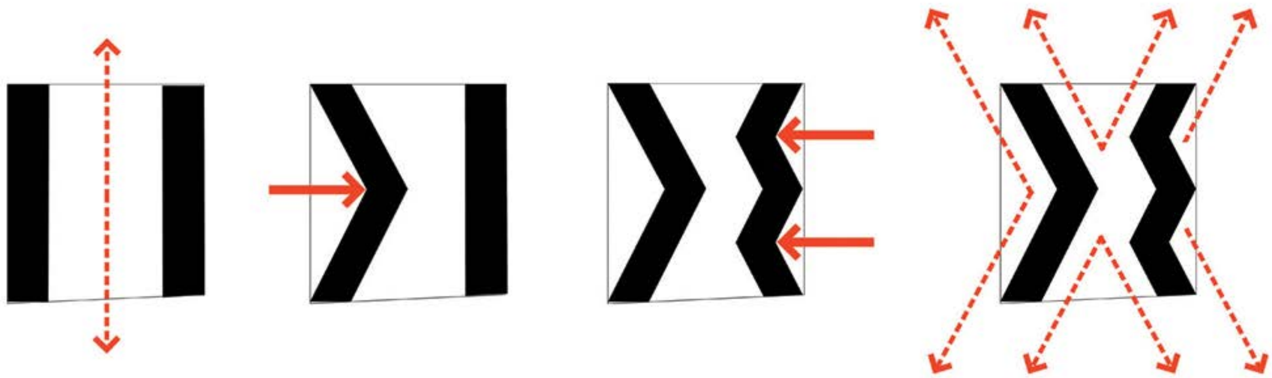


Figure 126. Building Form Creation. Reprinted from VM Houses / BIG + JDS, by Archdaily, 19 May 2008, adapted from https://www.archdaily.com/970/vm-houses-plot-big-jds

3.2.10 Program Amenity Spaces

VM Houses has no additional amenity spaces above the residential units.

3.6.11 Conclusion

VM Houses precedent influences the proposed site through the use of housing, the typology of building form, and design. The innovative housing concept of multiple variant sizes and scales can be seen throughout the design which adds flexibility and openness. This can be a vital part of a sustainable social housing development. The design of the building's form utilizes angles, height variations, building masses to better conform to the site. This allows the occupants the best opportunity for views, natural light, and ventilation. All three of these are necessary for a quality living space.

KEY PRINCIPLES OF VM HOUSE CASE STUDY

- Housing concepts/layout
- Flexibility
- Scale
- Sustainability
- Site Orientation / Views
- Urban Environment / Density
- Deconstructivist Architecture Principles
- Individual Unit Design
- Natural Light
- Building Form

CHAPTER FOUR CONCEPTUAL ANALYSIS

4.1 INTRODUCTION

The CN Lands, in Edmonton, Alberta, have been underdeveloped and underutilized for the past 15 years. With rapid growth and development pushing further from the downtown core, the CN Tower Lands are engulfed by the surrounding commercial development. The current site consists mainly of gravel vehicular parking lots with the exception of two buildings. The main building located on the site is the CN Tower that remains from 1966. The other building, one of less stature, is the Re-Use store which is located directly along 104th avenue.

The lands are a prominent feature in the downtown core, they could play an important role in the city's growth. With the expanding city and economic downturn, more people require social housing and social services. The site, which as noted is mostly vacant, borders some of the necessities utilized by both people seeking housing and services. The northern area and eastern area of the site are located within the highest density of people requiring aid.

I utilized the same criteria as those applied to the precedent studies to the CN Lands. This forms the basis of my research and will be utilized for my design concept.

4.2 SITE

4.2.1 Location

CN Tower Lands are located between 103a Avenue street and 105th Avenue north to south, and between 101st Street and 97th street east to west, as shown in Figure 127. The existing CN Tower is located in the middle of the site, while the Re-Use store is located on the south, adjacent to 103a avenue. The shape of the site provides a connection to both the downtown core and to city hall, located to the south, and also to the support buildings located to the north and east. The location of the CN Tower Lands is the Downtown district of Edmonton, and falls within ward 6.

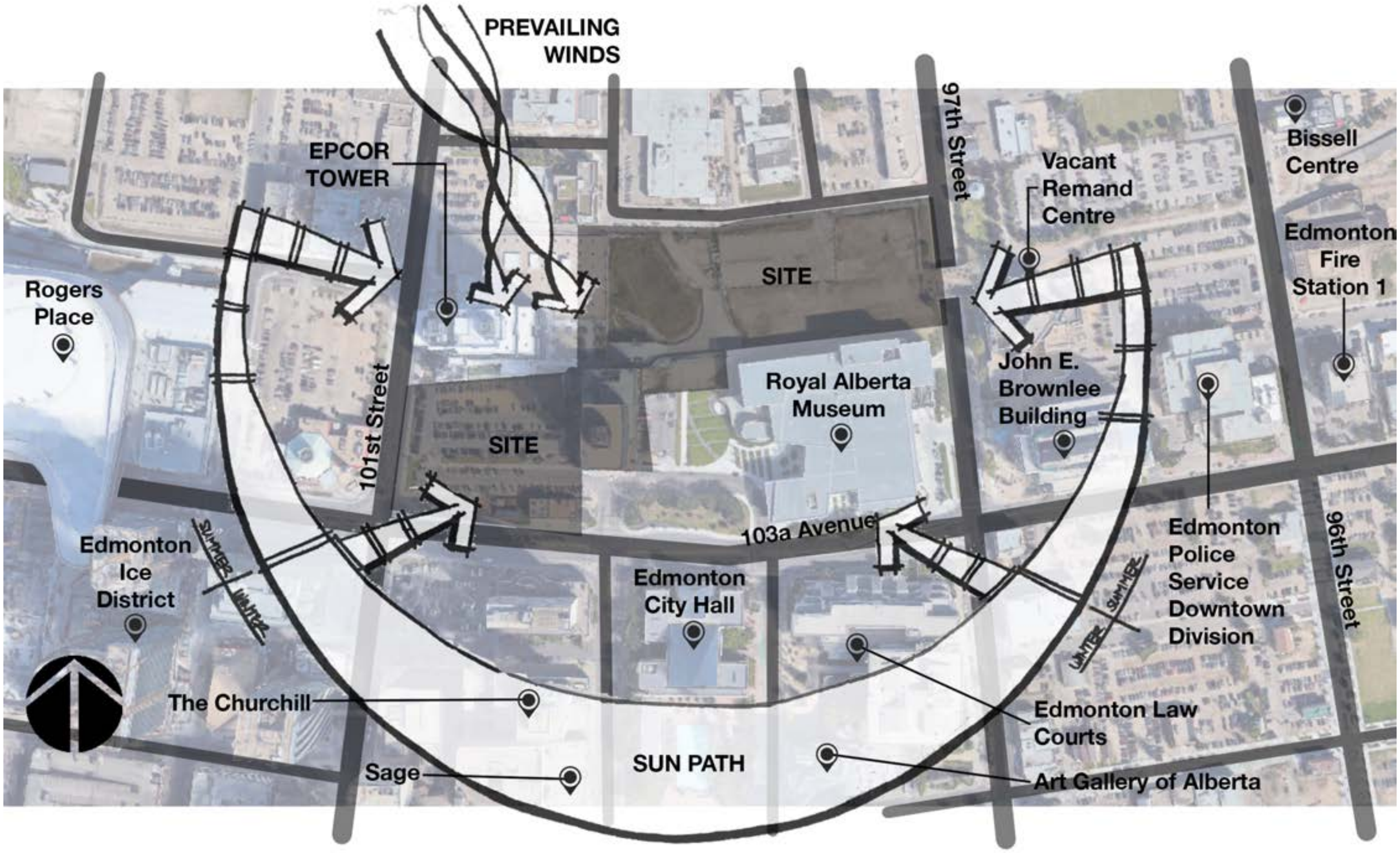


Figure 127. CN Lands Location. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

4.2.2 Climate

CN Tower Lands are located within Edmonton, Alberta. Edmonton's climate is fluctuating from temperatures below zero in the winter months, to mild temperatures in the summer months. Figure 128 denotes the average temperature in Edmonton.

Figure 128. Edmonton Annual Weather. Reprinted from Untitled, by Author, 2018.

4.2.3 Context

CN Tower Lands are located in a high-density area, and consist of urban infill as shown in Figure 129. The two adjacent sites, Epcor Tower and Royal Alberta Museum, have been redeveloped in the past 10 years. The two main roads that border the site, 103a avenue and 101st Street, are main arterial roads to the city's downtown core. The connectivity of the site is important. Creating more than just a grade connection is a vital part of the circulation within the downtown fabric.

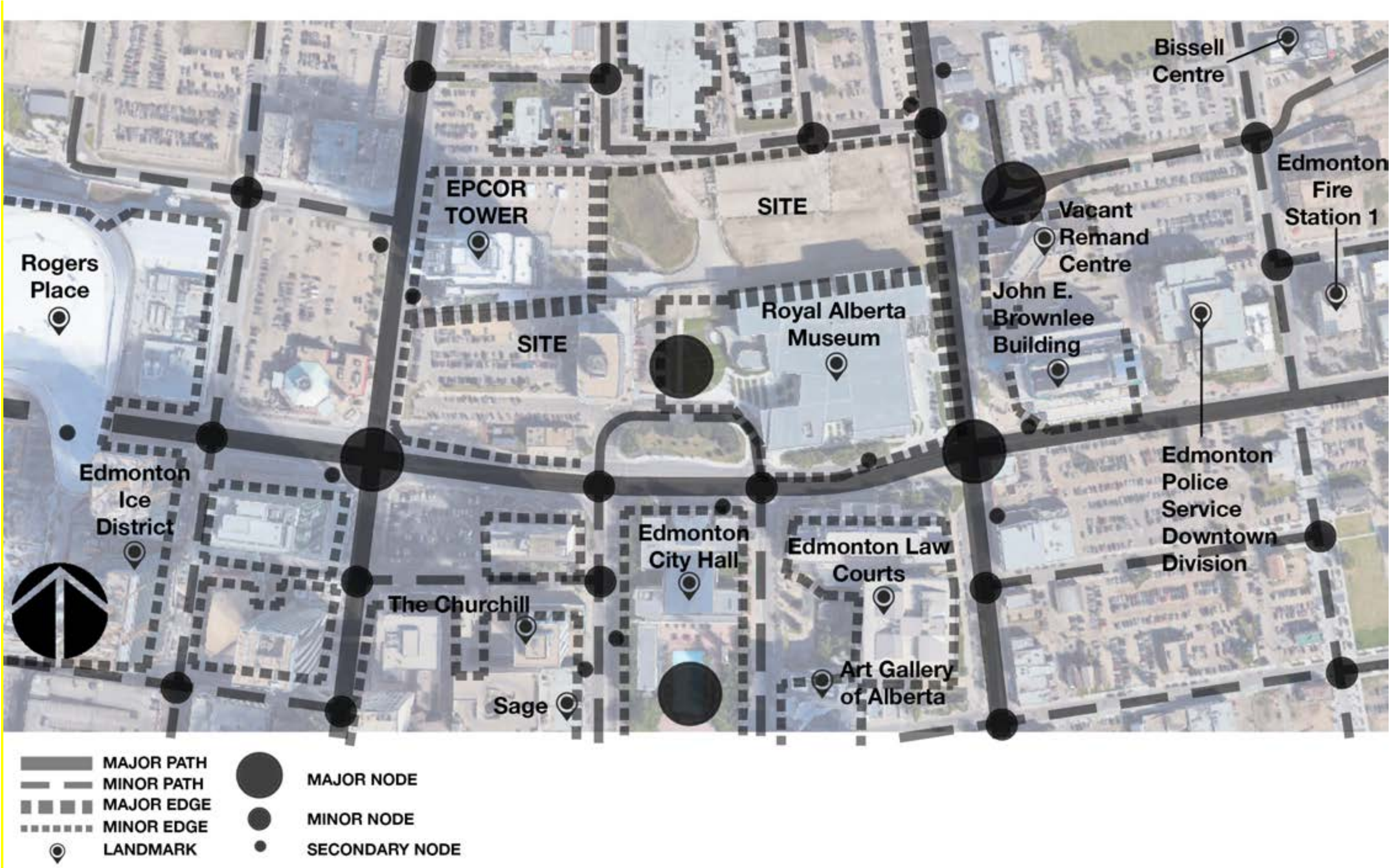


Figure 129. CN Lands Site Context. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Utilizing Kevin Lynch's five principles of architecture, as shown in Figure 129, an analysis of the site and surrounding buildings can be completed. The five elements are listed below:

Landmarks
The CN Tower Lands are surrounded by numerous landmarks and notable buildings, including CN Tower, Rogers Place, Royal Alberta Museum, City Hall, Epcor Tower, Art Gallery of Alberta, and the Ice District Development. These landmarks represent a variety of building types, as seen in Figure 130.

Edges
CN Tower Lands has numerous Edges within the site and adjacencies, the main edges are located along the previously named four vehicular roads, as shown in Figure 131. Other edges include the one that separates the site from the Royal Alberta Museum, and one separating it from the Epcor tower. CN Lands are also surrounded by transportation nodes, Light Rail Transit (LRT) and bus stops.

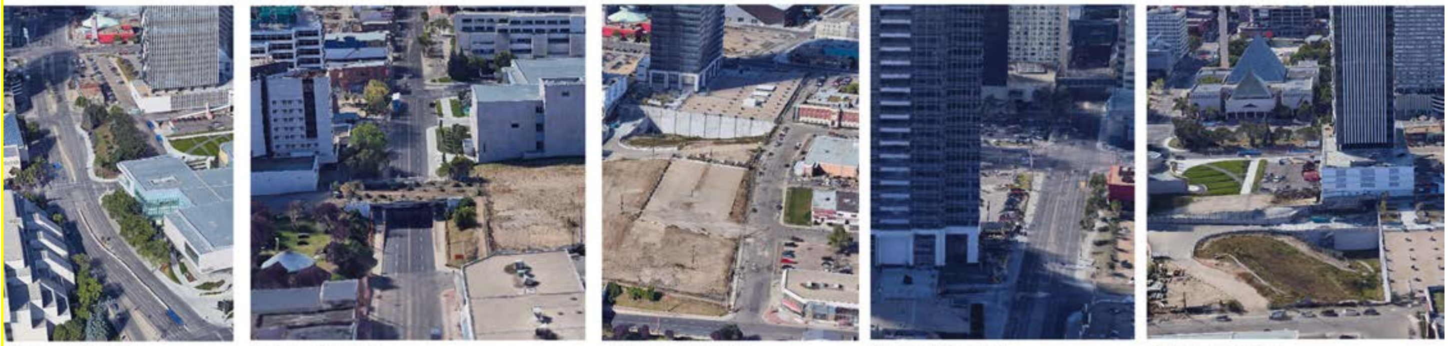
Nodes
CN Tower Lands main nodes are the intersections of the adjacent and surrounding vehicular streets, as shown in Figure 132. The secondary nodes are the internal roads that connect the developments together, and also the connection to the adjacent site, including the unoccupied Remand Centre.

Paths
CN Tower Lands main paths are the surrounding streets, as seen in Figure 133.

District
CN Land site makes up part of the Downtown Edmonton District, as shown in Figure 134.

Figure 130. CN Lands Landmarks. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

CN LANDS EDGES



103a Avenue | 97th Street | 105th Avenue | 101st Street | Site Interior

Figure 131. CN Lands Edges. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

CN LANDS NODES

99th Street | 99th Street & 103a Avenue | 101st Street & 103a Avenue | 105th Avenue

97th Street & 105th Avenue | 97th Street | Remand | City Hall | R.A.M

Figure 132. CN Lands Edges. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

CN LANDS PATHS

Figure 133. CN Lands Paths. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

CN LANDS DISTRICT

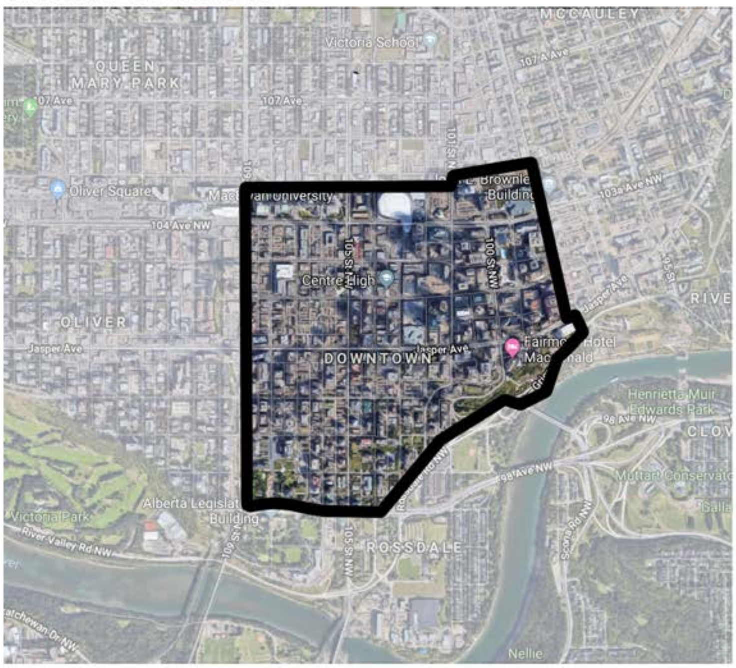


Figure 134. CN Lands District. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

4.3 LAYER ANALYSIS

Below is a visual analysis of the CN lands site layers.

Zoning/Land Use

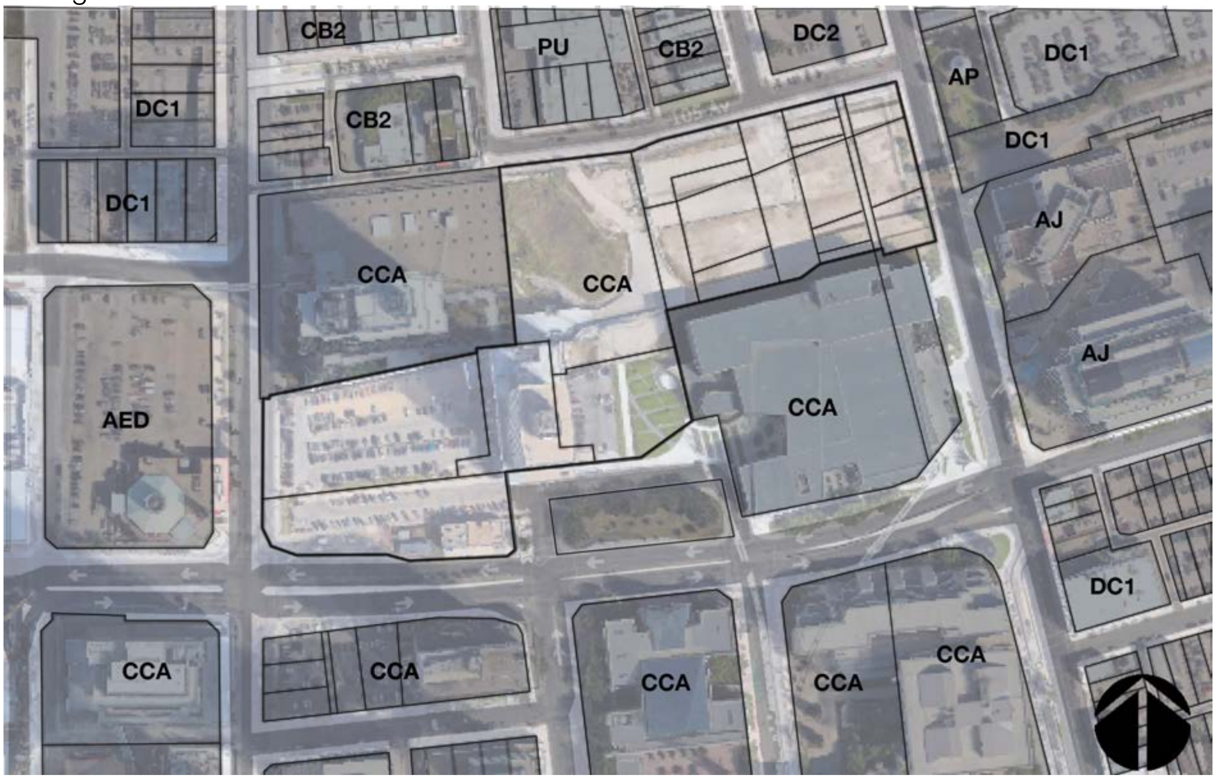


Figure 135. CN Lands Land uses. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Key Parks and Open Space

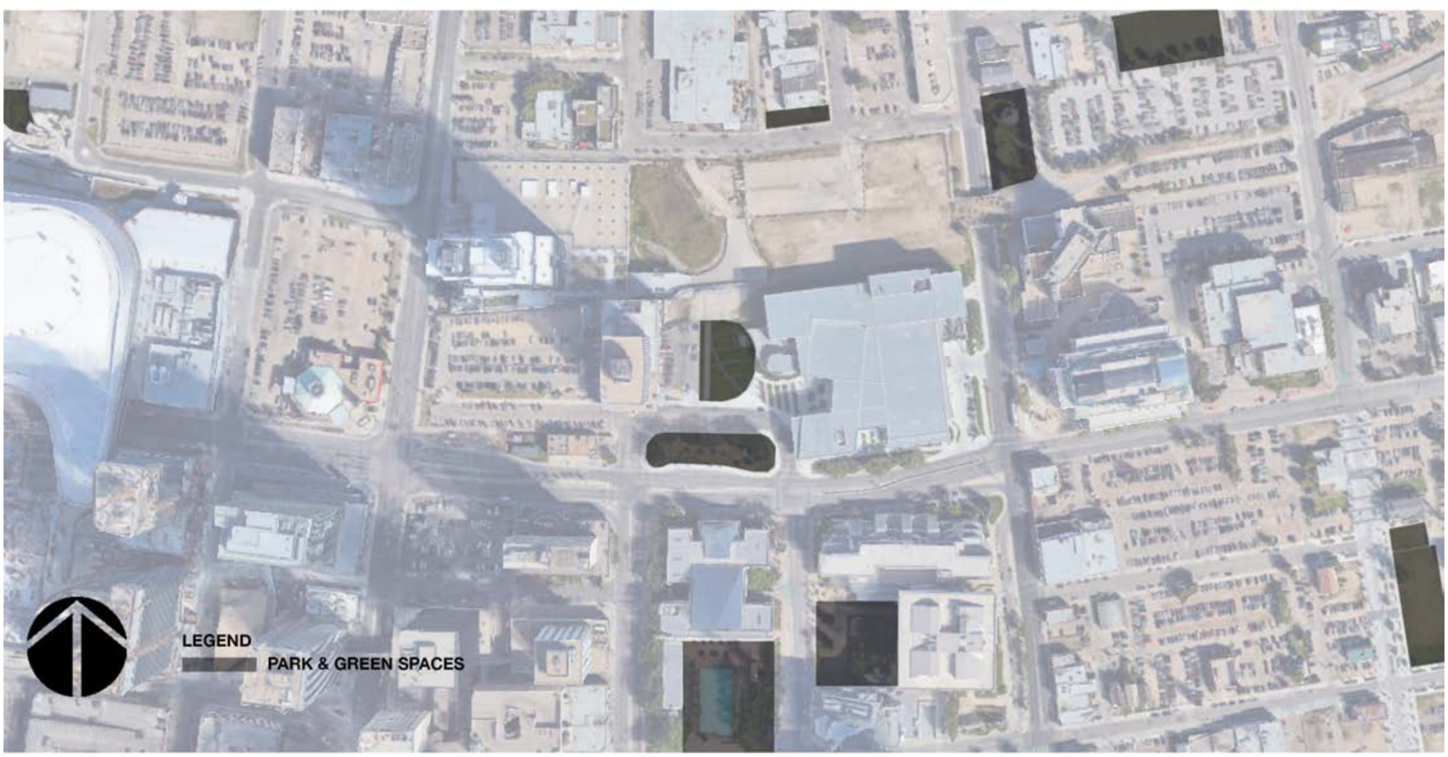


Figure 136. CN Lands Key Parks and Open Spaces. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Street Network – Including Sections

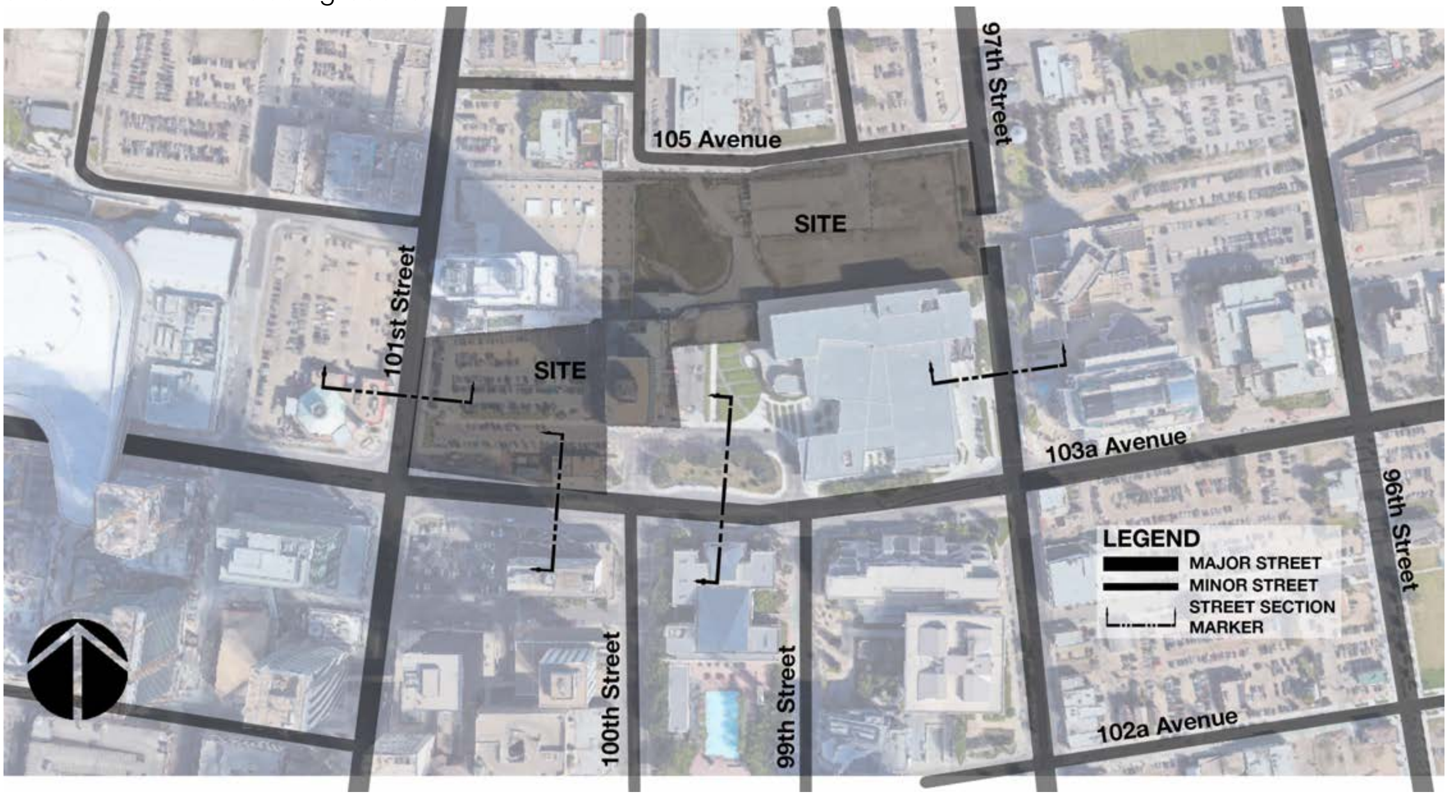


Figure 137. CN Lands Street Network. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

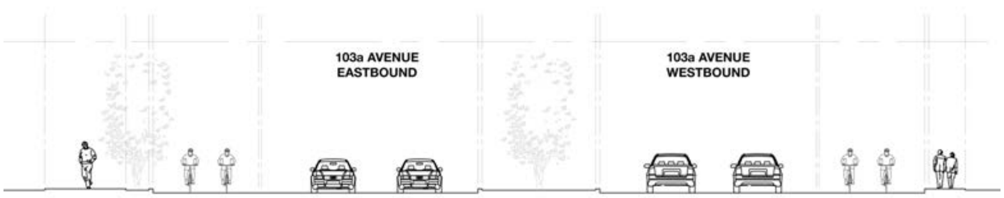


Figure 138. 103rd Avenue Section. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Figure 139. 103rd Avenue & 104 Avenue Section. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

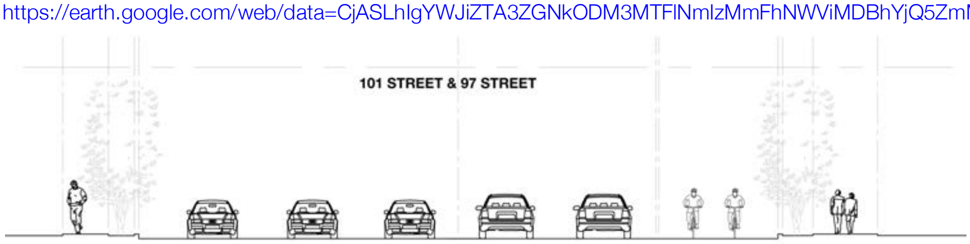


Figure 140. 97th Street & 101st Street Section. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Pedestrian Network

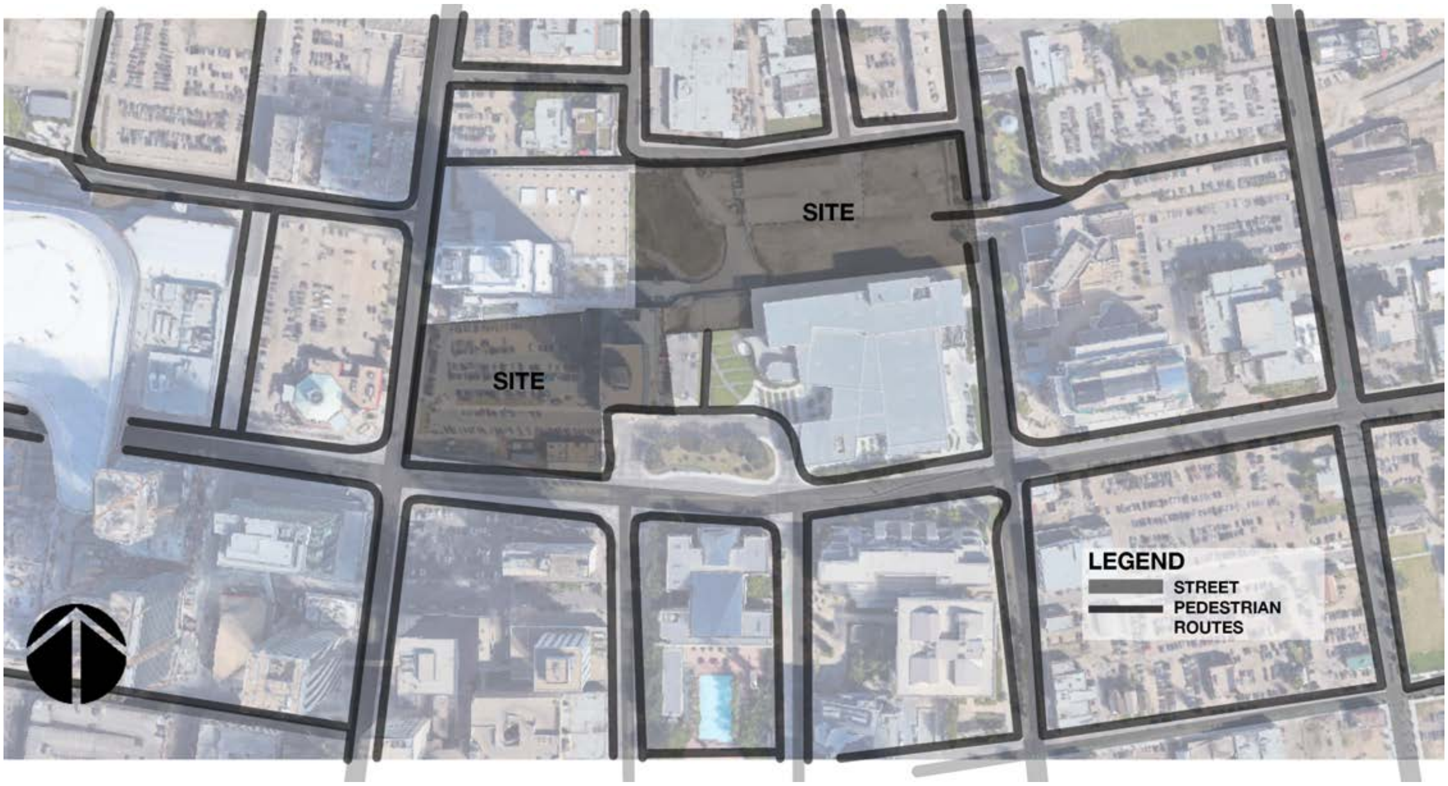


Figure 141. CN Lands Pedestrian Network. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Cycling Network

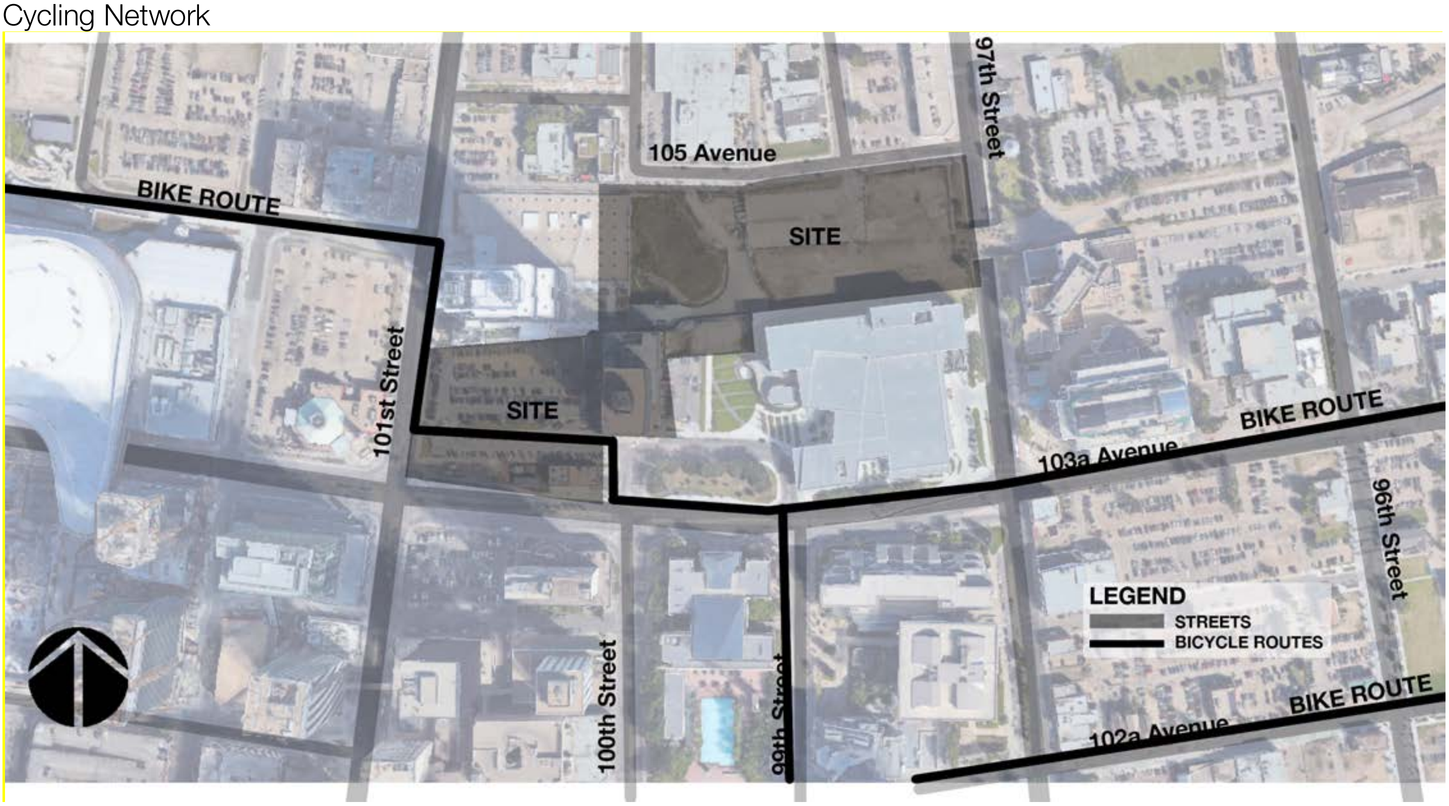


Figure 142. CN Lands Cycling Network. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

Public Transportation Network

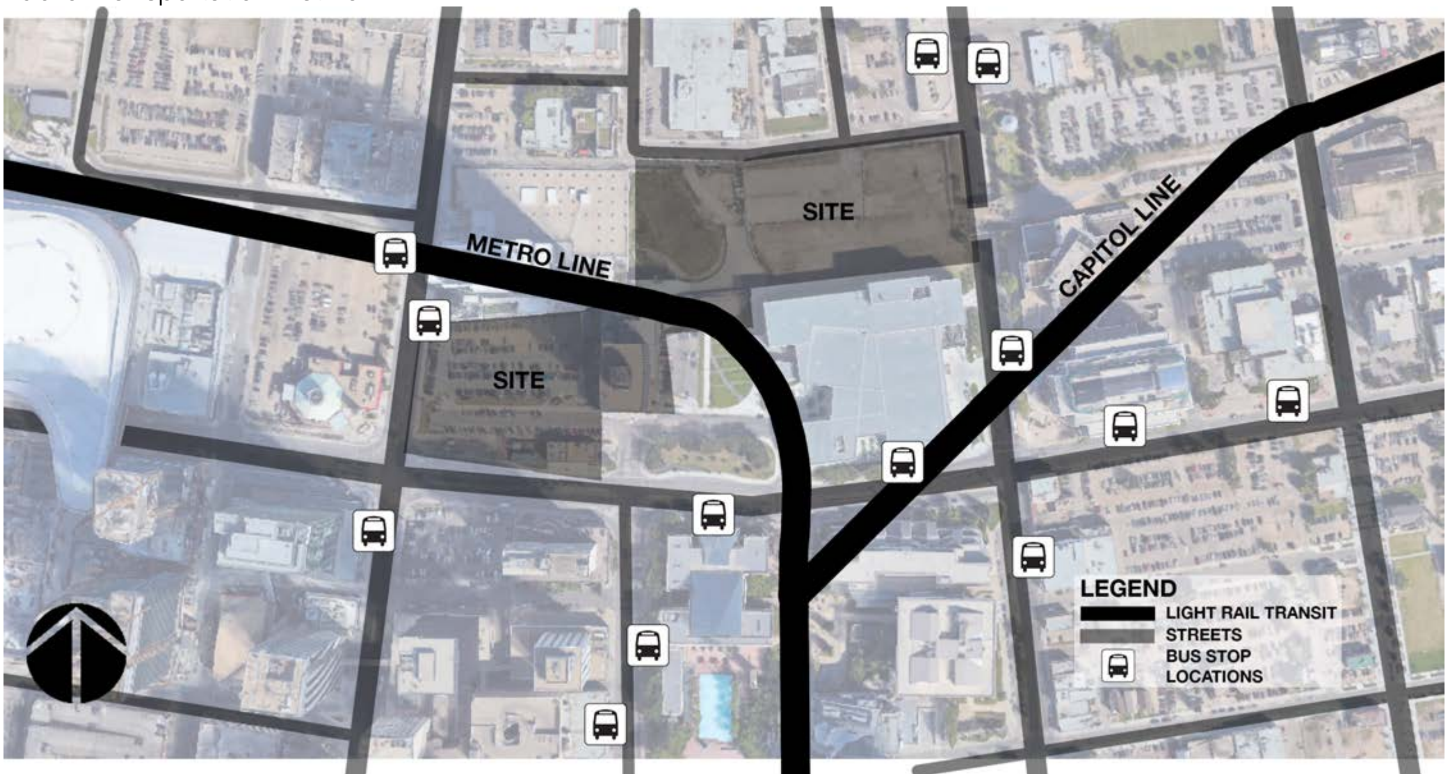


Figure 143. CN Lands Public Transit Network. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Parking Network

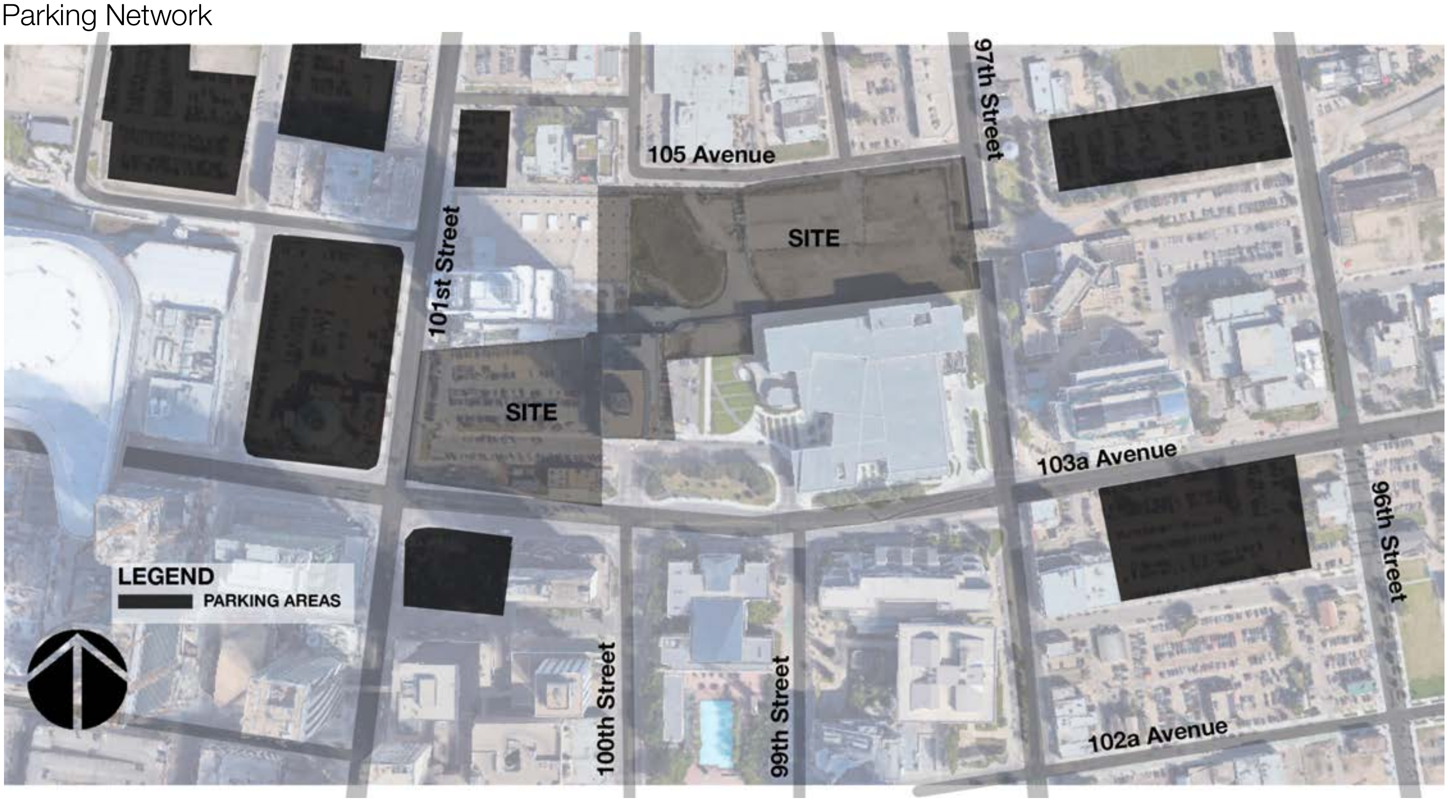


Figure 144. CN Lands Parking Network. Reprinted from Google Earth, by Google, 2018, adapted from
https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRolFZpZXc

Connectivity Network

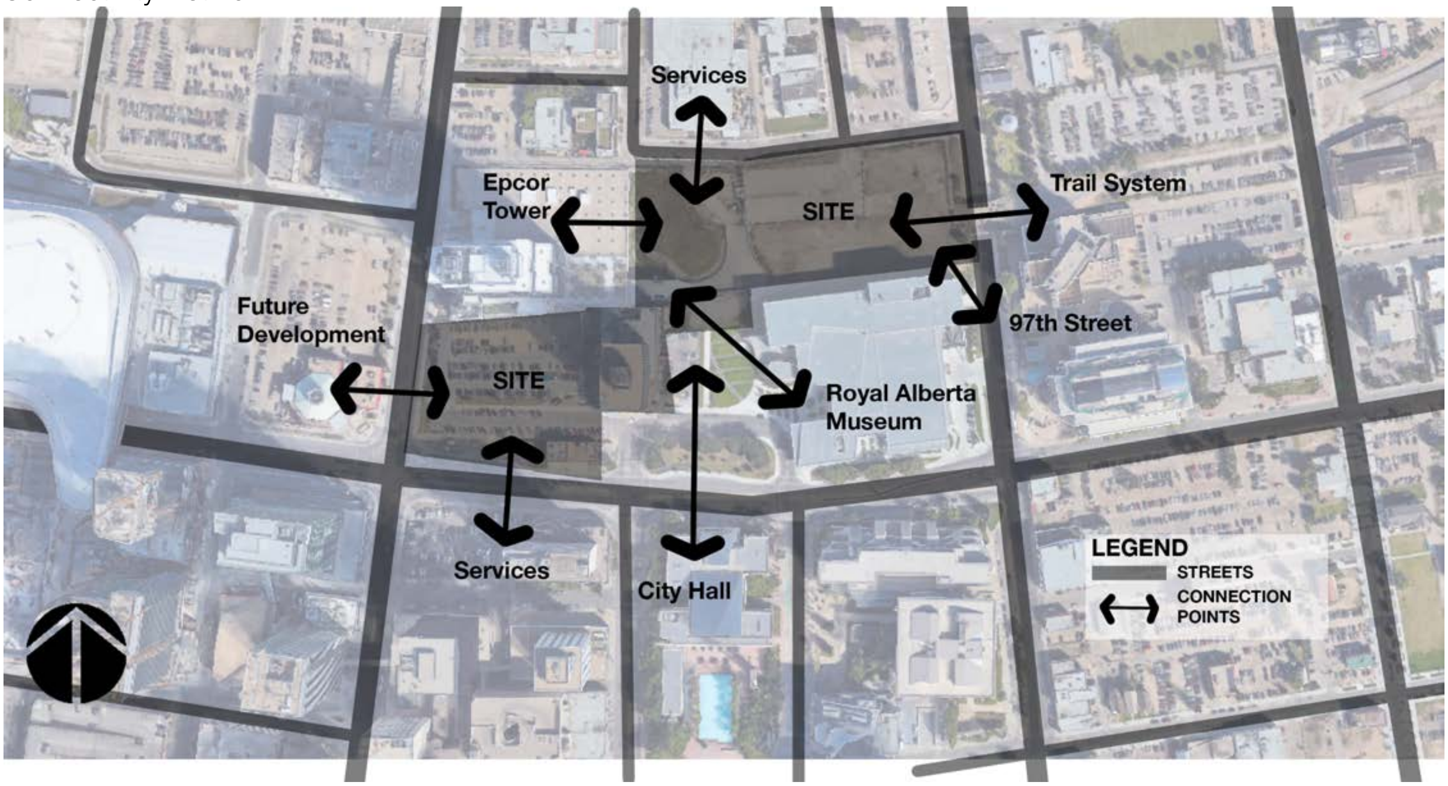


Figure 145. CN Lands Connectivity. Reprinted from Google Earth, by Google, 2018, adapted from https://earth.google.com/web/data=CjASLhIgYWJiZTA3ZGNkODM3MTFlNmIzMmFhNWViMDBhYjQ5ZmMaCkVhcnRoIFZpZXc

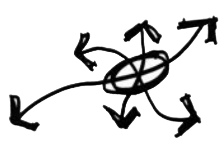
4.4 PROGRAM

The program of the revitalization will consist of a social housing and a social service development. It will also include some commercial use. The social housing component will consist of multiple unit layouts that provide flexibility. These units will be of varying sizes that allow for transition from the streets to permanent housing. Social services will consist of a medical centre, community centre and support centres; commercial use will consist of office space, retail, and leasable spaces.

4.5 CONCEPT

Below are the principles drawn from my research that will be utilized for my project. An overall principle is given in bold letters followed by considerations to each topic.

Community
Inclusion
Supportive
Transparency
Support System
Integration
Security



Connectivity
Building Connectivity
Site Connectivity
Site Integration
Green Spaces
Public Spaces
Urban Typology

Building Layout
Flexibility/Evolution
Versatile
Urban Typology
Deconstruction Principles
Scale
Shape

CHAPTER FIVE CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION

This Annotated Visual Argument research paper is a culmination of the research compiled with regard to a revitalized social housing network with the CN Tower Lands located in Edmonton, Alberta. The paper demonstrates the theories and framework utilized in deconstructivist architecture that could benefit a social housing development. This combined with the research conducted on current social housing and social services in Edmonton illustrates the importance of establishing a larger network of services to provide for those in need. The concept reflects the precedent studies and how they changed the way social housing and deconstructive architecture is viewed in cities, as my project aims to do in the city of Edmonton.

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RAIC690B: SYLLABUS DIPLOMA PROJECT

THE REVITALIZATION OF EDMONTON TOWER CN LANDS INTO SOCIAL HOUSING AND SOCIAL SERVICES SUPPORT HUB THROUGH THE UTILIZATION OF DECONSTRUCTIVIST ARCHITECTURE

FINAL DIPLOMA PROJECT PRESENTATION

Jason McConaghie
AB090001EDM

Royal Architecture Institute of Canada

RAIC SYLLABUS

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Can the Revitalization of Edmonton CN Tower Lands be turned Into a Social Housing And Social Services Support Hub Through the Utilization of Deconstructivist Architecture.

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1.3 ENDORSEMENT LETTERS

PART A PRELIMINARY DESIGN

BR2 ARCHITECTURE

March 29, 2019

To Whom It May Concern:

Re: Mr. Jason McConaghie – Thesis Preliminary Design Presentation, Approval and Endorsement

As a Thesis Committee Advisor for Mr. Jason McConaghie, I am endorsing his thesis preliminary design presentation entitled, "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub through the Utilization of Deconstructivist Architecture".

This preliminary design presentation was prepared and submitted by Jason McConaghie, has been approved and endorsed to contribute to Mr. McConaghie's partial fulfillment of the requirements for a professional diploma in architecture, based on the requirements of the Royal Architecture Institute of Canada Syllabus Program.

Yours truly

BR2 ARCHITECTURE

Steven Bushnell, Architect, AAA
Senior Partner
SB/cw

201, 10441-123 St. Edmonton, AB Canada T5N 1N8 T: 780.423.6606 F: 780.429.3962 E: Office@BR2architecture.com www.BR2Architecture.com

Steven Bushnell, Architect, AAA, AIBC, SAA, MRAIC, Partner
Jim Carey, C. Arch. Tech., AAA, Partner
Shaun Visser, Architect, AAA, AIBC, SAA, Partner
Derek Sampson, Sr. Tech., Partner

ACI ARCHITECTS INC

March 29, 2019

Re: Preliminary Design Presentation - Approval and Endorsement
Thesis of Mr. Jason McConaghie

To Whom it May Concern,

I am writing with regard to the preliminary design presentation of Jason McConaghie's thesis entitled "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub Through the Utilization of Deconstructivist Architecture".

Jason made his preliminary design presentation and submitted the supporting background information on Thursday March 28th 2019. I wholeheartedly endorse his efforts and the related materials as his contribution towards partial fulfillment of the requirements of the Royal Architectural Institute of Canada's Syllabus Program for a professional diploma in architecture. On this basis I recommend that Mr. McConaghie continue to progress along this path.

Sincerely,

Ron Nemeth, Architect, B.Arch., AAA, OAA
Thesis Committee Advisor

17225 - 102 AVENUE EDMONTON ALBERTA CANADA T5S 1J8 T: 780.486.6400 F: 780.486.6401 WWW.ACI-ARCH.COM

RON NEMETH, ARCHITECT, AAA, OAA, B.ARCH.
DARRYL REWNIAK, ARCHITECT, AAA, B.E.S., M.ARCH., MRAIC

1.3 ENDORSEMENT LETTERS
PART B FINAL DESIGN

BR2 ARCHITECTURE

May 10, 2019

To Whom It May Concern:

Re: Mr. Jason McConaghie – Thesis Design Presentation, Approval and Endorsement

As a Thesis Committee Advisor for Mr. Jason McConaghie, I am endorsing his thesis design presentation entitled, "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub through the Utilization of Deconstructivist Architecture".

This design presentation was prepared and submitted by Jason McConaghie, has been approved and endorsed to contribute to Mr. McConaghie's partial fulfillment of the requirements for a professional diploma in architecture, based on the requirements of the Royal Architecture Institute of Canada Syllabus Program.

Yours truly

BR2 ARCHITECTURE

Steven Bushnell, Architect, AAA
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Jim Carey, *C. Arch. Tech., AAA, Partner*
Shaun Visser, *Architect, AAA, AIBC, SAA, Partner*
Derek Sampson, *Sr. Tech., Partner*

ACI ARCHITECTS INC

May 15th 2019

Subject - Architectural Thesis Presentation
RAIC Syllabus Program
Jason McConaghie

Madam Sir,

I have attentively followed Jason's sustained progress through the development of his thesis design on the subject of *The revitalization of Edmonton CN Tower lands into a social housing and social services support hub through the utilization of deconstructivist architecture".*

His approach was analytical, systematic and pragmatic yet highly creative. Backed by a progressive champion and in the right economic climate, Jason's project would not only serve a population in dire need of such accommodations and services but could also become a strong architectural marker on the Edmonton skyline, with the added benefit of re-use of an iconic building.

In my capacity as mentor/adviser to Jason throughout his research and design activities, I recommend that his design presentation be accepted as the next step towards fulfilling the requirements of the RAIC Syllabus diploma program.

Regards,

Ron Nemeth
Architect

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RON NEMETH, ARCHITECT, AAA, OAA, B.ARCH.
DARRYL REWNIAK, ARCHITECT, AAA, B.E.S., M.ARCH., MRAIC

1.3 ENDORSEMENT LETTERS

PART C FINAL PRESENTATION

BR2 ARCHITECTURE

June 5, 2019

To Whom It May Concern:

Re: Mr. Jason McConaghie – Thesis Design Presentation, Approval and Endorsement

As a Thesis Committee Advisor for Mr. Jason McConaghie, I am endorsing his thesis design presentation entitled, "The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub through the Utilization of Deconstructivist Architecture".

This final design presentation was prepared and completed by Jason McConaghie, has been approved and endorsed to contribute to Mr. McConaghie's fulfillment of the requirements for a professional diploma in architecture, based on the Royal Architecture Institute of Canada Syllabus Program.

Yours truly

BR2 ARCHITECTURE

Steven Bushnell, Architect, AAA
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Jim Carey, C. Arch Tech., AAA, Partner
Shaun Visser, Architect, AAA, AIBC, SAA, Partner
Derek Sampson, Sr Tech., Partner

ACI ARCHITECTS INC

May 30th 2019

Subject - Final Design Presentation of Thesis
Mr. Jason McConaghie

To Whom It May Concern,

This endorsement is in recognition of Jason McConaghie's final thesis design presentation on the topic of *The Revitalization of Edmonton CN Tower Lands into a Social Housing and Social Services Support Hub Through the Utilization of Deconstructivist Architecture,* in the context of the RAIC Syllabus Diploma Program.

Jason completed his presentation on Tuesday May 28th 2019. I recommend that it be accepted and approved in support of his efforts towards fulfilling the requirements of the RAIC's program for a professional diploma in architecture.

Please do not hesitate to contact me for any additional information.

Regards,

Ron Nemeth
Architect AAA OAA

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DARRYL REWNIAK, ARCHITECT, AAA, B.E.S., M.ARCH., MRAIC

RAIC690B: SYLLABUS DIPLOMA PROJECT

THE REVITALIZATION OF EDMONTON TOWER CN LANDS INTO SOCIAL HOUSING AND SOCIAL SERVICES SUPPORT HUB THROUGH THE UTILIZATION OF DECONSTRUCTIVIST ARCHITECTURE

PART A

PRELIMINARY PRESENTATION

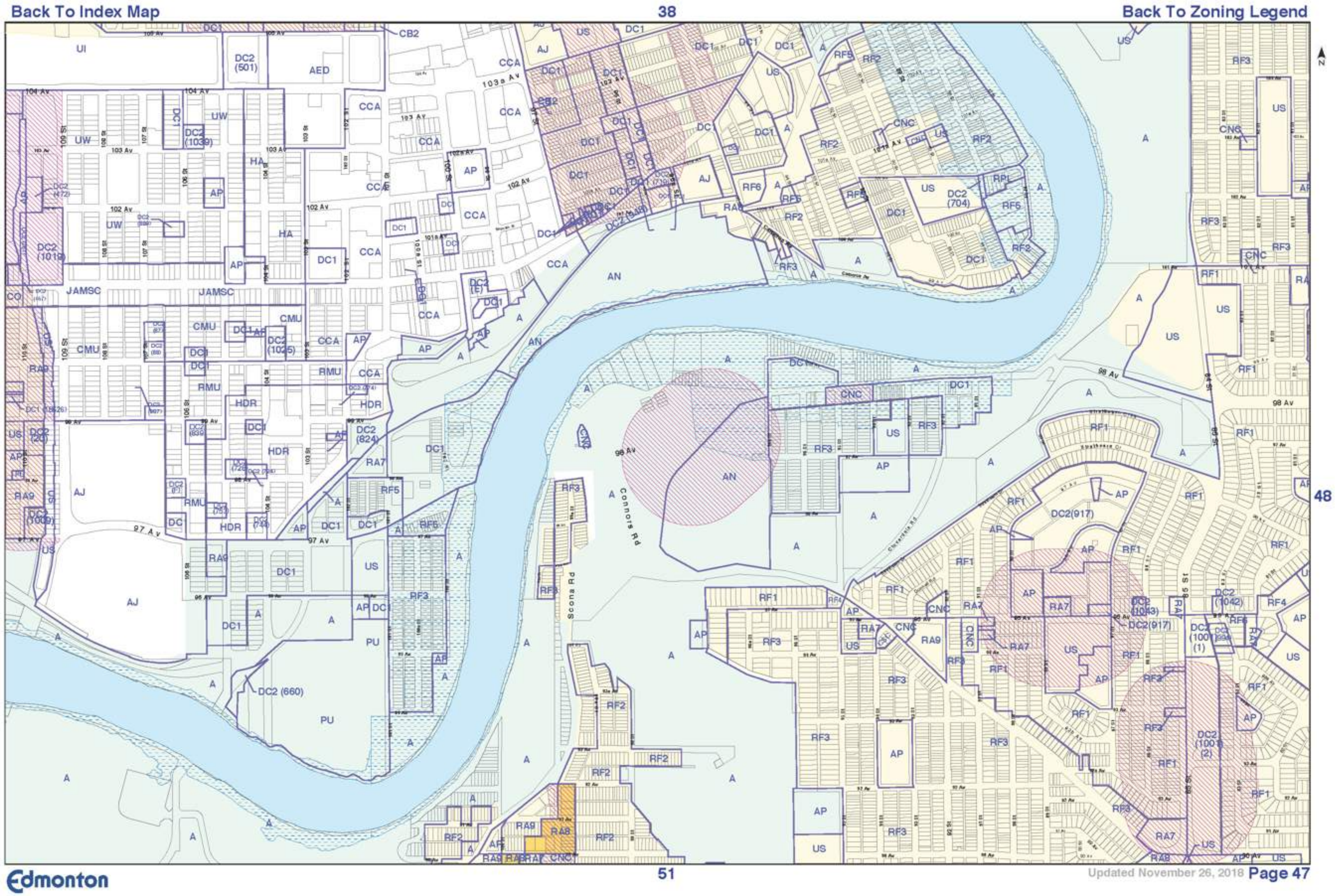
RAIC
SYLLABUS

PART A

A.1 ZONING

RAIC SYLLABUS

A.1.1 ZONING MAP



A.1.2 BYLAW REVIEW

BYLAW REVIEW
CN TOWER LANDS

ITEM	Edmonton Zoning Bylaw 12800	Bylaw Reference
1	**Legal Description of Property:** **Municipal Address:** **Project Type:**	
2	**Zoning:** CCA – Core Commercial Arts Zone	910.5
	Permitted Uses: Residential, Child Care Services, Health Services, Community Recreation Services, General Retail Store,	910.5.2
3	**Floor Area Ratio**	910.5.4.a
	The Maximum floor area ratio east of 100 street shall be 8.0;	
	The maximum floor area ratio west of 100 street shall be 12.0;	
	Notwithstanding 4(a)ii, the maximum floor area ratio shall be 13.1 for the area bounded on the east by 100 street, on the north by jasper ave, on the south by Macdonald Drive and on the west by the north/south lane and pedestrian walkway.	
4	**Building Height**	910.5.4.b
	The maximum permitted height shall not exceed 150m;	
	The maximum discretionary height shall not exceed 200m;	
	Where the maximum height exceed 150m, the development officer shall ensure the design of the built form, its profile, sculpting, and detailing, as well as the quality of its material is such that it is a significant positive addition to the city's skyline.	
5	**Setbacks:**	910.5.4.c
	Front Setback: between 1.5 to 2.5m, except that: ▪ the Setback on the north side of 103A Avenue between 97 and 101 Street shall be 10.0m; ▪ the Setback for properties fronting on the south side of 103A Avenue between 97 and 101 Street shall be 5.0m; ▪ the Setback for properties fronting on the south side of 104 Avenue between 101 and 103 Streets shall be 5.0m ▪ the Setback from the front property line for all other buildings not covered by subsection b) and c) located west of 100 Street and south of 103A Avenue, and west of 101 Street and south of 104 Avenue shall have a zero to 2.5m front Setback; Side Setbacks: Buildings shall be built to the side property lines; and ▪ Notwithstanding the above, the Development Officer shall have regard for the existing block face Setback and consideration of the Urban	

CN TOWER LANDS | BYLAW REVIEW | FEBRUARY 2019 | PAGE 1

	Design Framework for Downtown Streets within the Capital City Downtown Plan, Bylaw 15200 in determination of the Setback.	
6	**Amenity Area:**	910.5.4.d
	i. Notwithstanding subsection 46(2), Amenity Area shall be provided in accordance with the following: A. A minimum Amenity Area of 3% of gross floor area of residential uses, to a maximum of 6% shall be required for buildings over 2000m2 to the satisfaction of the Development Officer. Amenity Areas may include meeting rooms, fitness facilities, outdoor space, and shall be exempt from FAR calculations. B. Non-residential buildings on sites of less than 1350m□ shall not be required to provide Amenity Area. C. Non-residential or mixed-use buildings on sites greater than 1350m□ shall provide a minimum Amenity Area of 3% on the non-residential uses to a maximum of 6% of the development. Amenity Areas may include interior landscaped open spaces, arcades, atriums, plazas and gardens and shall be exempt from FAR calculations.	
7	**Street Interface:**	910.5.5.a
	i. Buildings shall reflect the street types identified in the Urban Design Framework for Downtown Streets within the Capital City Downtown Plan, Bylaw 15200, emphasizing specific boulevard treatments to enhance the pedestrian oriented character of the Commercial Cultural Core. ii. Buildings shall be designed to accommodate Commercial Uses to strengthen the pedestrian oriented shopping area through the following: ▪ The ground Storey shall have a minimum Height of 3.5m, ▪ Architectural treatment of new developments and substantial renovations shall ▪ have windows on the front façade of the building at each storey, and the placement and type of windows shall allow viewing into the building, ▪ Major shopping complexes and large-format stores over 2000m2 shall contain smaller scale retail spaces with direct access to the street to maintain a rhythm of fine-grained retail establishments at Grade. All street level Commercial Uses that abut a street shall provide a primary direct access to the street, ▪ A minimum of 60% of street frontage for retail, services, and other Commercial Uses, and ▪ The geodetic elevation of the top of the floor on the level that is directly above ▪ Grade shall not exceed the geodetic elevation of the abutting public sidewalk by ▪ more than 0.3 m. iii. The development of the abutting public realm shall be in accordance with the standards outlined in the Urban Design Framework for Downtown Streets within the Capital City Downtown Plan, Bylaw 15200.	

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A.1.2 BYLAW REVIEW

	iv. Public Amenity Area ▪ A. Yards, including useable outdoor spaces, shall continue the public sidewalk paving materials, finish, and pattern. In addition, soft landscaping may be required at the Discretion of the Development Officer.	
8	**Street Wall Design:** i. The building façade that comprises a portion of the Street Wall shall range in Height from 9m to 26m. The Development Officer may vary street wall Heights in consideration of the following: ▪ The visual, sun/shadowing, and other microclimatic impacts on adjacent residential development; and ▪ The recommendations, and mitigative measures specified in any required technical studies. ii. Infill developments shall ensure that the Height of the building façade or podium base is within 7m of the adjacent buildings façade or podium.	910.5.5.b
9	**Entrances and Corners:** i. Ground level retail Uses shall open to the street rather than an internal atrium. ii. In mixed-Use buildings, Residential Uses shall have access at Grade that is separate from the commercial premises. iii. Buildings at corners shall provide courtyards, major entry ways or distinctive architectural features consistent with the style of the building or influences on the other corners of the intersection to enhance pedestrian circulation and, where applicable, enhance axial views. iv. Buildings shall be designed and oriented to face the front property line with entrances that are clearly visible, except on double fronting streets where the building shall be designed to front both the street and the avenue.	910.5.5.c
10	**Tower Floor Plate, Stepbacks, and Spacing** i. Buildings greater than 26m in Height shall be allowed in the form of a podium plus Tower composition or other configuration that ensures design treatments are compatible with the façades of adjacent buildings in the immediate area. ii. The mid-level of Towers shall employ building Stepback, Tower spacing and sculpting to reduce building mass and augment views, light and privacy. ▪ Towers shall Stepback from the front podium wall a minimum of 4.5m. ▪ The minimum space between non-residential Towers shall be 20m. ▪ The minimum space between a residential Tower and any other Tower shall be 25 m. ▪ The Development Officer may vary the Tower spacing in consideration of the ▪ following: o The visual sun/shadowing, and other microclimatic impacts on adjacent residential development; and	910.5.5.d

	o The recommendations, and mitigative measures specified in any required technical studies. iii. Towers, whether in the form of freestanding independent structures, or a number of associated structures within a complex shall be designed, oriented and constructed to maximize views, articulate the downtown skyline, and allow sunlight penetration at the street level, in public spaces, plazas, parks and amenity areas. iv. Developments less than 26m in Height on sites 700m□ or less, may not be required to provide Floor Plate reduction.	
11	**Building Façade, Materials, and Exterior Finishing** i. Building façades shall incorporate architectural design details or features that recognize the predominant urban character of the street, as identified in the Urban Design Framework for Downtown Streets within the Capital City Downtown Plan, Bylaw 15200. ii. Building façades must be strongly articulated at regular increments to add variety, rhythm, and a human scaled dimension along the block face. iii. Building design and façades shall incorporate treatments such as awnings, canopies, window openings, reveals, offsets, multiple entrances, arcades, columns, quality materials, interesting design, fenestrations, double Height entrances, parks, plazas, appropriate landscaping, colour, and other architectural features. iv. Buildings shall emphasize horizontal and vertical elements as well as finer grain elements including windows, balconies, shadow lines and textures to distinguish between residential and non-residential buildings. v. Building materials shall be sustainable, durable, high quality and appropriate for the development within the context of the Commercial Cultural Core district. The contextual fit, design, proportion, quality, texture and application of various finishing materials shall be to the satisfaction of the Development Officer. vi. All exposed building facades shall have consistent and harmonious exterior finishing materials, vii. Infill developments shall be sensitive to the rhythm, articulation, design character, scale, façade and materials colours and textures of the block face.	910.5.5.e
12	**Roof Tops and Skyline Effects** i. The top level(s) of Towers shall contribute to the 'signature' of the building and the City's skyline through sculpting of the upper floors and roofs. ii. Rooftops of Towers shall be designed with penthouses to accommodate mechanical penthouses, reduce the heat island effect, facilitate energy efficiency and contribute to a distinctive and unique Downtown skyline. The design of the roof may include a combination of green roofs, Solar Collectors, patios, and public or private open spaces.	910.5.5.f

A.1.2 BYLAW REVIEW

	iii. All minor mechanical equipment on a roof of any building shall be concealed by screening in a manner compatible with the architectural character of the building or concealed by incorporating it within the building. iv. Wherever podium roofs are visible from adjacent developments, the development shall provide enhancements to improve rooftop aesthetics. Enhancements may include patios, gardens, green roofs or additional Amenity Area. v. The Tower Floor Plate(s) of the top 4 floors shall be reduced a further 10% to 15%, to the satisfaction of the Development Officer, through Stepbacks to create the articulation, visual interest, and reduced massing effects.	

13	**Additional Development Regulations for Specific Uses and Streets**	910.5.6
	a. For new buildings, Residential Uses shall not exceed 90% of gross Floor Area and shall not be developed as stand-alone buildings or at Grade. b. Notwithstanding the requirements of subsection 910.5(4)(a), Hotels shall be allowed an additional Floor Area Ratio of 4.0 where the Development Officer is satisfied that new developments fit within the urban context of the area and that adverse environmental impacts, such as sun shadow and wind are minimized. c. Notwithstanding the requirements of Section 910.5(4)(g), Minor Digital On-premises Signs shall: ▪ i. be prohibited when the Copy of the Minor Digital On-premises Signs faces the Civic Precinct area on Sites abutting 103A Avenue to the north, 102 Avenue NW to the south, 99 Street NW to the east, and 100 Street NW to the west.	

14	**Off-Street Parking and Loading Regulations**	54.1.2.h
	h. In the case of the multiple Use of a Site, the Development Officer shall calculate the vehicular parking, Bicycle Parking and total off-street loading requirement for each individual Use and the total shall be deemed to be the required vehicular parking, Bicycle Parking or off-street loading for the Site, unless the applicant can demonstrate that there is complementary use of the parking or loading facilities which would warrant a reduction in the requirements. Where such reduction is made, this shall be considered a variance and the Development Officer shall state the reduction and the reasons for it on the Development Permit.	

15	**Off-Street Parking and Loading Regulations**	54.2

	1. Number of Vehicular Spaces b. Where the applicant for a Development Permit can demonstrate through a parking impact assessment completed in accordance with Section 14.11 that the parking requirement for the proposed development is less than any minimum or more than any maximum set out in Section 54.2 Schedule 1, the Development Officer may allow a reduction from the minimum or an increase from the maximum in the number of parking spaces.	54.2.1
	3. Landscaped Islands Within Parking Areas a. Every off-street parking or loading area designed to accommodate 30 or more vehicles at ground level shall incorporate landscaped open space within the parking area, calculated on the basis of 2.0 m2 of landscaped island area per required parking and loading space. This shall be Landscaped in accordance with Section 55.3 of this Bylaw. b. For parking areas containing parking for 40 or more vehicles, a minimum of two landscaped islands shall be required. These islands shall be placed to provide visual relief, to assist vehicular circulation and to organize large areas of parking into smaller cells. The number of islands provided shall be to the satisfaction of the Development Officer	54.2.3
	4. Vehicular Parking Dimensions and Configuration a. All required parking spaces shall be clear of any access driveways, aisles, ramps, columns, Signs or other similar obstructions, and shall conform to the following minimum dimensions: • i. except as provided below, each required off-street parking space shall be a minimum of 2.6 m width with a minimum clear length of 5.5 m exclusive of access drives or aisles, ramps, columns. Parking spaces shall have a vertical clearance of at least 2.0 m. For parallel parking, the length of the parking spaces shall be increased to 7.0 m, except that an end space with an open end shall be a minimum length of 5.5 m. • ii. expanded parking spaces shall be a minimum of 2.9 m in width and 5.5 m in length, and shall be painted with double line markings; • iii. for parking spaces other than parallel parking spaces, up to 30% of the required parking spaces may be of a length shorter than that required above, to a minimum of 4.6 m. Such spaces shall be clearly signed as small car spaces, easily located and convenient to use; • iv. where the use of a parking space is limited on both sides by a wall or a column, the unobstructed width from face to face of the obstructions shall be 3.0 m, and if in this case, a building door opens into the parking space on its long side, the unobstructed width shall be 3.3 m. • v. where the use of a parking space is limited to one side by a wall or a column, the unobstructed width of the parking space shall be 2.7 m, and	54.2.4

A.1.2 BYLAW REVIEW

	if in this case, a building door opens into the parking space on its long side, the unobstructed width shall be 3.0 m. • vi. aisles shall be a minimum of 7.0 m wide for 90° parking, 5.5 m wide for 60° parking, and 3.6 m wide for 45° parking and parallel parking. • vii. disabled parking spaces shall: o be a minimum of 2.4 m in width; o be a minimum of 5.5 m in length; o be located adjacent to a 2.4 m wide access aisle where no parking shall be allowed and which shall be marked to indicate no parking is permitted; and o be located adjoining to or near to a barrier free path of travel leading to a barrier free entrance. • viii. where parking spaces are located with access directly off a Lane, the required width of the aisle may be reduced by the width of the Lane, but the entire parking space must be provided on the site	

16	**Vehicular Parking Requirements (Residential)**		54.2 Schedule 1(b)
	Dwelling Size	Minimum	
	Studio / Bachelor	0	
	1 Bedroom Dwelling	.4	
	2 Bedroom Dwelling	.8	
	3 or more bedroom Dwelling	.8	
	Visitor parking shall be provided at a minimum rate of 0 visitor parking spaces for the first 7 Dwellings, and 1 visitor parking space per 7 Dwellings thereafter. Visitor parking spaces shall be readily available to the primary building entrance for each multi-unit residential building on Site, and be clearly identified as visitor parking, to the satisfaction of the Development Officer		

	Parking Calculation				
16a	Dwelling Size	# of Dwellings	Factor	Total # of Stalls Required	
	Studio / Bachelor	45	1:0	45 *0 = 0 Stalls	
	1 Bedroom Dwelling	65	1:.4	65 *1 = 26 Stalls	
	2 Bedroom Dwelling	65	1:.8	65 *.8 = 52 Stalls	
	3 Bedroom Dwelling	30	1:1	30 *1 = 30 Stalls	
	4 Bedroom Dwelling	20	1:1	20 *1 = 20 Stalls	
			Total Required # of Stalls	**128 Stalls**	

	1 Visitor stall per 10 Dwelling Units	225/10 = 12.8 Stalls = 13 Stalls	
	Total Required # of Visitor Stalls	**13 Stalls**	

17	**Vehicular Parking Requirements (Child Care)**	54.2 Schedule 1(b)
	a. Passenger pick-up/drop-off spaces shall be provided at the rate of 2 pick-up/drop-off spaces for the first 10 children, plus 1 additional pick-up/drop-off space for every 10 additional children. i. Passenger pick-up/drop-off spaces shall be designated with signs to reserve the parking spaces for Child Care Service pick-up/drop-off, to the satisfaction of the Development Officer. ii. Passenger pick-up/drop-off spaces shall be located as close as possible to the main entrance used by the Child Care Service, and shall not be located further than 100 m from the main entrance used by the Child Care Service. The distance between the farthest parking space in the pickup/drop-off area and the main entrance of the Child Care Service shall be measured along the shortest publicly accessible pedestrian route. iii. An on-street loading zone shall satisfy a portion of the passenger pick-up/drop-off parking space requirement without a variance if the Development Officer, after consultation with Transportation Operations is satisfied with the proposal. b. Employee parking shall be provided at the rate of: I. A minimum of 1 parking space per 400.0 m2 of Floor Area to a maximum of 1 parking space per 200.0 m2 of Floor Area	

	Parking Calculation				
17a	Number of Kids	# of Dwellings	Factor	Total # of Stalls Required	
			Total Required Drop Off Stalls	**40 kids = 5 Stalls**	
	1 Staff stall per 200.0 m2 of Floor Area			330/200 = 1.65 Stalls = 2 Stalls	
			Total Required # of Staff Stalls	**2 Stalls**	

18	**Vehicular Parking Requirements (Remaining)**	54.2 Schedule 1(b)
	Minimum Parking Space Required (space/sq. m of GFA) = 1.0 Per 400m2	

	Parking Calculation		
18a	**Building Area / 400**	**5275m2 / 400 = 13 stalls**	

A.1.2 BYLAW REVIEW

	Total Required # of Stalls	**13 Stalls**	

19	**Bicycle Parking Facility**	54.3
	2. Size and Location of Bicycle Parking Facilities a. Each Bicycle Parking space shall be a minimum of 0.6 m in width with a minimum clear length of 1.8 m. Bicycle Parking spaces shall have a vertical clearance of at least 2.0 m. b. Required Bicycle Parking spaces shall be wholly provided on the same Site as the building. c. Adequate access to and exit from individual Bicycle Parking spaces shall be provided with an aisle of not less than 1.5 m in width, to be provided and maintained beside or between each row of Bicycle Parking. d. Required Bicycle Parking spaces and accesses shall be located on Hardsurfaced areas. e. Bicycle parking shall be separated from vehicular parking by a physical barrier or a minimum 1.5 m of open space. f. Bicycle Parking spaces shall be visibly located where possible and provided in one or more of the following ways: ▪ secure bicycle storage rooms, lockers, racks, railings or other such device inside the building, preferably at the ground level; ▪ secure bicycle storage rooms, lockers, racks, railings or other such device in any Accessory parking area; or ▪ iii. within any Yard of a Site but not more than 15.0 m from a principal entrance of the building, except: in the case of educational services developments where the students are restricted from using the principal entrance of the building, Bicycle Parking spaces may be provided in any Yard of a Site, no more than 15.0 m from the principal entrance of the building designated for student use.	

	Bicycle Parking Calculation				
19a	40% of the number of vehicular parking spaces required under Section 54.2 Schedule 1(B) with 5 Bicycle Parking spaces being the minimum to be provided. At least 10% of Bicycle Parking spaces shall be short term spaces				
	Number of Parking Stalls	Percentage of Bikes	Calc	Total # of Stalls Required	
	161 Stalls	40%	161 * 40%	64.4 Bike Stalls	
	Total Required # of Bicycle Parking Stalls			**65 Bike Stalls**	

20	**Off-Street Vehicular Loading**	54.3

	2. Location of Loading Space a. Off-street loading spaces shall be provided entirely within the property of the development being served, and shall be subject to all Setback requirements specified elsewhere in this Bylaw. b. Off-street loading shall be oriented away from residential developments. c. All required loading spaces shall be clear of any access driveways, aisles, ramps, columns, Signs or other similar obstructions 3. Size and Access a. Each off-street loading space shall be of adequate size and accessibility to accommodate the vehicles expected to load and unload. Each required loading space shall be a minimum of 3.0 m in width, a minimum of 9.0 m in length and maintain a minimum overhead clearance of 4.0 m, unless larger dimensions are required, having regard to the type of vehicle loading and unloading without projecting into a public roadway. b. Access to any loading area shall be provided, wherever possible, internally to the development or from a Lane abutting the development. c. Access to any loading area shall be arranged such that no backing or turning movement of vehicles going to or from the Site causes interference with traffic on the abutting streets or Lanes	

	Bicycle Parking Calculation			
	Up to 2 800 m2		1 loading stall	
	Each additional 2 800 m2 or fraction thereof 1		1 additional loading stall	
	Building Area	Factor	Calcs	
	7808	1/ 2 800 m2	7808/2800 = 2.78 Stalls	
	Total Required # of Loading Stalls		**3 Stalls**	

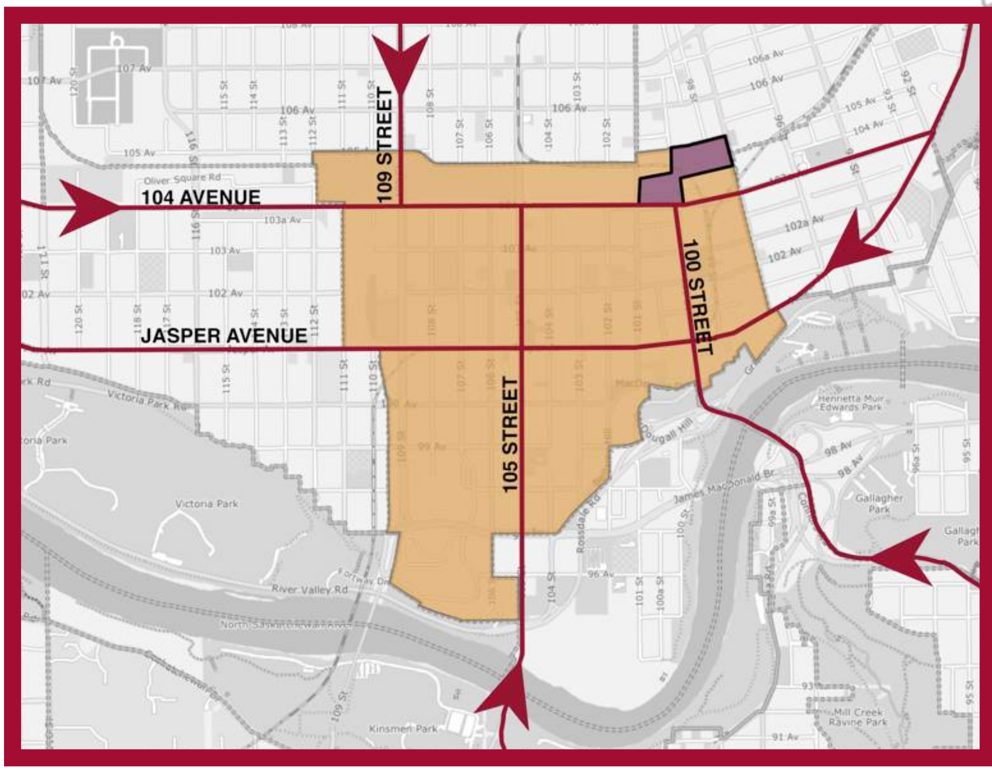
PART A

A.2 PLANNING

RAIC SYLLABUS

A.2.1 DISTRICT

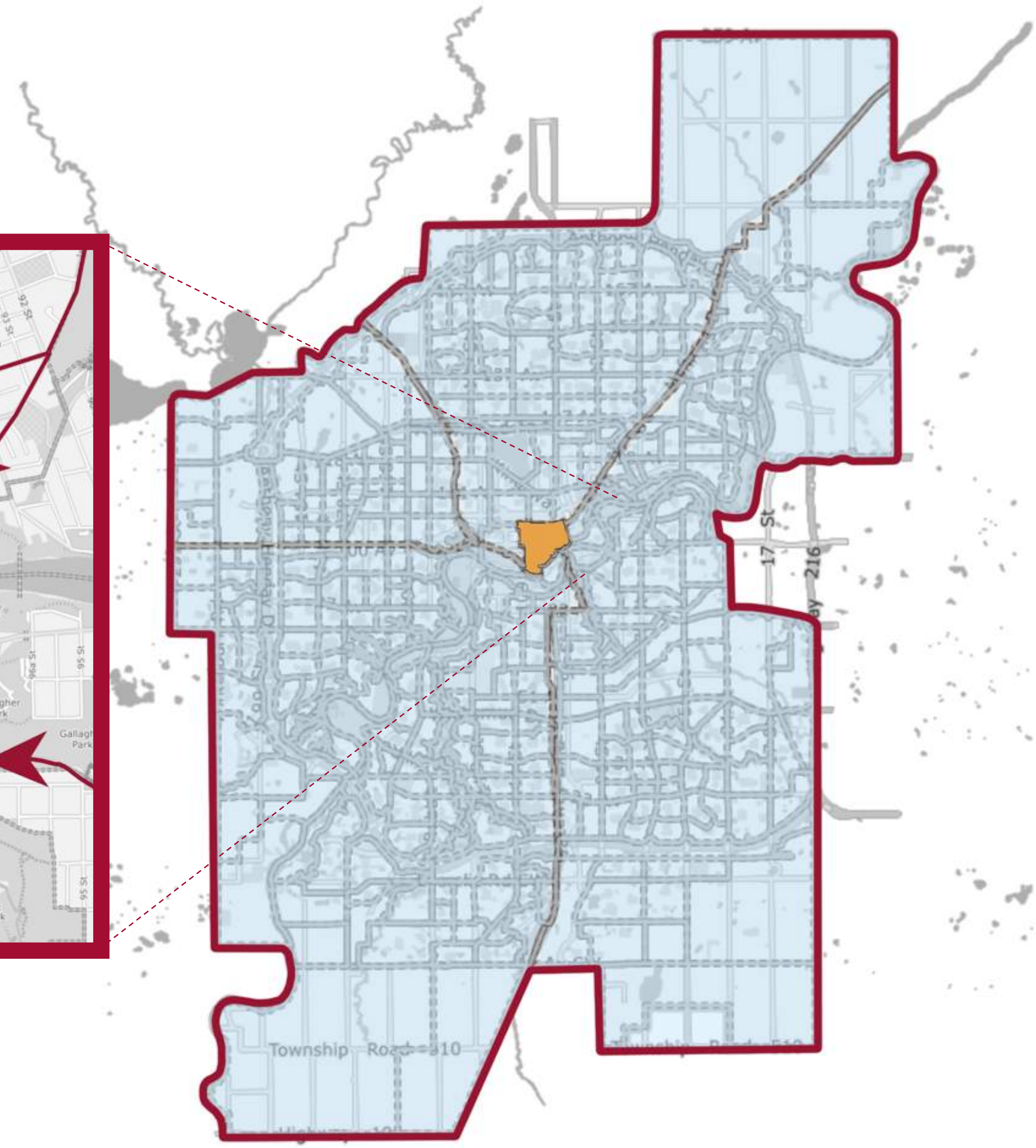
districts: areas characterized by common characteristics



NEIGHBOURHOOD DISTRICT

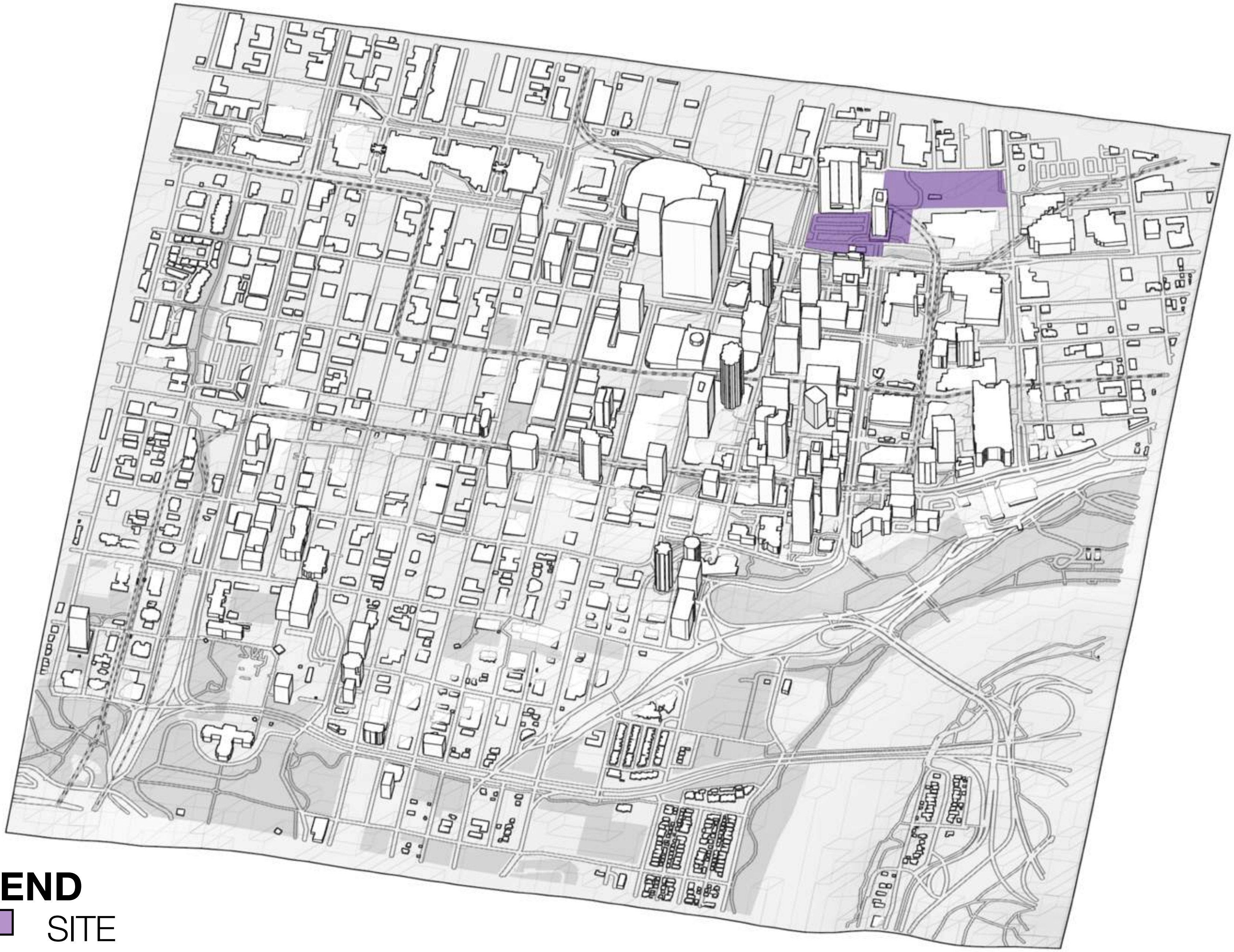
LEGEND

SITE



EDMONTON CITY LIMITS MAP

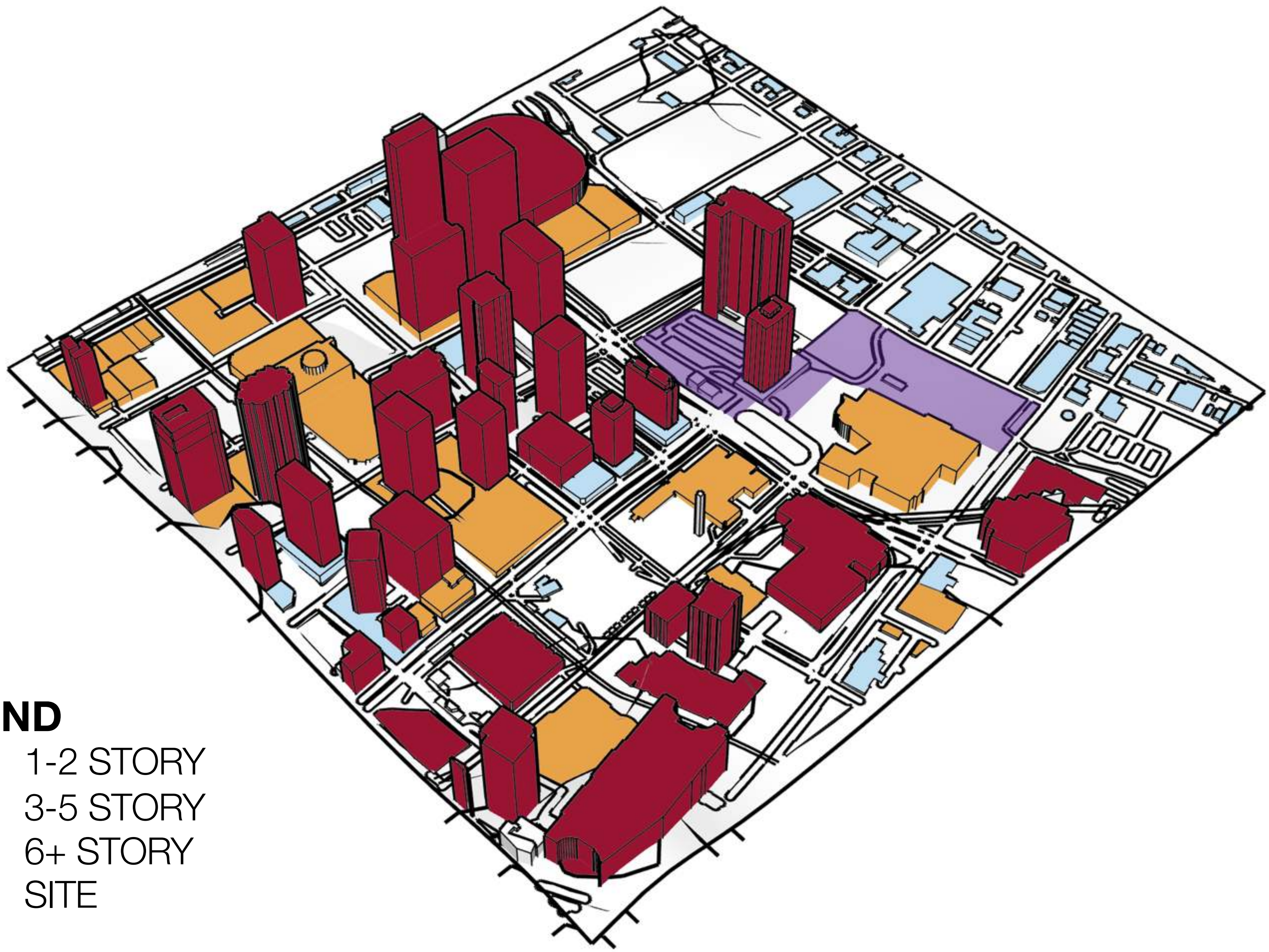
A.2.2 DOWNTOWN DISTRICT



LEGEND

SITE

A.2.3 DISTRICT - HEIGHT



LEGEND

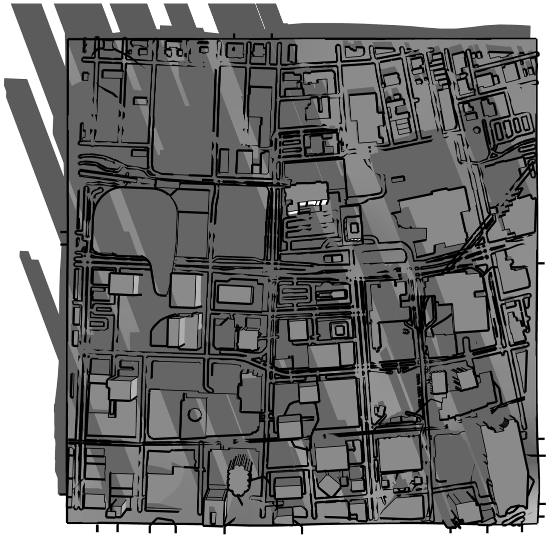
- 1-2 STORY
- 3-5 STORY
- 6+ STORY
- SITE

A.2.4 DISTRICT - USE

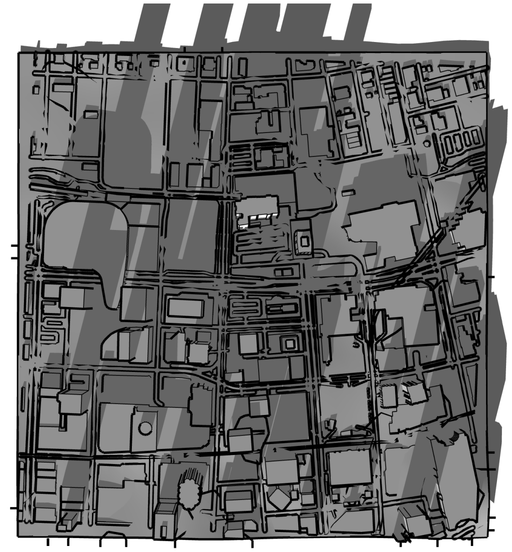
LEGEND

- RESIDENTIAL
- OFFICE/MIXED
- RECREATION
- CULTURAL
- GOVERNMENT
- RETAIL
- SERVICE
- PARKING/WAREHOUSE
- SITE

A.2.5 EXISTING SHADOW STUDY



JANUARY 10AM



JANUARY NOON

JANUARY 3PM

AUGUST 10AM

AUGUST NOON

AUGUST 3PM

A.2.6 EXISTING SITE

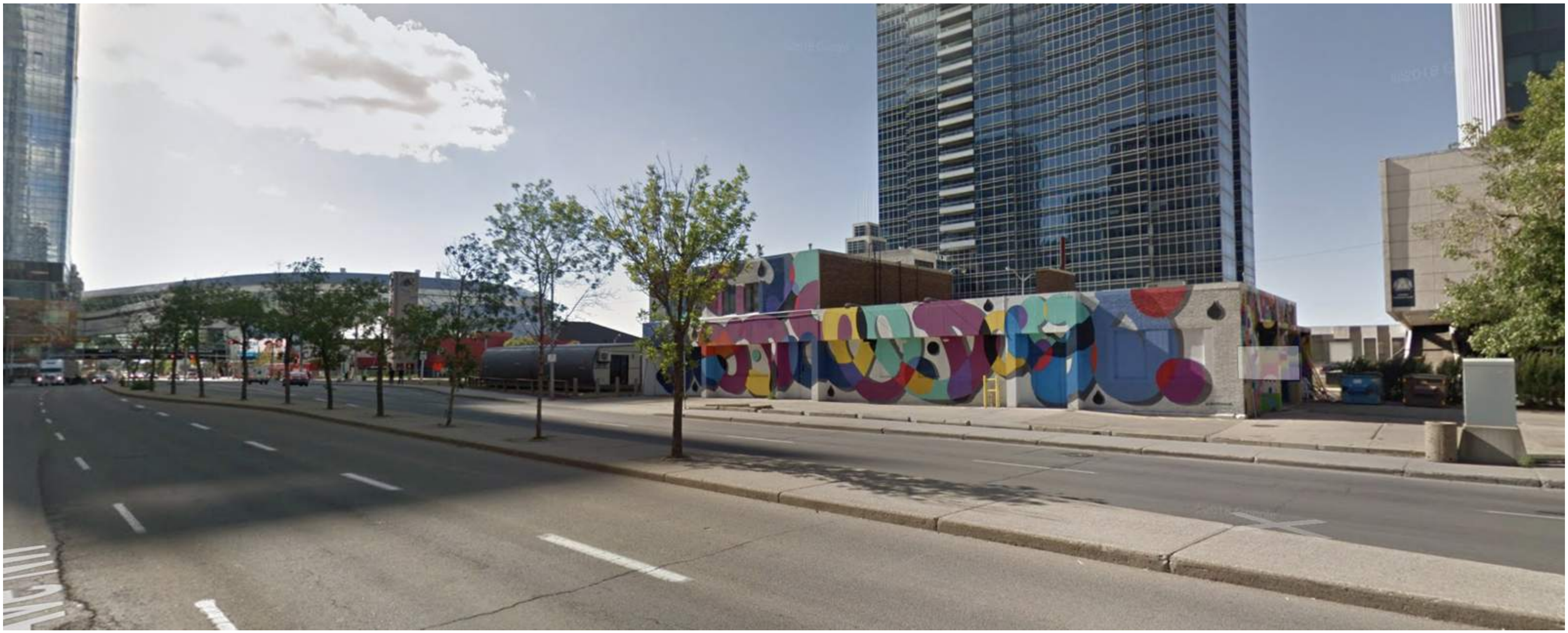
A.2.7 EDGES

ROYAL ALBERTA MUSEUM SITE SOUTH EDGE

A.2.7 EDGES

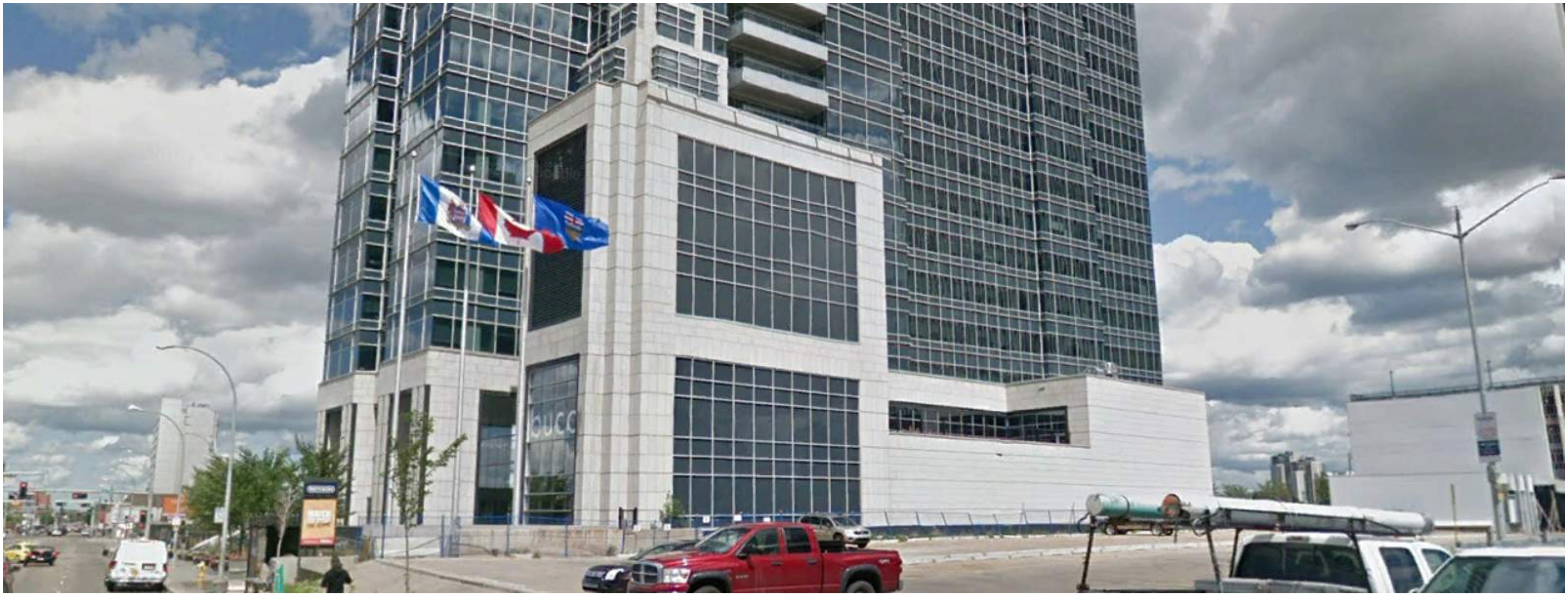
ROYAL ALBERTA MUSEUM SITE EAST EDGE

A.2.7 EDGES



104 AVENUE SOUTH EDGE

A.2.7 EDGES



EPCOR TOWER SITE SOUTH EDGE

A.2.7 EDGES

EPCOR TOWER SITE EAST EDGE

A.2.8 PATHS

97TH STREET

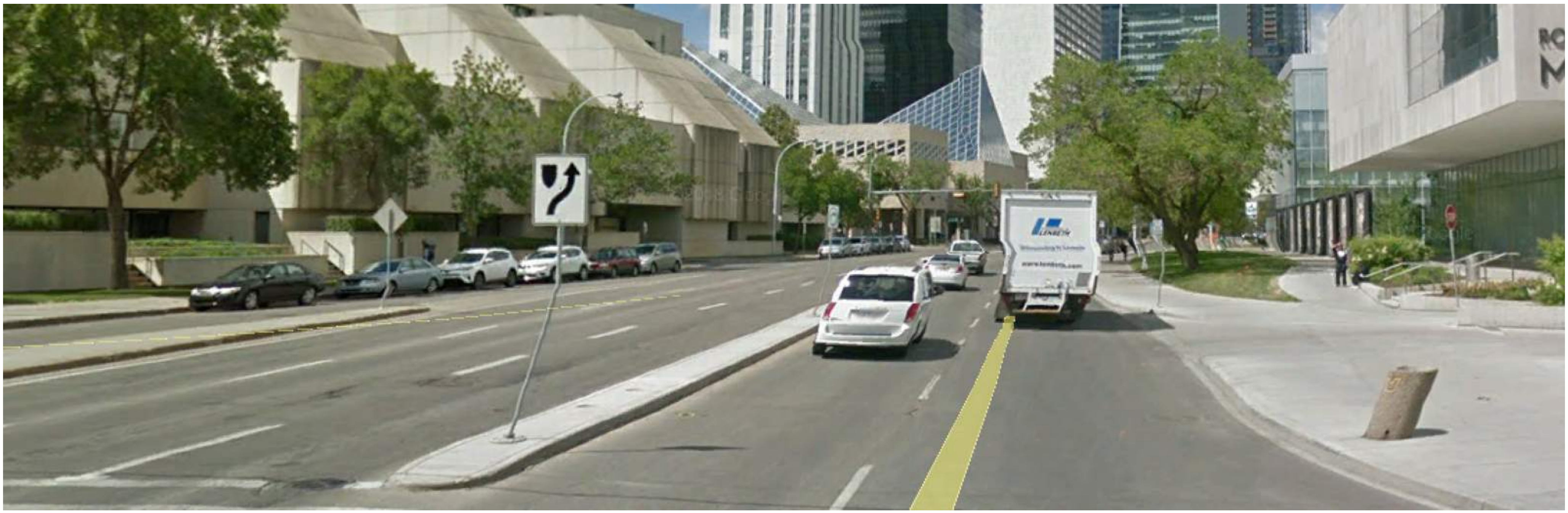
A.2.8 PATHS

97TH STREET

A.2.8 PATHS

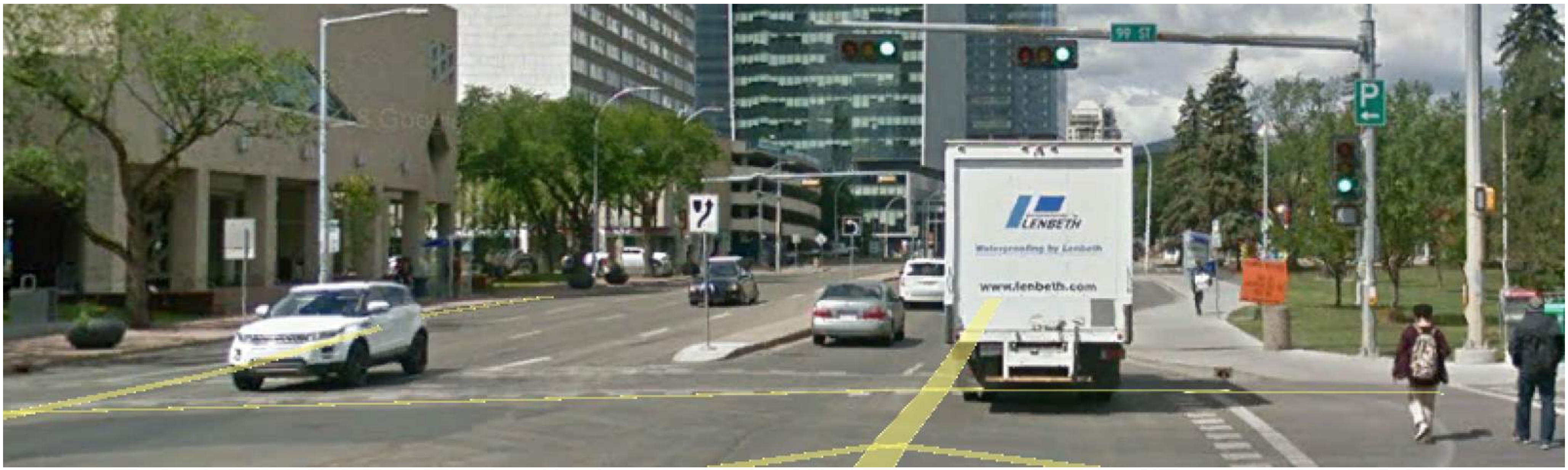
97TH STREET

A.2.8 PATHS



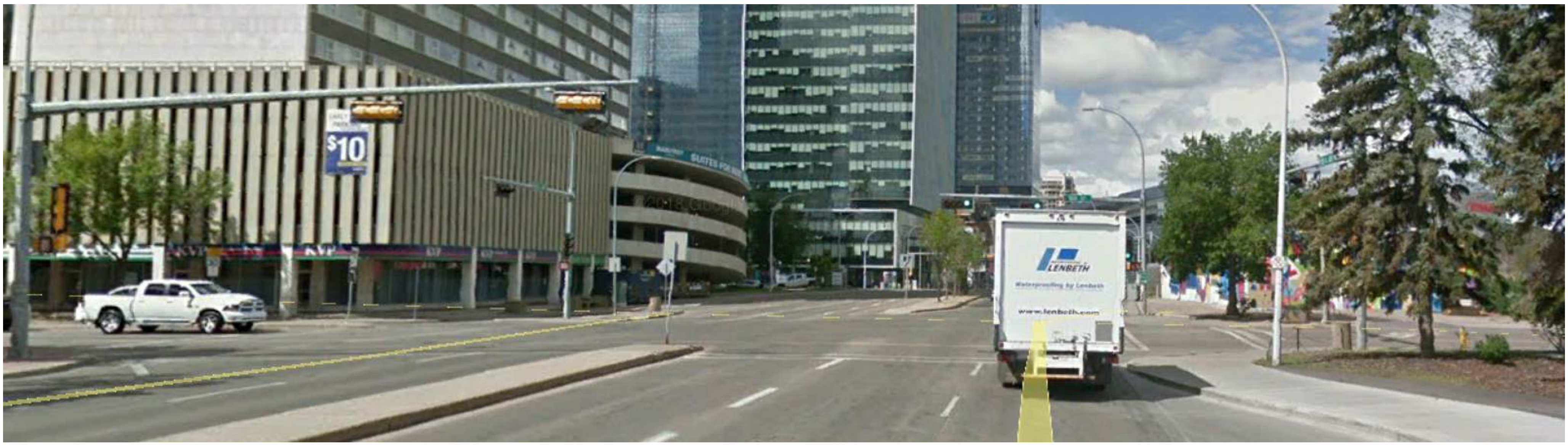
104TH AVENUE

A.2.8 PATHS



104TH AVENUE

A.2.8 PATHS



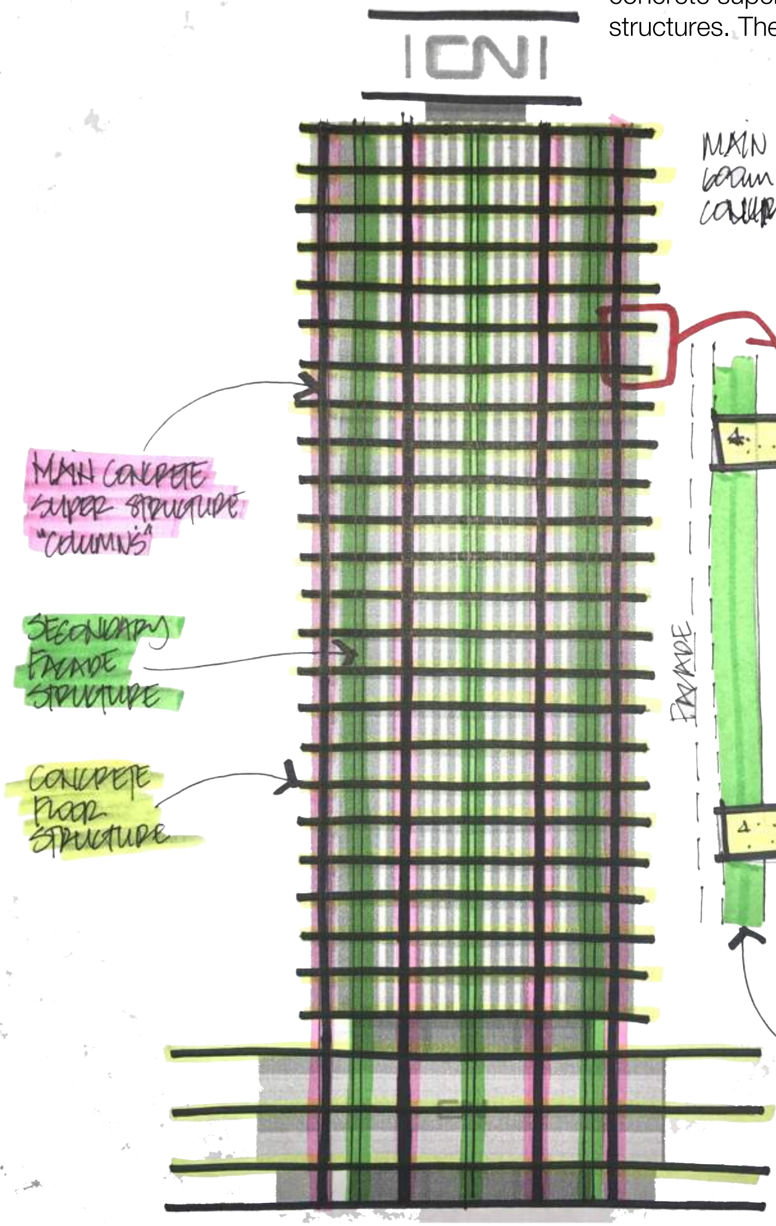
104TH AVENUE

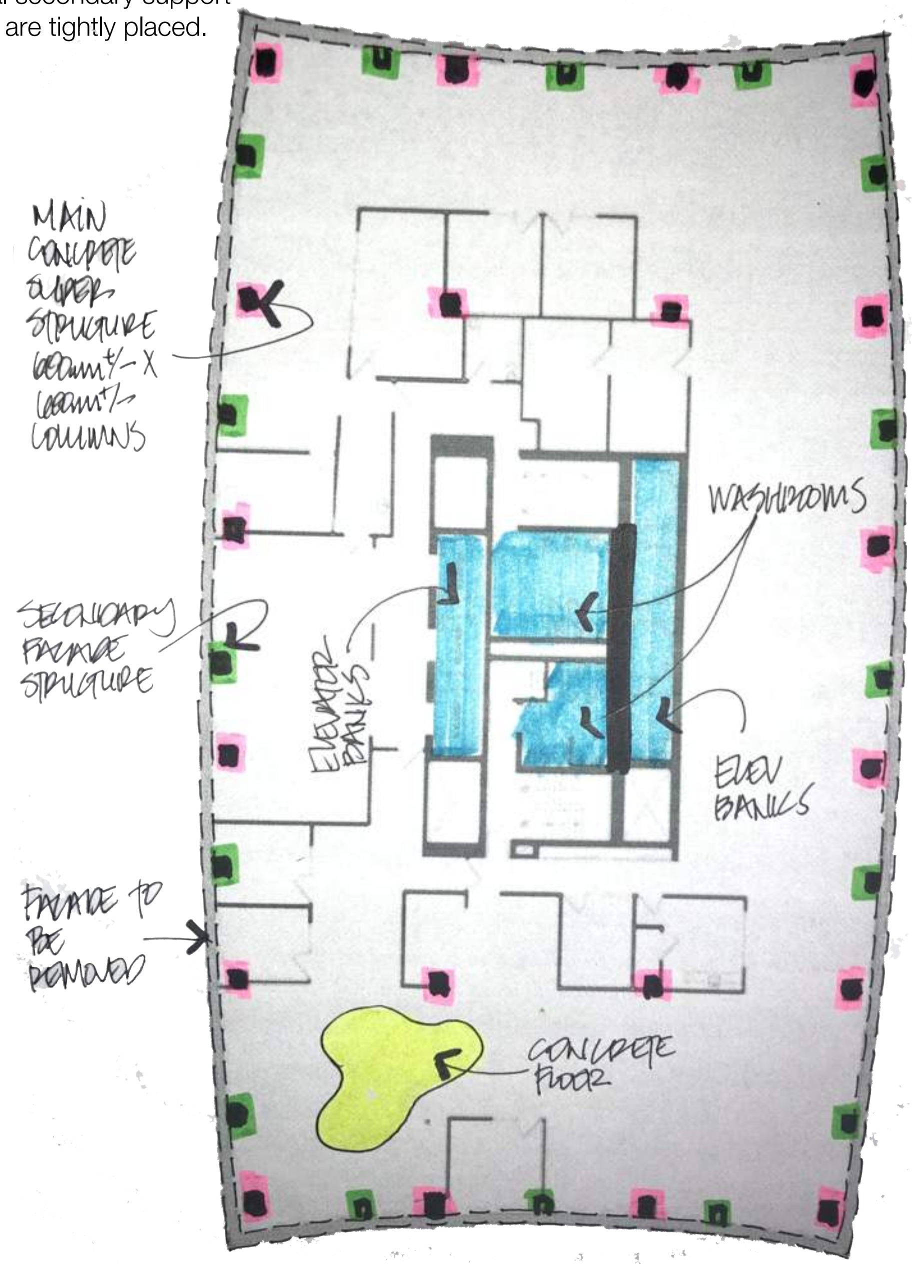
A.2.8 PATHS

104TH AVENUE

A.2.9 EXISTING CN TOWER INFRASTRUCTURE

The existing structural analysis of the CN Tower demonstrates a concrete super structure with additional secondary support structures. The spaces and clearances are tightly placed.





A.2.10 EXISTING INFRASTRUCTURE ANALYSIS

UTILIZING EXISTING CN STRUCTURE & FRAMING

PROS

- AREA
- HERITAGE
- CENTRALLY LOCATED, WITHIN SITE
- CONCRETE STRUCTURE
- ALIGNMENT TO ROAD
- SUSTAINABILITY
- POTENTIAL COST SAVINGS

CONS

- PARKING
- FLOOR TO FLOOR HEIGHT
- LANDLOCKED AT CENTRE OF SITE
- ABSENCE OF PROMINENT STREET EDGE/REMOVED FROM STREET EDGE
- CONCRETE STRUCTURE

A.2.10 EXISTING INFRASTRUCTURE ANALYSIS

DEMOLITION OF THE EXISTING CN TOWER STRUCTURE AND FRAMING

PROS

- LESS STRUCTURAL AND DESIGN RESTRICTIONS WITHOUT REWORK
- EASIER PARKING ADDITION
- CONNECTION

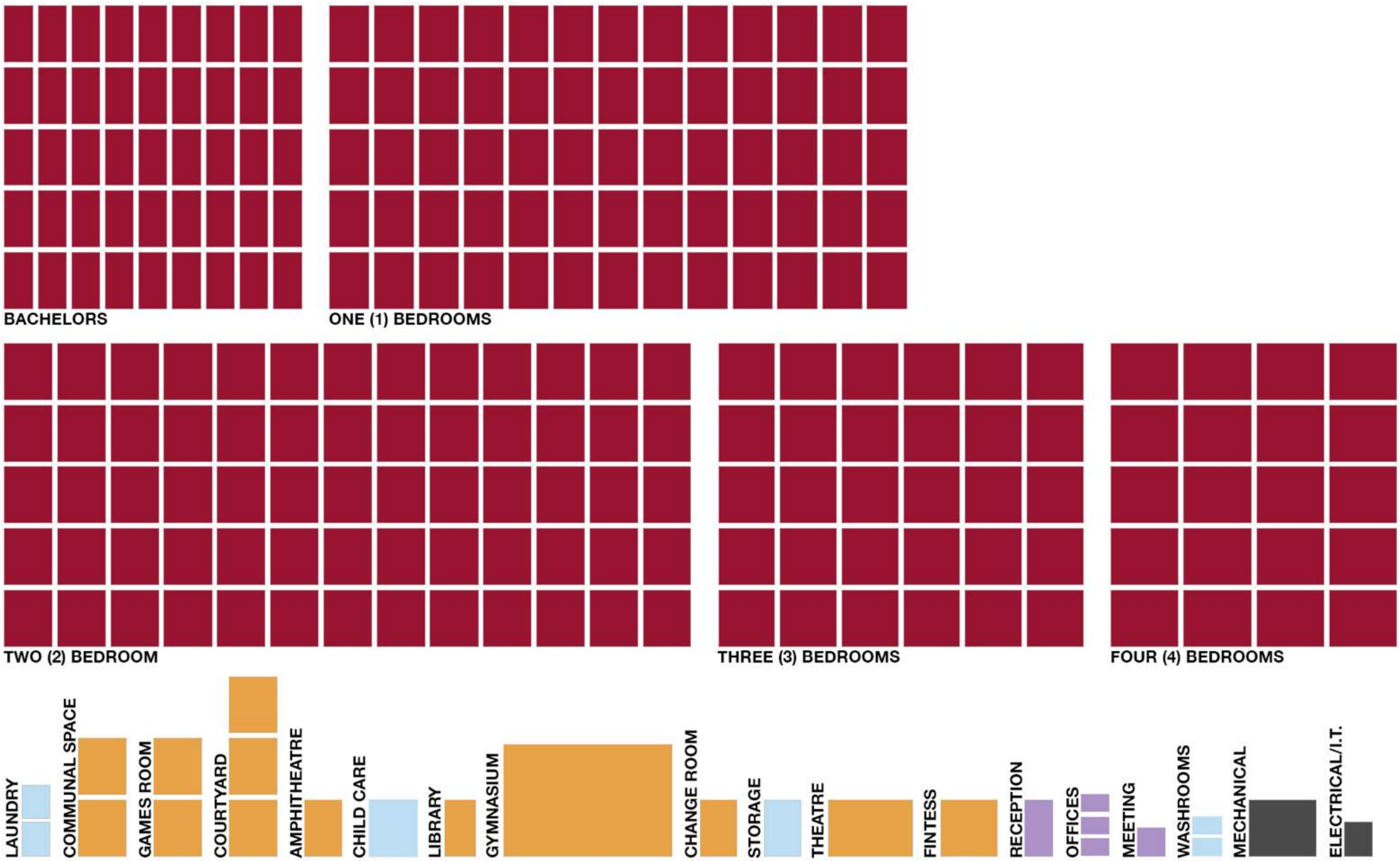
CONS

- POTENTIAL COST INCREASES AND IMPLICATIONS
- LOSS OF HERITAGE

A.2.11 PROGRAM

ROOM NAME	DESIGN AREA (m2)			DESIGN AREA (ft2)			TOTAL (m2)	TOTAL (ft2)
SOCIAL HOUSING								
Bachelor Suites	45	@	50	45	@	538	2,250	24,219
1 Bedroom Suites	65	@	70	65	@	753	4,550	48,976
2 Bedroom Suites	65	@	85	65	@	915	5,525	59,471
3 Bedroom Suites	30	@	105	30	@	1,130	3,150	33,906
4 Bedroom Suites	20	@	125	20	@	1,345	2,500	26,910
Laundry	2	@	30	2	@	323	60	646
Communal Space	2	@	80	2	@	861	160	1,722
Games Room	2	@	80	2	@	861	160	1,722
Courtyard	3	@	80	3	@	861	240	2,583
Amphitheatre	1	@	60	1	@	646	60	646
Child Care/Daycare	1	@	80	1	@	861	80	861
Library	1	@	50	1	@	538	50	538
Gymnasium	1	@	600	1	@	6,458	600	6,458
Change Rooms	1	@	60	1	@	646	60	646
Gym Storage	1	@	60	1	@	646	60	646
Theatre	1	@	250	1	@	2,691	250	2,691
Administration Reception	1	@	50	1	@	538	50	538
Administration Offices	3	@	15	3	@	161	45	484
Administration Meeting Room	1	@	25	1	@	269	25	269
Administration Washroom	2	@	10	2	@	108	20	215
Mechanical / Electrical	1	@	125	1	@	1,345	125	1,345
I.T	1	@	80	1	@	861	80	861
TOTAL	**250**	**@**	**2,170**	**250**	**@**	**23,358**	**20,100**	**216,354**

A.2.12 PROGRAM AREAS

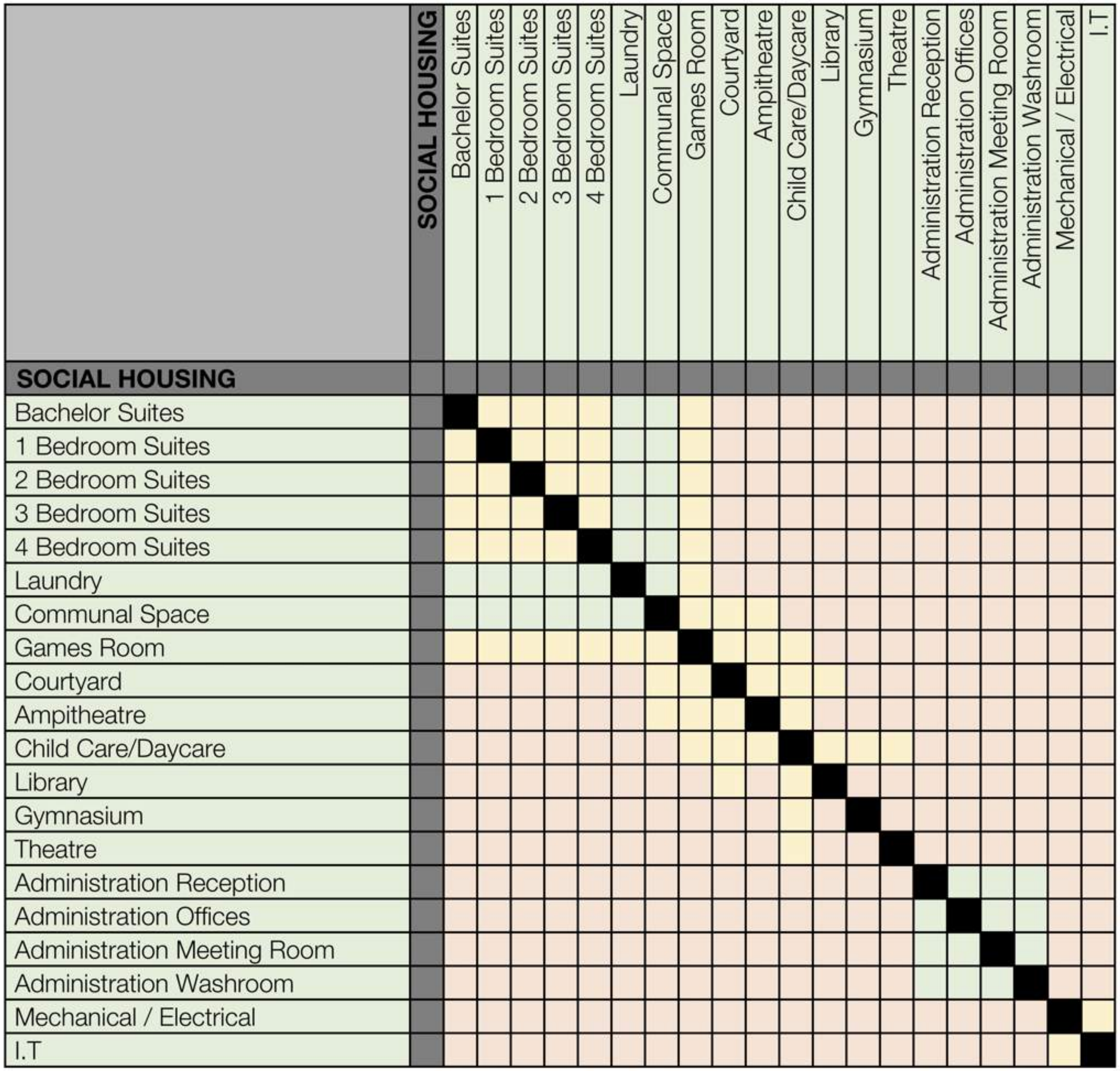


A.2.13 ATTRIBUTES CHARTS

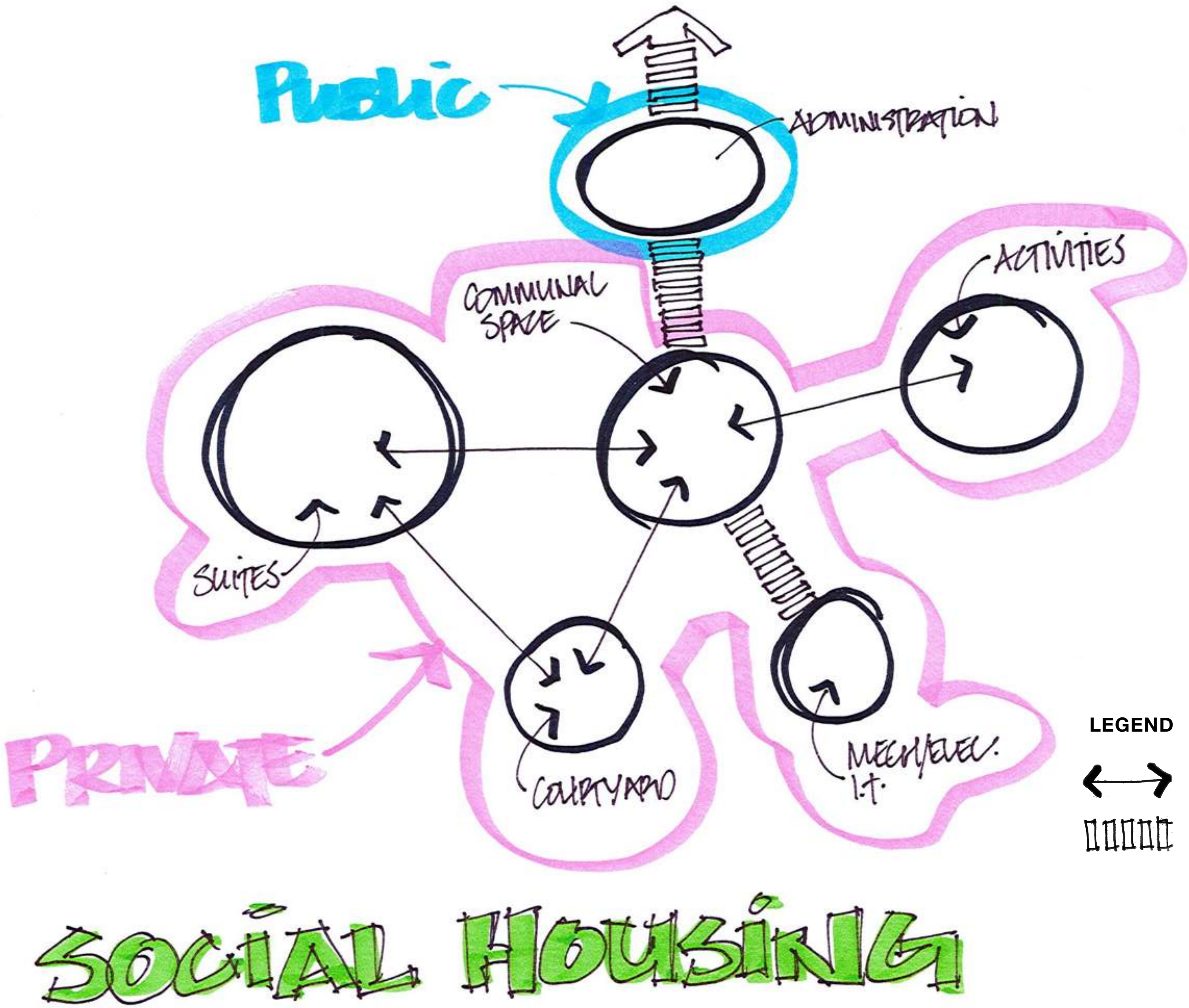
ROOM NAME	SECURITY	NATURAL LIGHT	STREET ACCESS	ACOUSTICS
SOCIAL HOUSING				
Administration Reception				
Administration Offices				
Administration Meeting Room				
Administration Washroom				
Bachelor Suites				
1 Bedroom Suites				
2 Bedroom Suites				
3 Bedroom Suites				
4 Bedroom Suites				
Laundry				
Communal Space				
Games Room				
Courtyard				
Ampitheatre				
Child Care/Daycare				
Library				
Gymnasium				
Theatre				
Mechanical / Electrical				
I.T				

LEGEND	
	REQUIRED
	DESIRED
	NOT REQUIRED

A.2.14 RELATIONSHIPS CHART



A.2.15 BUBBLE DIAGRAMS

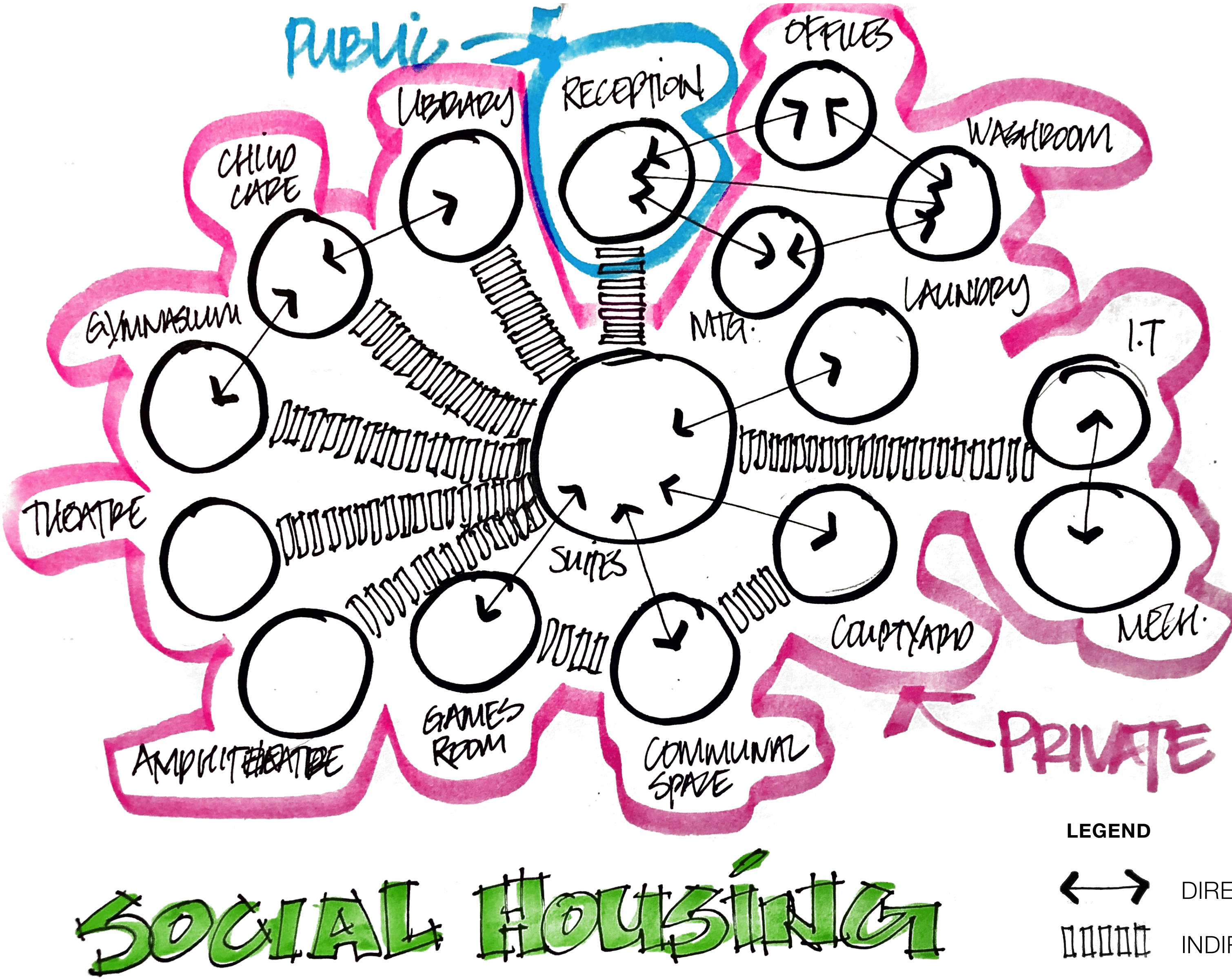


LEGEND

DIRECT CONNECTION

INDIRECT CONNECTION

A.2.15 BUBBLE DIAGRAMS



LEGEND

↔ DIRECT CONNECTION

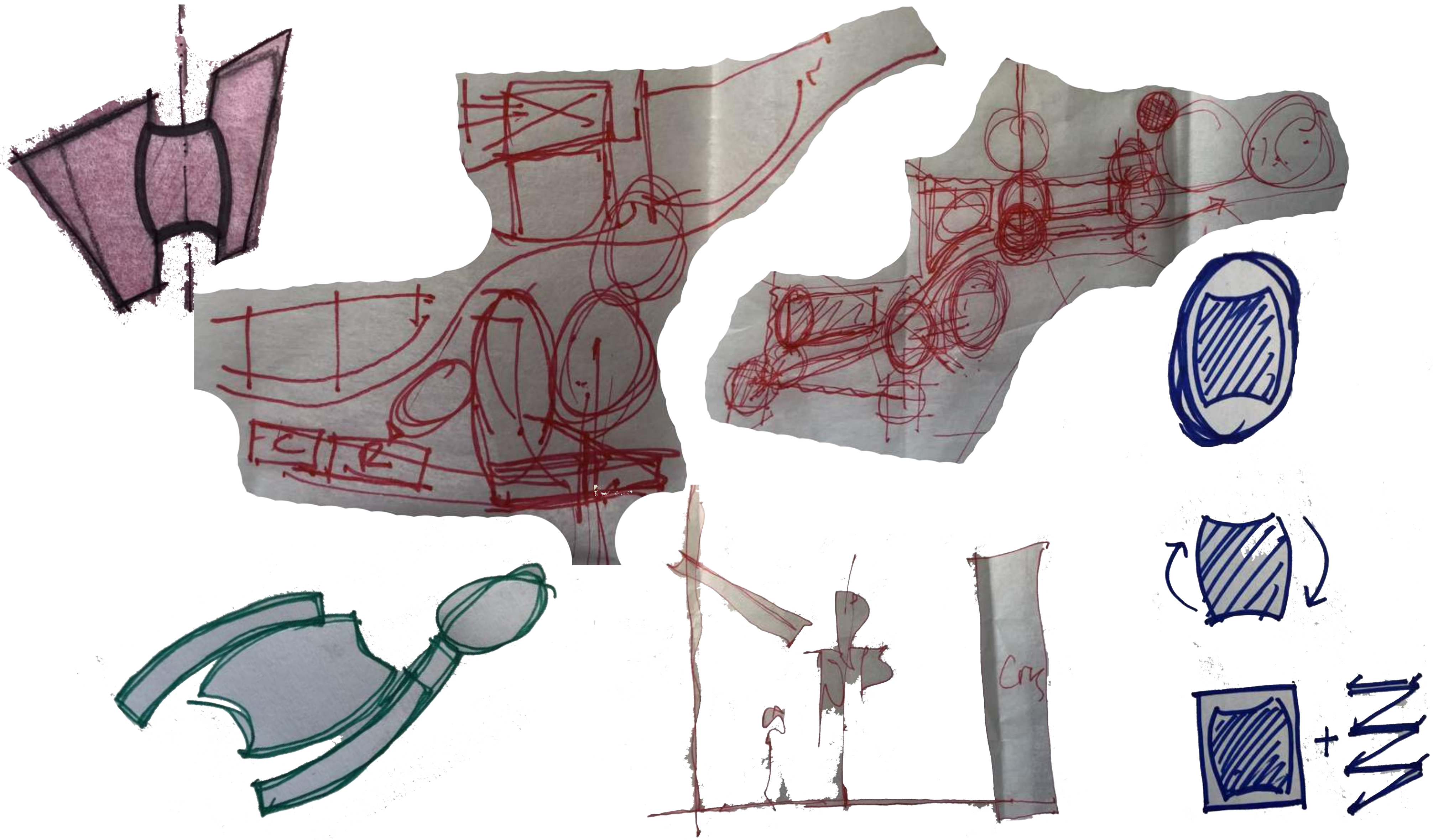
▯▯▯▯▯ INDIRECT CONNECTION

PART A

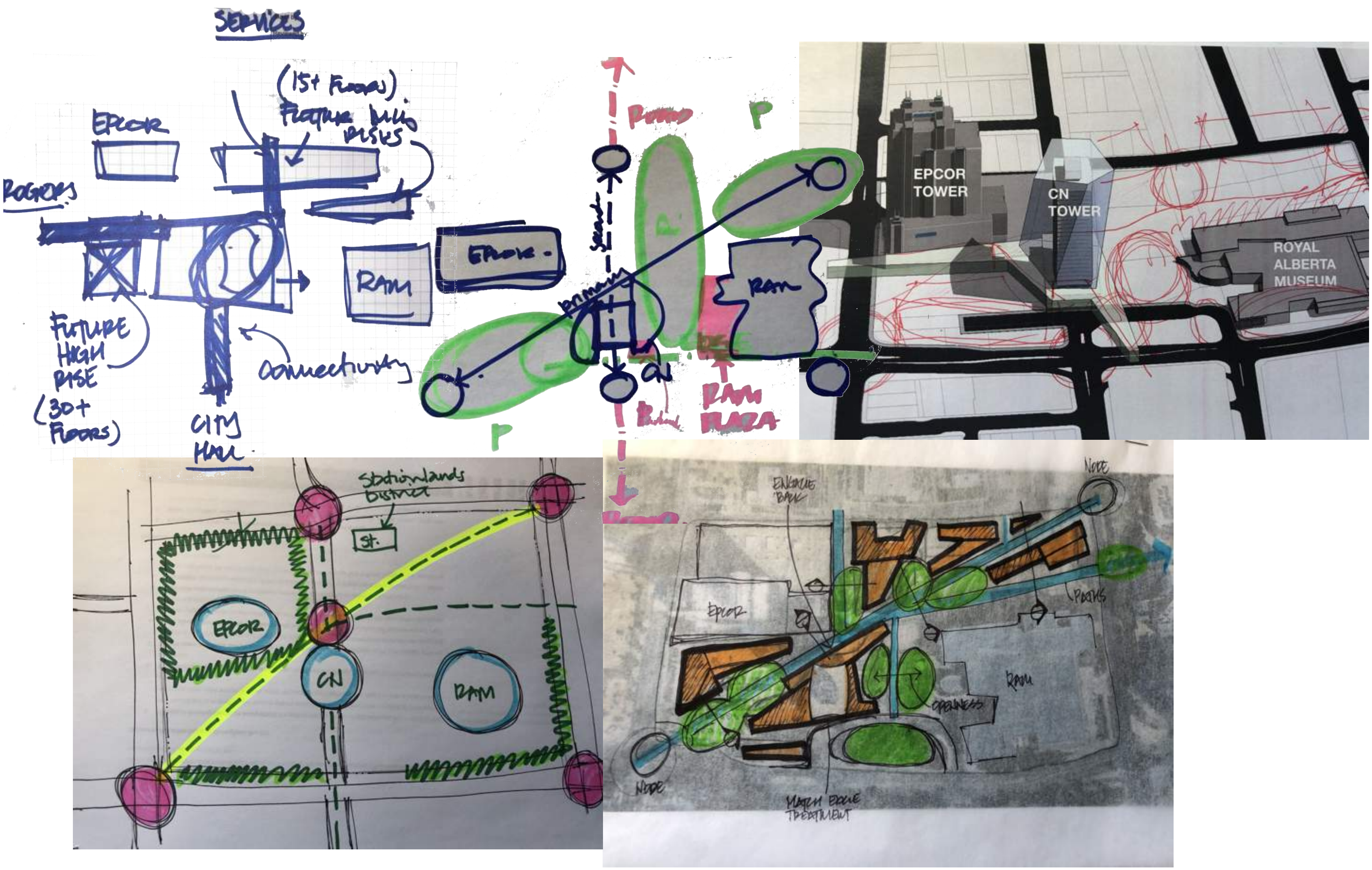
A.3 CONCEPT DEVELOPMENT

RAIC
SYLLABUS

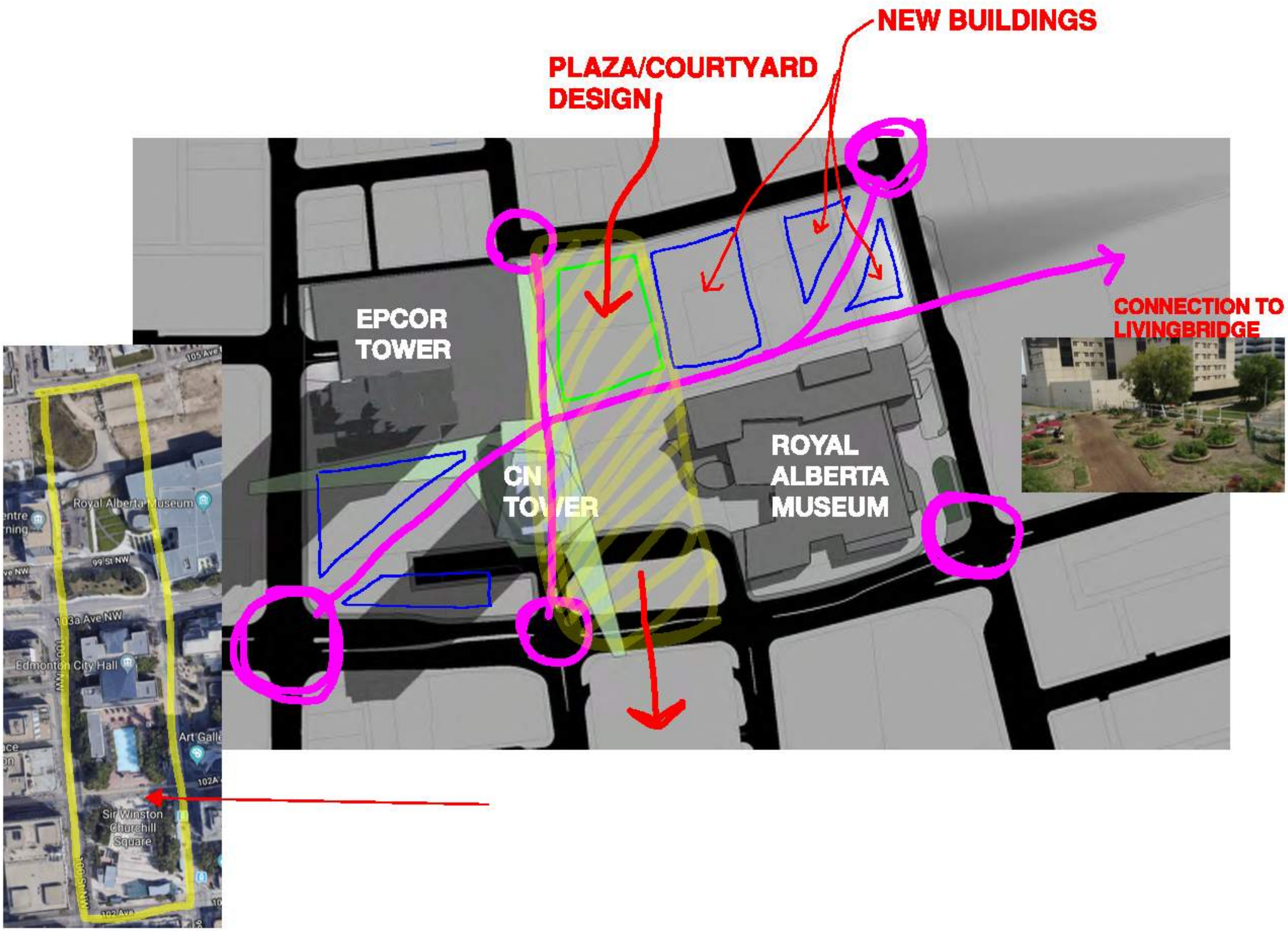
A.3.1 CONCEPT DEVELOPMENT SKETCHES



A.3.1 CONCEPT DEVELOPMENT SKETCHES



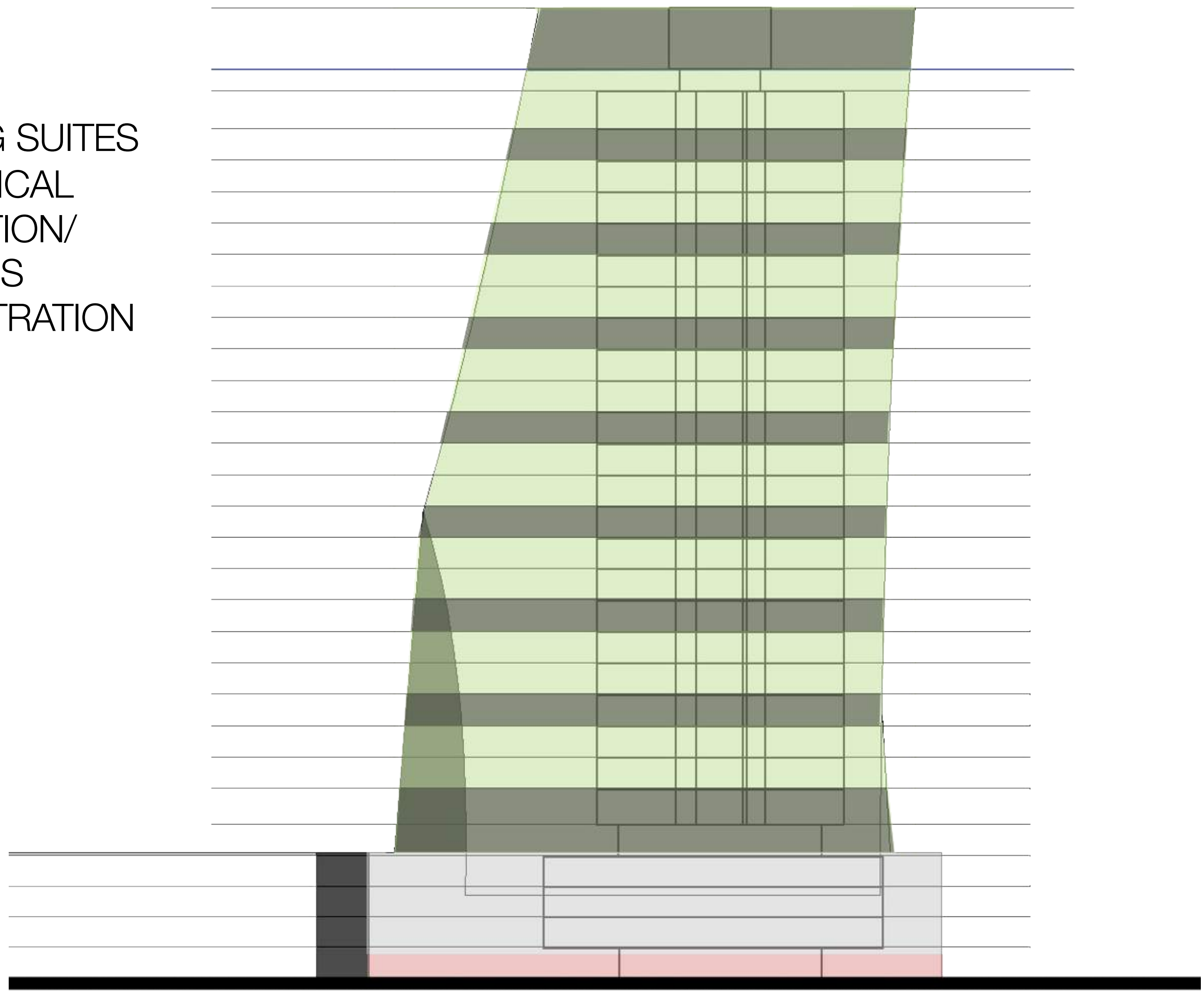
A.3.1 CONCEPT DEVELOPMENT SKETCHES



A.3.2 CONCEPT DEVELOPMENT FLOORS

LEGEND

- HOUSING SUITES
- MECHANICAL
- RECREATION/ ACTIVITIES
- ADMINISTRATION



A.3.3 CONCEPT DEVELOPMENT SITE

PART A

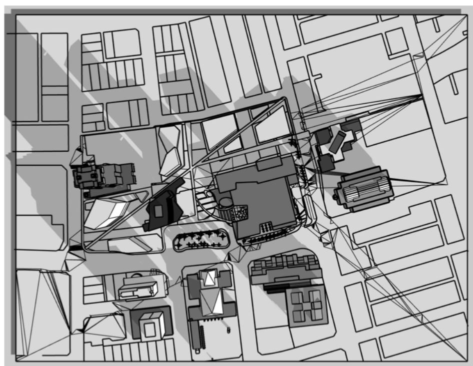
A.4 PRELIMINARY CONCEPTS

RAIC SYLLABUS

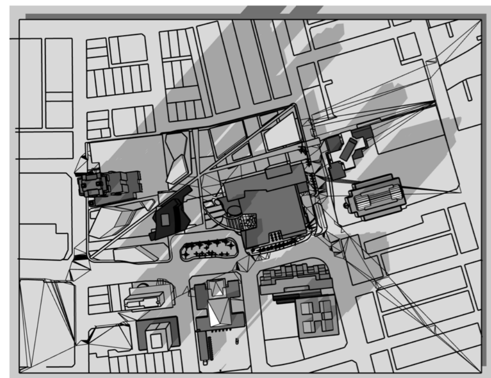
A.4.1 CONCEPT ONE

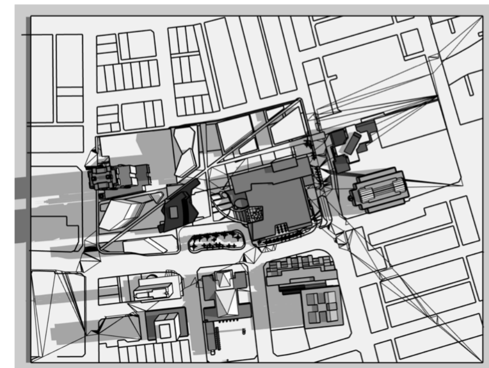
A.4.1 SITE PLAN

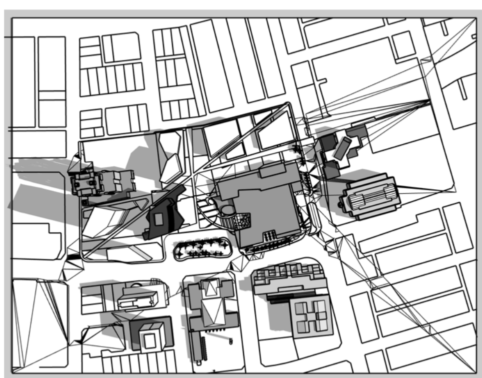
A.4.1 SHADOW STUDY


JANUARY 9AM


JANUARY NOON


JANUARY 3PM


AUGUST 7AM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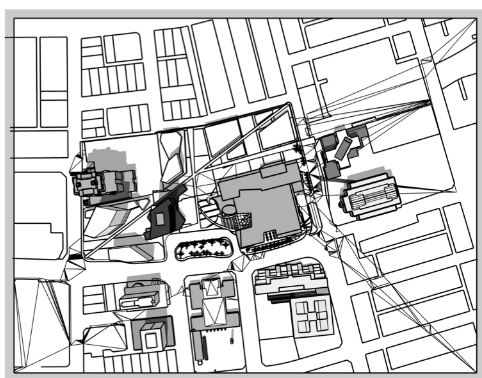
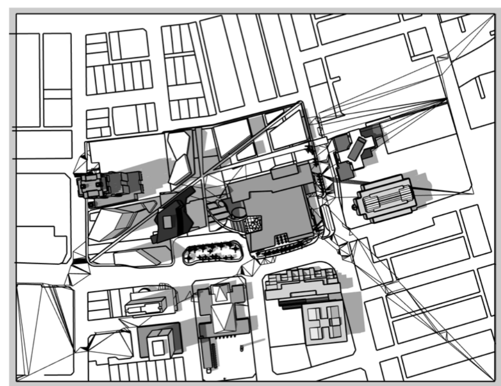

AUGUST NOON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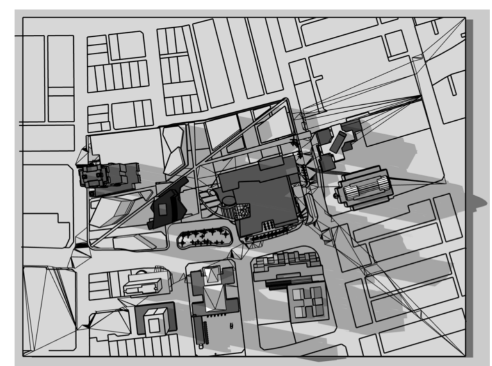
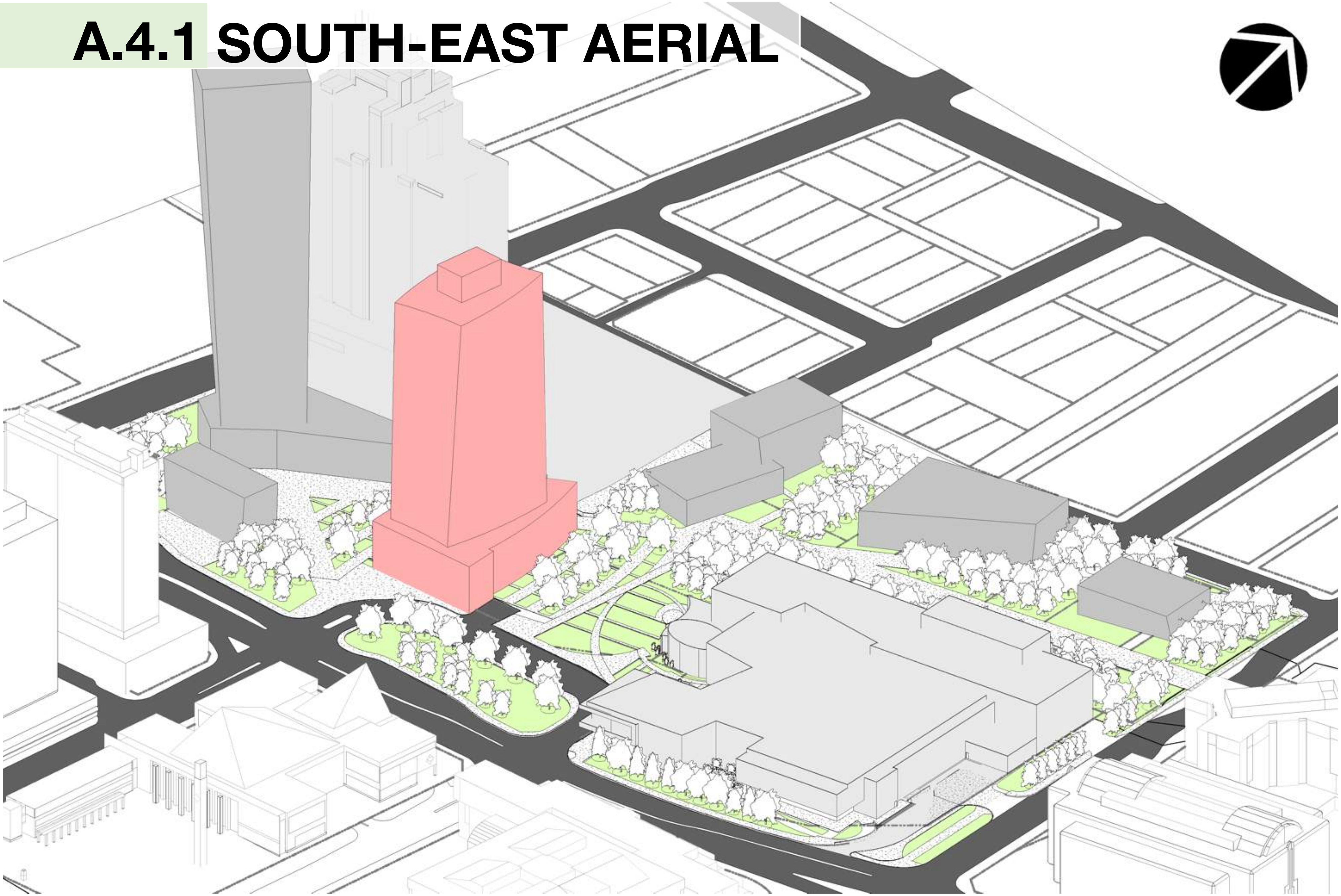
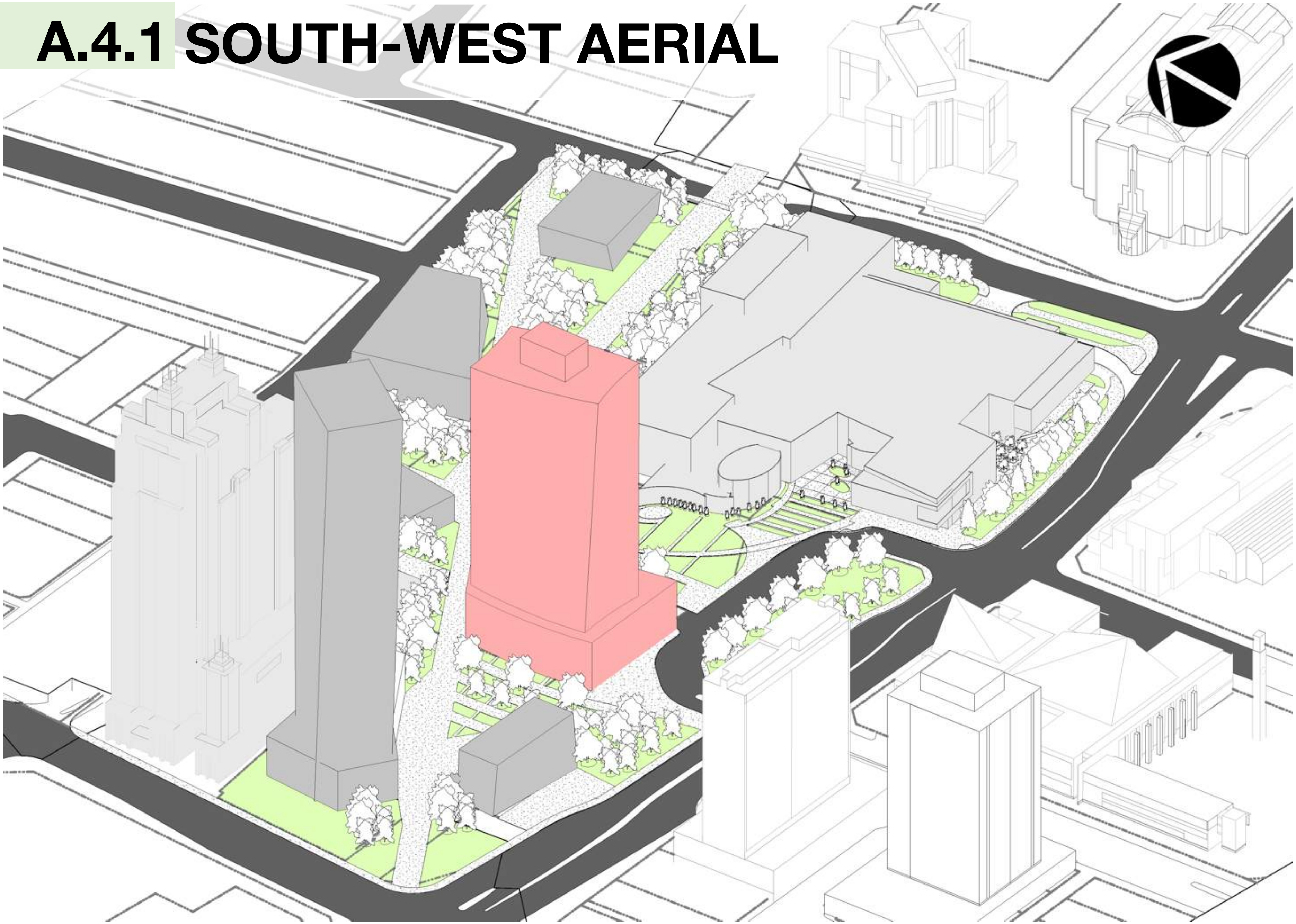

AUGUST 6PM

A.4.1 SOUTH-EAST AERIAL

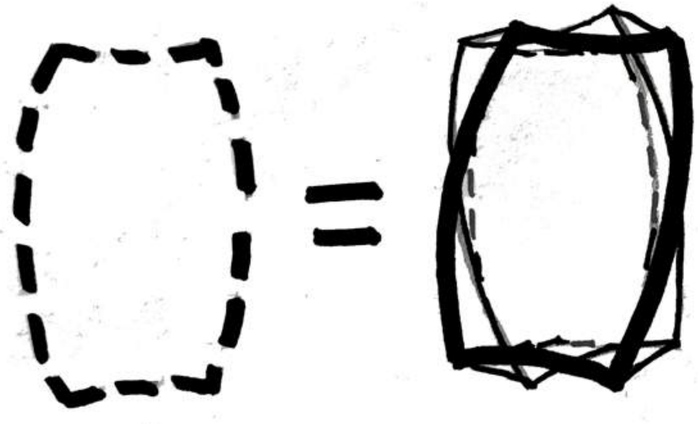


A.4.1 SOUTH-WEST AERIAL

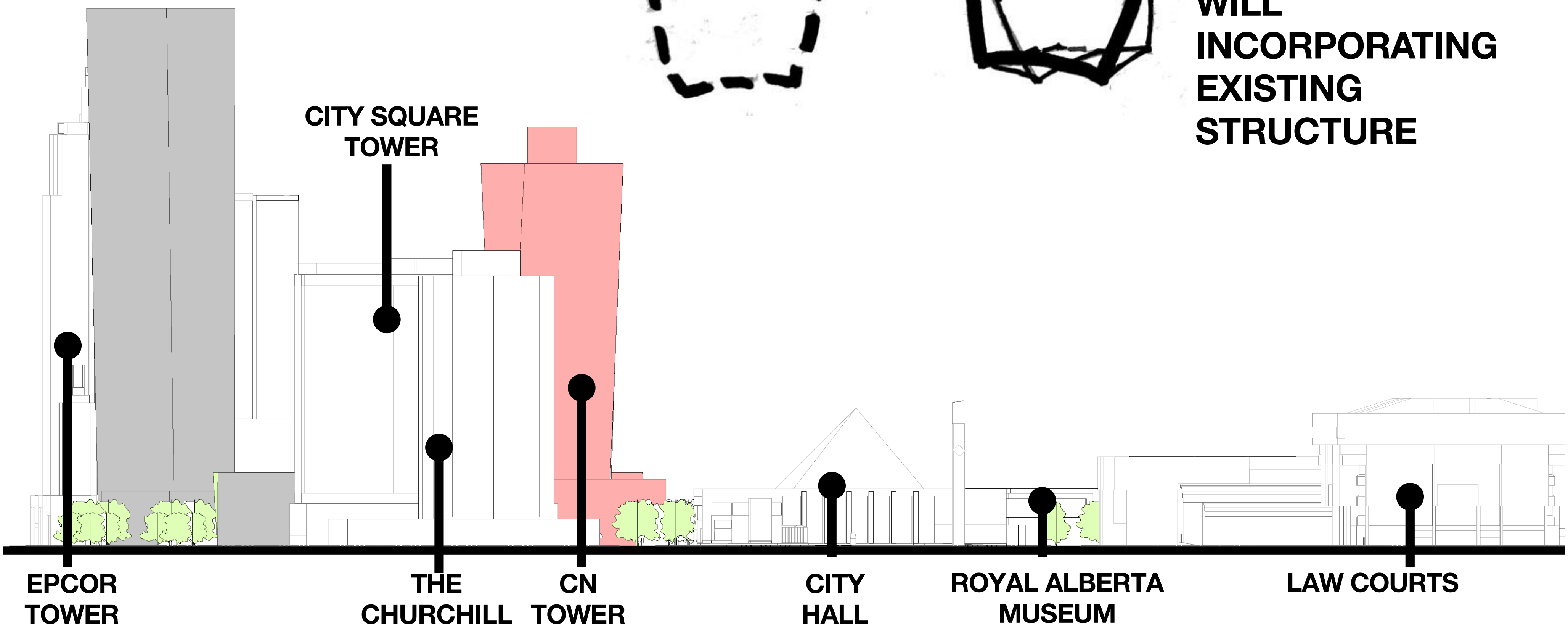


A.4.1 PARTI

REMOVAL OF EXISTING CN TOWER FACADE

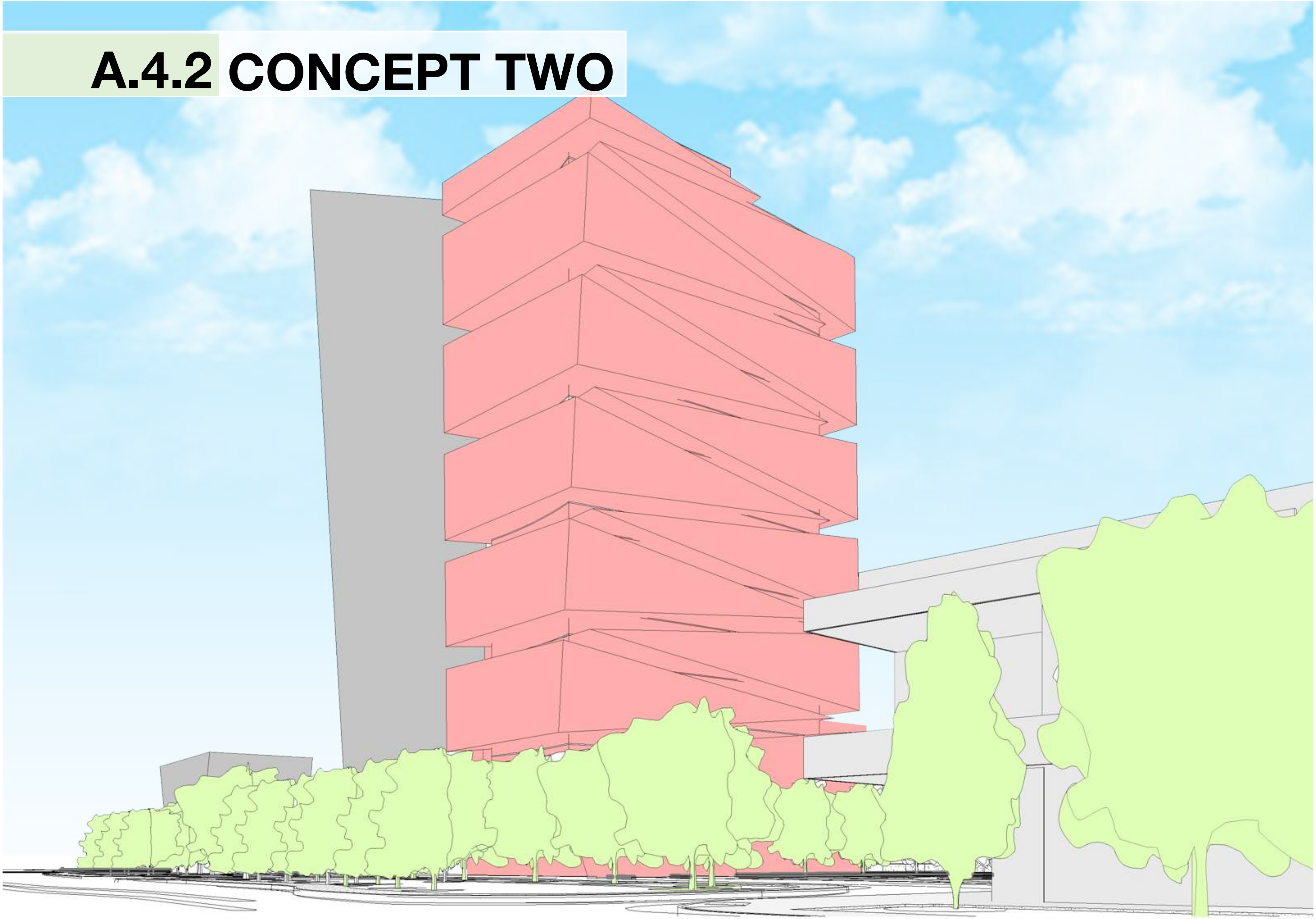


CN TOWER SHAPED TWISTED TO CREATE NEW FAÇADE & SPACE WILL INCORPORATING EXISTING STRUCTURE



BUILDING HEIGHTS

A.4.2 CONCEPT TWO

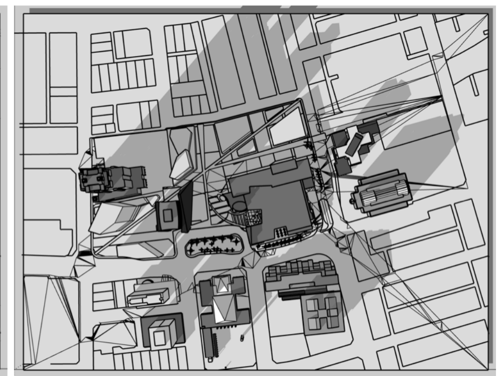


A.4.2 SITE PLAN

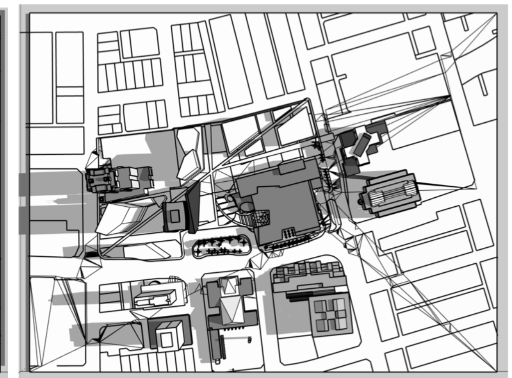
A.4.2 SHADOW STUDY

JANUARY 9AM

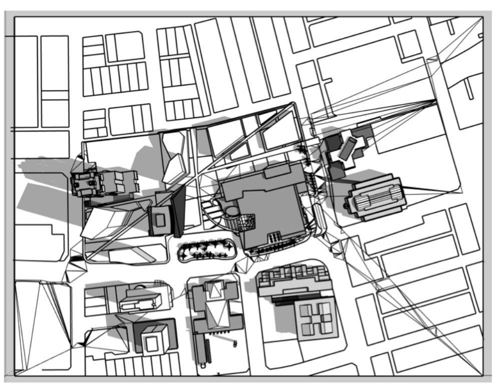
JANUARY NOON



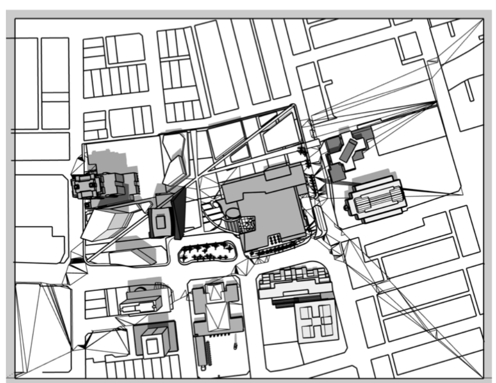
JANUARY 3PM



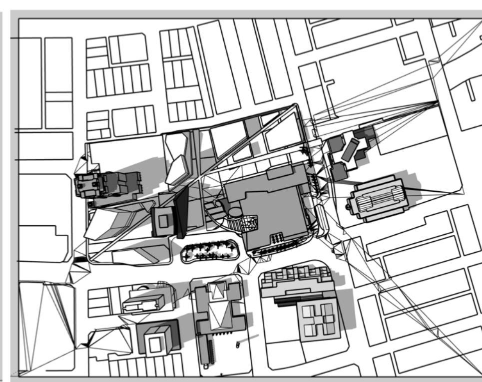
AUGUST 7AM



AUGUST 9AM



AUGUST NOON



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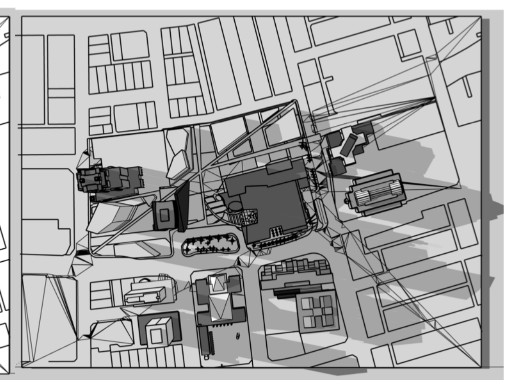
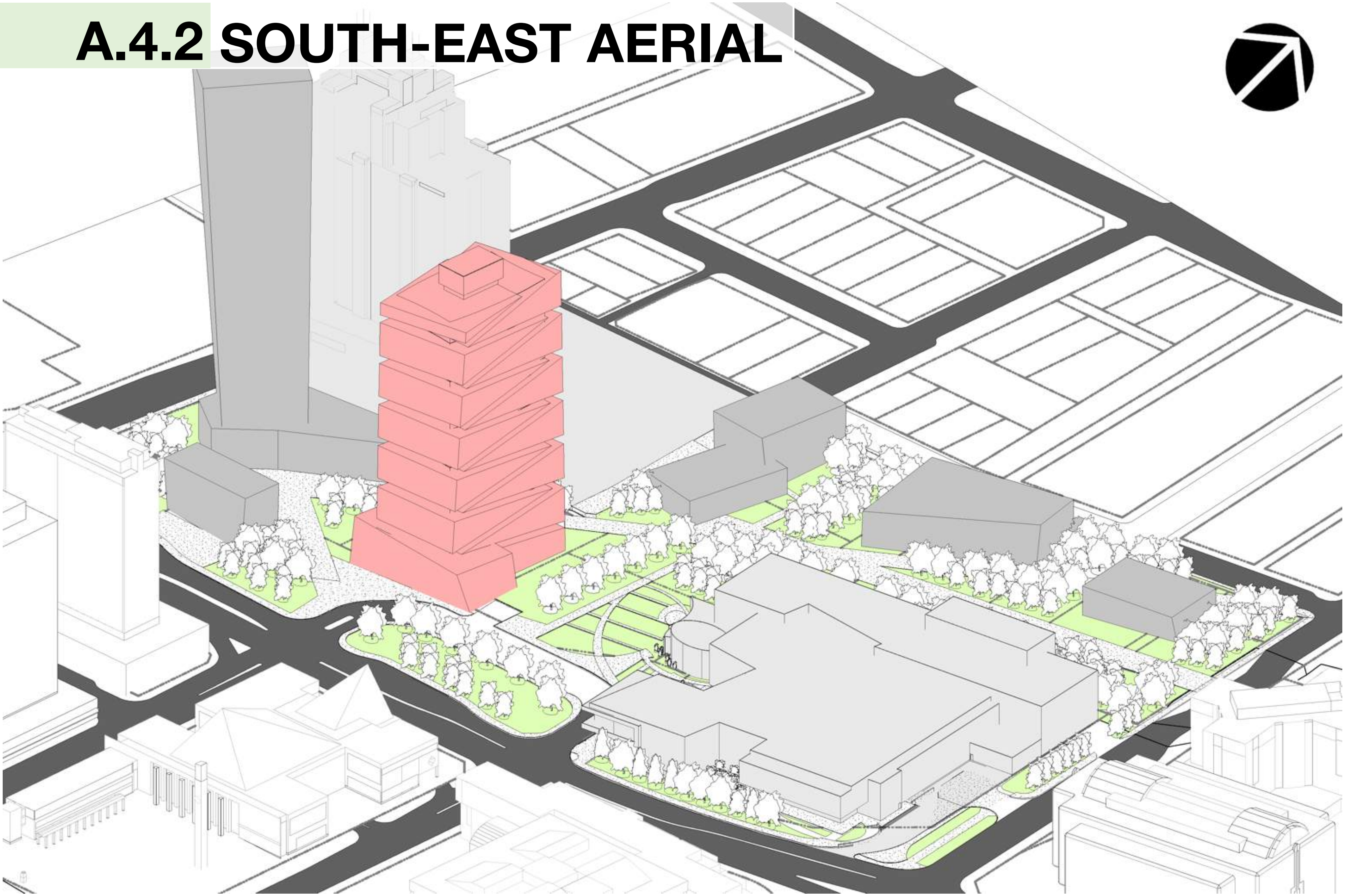
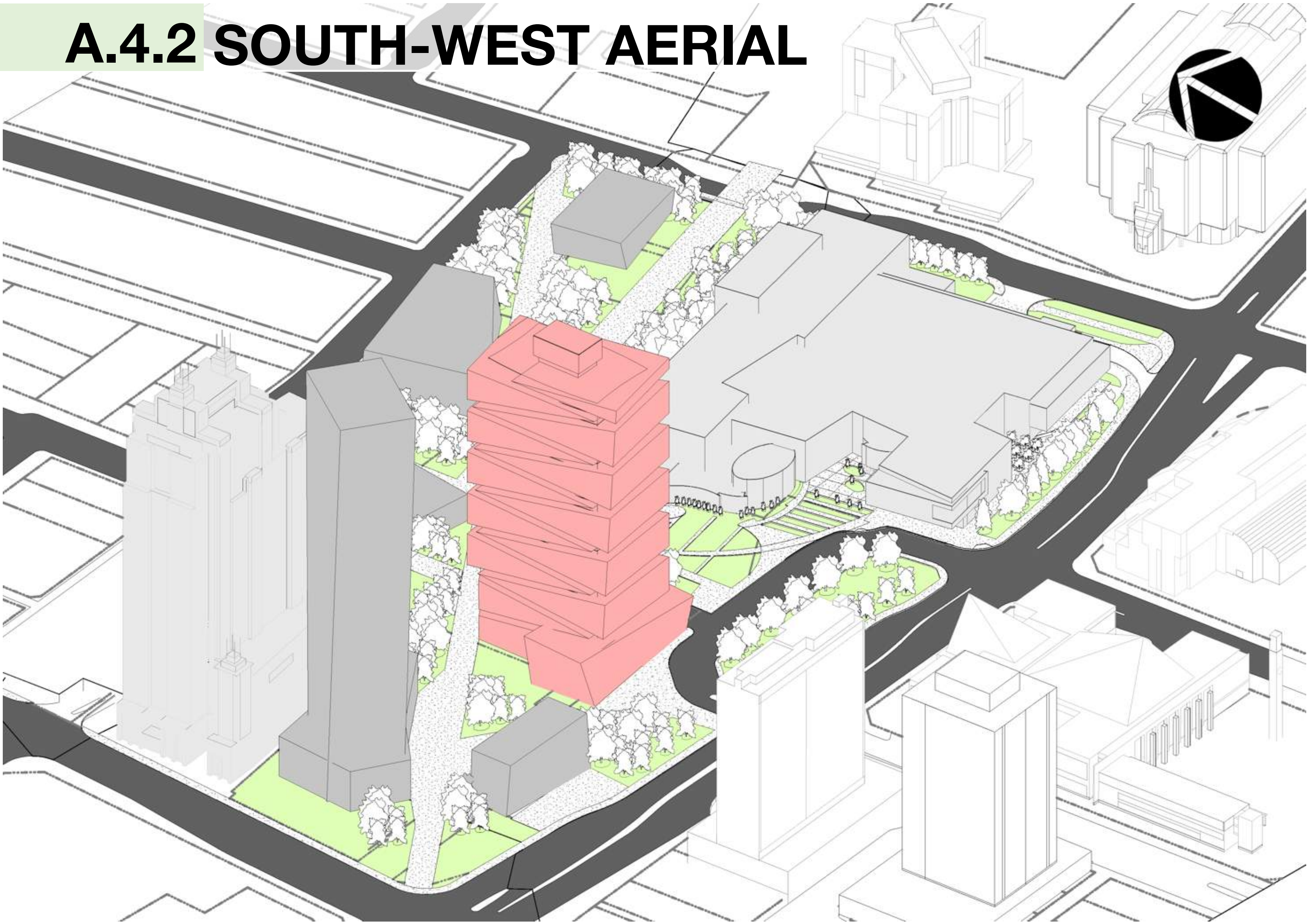


AUGUST 6PM

A.4.2 SOUTH-EAST AERIAL

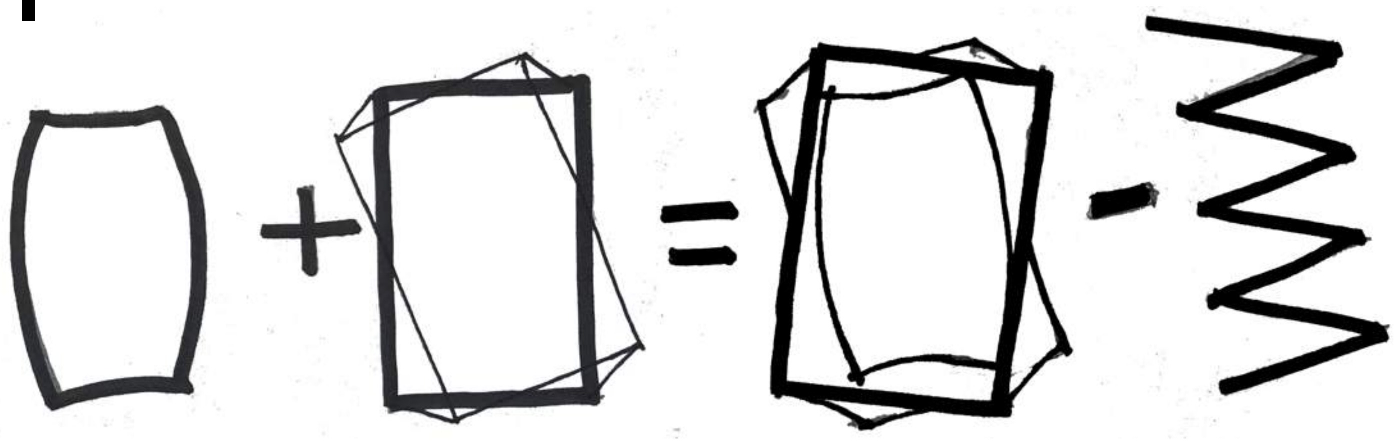


A.4.2 SOUTH-WEST AERIAL

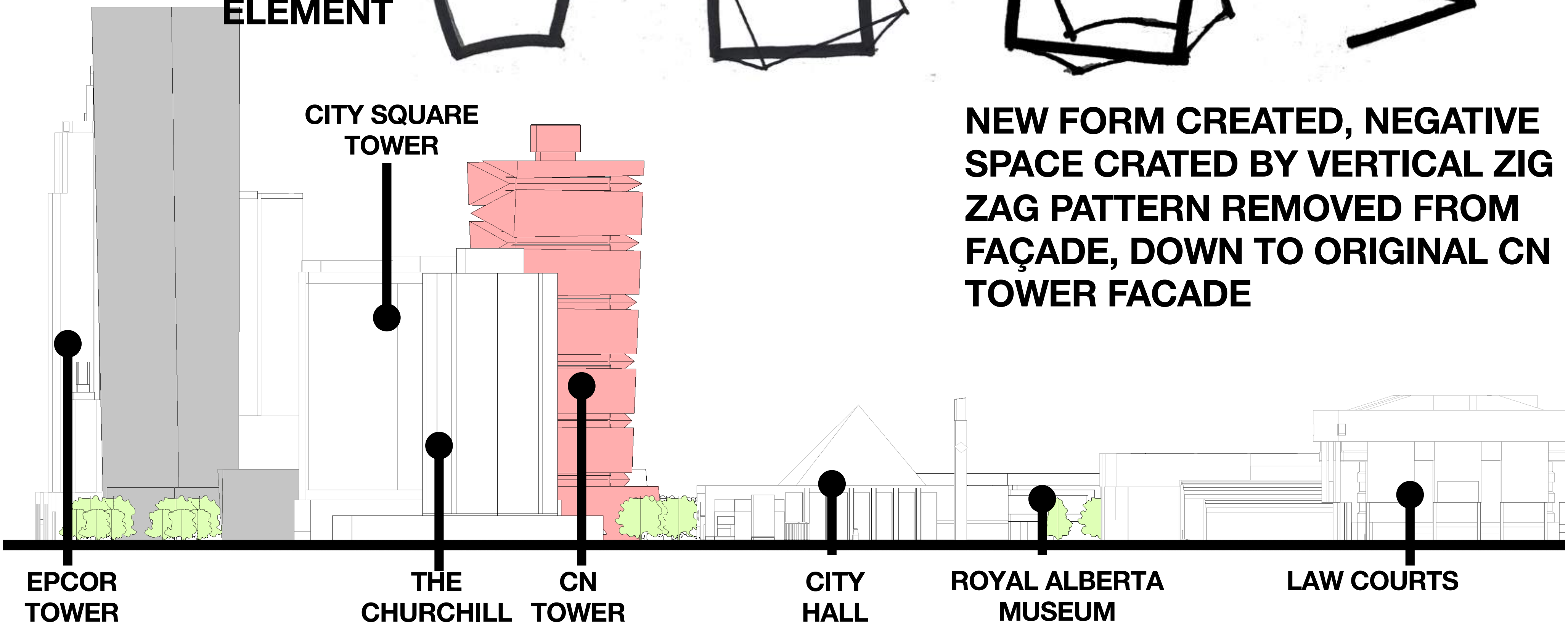


A.4.2 PARTI

EXISTING CN FAÇADE ADDED TO NEW TWISTED EXTERIOR ELEMENT

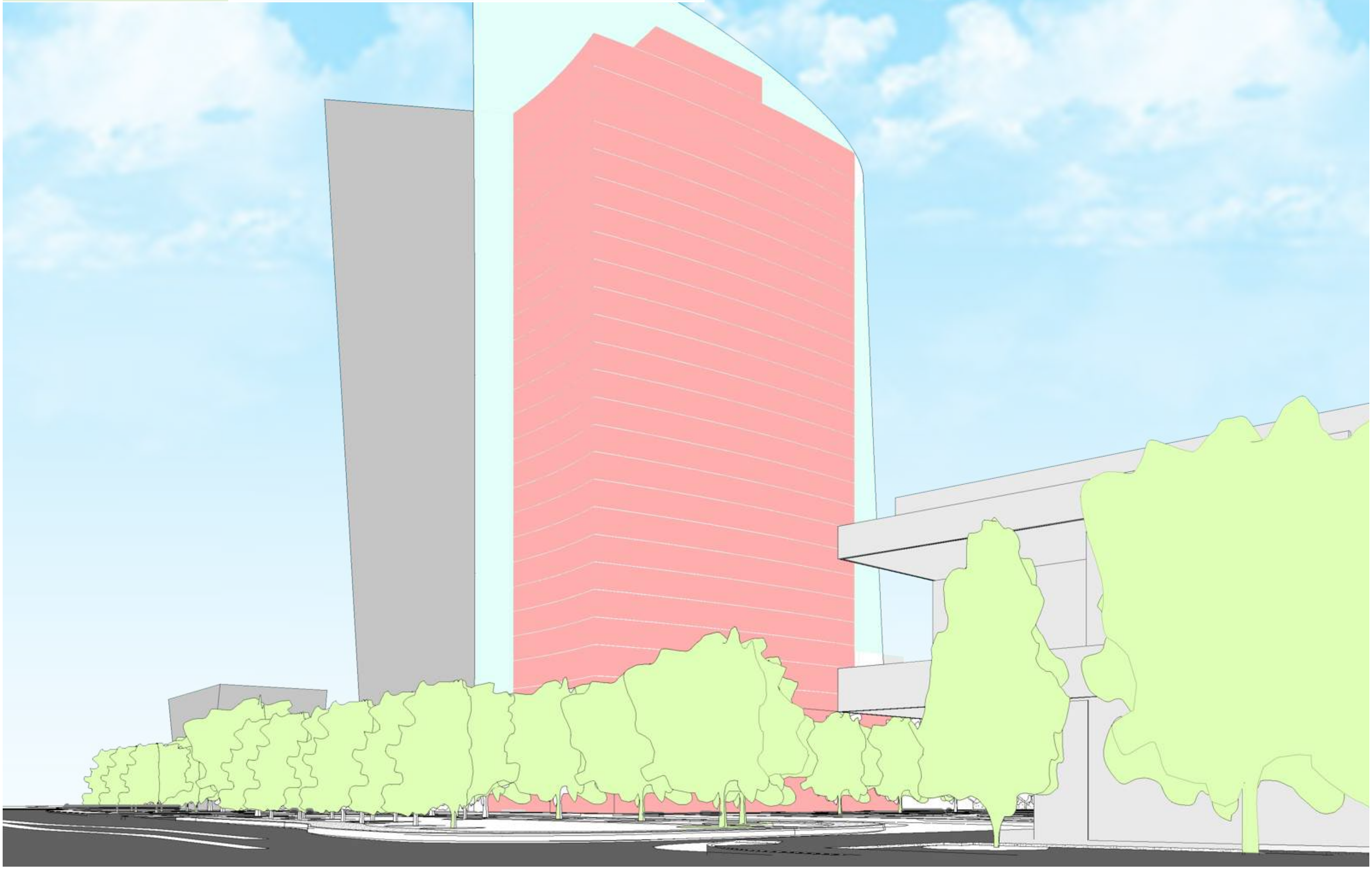


NEW FORM CREATED, NEGATIVE SPACE CRATED BY VERTICAL ZIG ZAG PATTERN REMOVED FROM FAÇADE, DOWN TO ORIGINAL CN TOWER FACADE



BUILDING HEIGHTS

A.4.3 CONCEPT THREE

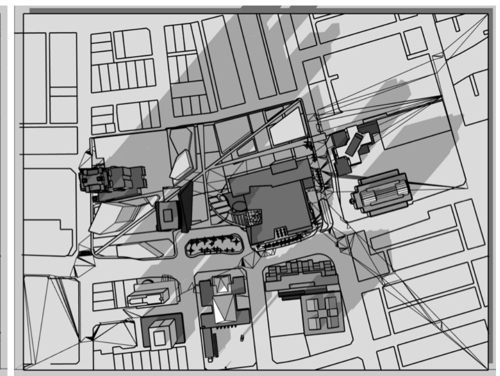


A.4.3 SITE PLAN

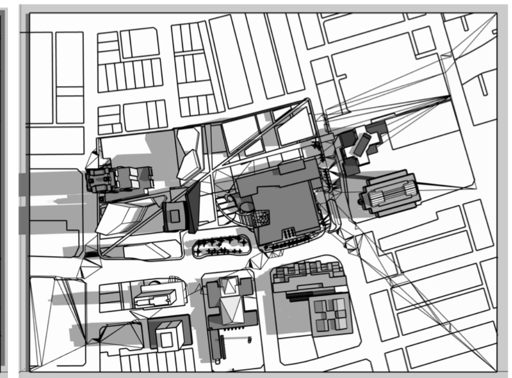
A.4.3 SHADOW STUDY

JANUARY 9AM

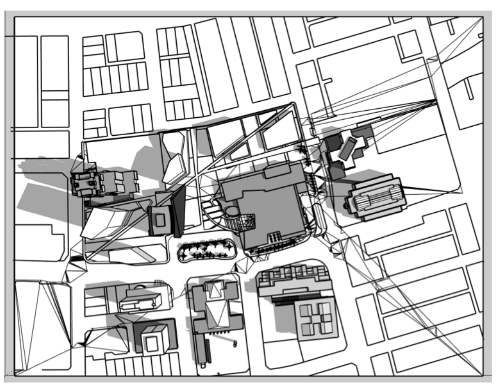
JANUARY NOON



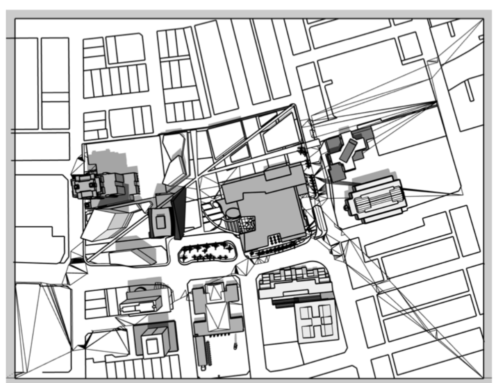
JANUARY 3PM



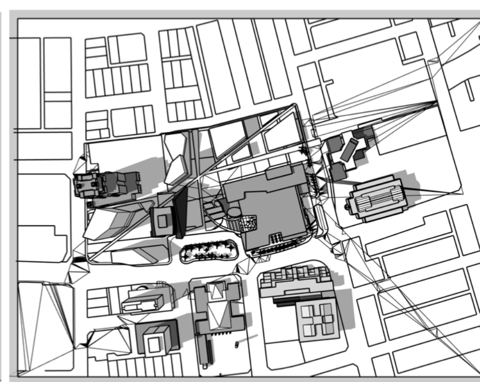
AUGUST 7AM



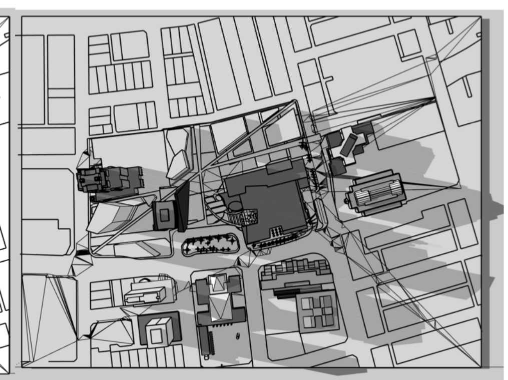
AUGUST 9AM



AUGUST NOON

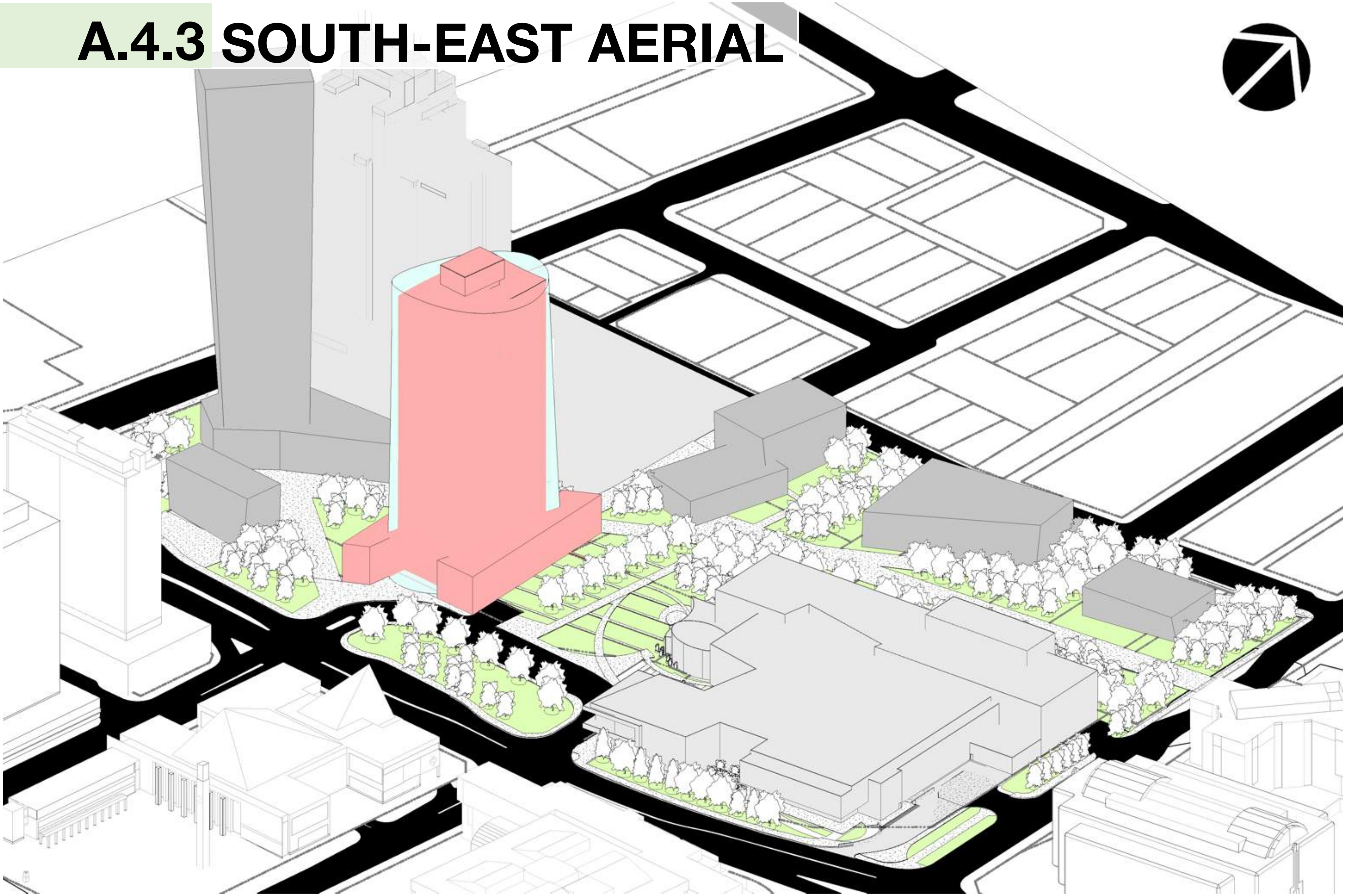


AUGUST 3PM

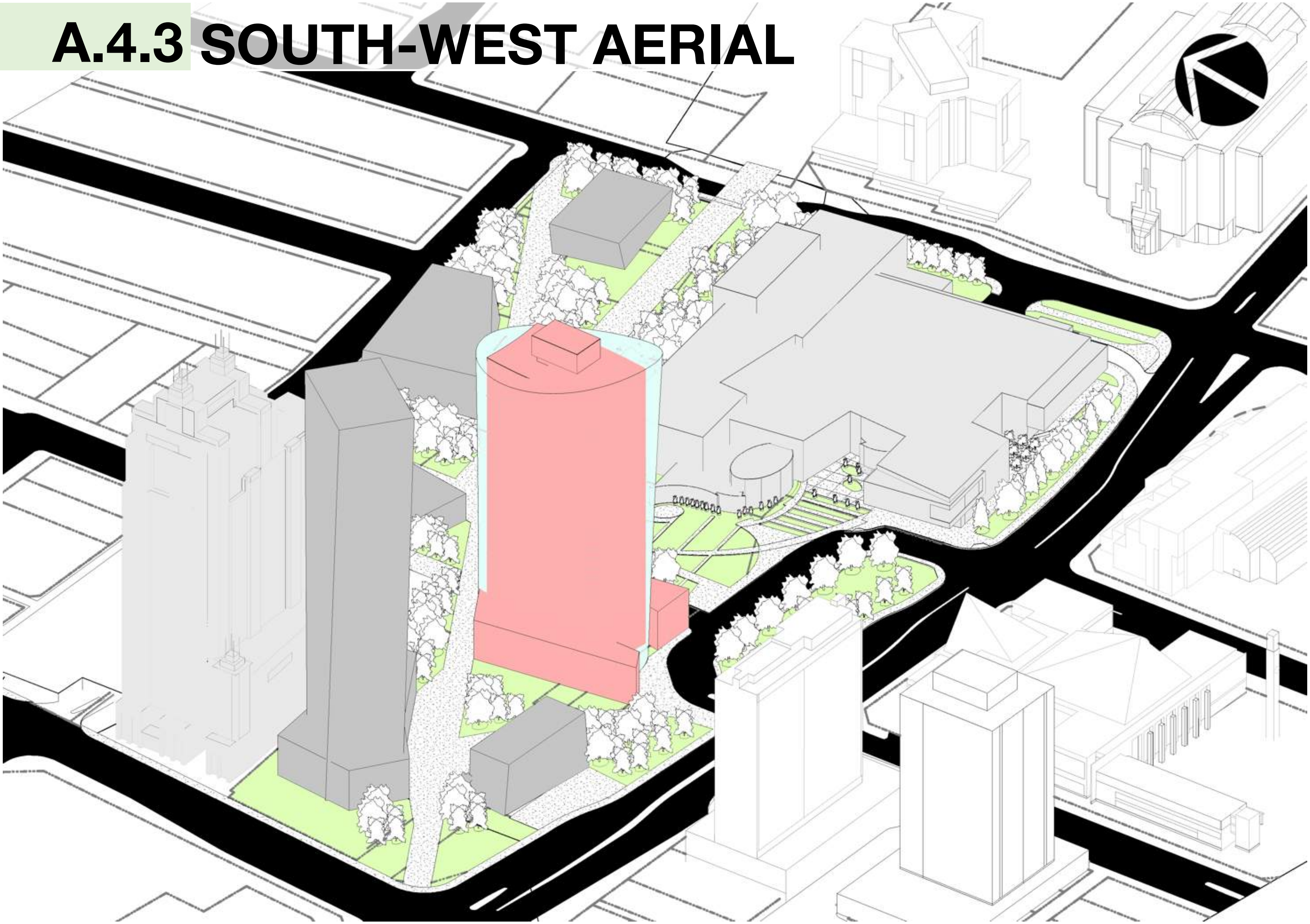


AUGUST 6PM

A.4.3 SOUTH-EAST AERIAL

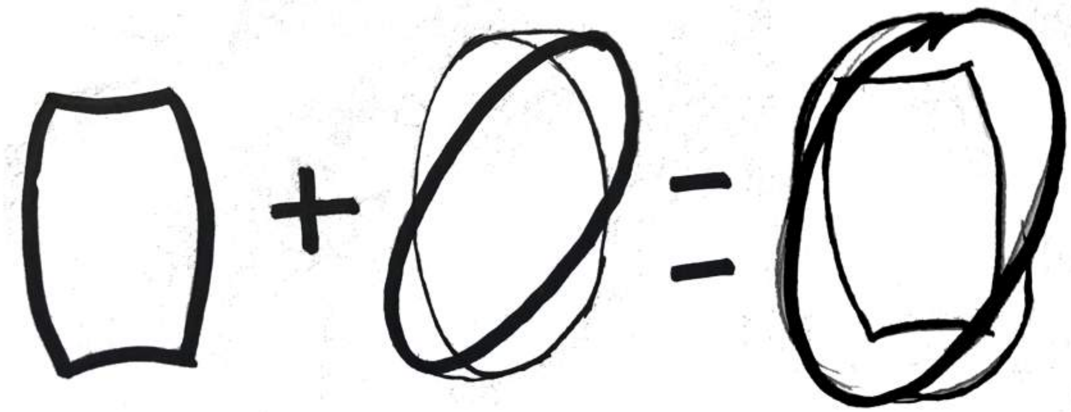


A.4.3 SOUTH-WEST AERIAL

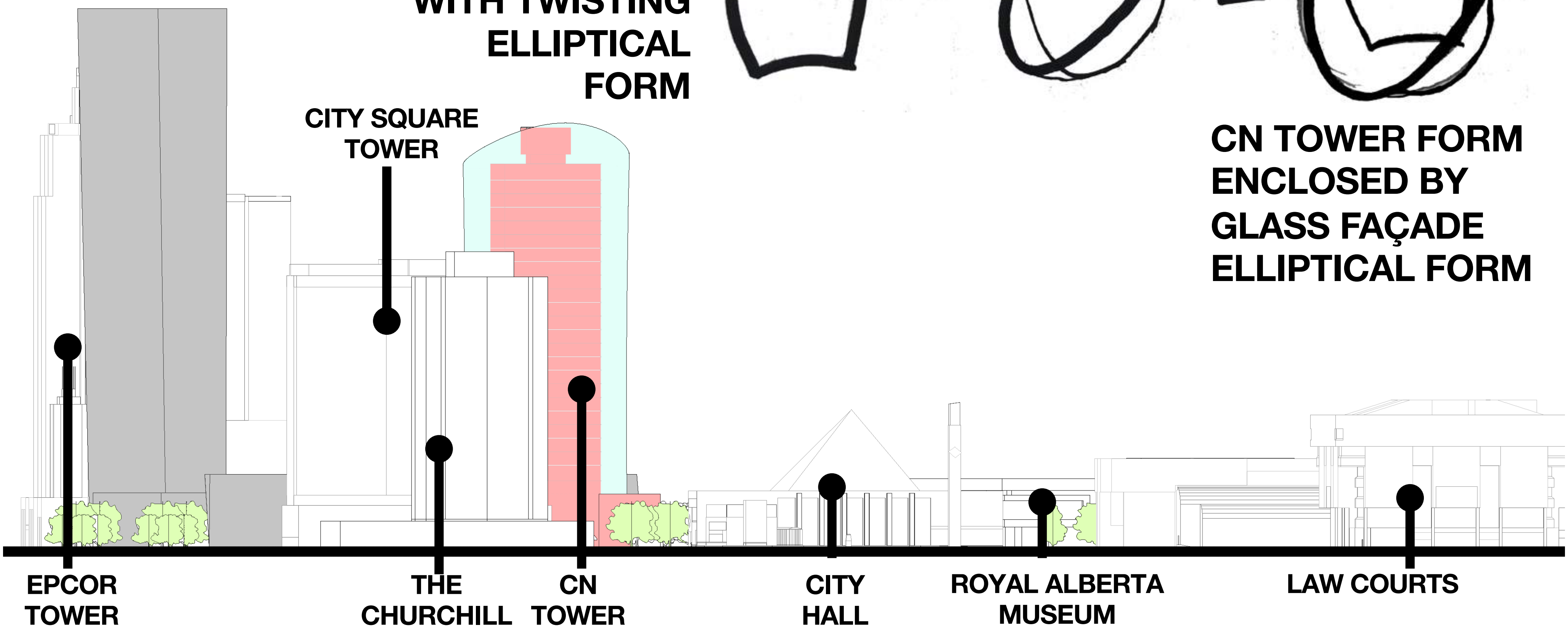


A.4.3 PARTI

EXISTING CN TOWER COMBINED WITH TWISTING ELLIPTICAL FORM



CN TOWER FORM ENCLOSED BY GLASS FAÇADE ELLIPTICAL FORM



BUILDING HEIGHTS

RAIC690B: SYLLABUS DIPLOMA PROJECT

THE REVITALIZATION OF EDMONTON TOWER CN LANDS INTO SOCIAL HOUSING AND SOCIAL SERVICES SUPPORT HUB THROUGH THE UTILIZATION OF DECONSTRUCTIVIST ARCHITECTURE

PART B

FINAL PRESENTATION

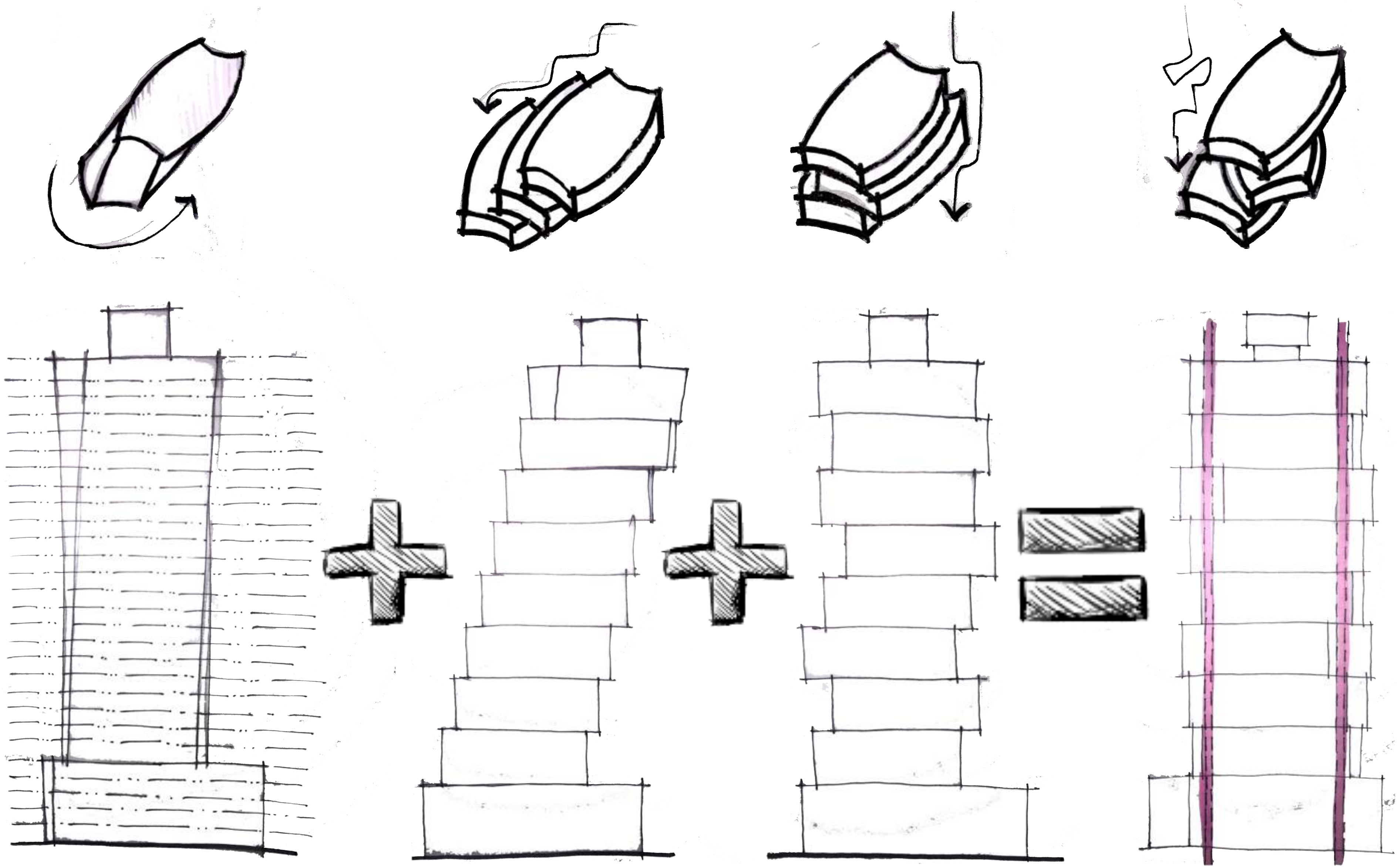
RAIC SYLLABUS

PART B

B.1 DESIGN DEVELOPMENT

RAIC SYLLABUS

B.1.1 CONCEPT DESIGN DEVELOPMENT - BLDG



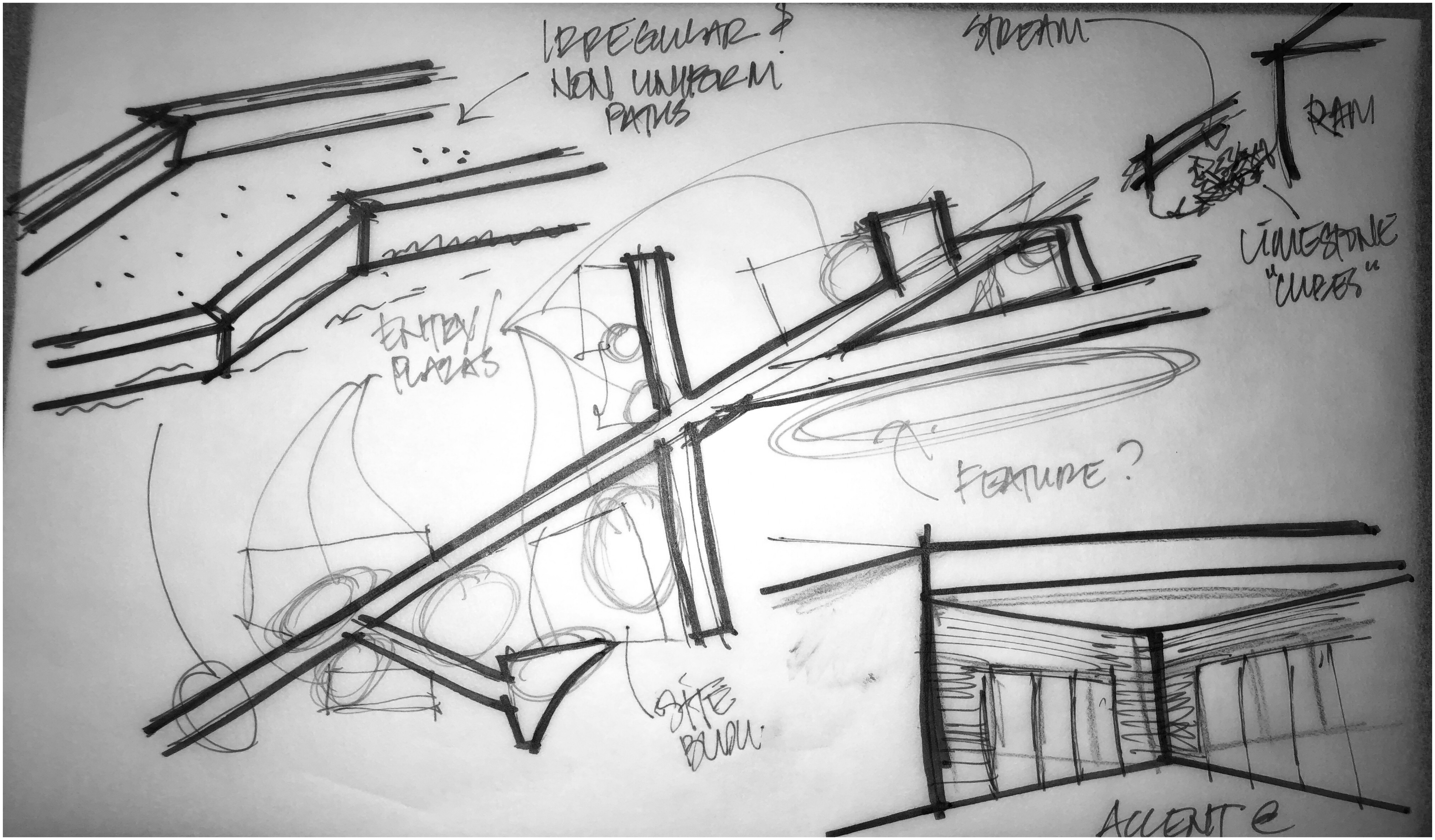
TWISTING CN TOWER FORM

STAGGERED PLATEAU CN TOWER

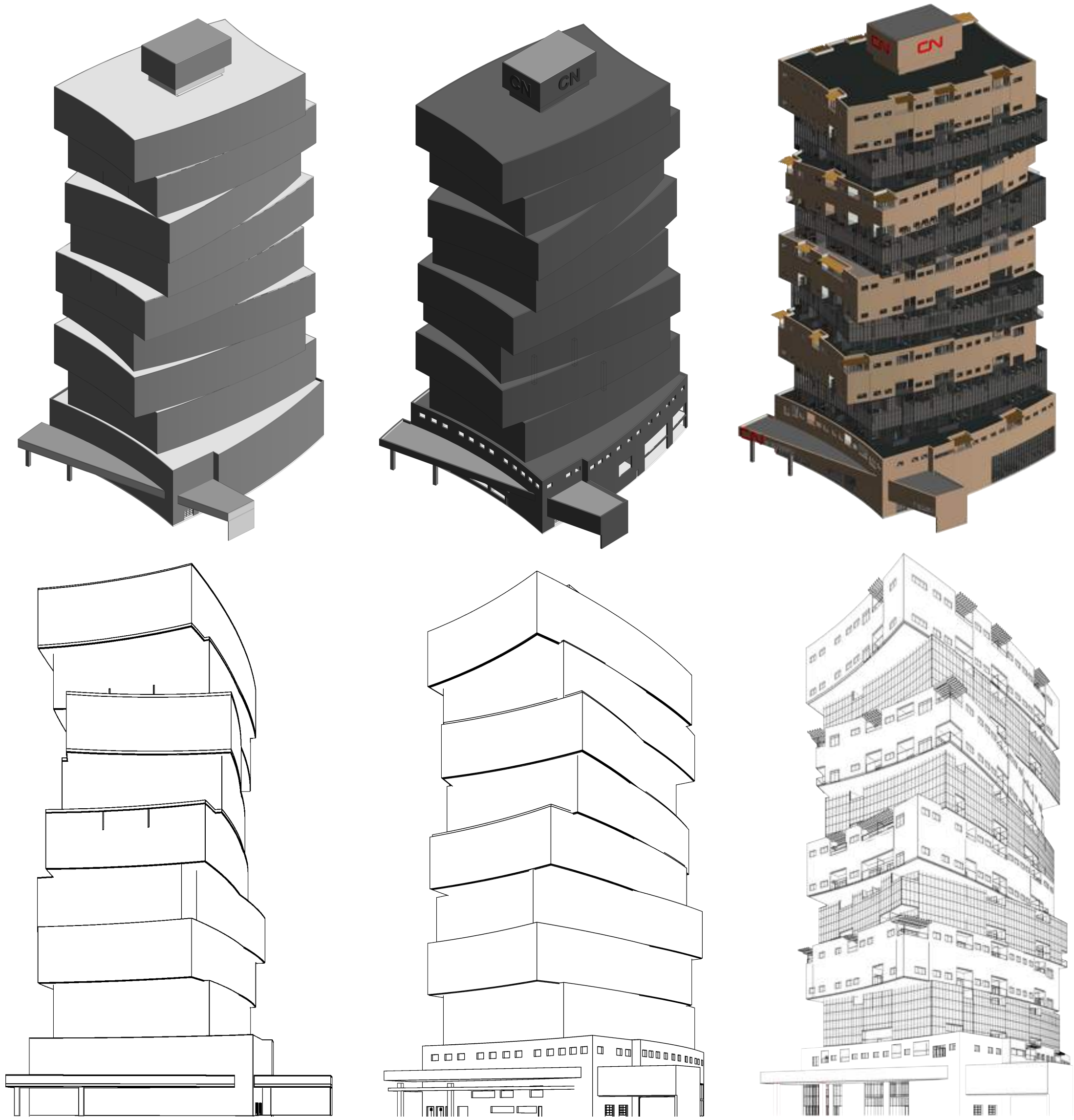
STEPPED/STACKED CN TOWER FORM

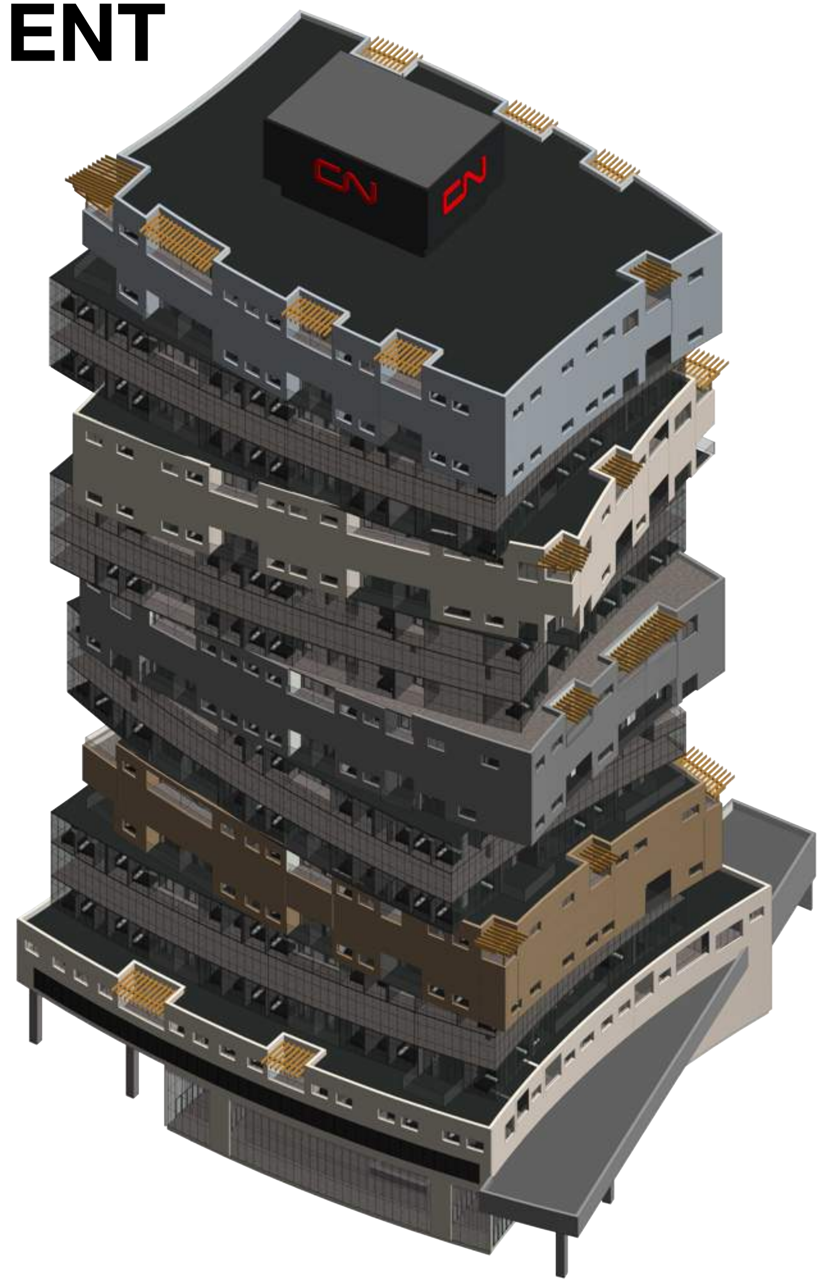
FINAL DESIGN RESULT

B.1.2 CONCEPT DESIGN DEVELOPMENT - SITE



B.1.3 CONCEPT DEVELOPMENT





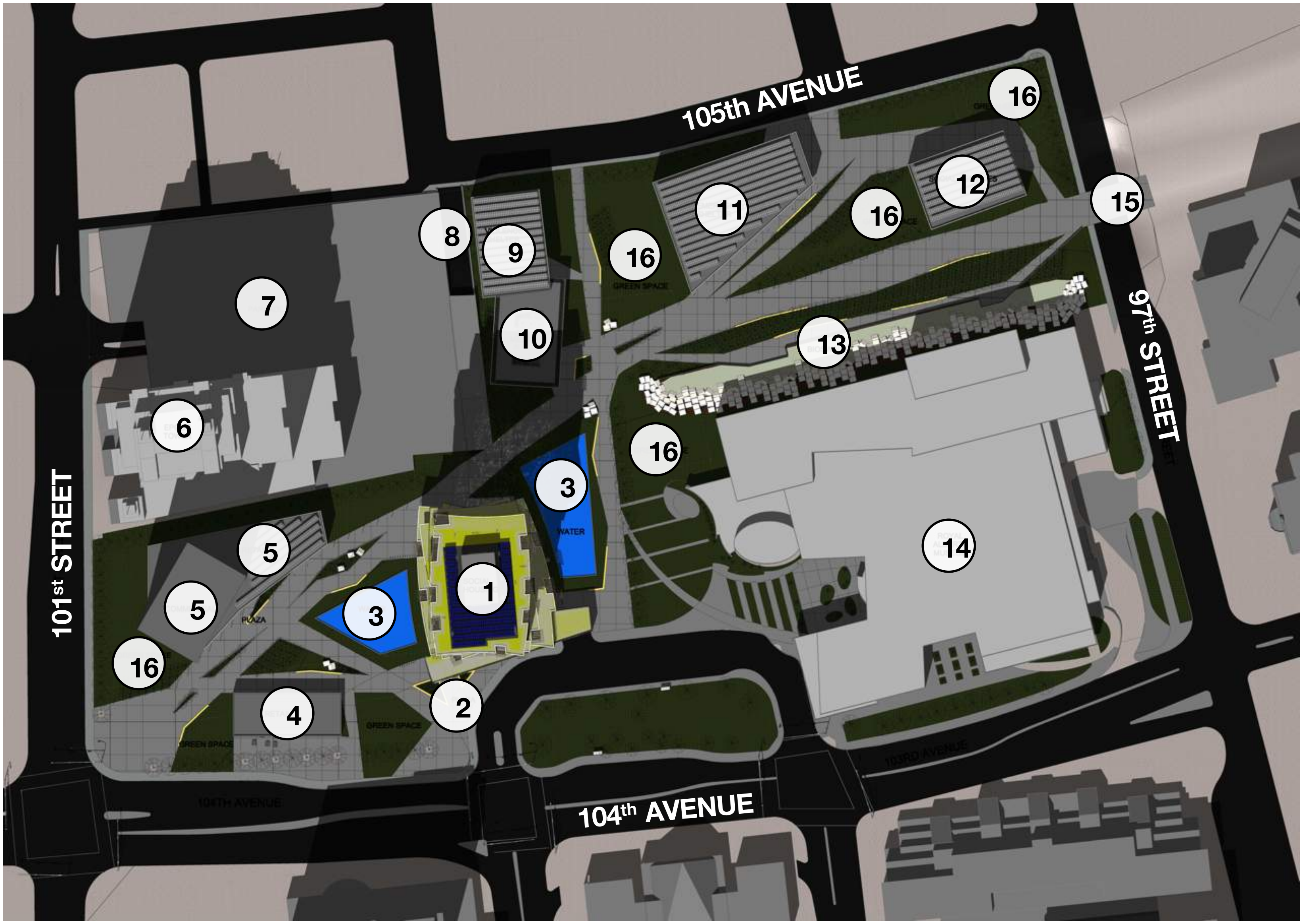
PART B

B.2 FINAL DESIGN

RAIC
SYLLABUS

CN LANDS DISTRICT

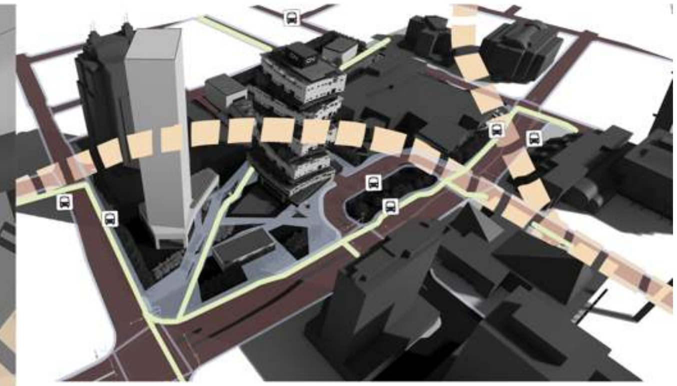
B.2.1 OVERALL SITE PLAN



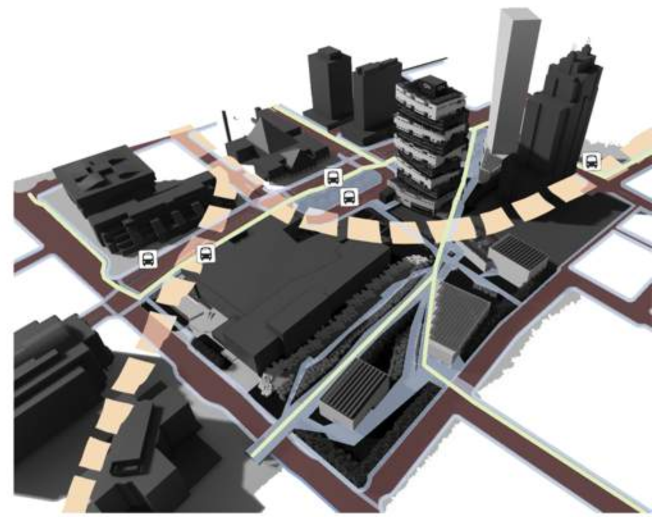
LEGEND

1 CN TOWER
2 PLAZA
3 WATER FEATURE
4 FUTURE COFFEE SHOP
5 FUTURE MIXED-USE
6 EPCOR TOWER
7 PARKADE
8 PARKADE ENTRANCE
9 FUTURE VIOLENCE SHELTER
10 FUTURE MEDICAL CLINIC
11 FUTURE EMERGENCY SHELTER
12 FUTURE SERVICES BUILDING
13 STREAM
14 ROYAL ALBERTA MUSEUM
15 OVER PASS CONNECTION
16 GREEN SPACE

B.2.2 SITE MOBILITY PLAN



SOUTH-WEST AERIAL

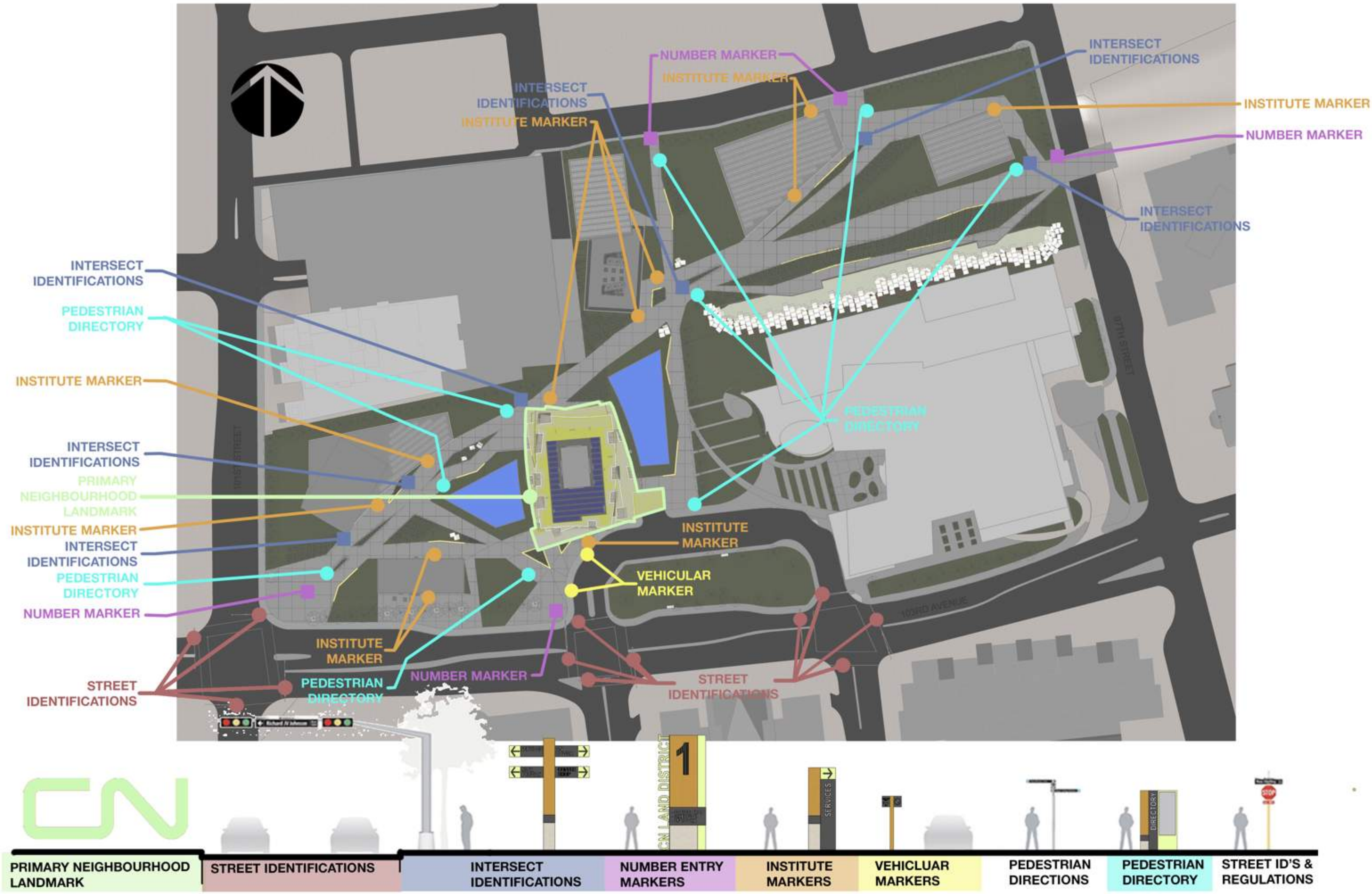


NORTH-EAST AERIAL

LEGEND

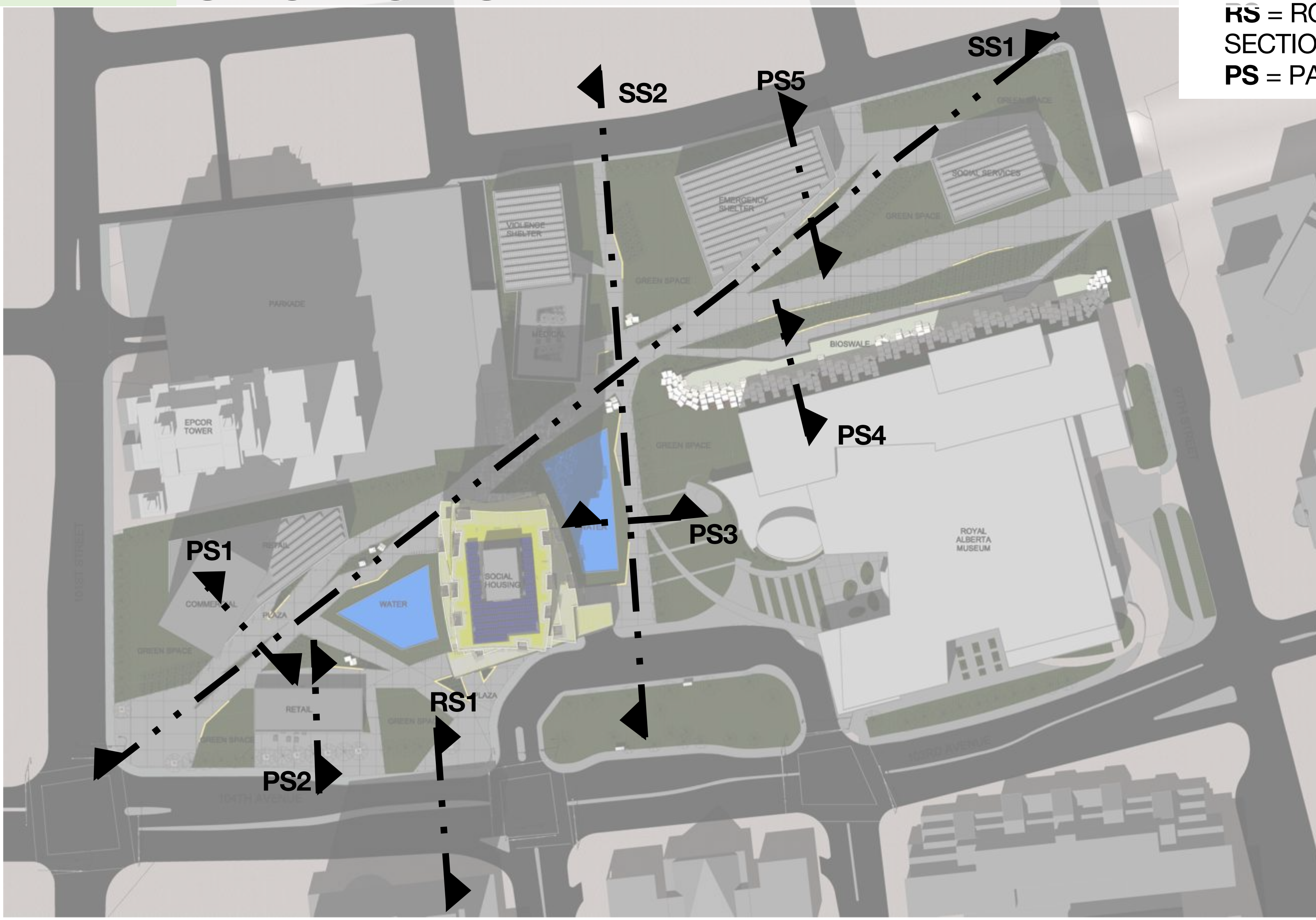
- VEHICULAR TRAFFIC
- PEDESTRIAN ROUTES
- BICYCLE ROUTES
- TRANSIT LIGHT RAIL ROUTE
- TRANSIT STOPS

B.2.3 WAYFINDING

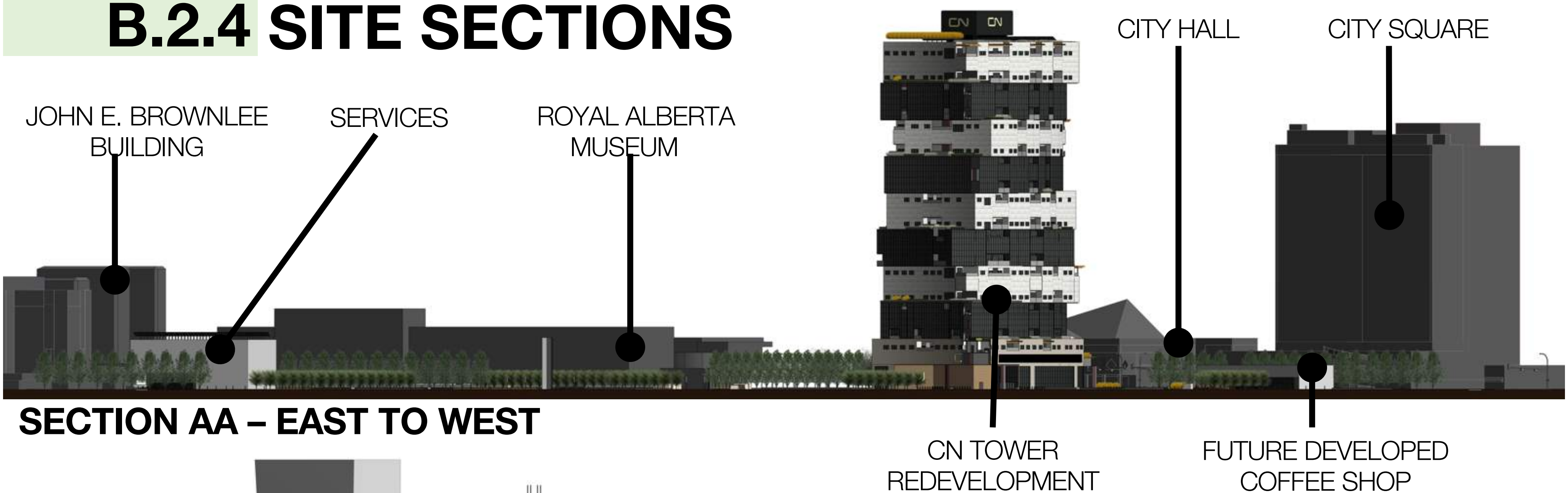


B.2.4 SECTIONS KEYPLAN

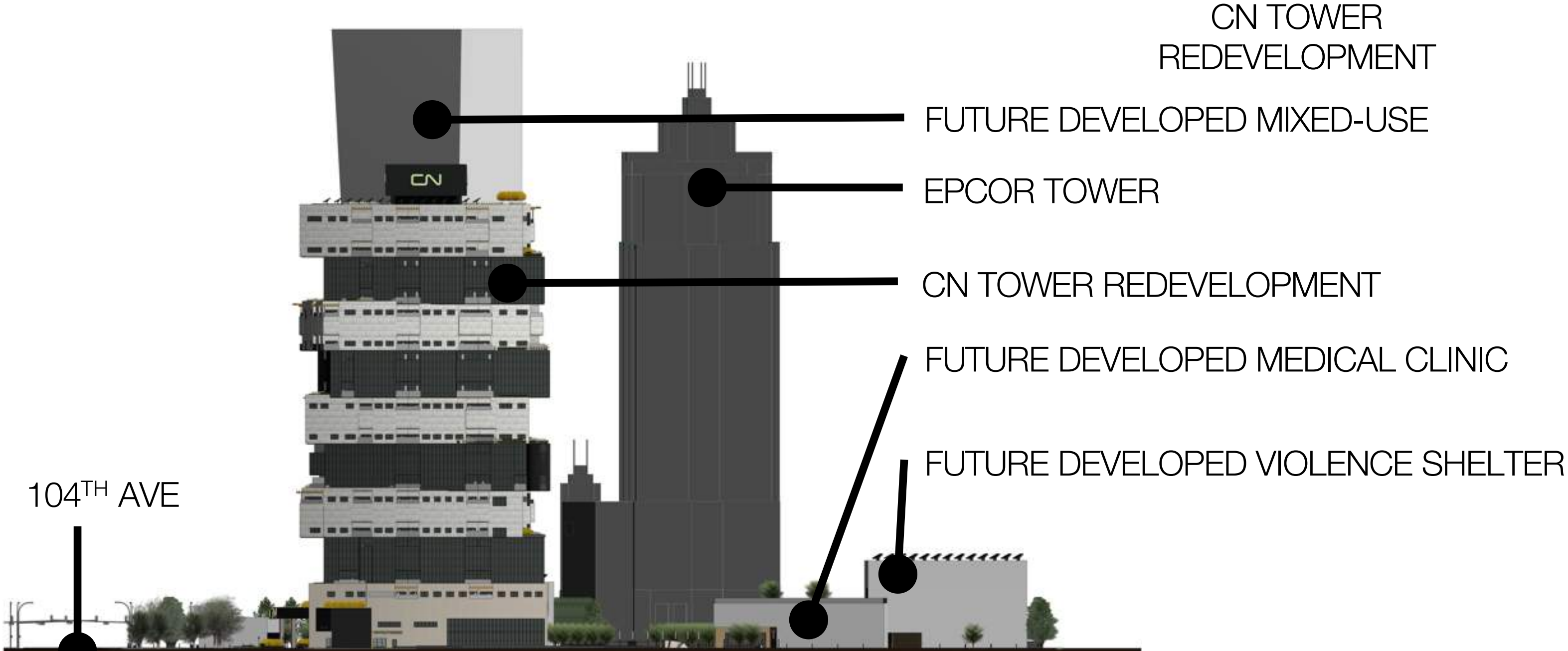
LEGEND
SS = SITE SECTION
RS = ROAD SECTION
PS = PATH SECTION



B.2.4 SITE SECTIONS

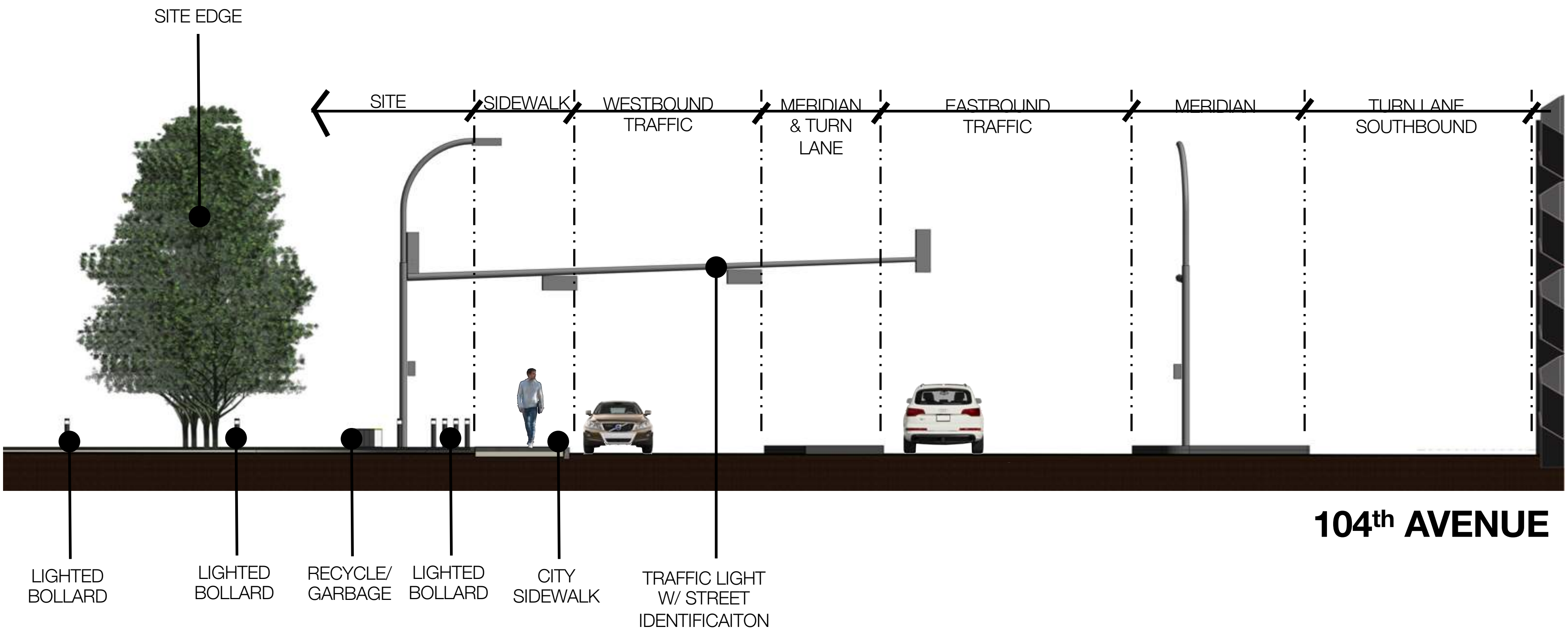


SECTION AA – EAST TO WEST

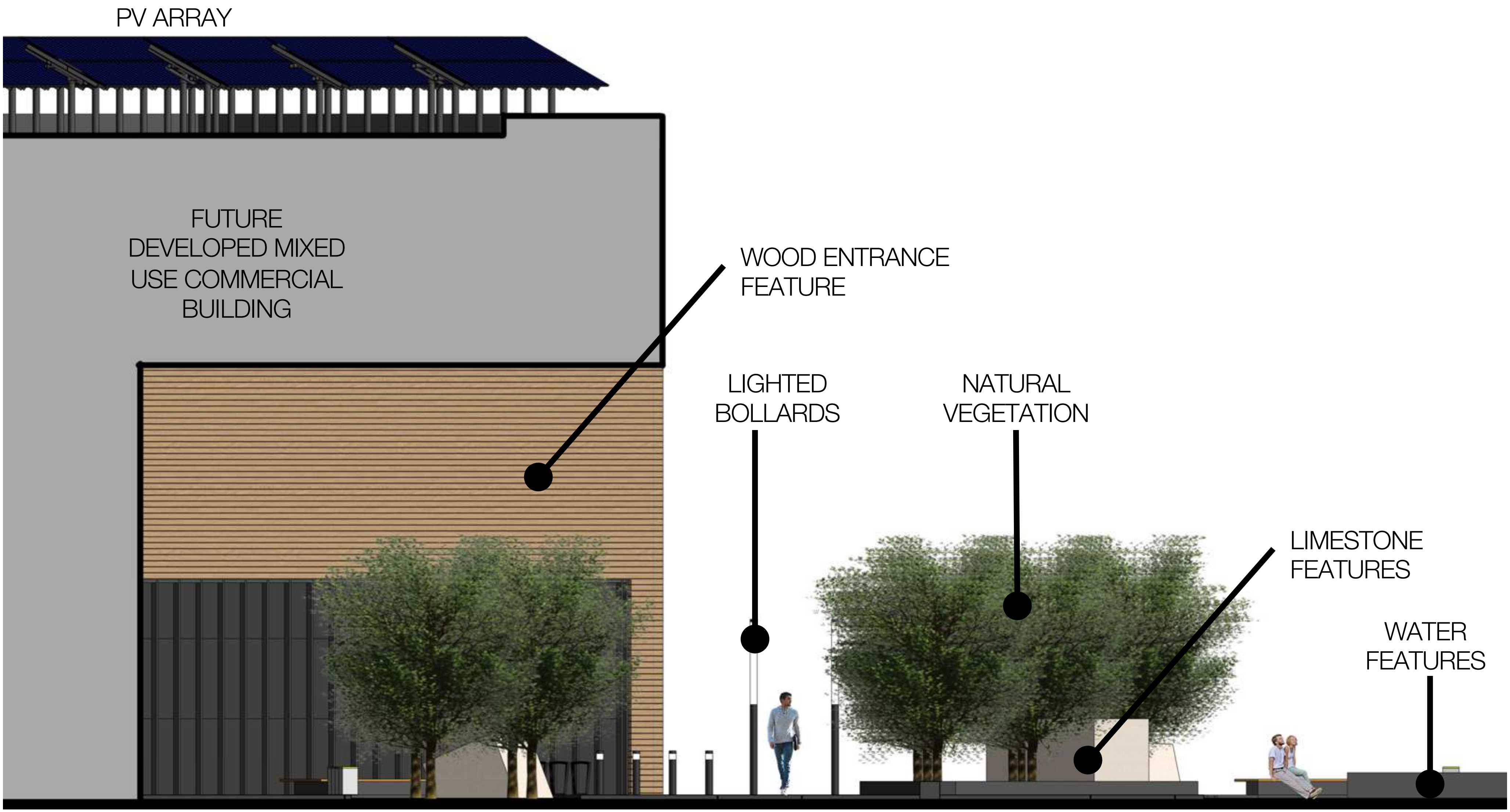


SECTION BB – NORTH - SOUTH

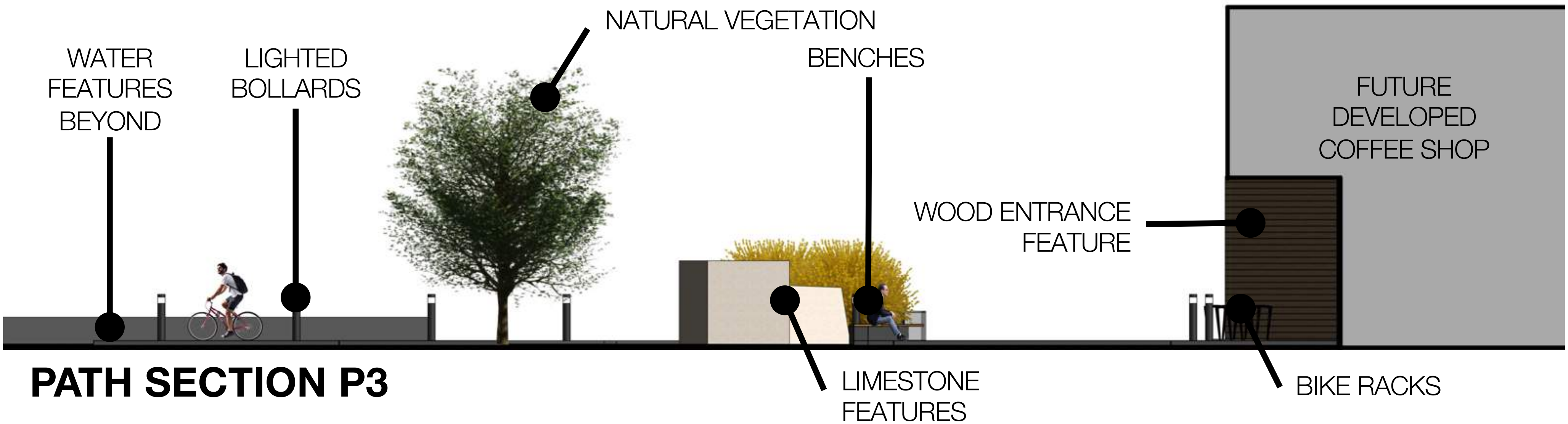
B.2.6 ROAD SECTION



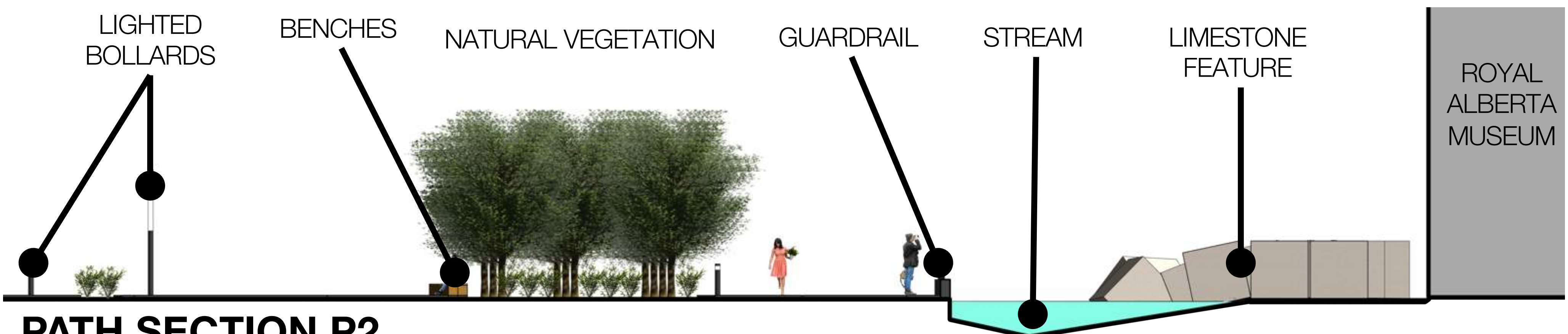
B.2.7 PATH SECTION P1



B.2.7 PATH SECTIONS

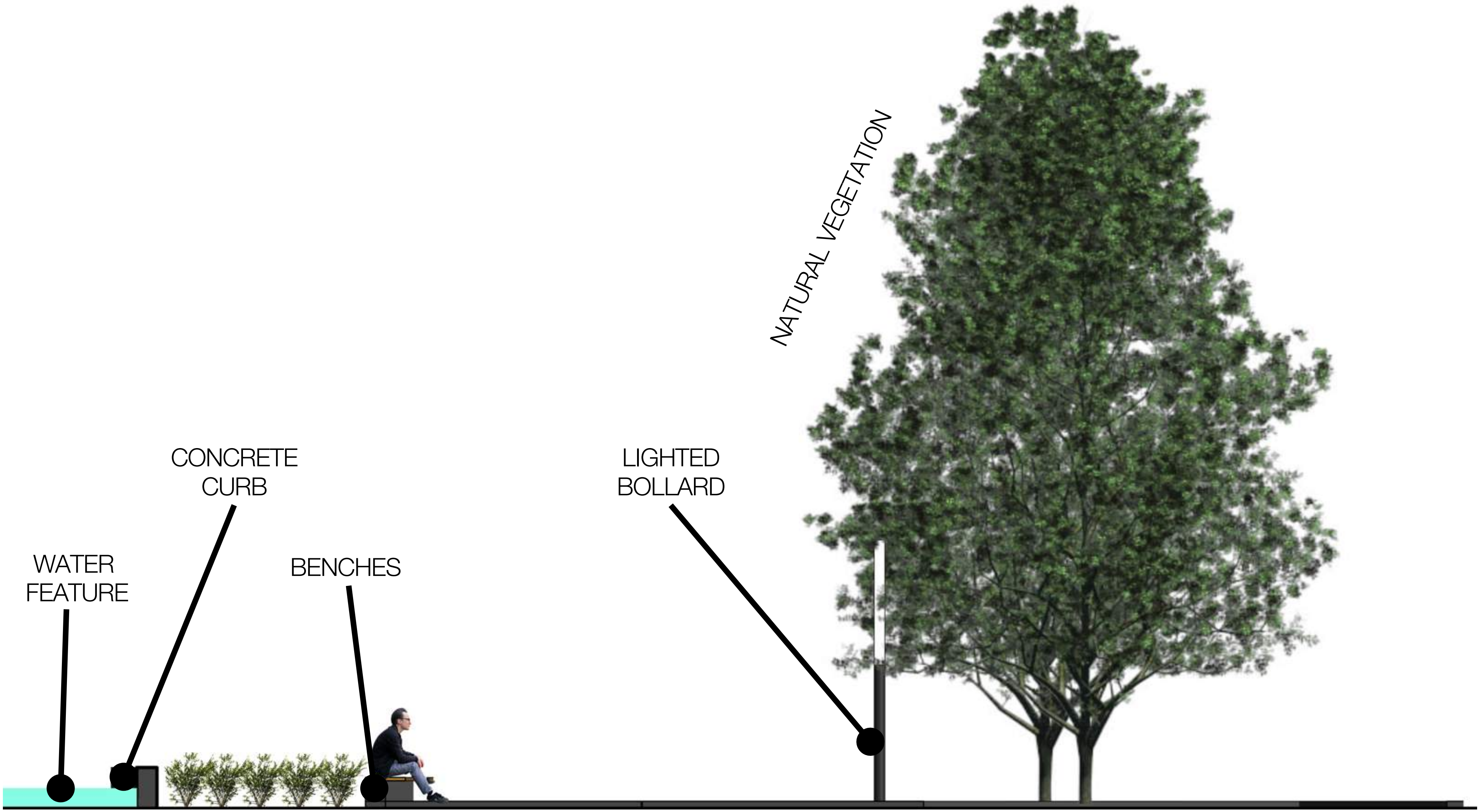


PATH SECTION P3

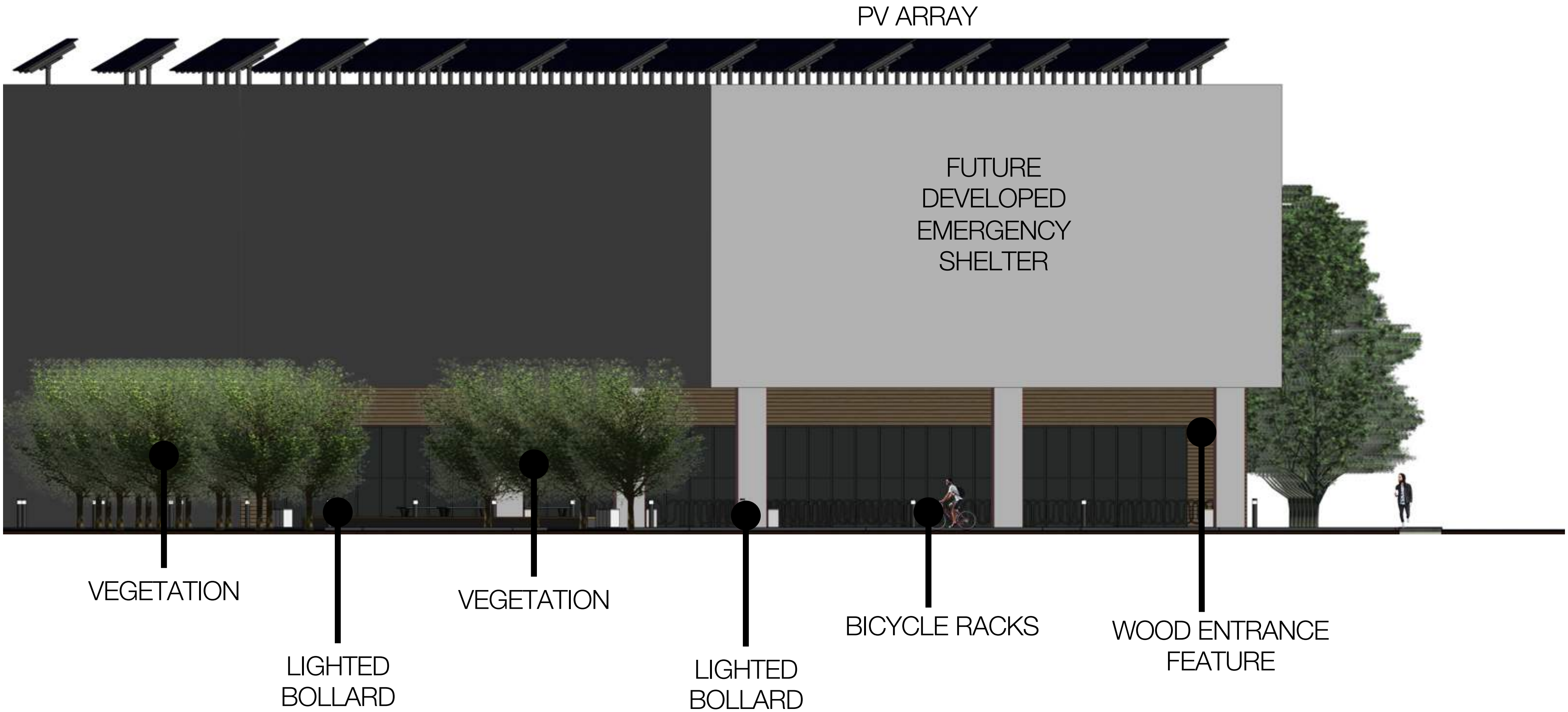


PATH SECTION P2

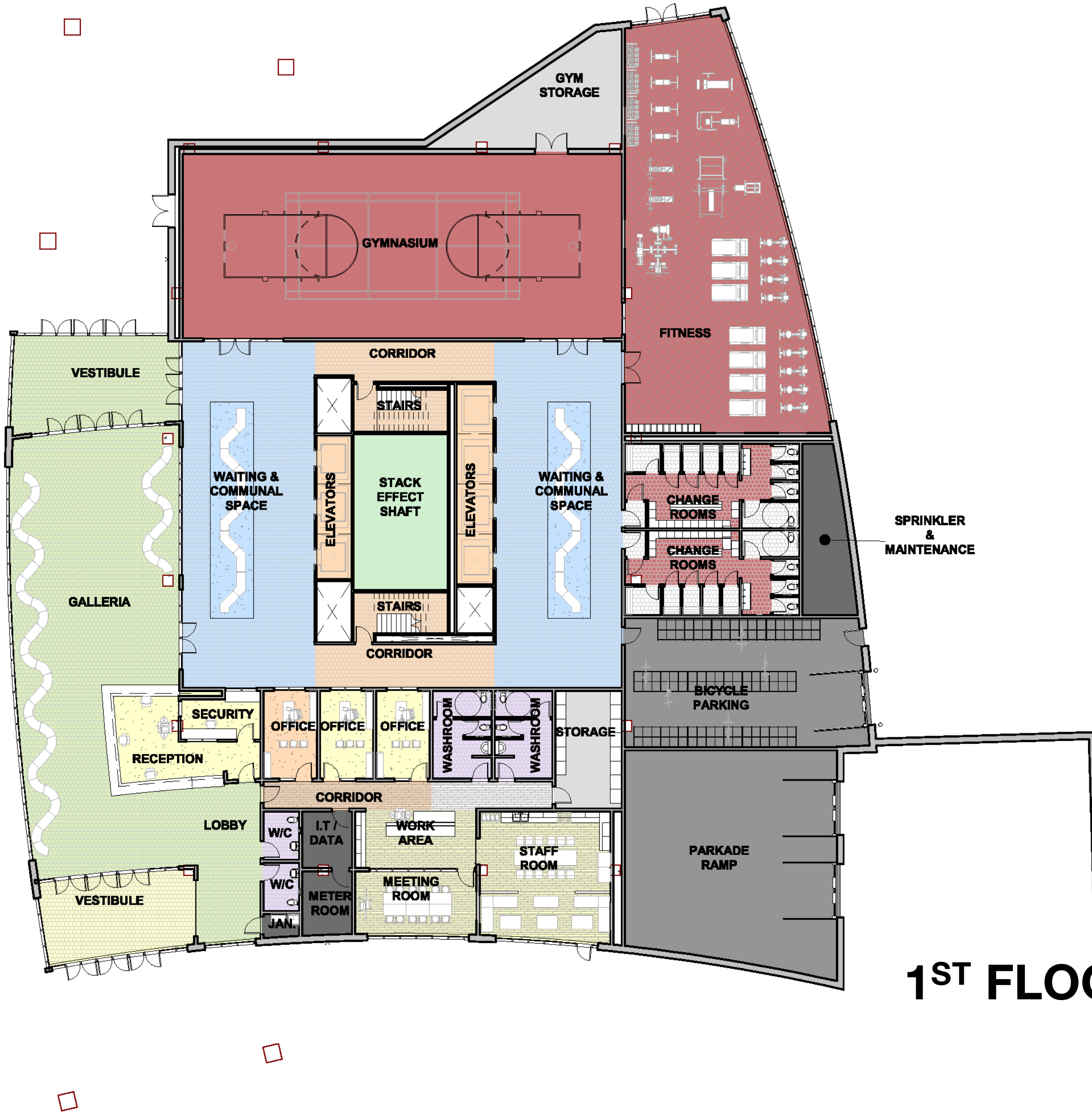
B.2.7 PATH SECTION P4



B.2.7 PATH SECTION P5



B.2.8 FLOOR PLAN



LEGEND

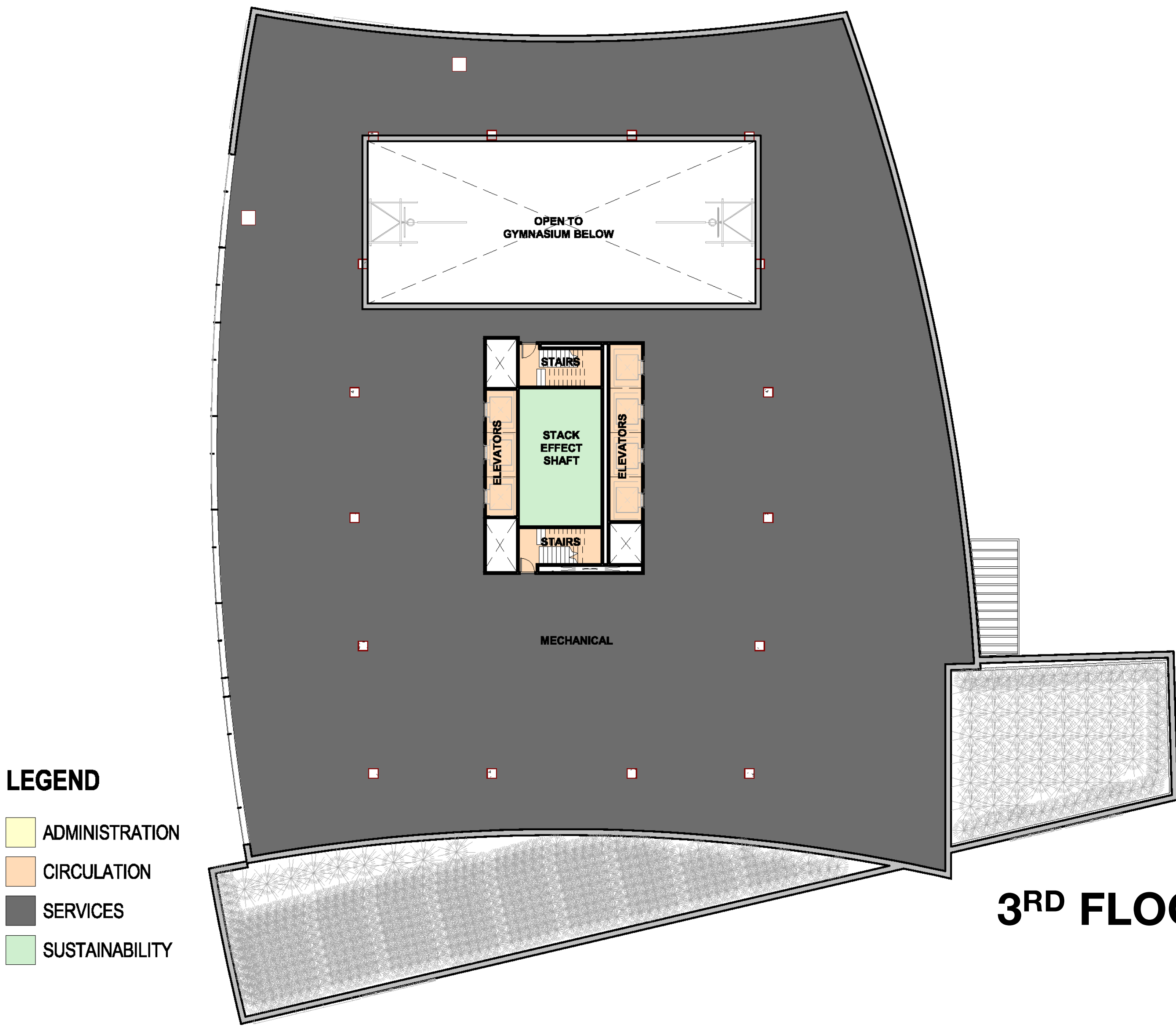
- ACTIVITIES
- ADMINISTRATION
- CIRCULATION
- COMMUNAL SPACE
- PARKING
- PUBLIC
- SERVICES
- STORAGE
- SUSTAINABILITY
- WASHROOM

1ST FLOOR PLAN

B.2.8 FLOOR PLAN

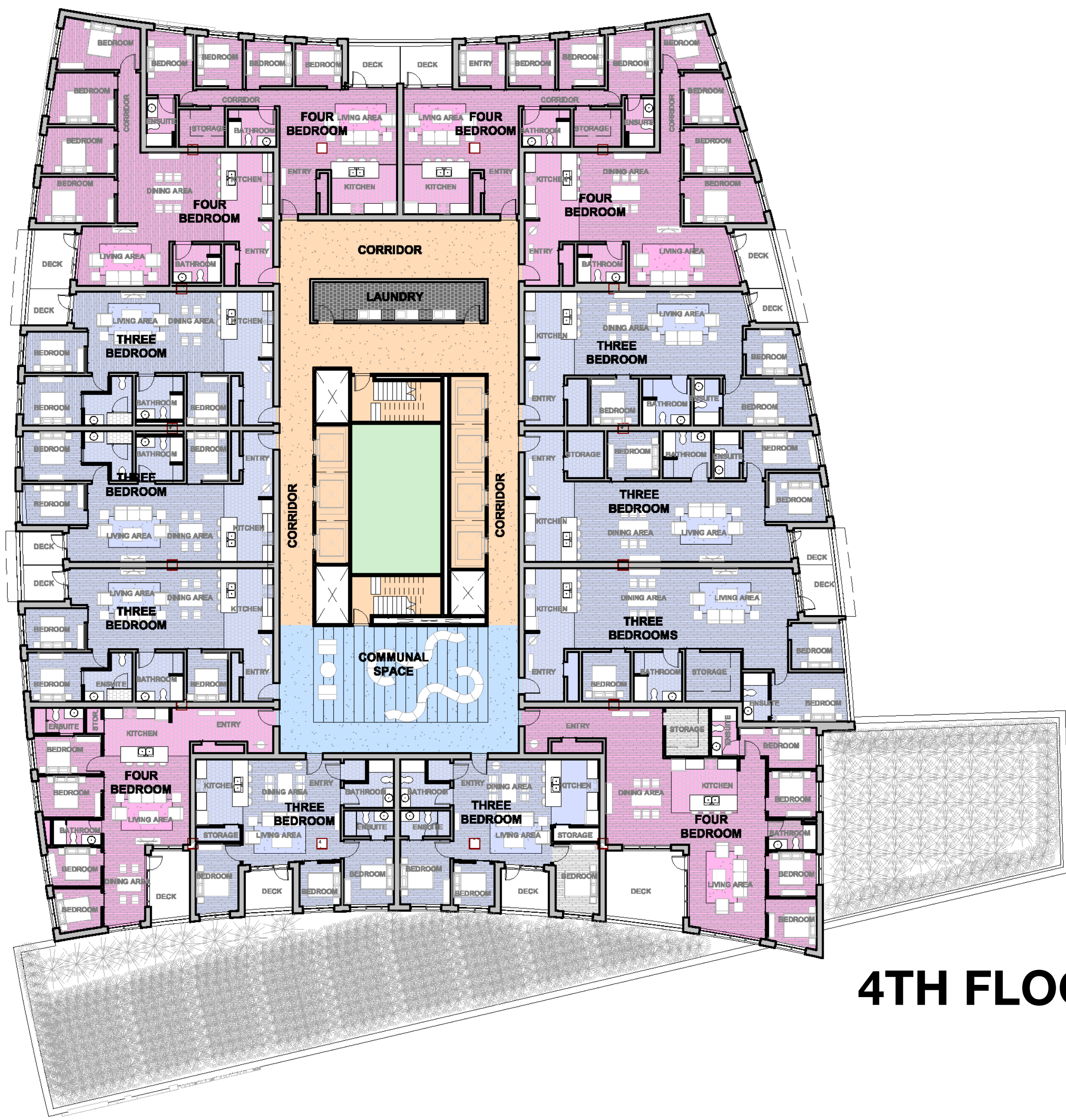
2ND FLOOR PLAN

B.2.8 FLOOR PLAN



3RD FLOOR PLAN

B.2.8 FLOOR PLAN

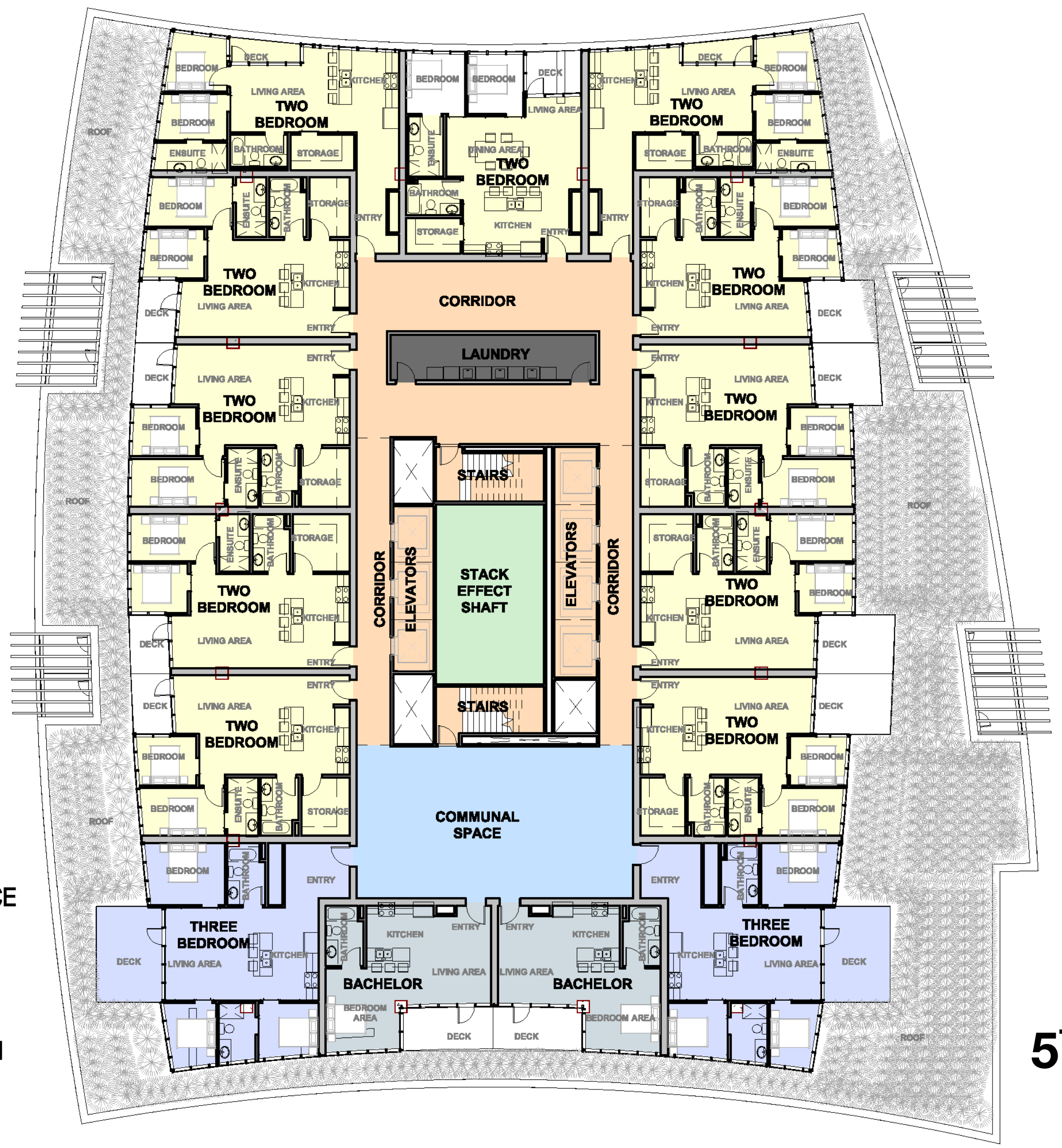


LEGEND

- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM

4TH FLOOR PLAN

B.2.8 FLOOR PLAN

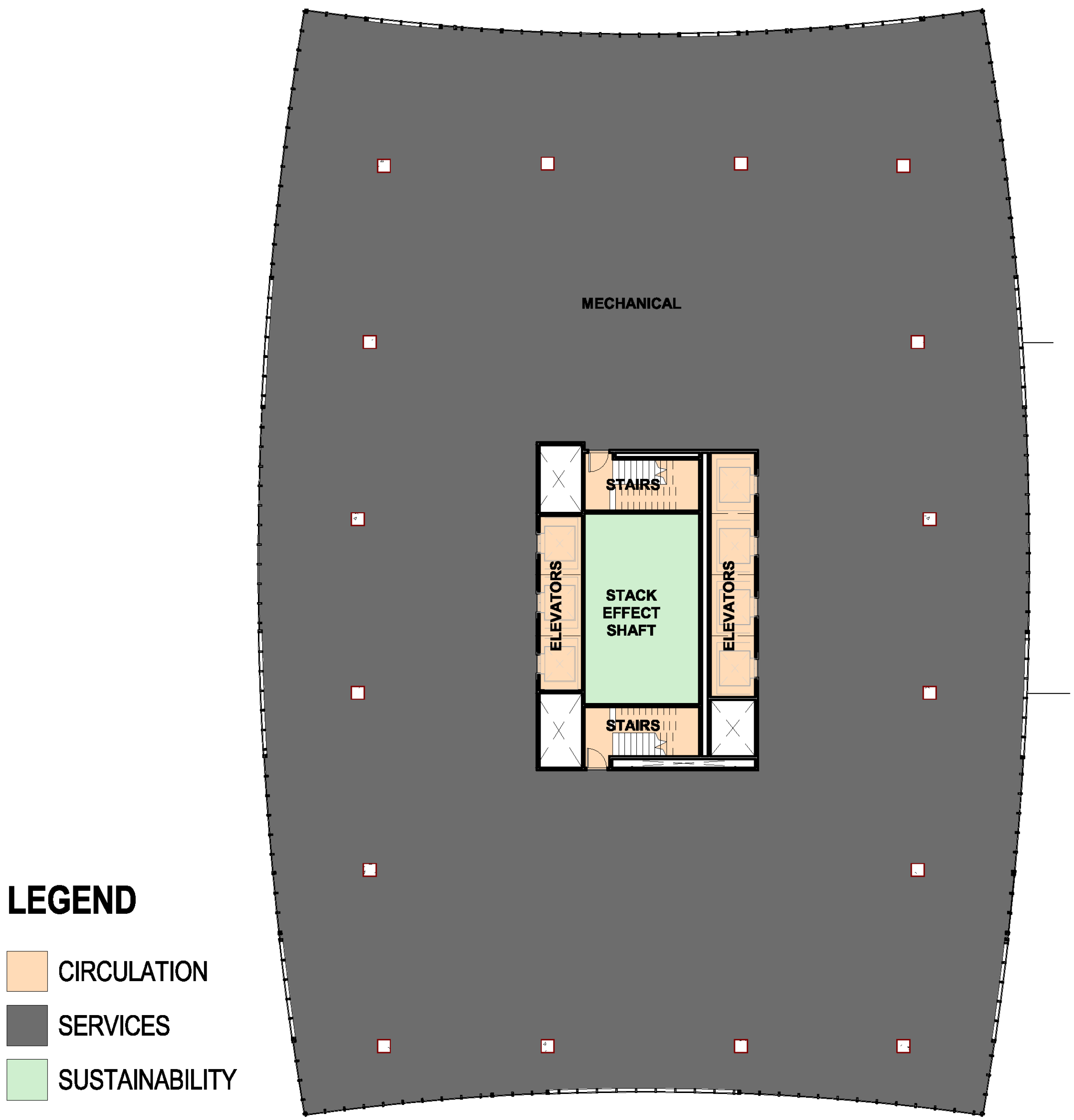


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

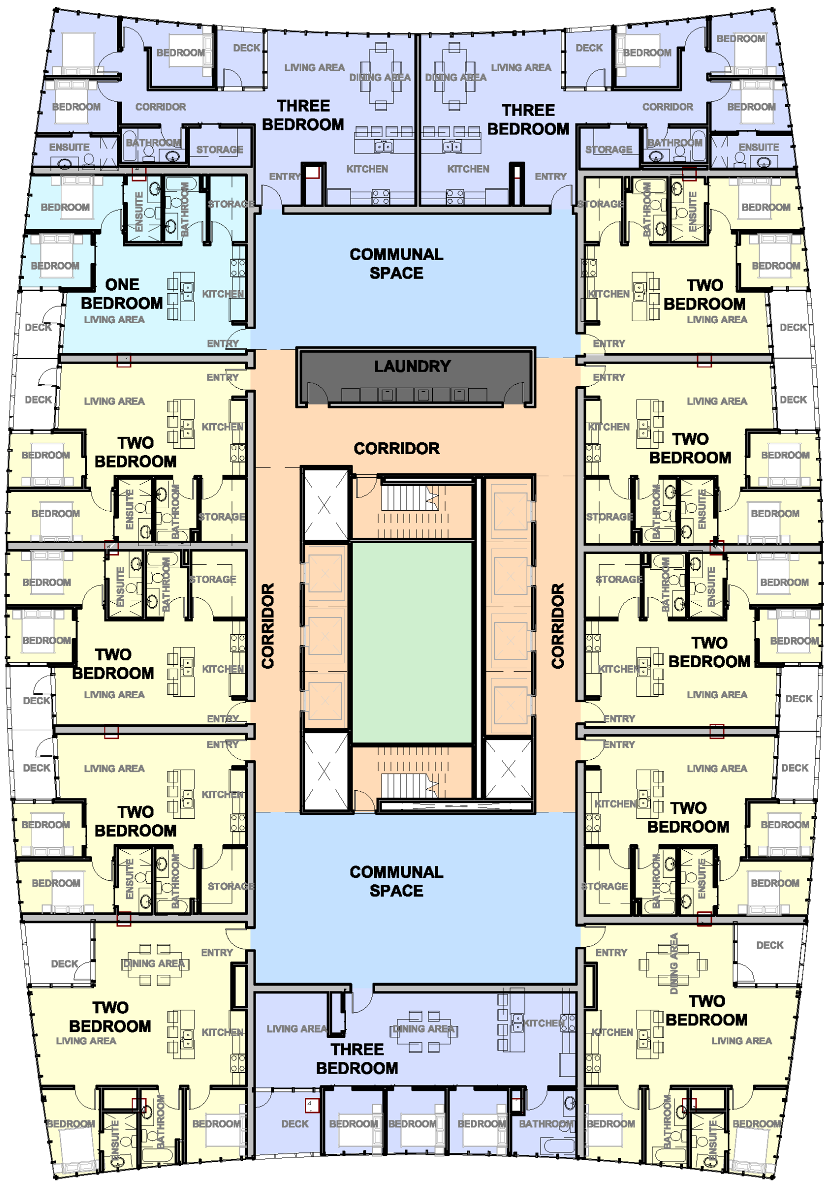
5TH FLOOR PLAN

B.2.8 FLOOR PLAN



6TH FLOOR PLAN

B.2.8 FLOOR PLAN

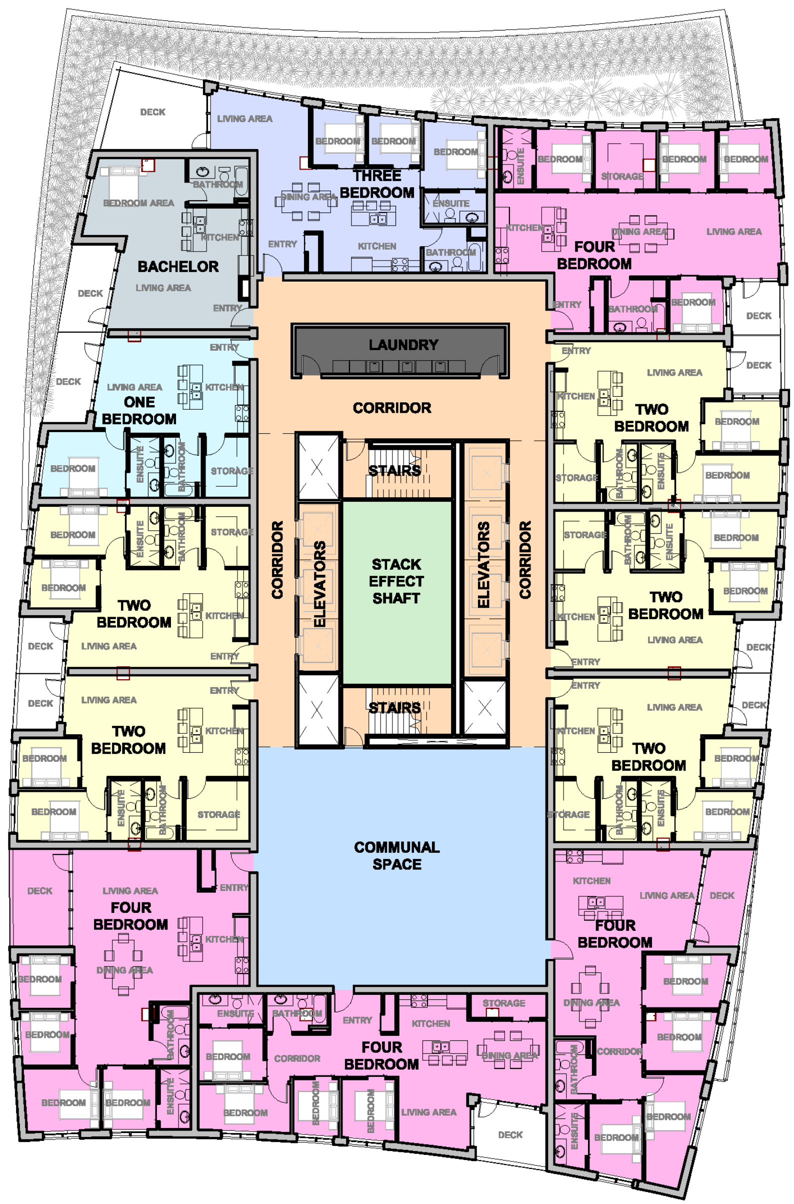


LEGEND

- CIRCULATION
- COMMUNAL SPACE
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

7TH FLOOR PLAN

B.2.8 FLOOR PLAN

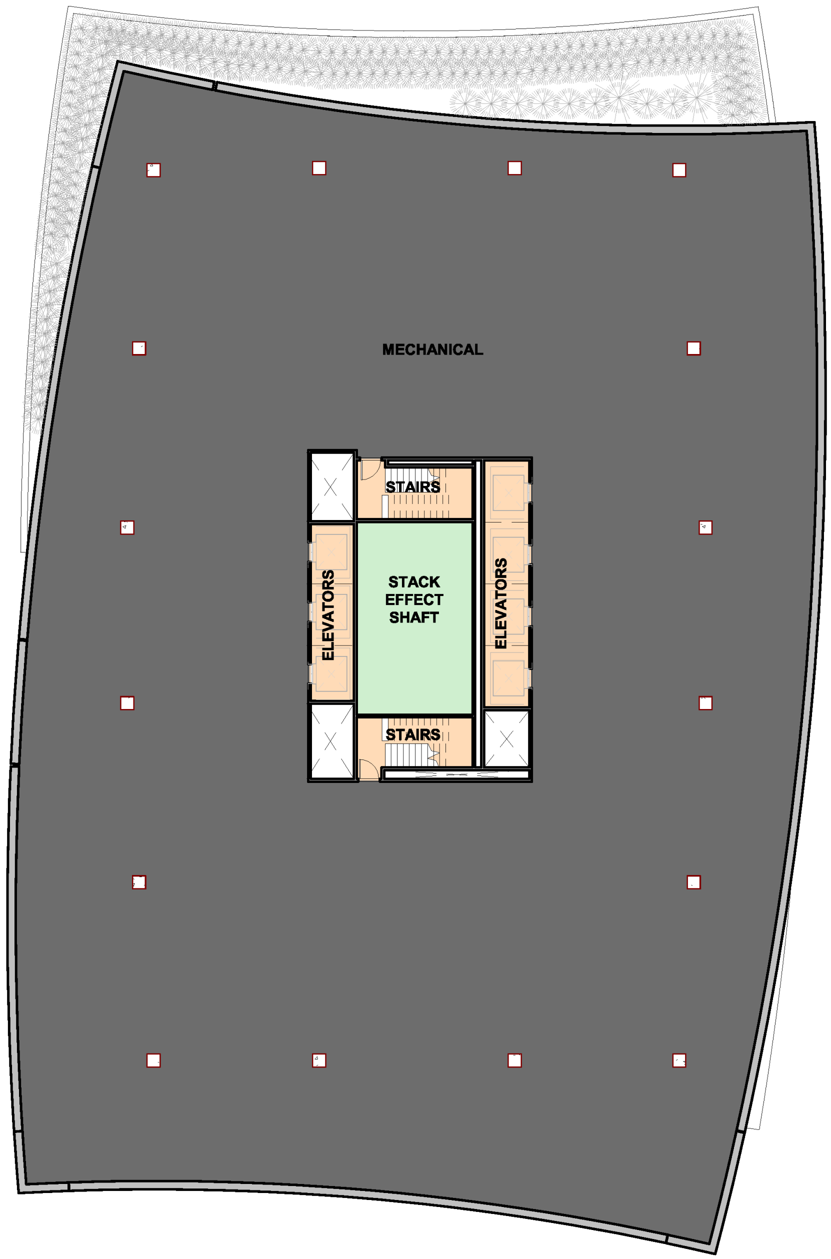


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

8TH FLOOR PLAN

B.2.8 FLOOR PLAN



LEGEND

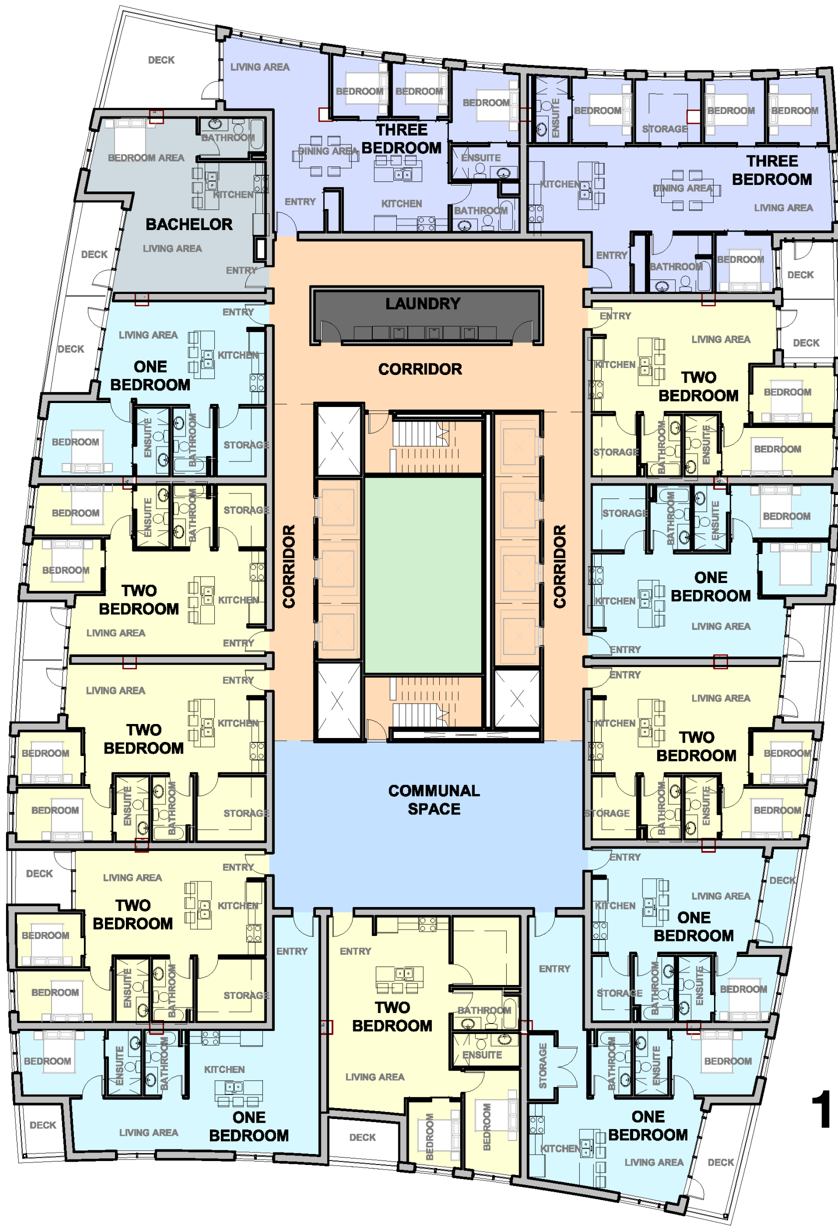
CIRCULATION

SERVICES

SUSTAINABILITY

9TH FLOOR PLAN

B.2.8 FLOOR PLAN

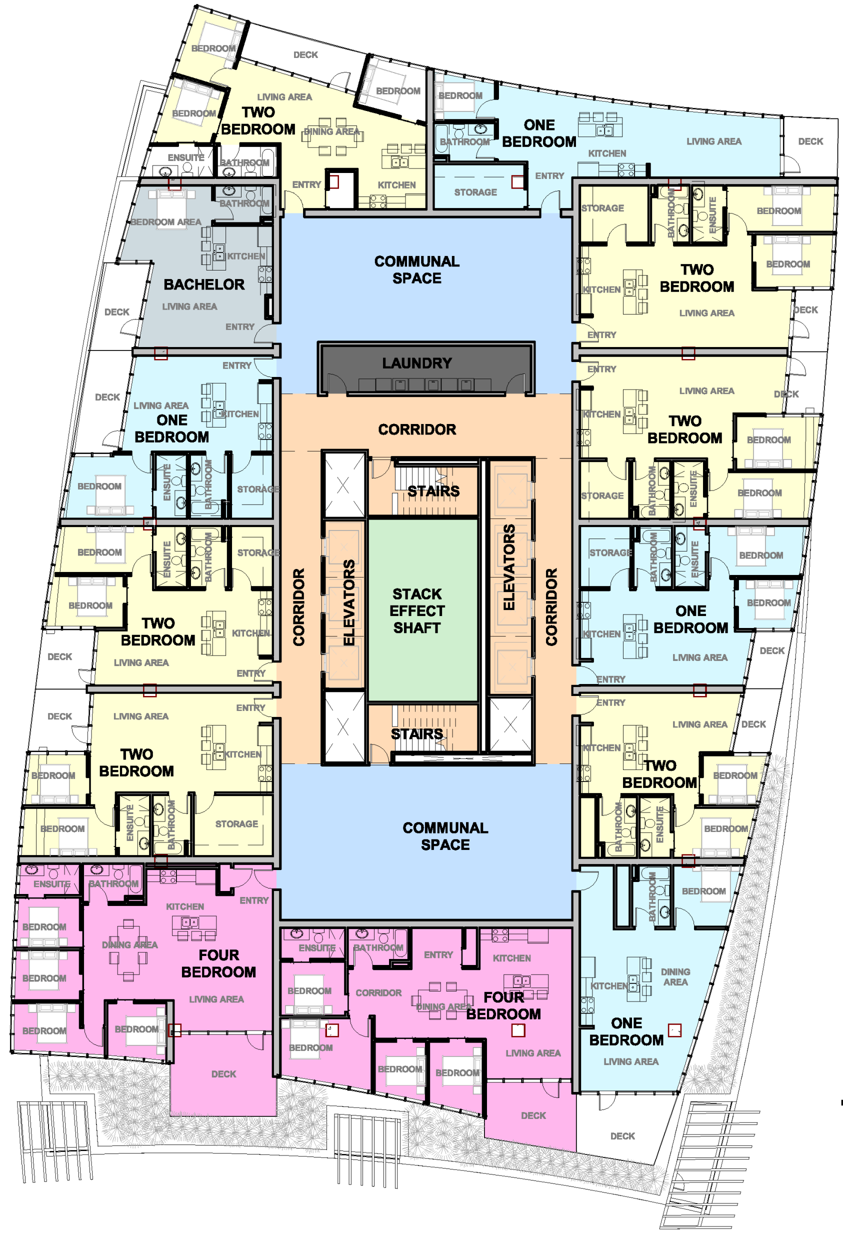


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

10TH FLOOR PLAN

B.2.8 FLOOR PLAN

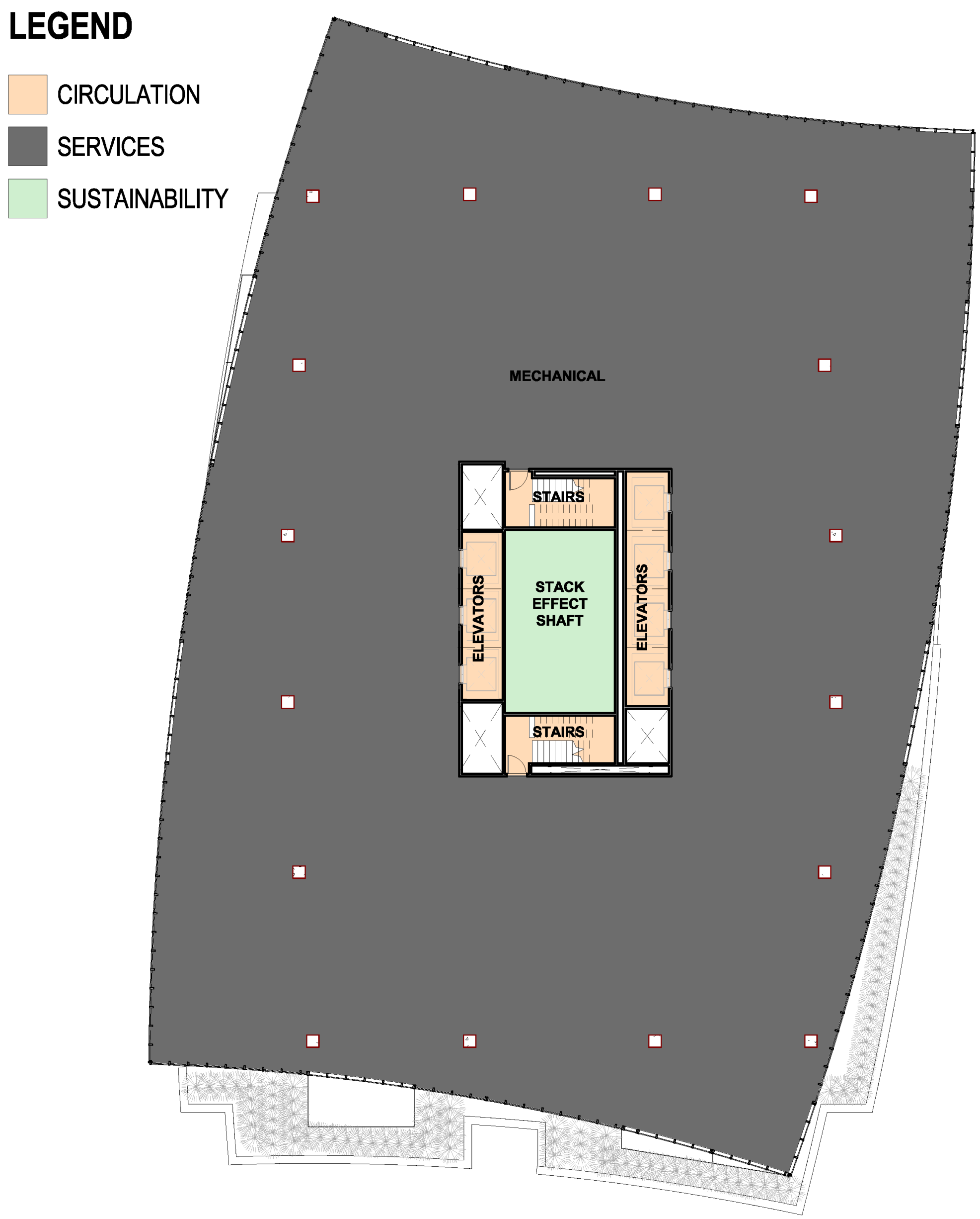


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- TWO BEDROOM

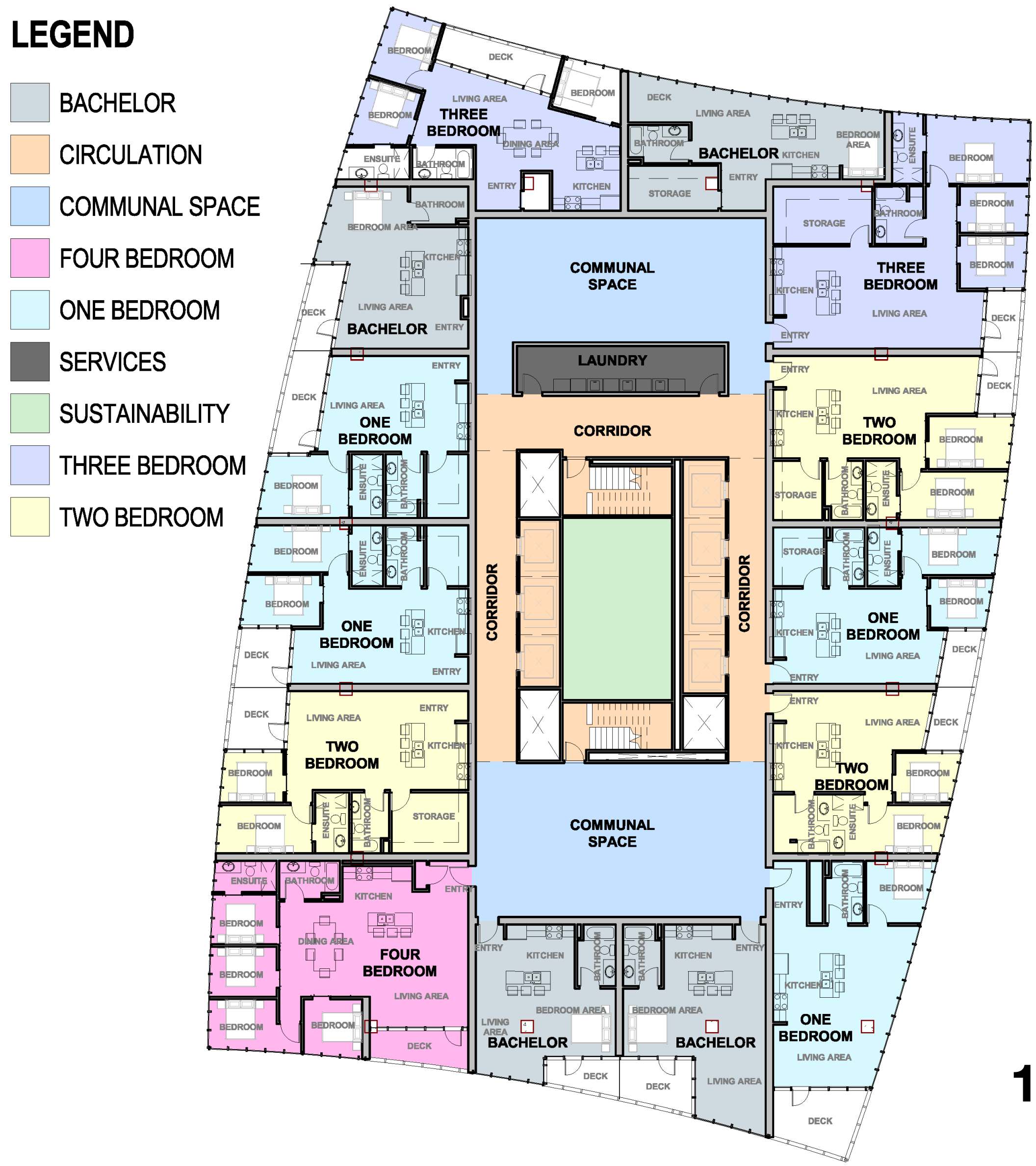
11TH FLOOR PLAN

B.2.8 FLOOR PLAN



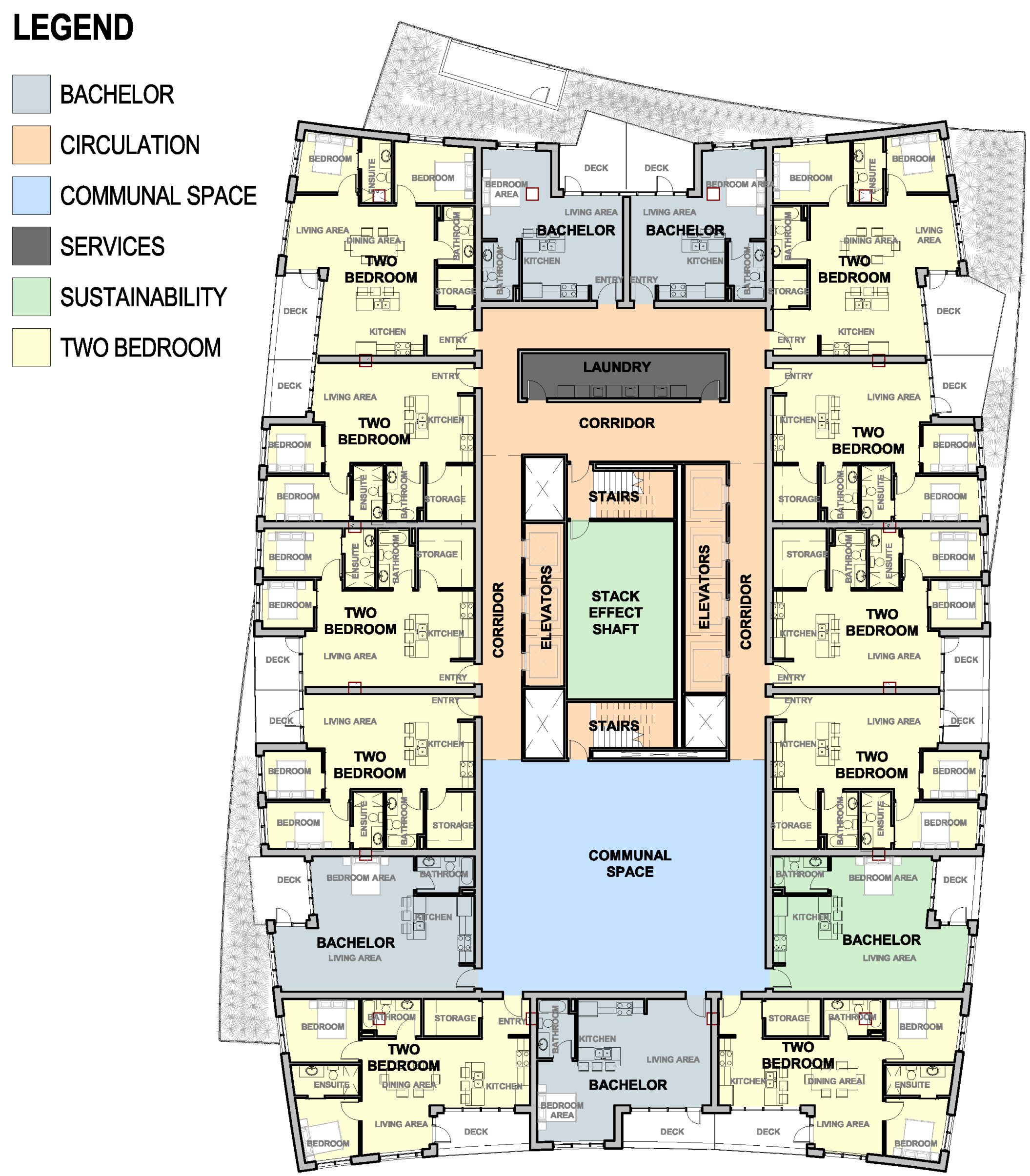
12TH FLOOR PLAN

B.2.8 FLOOR PLAN



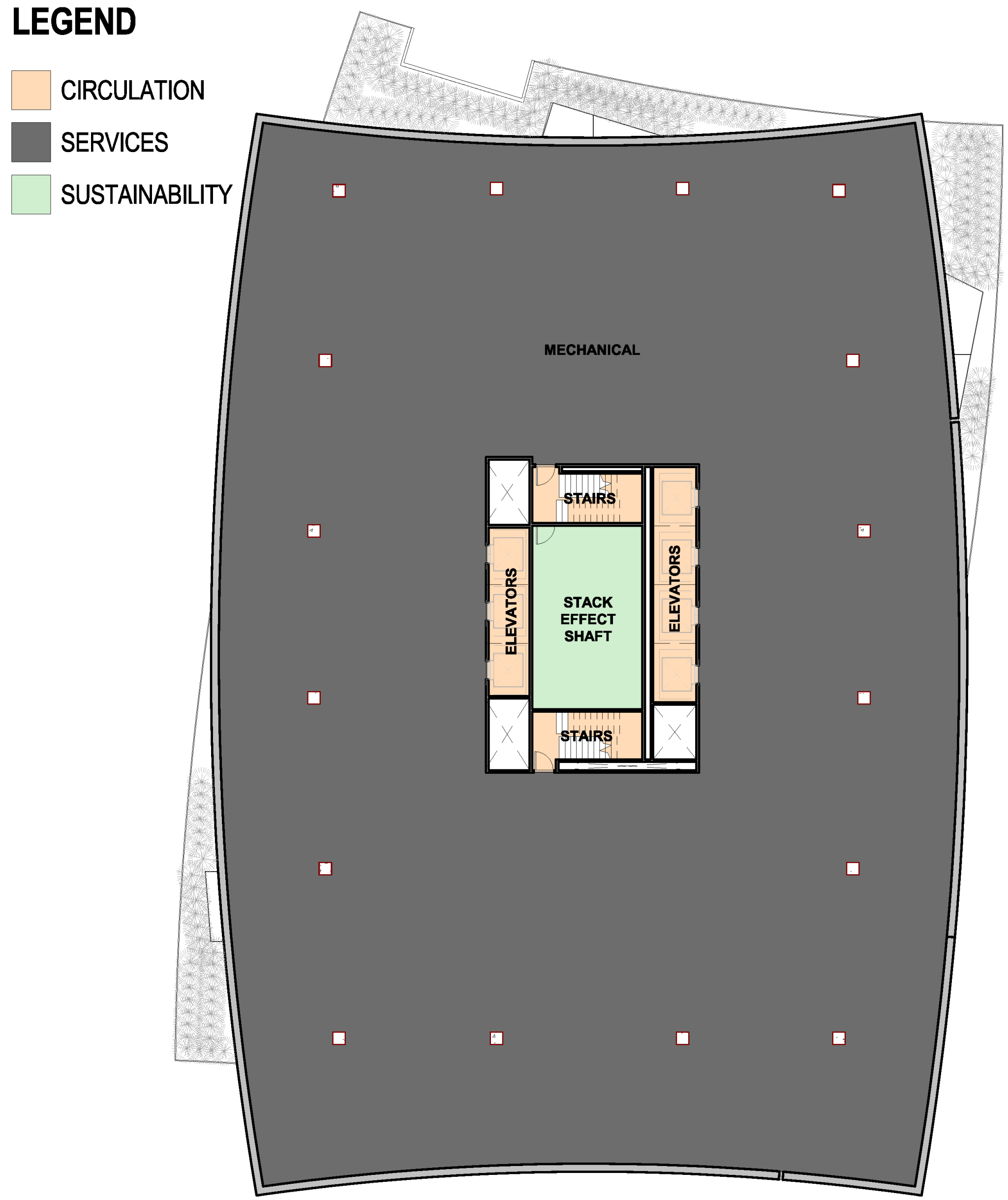
13TH FLOOR PLAN

B.2.8 FLOOR PLAN



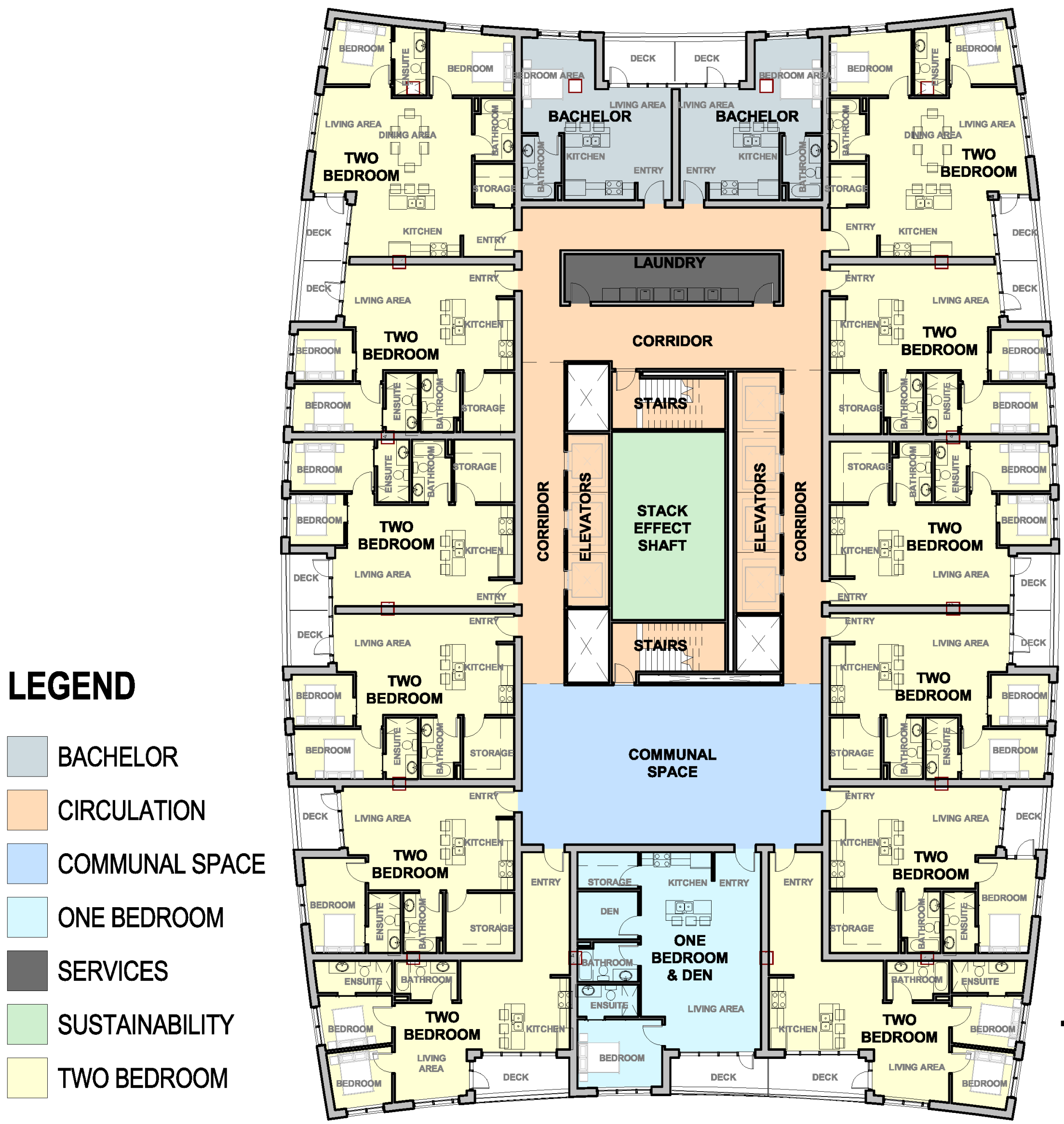
14TH FLOOR PLAN

B.2.8 FLOOR PLAN



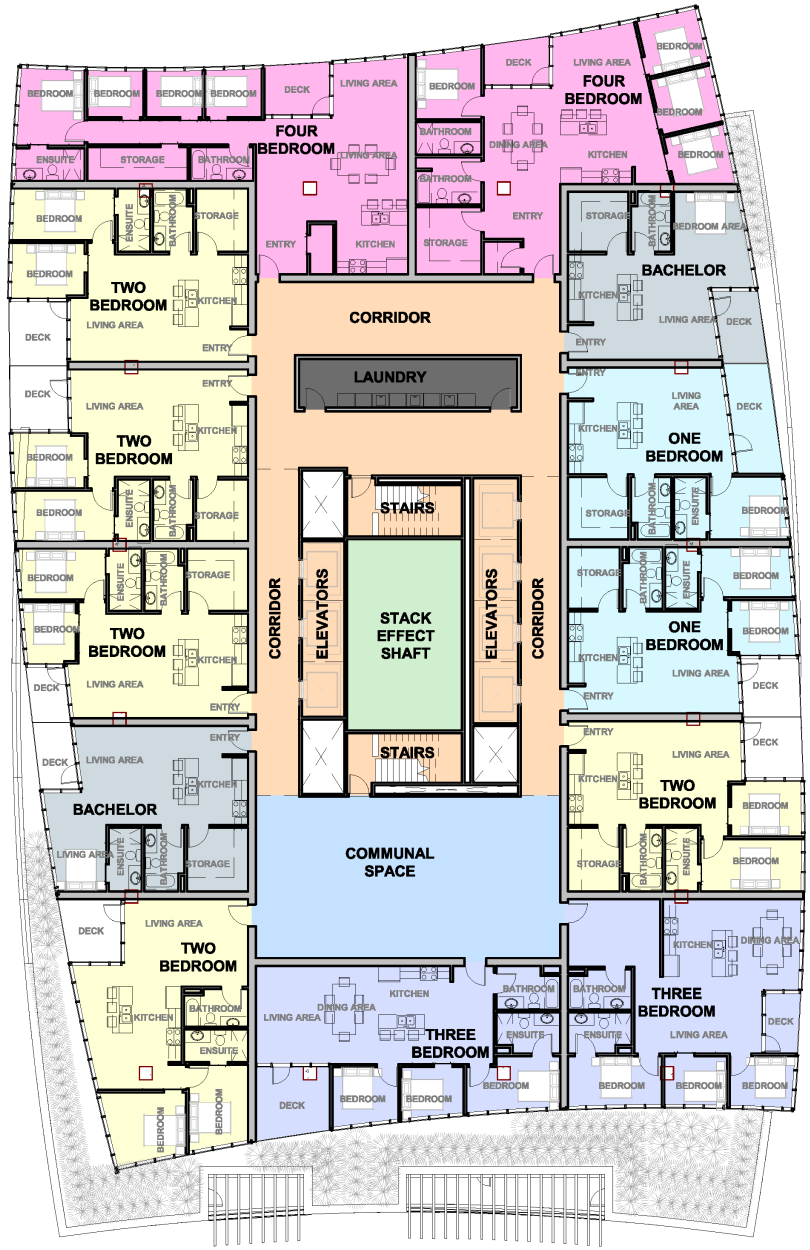
15TH FLOOR PLAN

B.2.8 FLOOR PLAN



16TH FLOOR PLAN

B.2.8 FLOOR PLAN

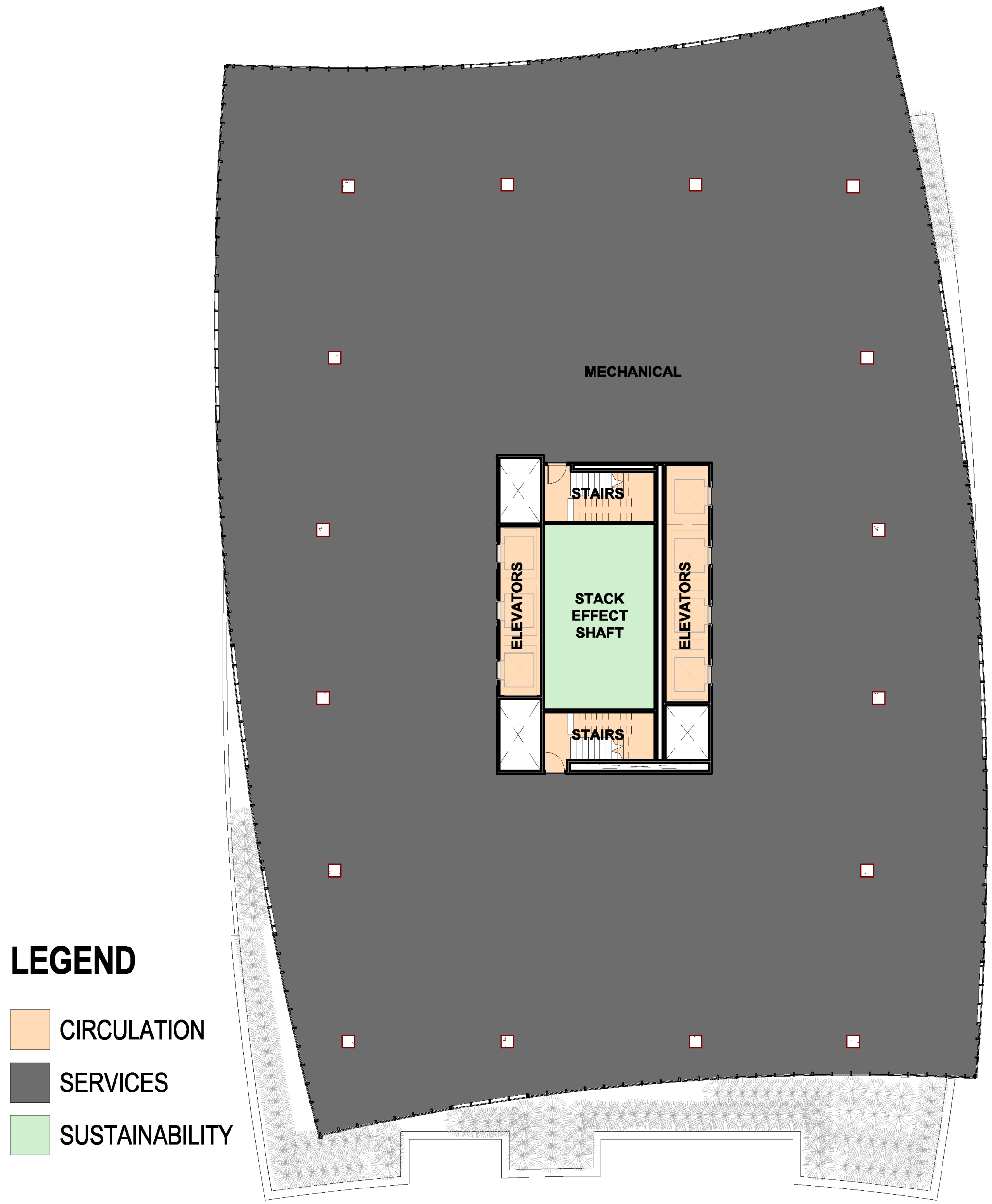


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

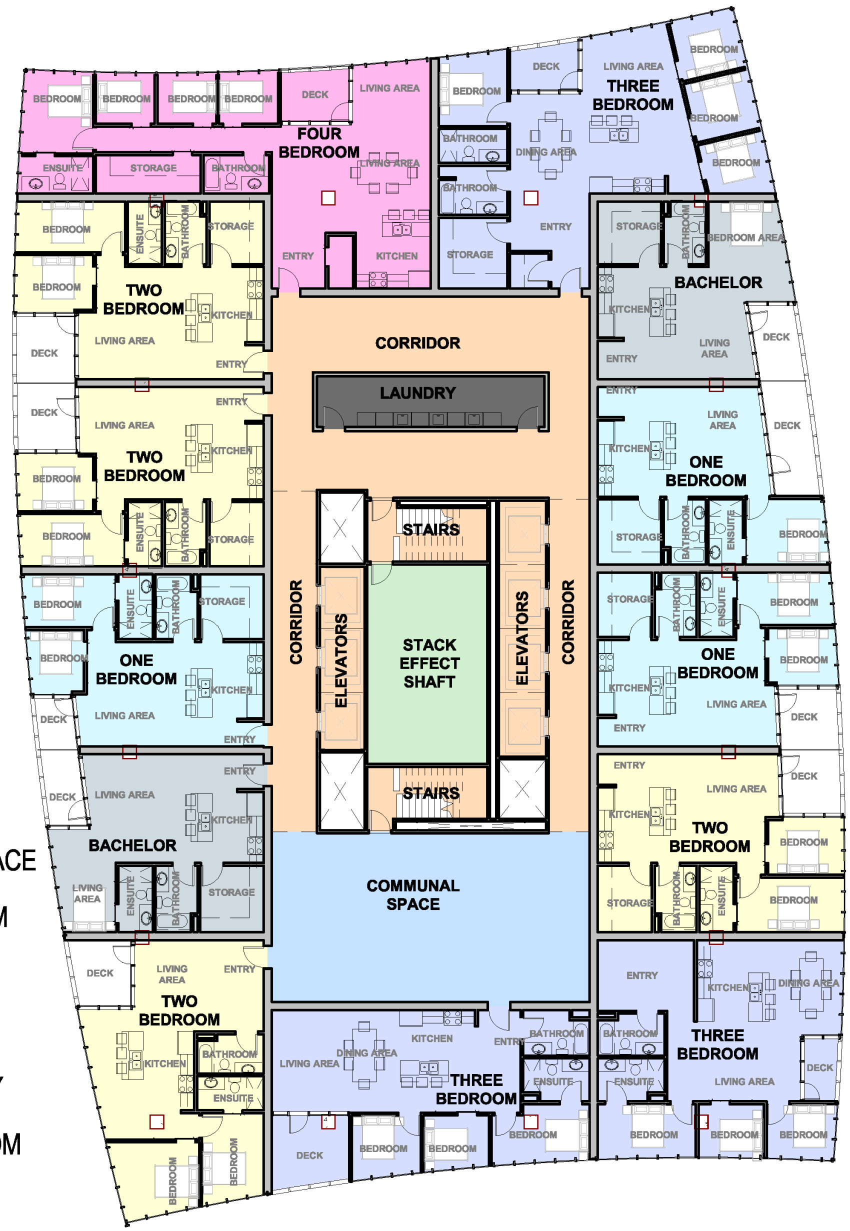
17TH FLOOR PLAN

B.2.8 FLOOR PLAN



18TH FLOOR PLAN

B.2.8 FLOOR PLAN

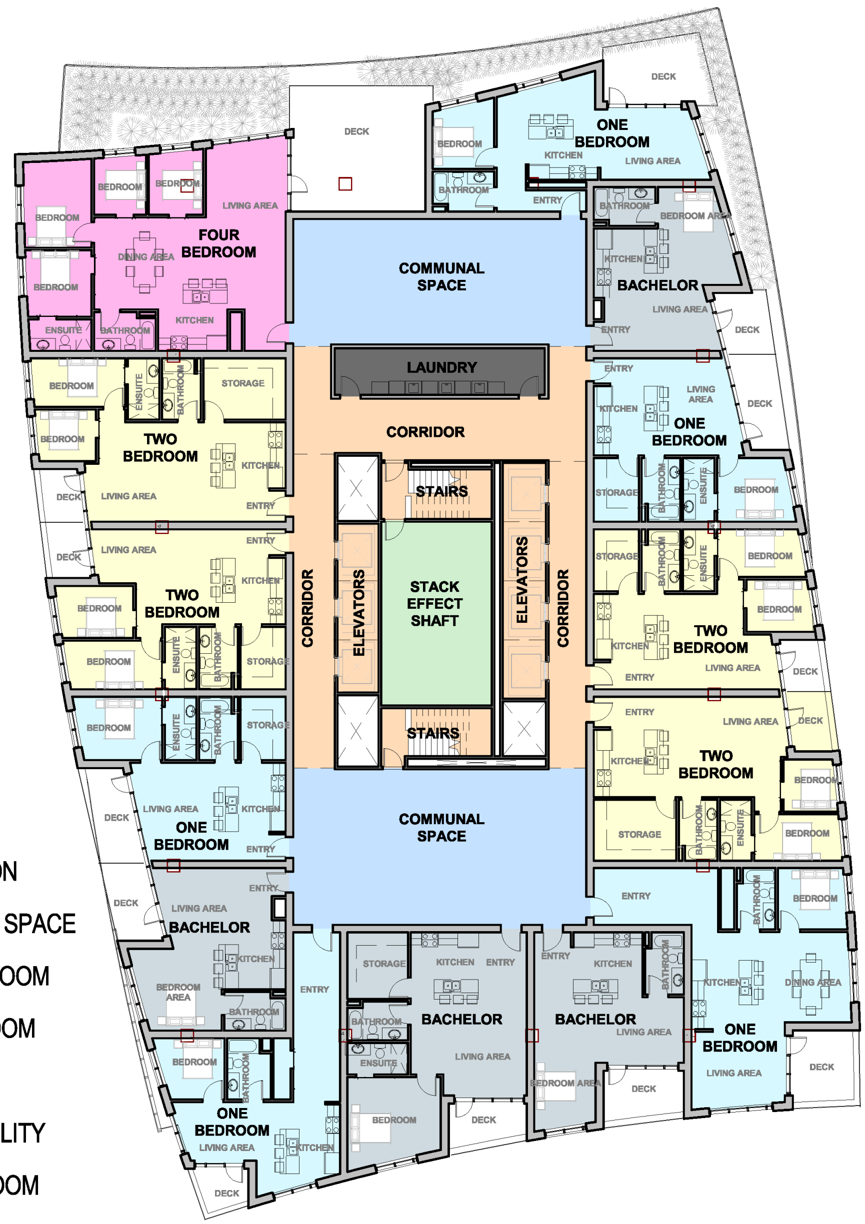


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

19TH FLOOR PLAN

B.2.8 FLOOR PLAN

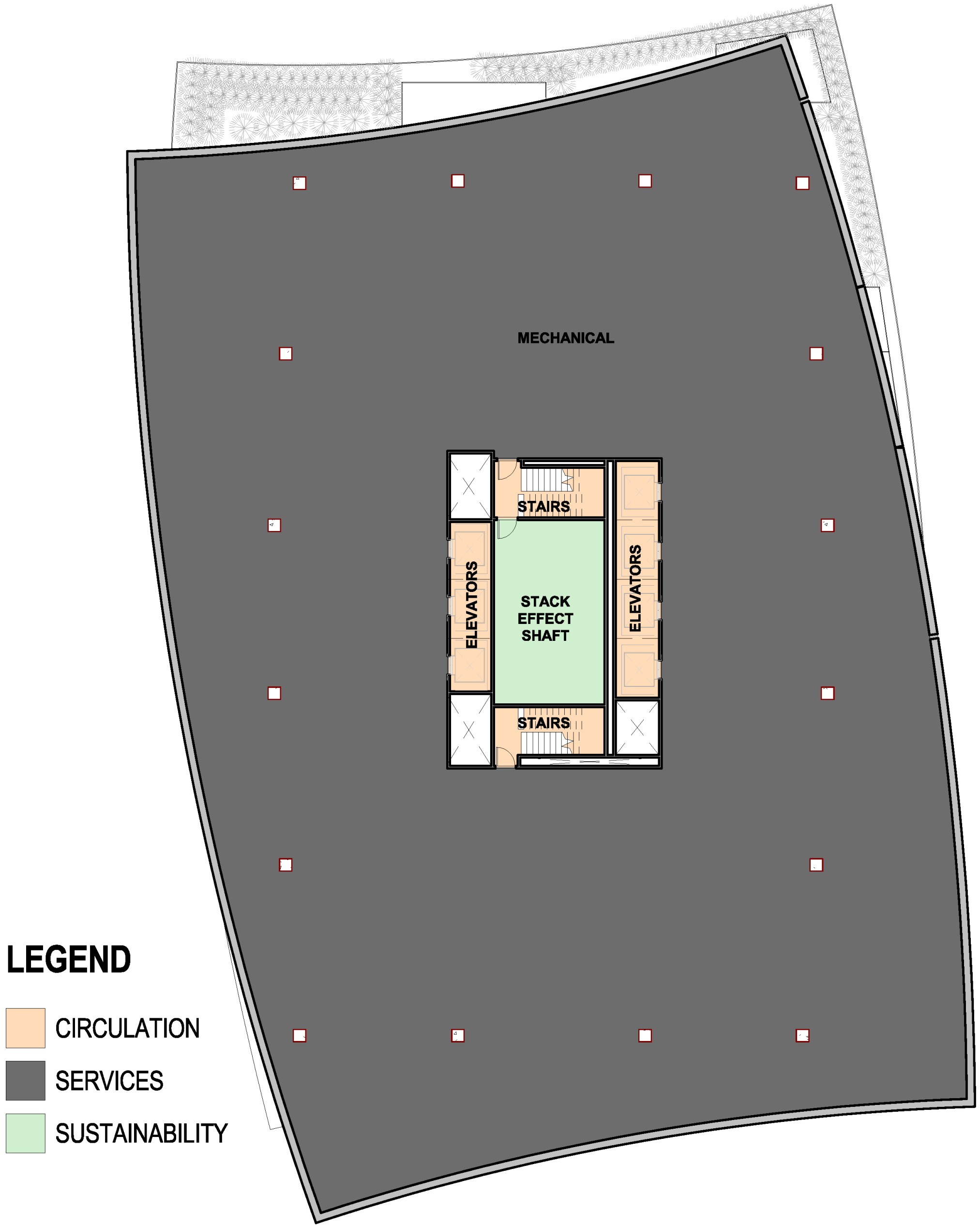


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- TWO BEDROOM

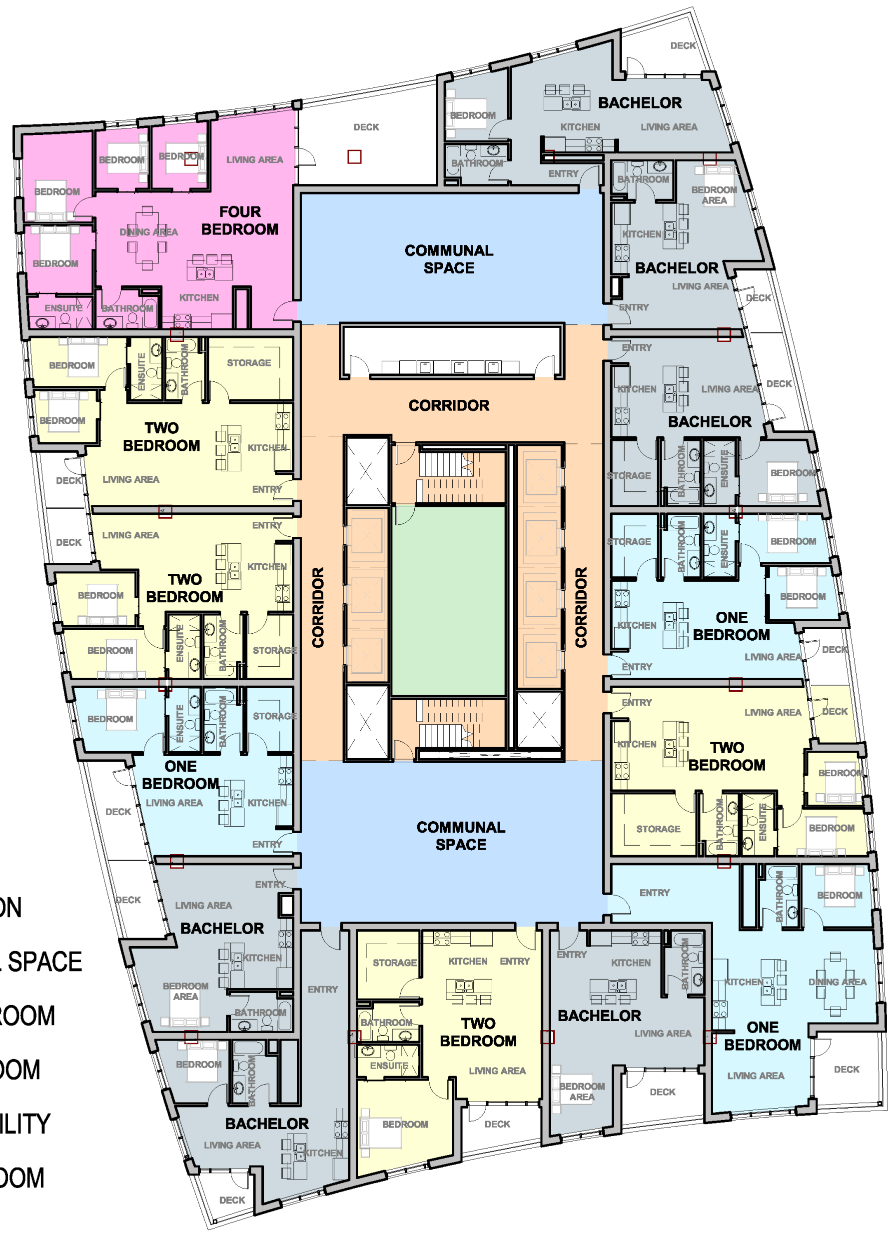
20TH FLOOR PLAN

B.2.8 FLOOR PLAN



21ST FLOOR PLAN

B.2.8 FLOOR PLAN

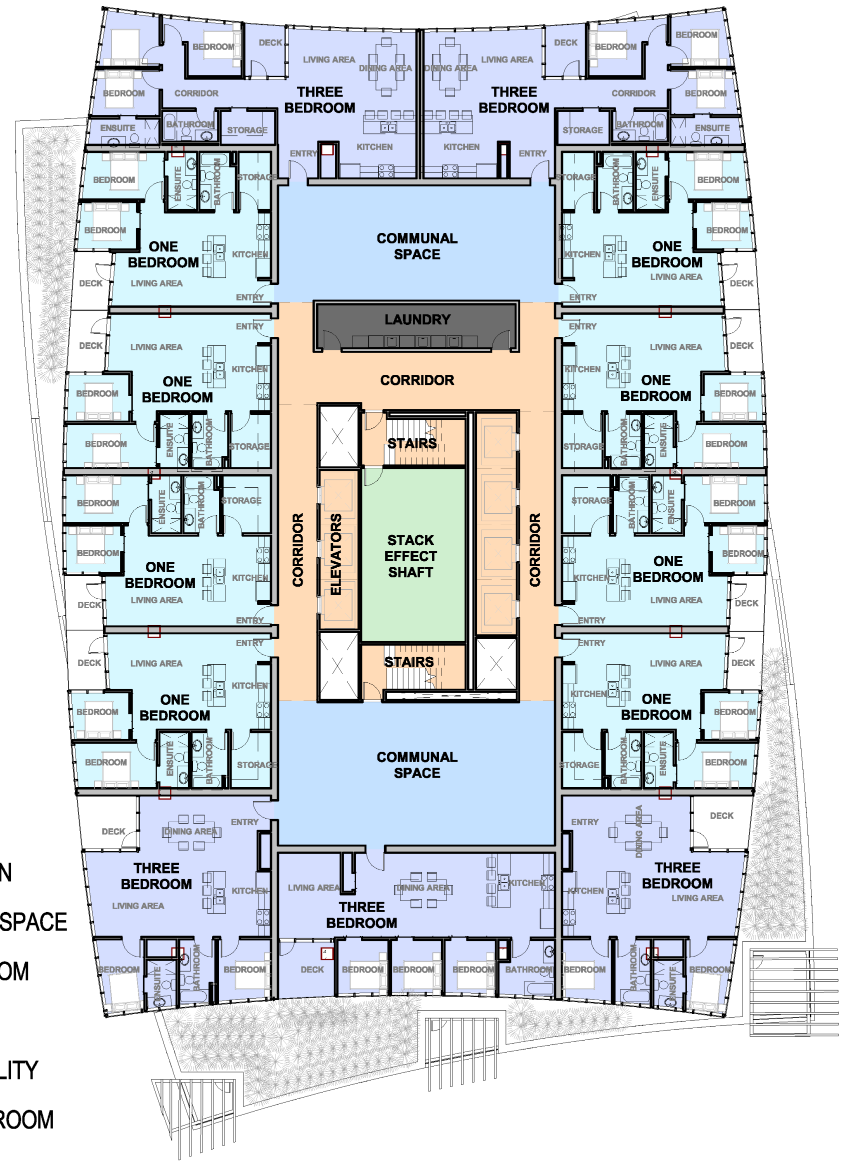


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SUSTAINABILITY
- TWO BEDROOM

22ND FLOOR PLAN

B.2.8 FLOOR PLAN

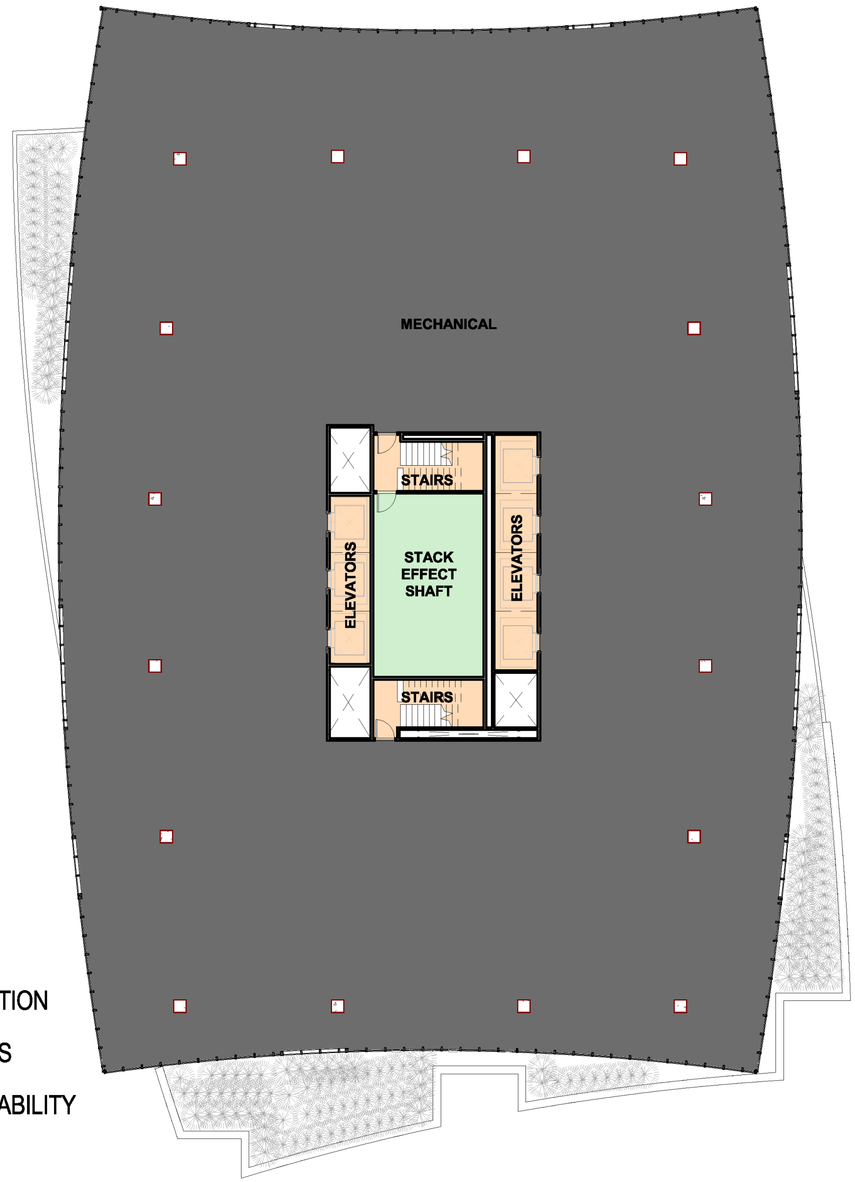


LEGEND

- CIRCULATION
- COMMUNAL SPACE
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM

23RD FLOOR PLAN

B.2.8 FLOOR PLAN

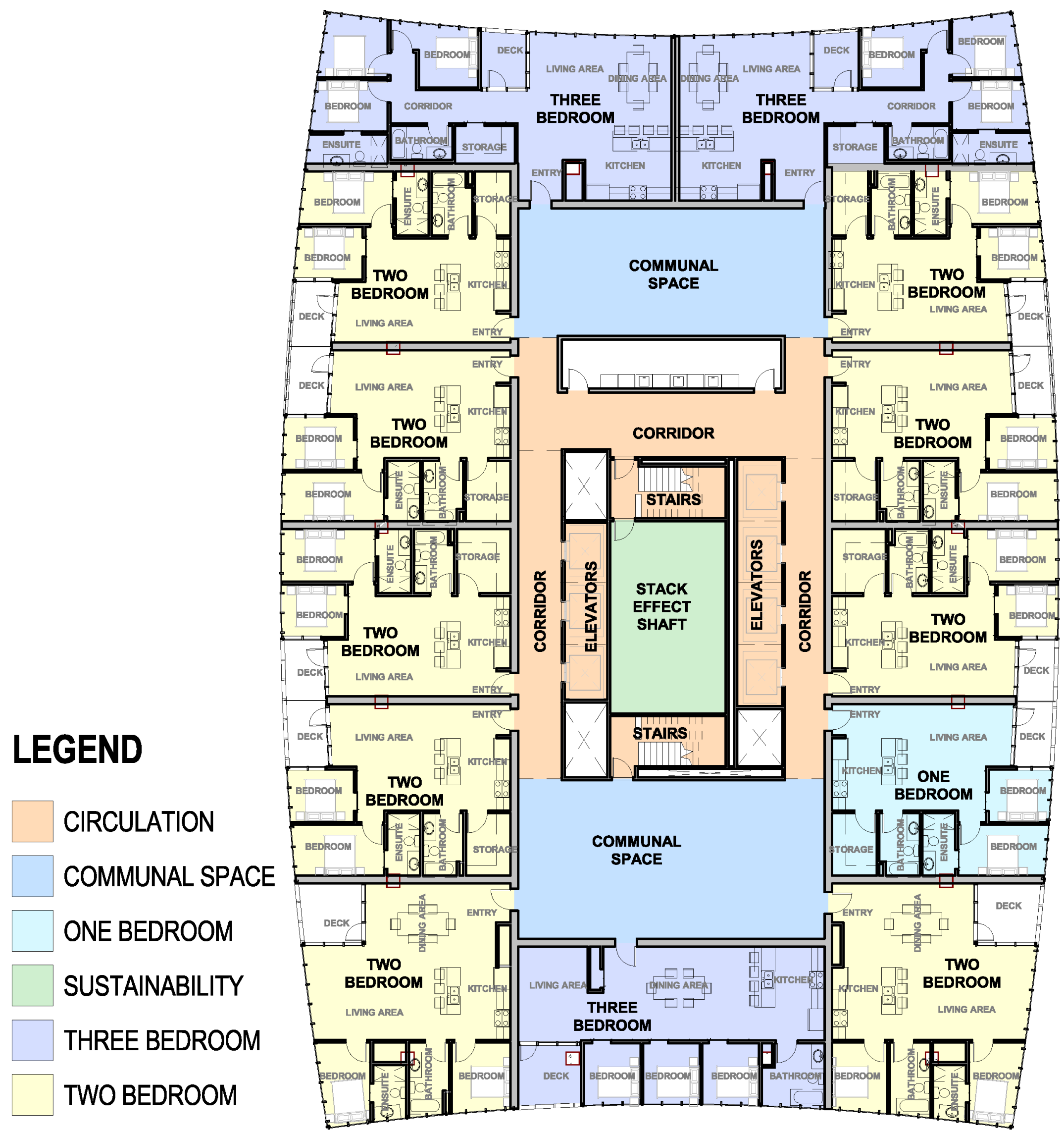


LEGEND

- CIRCULATION
- SERVICES
- SUSTAINABILITY

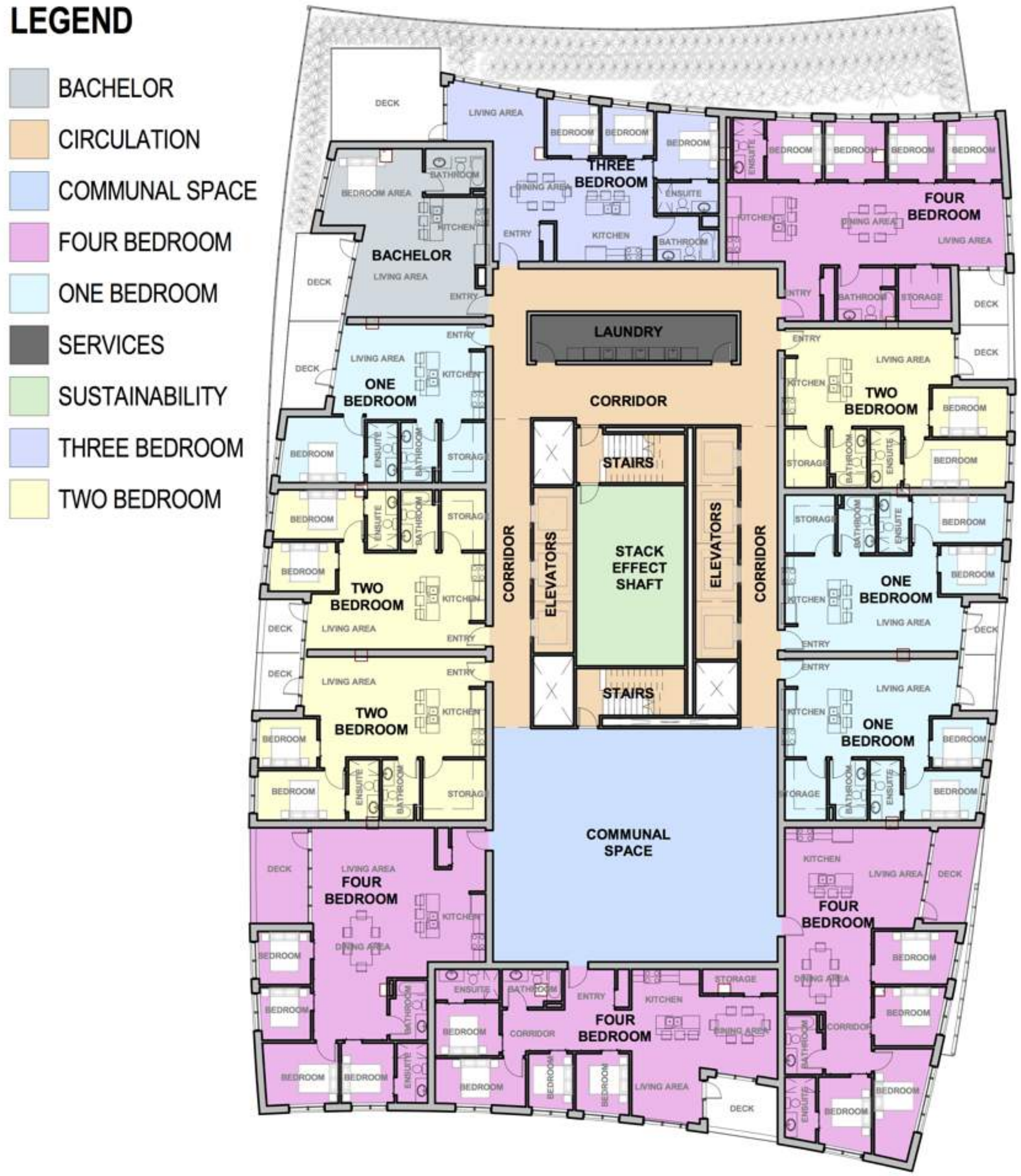
24TH FLOOR PLAN

B.2.8 FLOOR PLAN



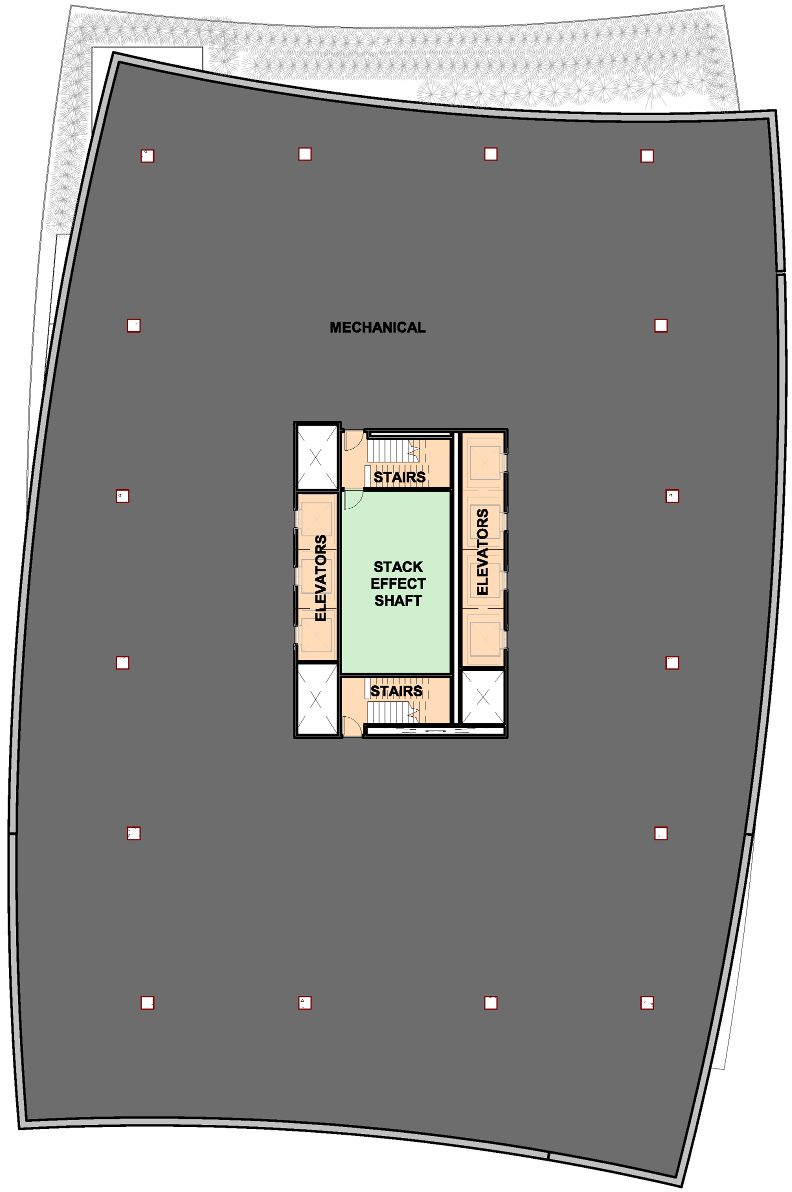
25TH FLOOR PLAN

B.2.8 FLOOR PLAN



26TH FLOOR PLAN

B.2.8 FLOOR PLAN

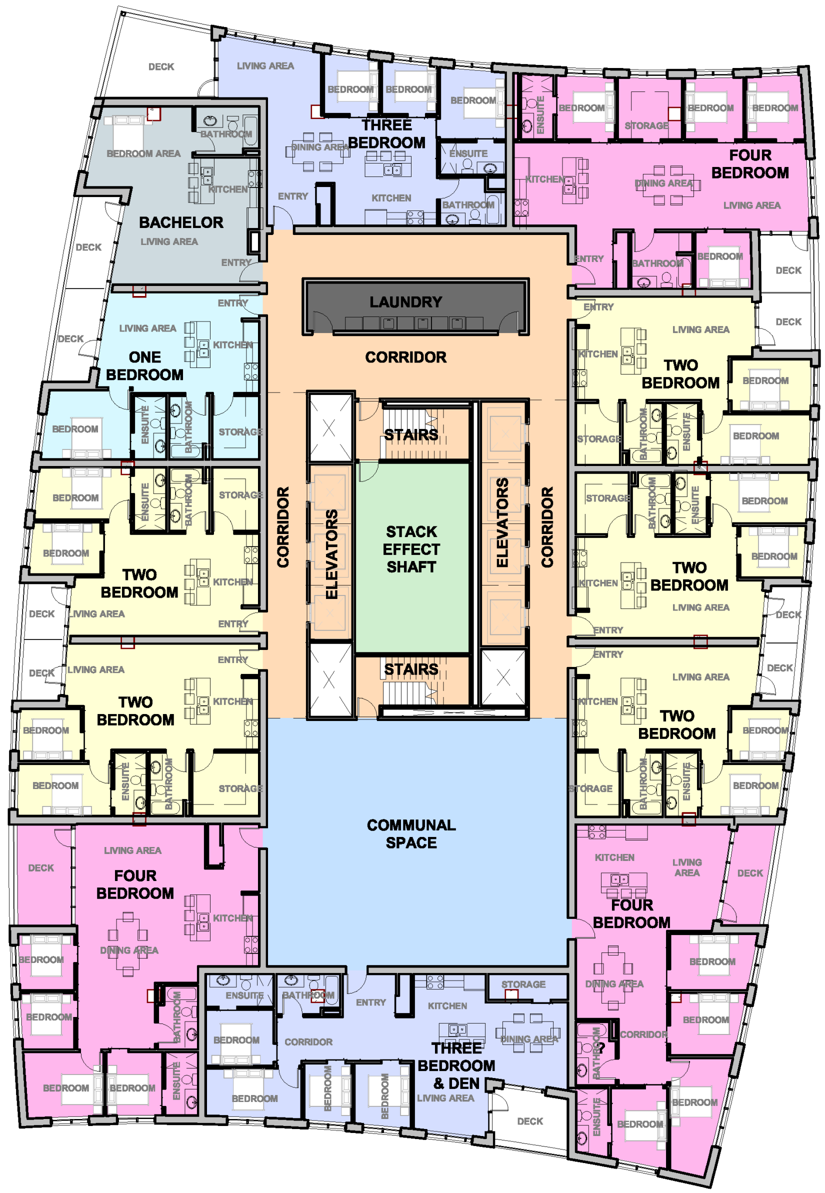


LEGEND

- CIRCULATION
- SERVICES
- SUSTAINABILITY

27TH FLOOR PLAN

B.2.8 FLOOR PLAN

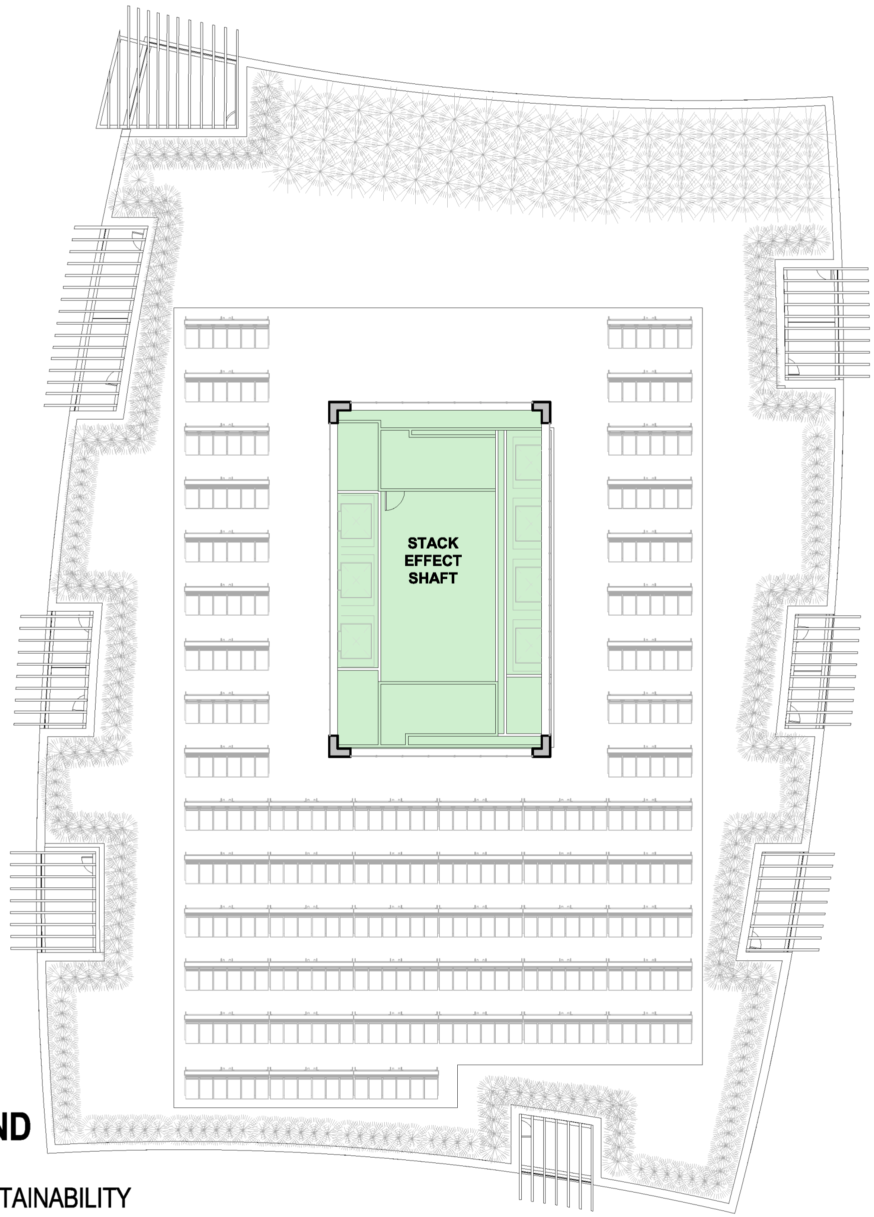


LEGEND

- BACHELOR
- CIRCULATION
- COMMUNAL SPACE
- FOUR BEDROOM
- ONE BEDROOM
- SERVICES
- SUSTAINABILITY
- THREE BEDROOM
- TWO BEDROOM

28TH FLOOR PLAN

B.2.8 FLOOR PLAN



LEGEND

SUSTAINABILITY

29TH FLOOR PLAN

B.2.9 AREAS

ROOM NAME	DESIGN AREA (m2)			TOTAL (m2)	ACTUAL AREA (m2)	TOTAL (m2)
SOCIAL HOUSING						
Bachelor Suites	45	@	50	2,250	32	1,790
1 Bedroom Suites	65	@	70	4,550	42	3,071
2 Bedroom Suites	65	@	85	5,525	96	7,603
3 Bedroom Suites	30	@	105	3,150	34	3,594
4 Bedroom Suites	20	@	125	2,500	25	3,107
Laundry	2	@	30	60	15	344
Communal Space	2	@	80	160	28	3,228
Games Room	2	@	80	160	1	103
Courtyard	3	@	80	240	1	340
Amphitheatre	1	@	60	60	-	-
Child Care	1	@	80	80	1	136
Child Care Office					1	8
Child Care Washroom					1	6
Child Care Kitchen					1	8
Child Care Storage					1	17
Library	1	@	50	50	1	211
Gymnasium	1	@	600	600	1	263
Change Rooms	1	@	60	60	2	47
Gym Storage	1	@	60	60	1	43
Theatre	1	@	250	250	1	221
Administration Reception	1	@	50	50	1	33
Administration Offices	3	@	15	45	3	45
Administration Meeting Room	1	@	25	25	1	25
Administration Washroom	2	@	10	20	2	33
Mechanical / Electrical	1	@	125	125	2	35
I.T	1	@	80	80	1	21
Lobby					1	64
Galleria					1	184
Vestibules					1	85
Bike Storage					1	100
Administration Storage					1	25
Administration Staff Room					1	54
TOTAL	**250**	**@**	**2,170**	**20,100**	**295**	**24,844**

LEGEND

- ORIGINAL AREA
- ADDITIONAL AREA
- DELETED AREA

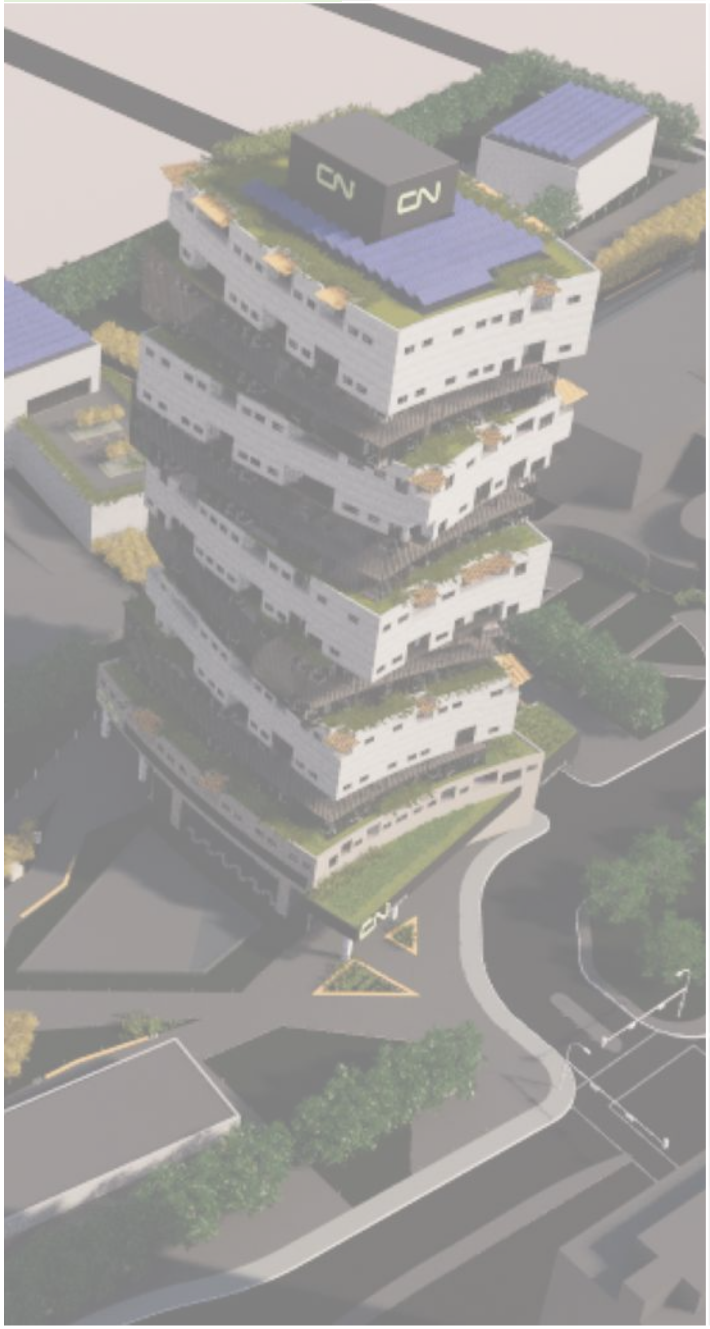
B.2.10 ELEVATIONS

B.2.10 ELEVATIONS

SOUTH

WEST

B.2.11 MATERIALS

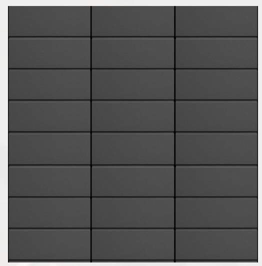


Zinc Panels
610 x 1200

*Compliment Rogers Place & Art Gallery of Alberta

Grey Tinted Glazing

Glazing System



Black Aluminum Composite Panels
610 x 1200

Frosted Glazing

Exterior Guardrails and dividers

Indiana Limestone
1220 x 2440

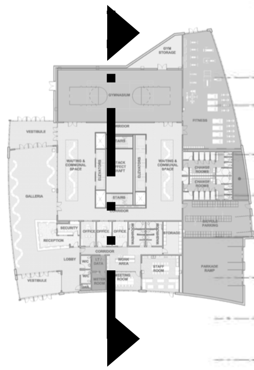
Black Charcoal Curtain wall Mullions

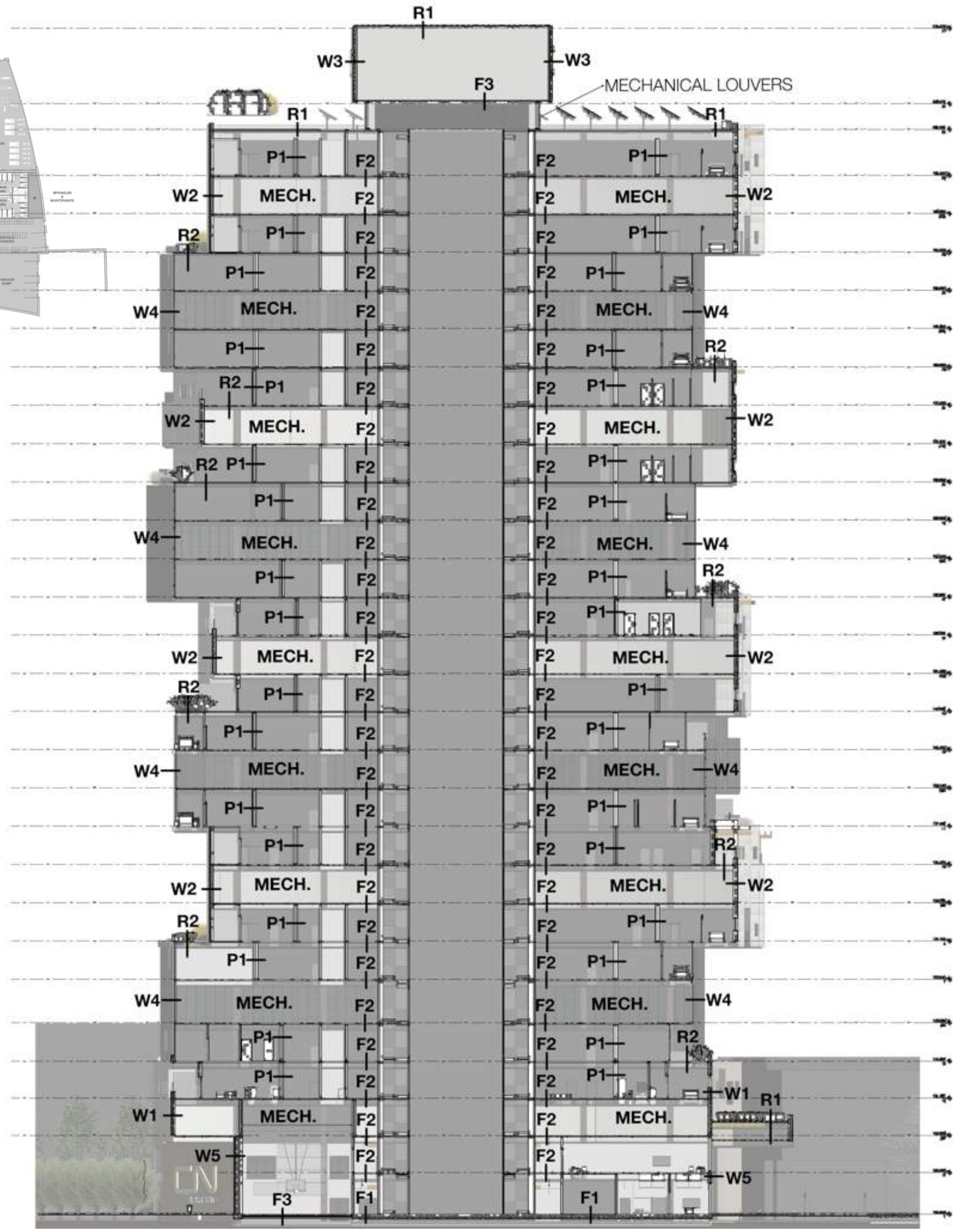
Walnut Composite Panels

Walnut Stained Wood Trellis

Lime Green Signage

B.2.12 BUIDLING SECTION





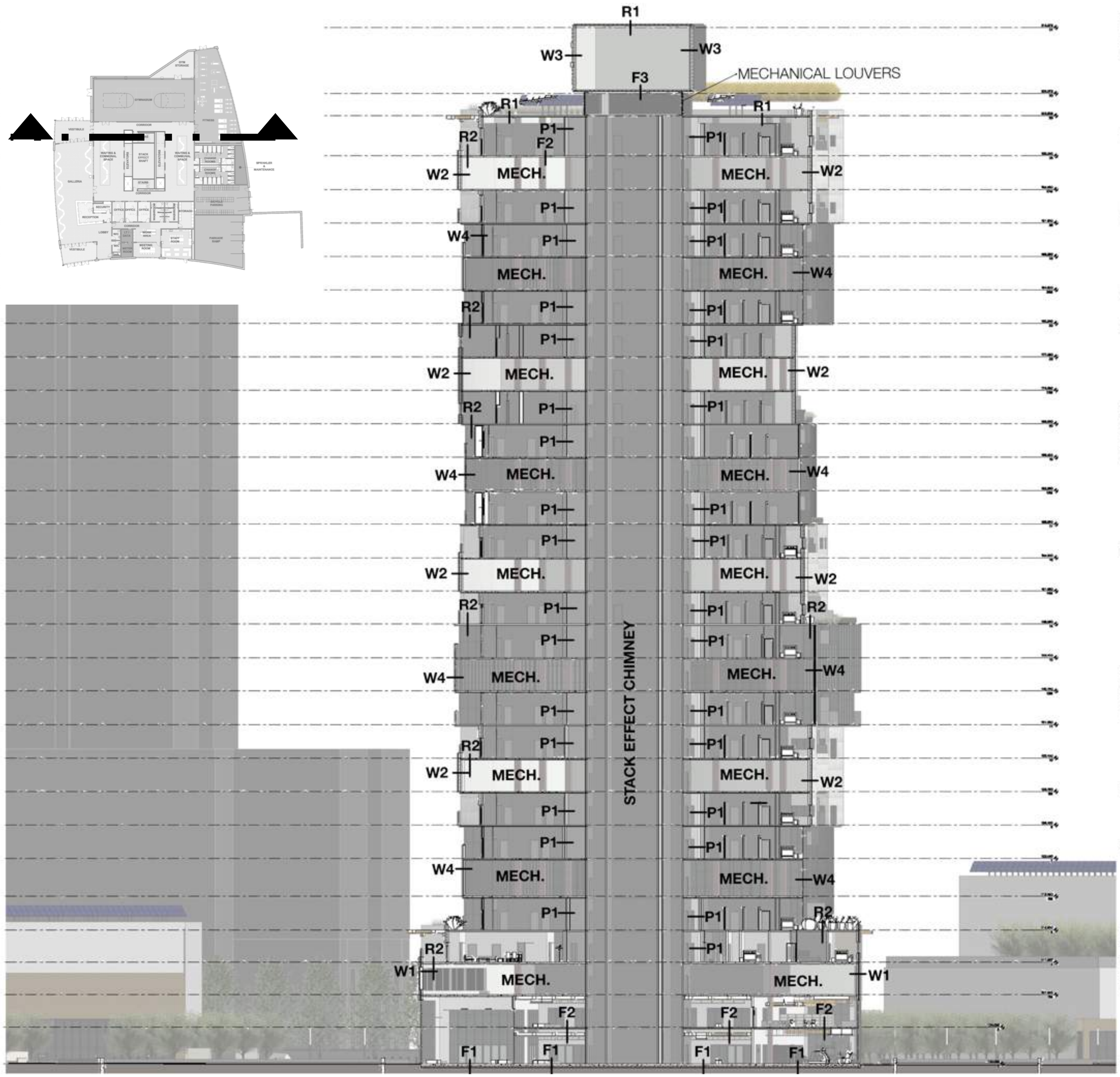
WALL ASSEMBLIES		
TYPE	**DESCRIPTION**	**RSI**
W1	INDIANNA LIMESTONE 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOARD	RSI - 4.30
W2	ARCHITECTURAL METAL PANELS 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30
W3	CORRIGATED METAL SIDING 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30
W4	CURTAIN WALL SYSTEM MULLION COLOUR: CHARCOAL GREY GLAZING COLOUR: GREY TINTED	
W5	ALUMINUM WOOD SIDING 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30

ROOF ASSEMBLIES		
TYPE	**DESCRIPTION**	**RSI**
R1	2 PLY SBS ROOF MEMBRANE 13mm FIBERBOARD RIGID INSULATION (BACK SLOPE TO DRAIN WHERE APPLICABLE) VAPOUR BARRIER MEMBRANE 13mm EXTERIOR GRADE SHEATHING 38mm METAL DECK (U.N.O. REFER TO STRUCTURAL) STEEL STRUCTURE SLOPED TO DRAI	RSI - 5.79
R2	COMPOSITE DECKING 38x89 WOOD BATTENS AT 400 O.C. ADJUSTABLE DECKING SUPPORT AT 1400 O.C.+/-2 PLY SBS ROOF MEMBRANE 13mm FIBERBOARD RIGID INSULATION (BACK SLOPE TO DRAIN WHERE APPLICABLE) VAPOUR BARRIER MEMBRANE 13mm EXTERIOR GRADE SHEATHING 76mm METAL ACOUSTIC DECK STEEL STRUCTURE SLOPED TO DRAI	RSI - 5.79

FLOOR ASSEMBLIES	
TYPE	**DESCRIPTION**
F1	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) REINFORCED STRUCTURAL CONCRETE SLAB (REFER TO STRUCTURAL DRAWINGS) 15mil VAPOUR/SOIL GAS BARRIER 5mm HARDBOARD 100mm VOID FORM/SOIL GAS VENTING LAYER (REFER TO STRUCTURAL)*
F2	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) REINFORCED CONCRETE TOPPING (REFER TO STRUCTURAL DRAWINGS) 38mm METAL DECK (REFER TO STRUCTURAL DRAWINGS)
F3	HARDWARE FLOOR ASSEMBLEY (65mm TOTAL THICKNESS) REINFORCED STRUCTURAL CONCRETE SLAB (REFER TO STRUCTURAL DRAWINGS) 15mil VAPOUR/SOIL GAS BARRIER 5mm HARDBOARD 100mm VOID FORM/SOIL GAS VENTING LAYER (REFER TO STRUCTURAL DRAWINGS)
F4	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) EXISTING CONCRETE FLOOR

PARTITION ASSEMBLIES	
TYPE	**DESCRIPTION**
P1	16mm "TYPE X" GYPSUM BOARD 16mm "TYPE X" GYPSUM BOARD 152mm STEEL STUDS @ 400mm O.C (VOID FILLED WITH ACOUSTICAL INSULATION) 25mm AIR SPACE 152mm STEEL STUDS @ 400mm O.C (VOID FILLED WITH ACOUSTICAL INSULATION)

B.2.12 BUIDLING SECTION



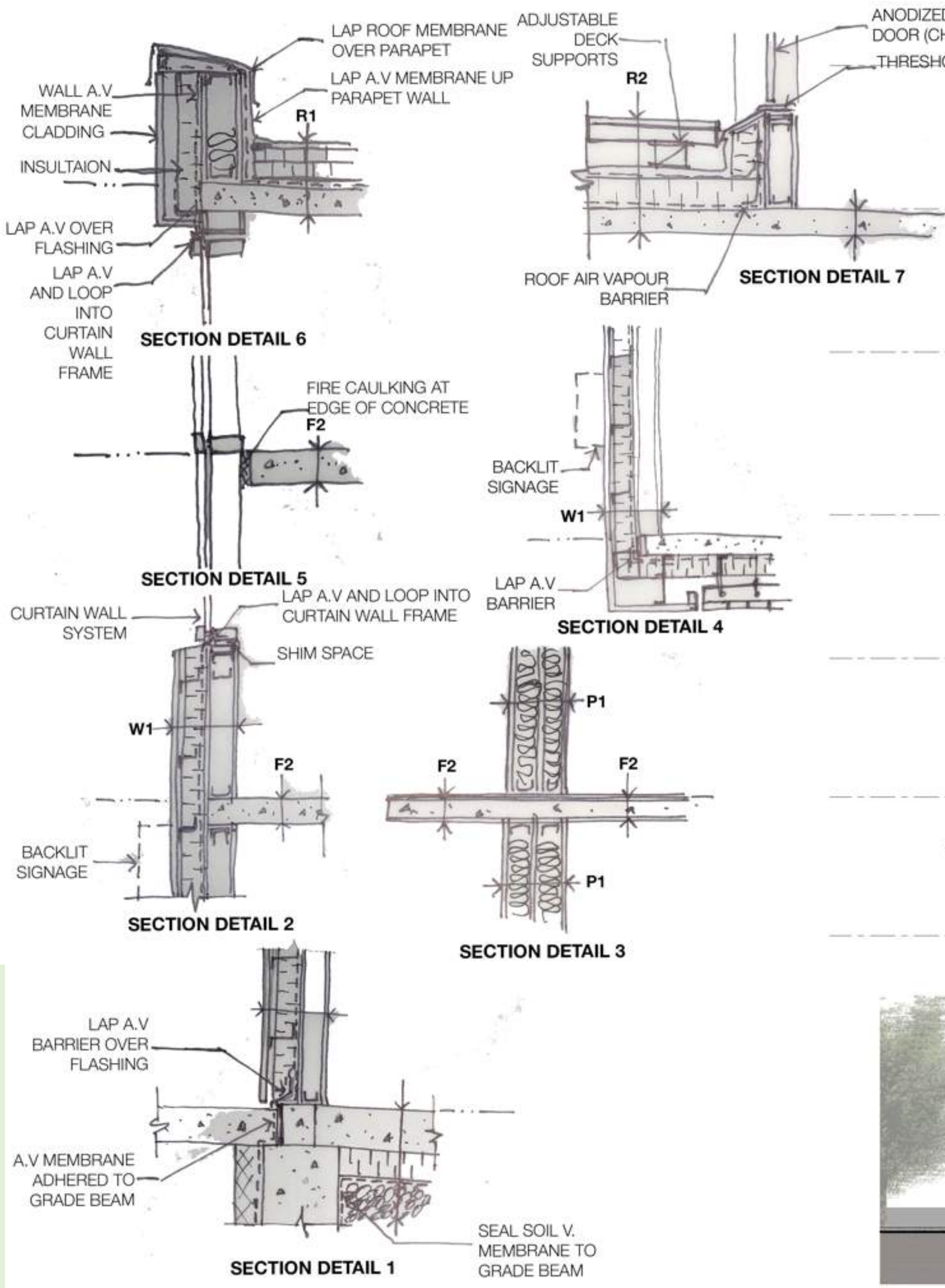
WALL ASSEMBLIES		
TYPE	**DESCRIPTION**	**RSI**
W1	INDIANNA LIMESTONE 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOARD	RSI - 4.30
W2	ARCHITECTURAL METAL PANELS 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30
W3	CORRIGATED METAL SIDING 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30
W4	CURTAIN WALL SYSTEM MULLION COLOUR: CHARCOAL GREY GLAZING COLOUR: GREY TINTED	
W5	ALUMINUM WOOD SIDING 25 AIR SPACE 125 SEMIIRIGID INSULATION AIR/VAPOUR BARRIER MEMBRANE 13 EXTERIOR GRADE GYPSUM SHEATHING 152 STEEL STUD @ 400 O.C. 16 GYPSUM BOAR	RSI - 4.30

ROOF ASSEMBLIES		
TYPE	**DESCRIPTION**	**RSI**
R1	2 PLY SBS ROOF MEMBRANE 13mm FIBERBOARD RIGID INSULATION (BACK SLOPE TO DRAIN WHERE APPLICABLE) VAPOUR BARRIER MEMBRANE 13mm EXTERIOR GRADE SHEATHING 38mm METAL DECK (U.N.O. REFER TO STRUCTURAL) STEEL STRUCTURE SLOPED TO DRAI	RSI - 5.79
R2	COMPOSITE DECKING 38x89 WOOD BATTENS AT 400 O.C. ADJUSTABLE DECKING SUPPORT AT 1400 O.C.+/-2 PLY SBS ROOF MEMBRANE 13mm FIBERBOARD RIGID INSULATION (BACK SLOPE TO DRAIN WHERE APPLICABLE) VAPOUR BARRIER MEMBRANE 13mm EXTERIOR GRADE SHEATHING 76mm METAL ACOUSTIC DECK STEEL STRUCTURE SLOPED TO DRAI	RSI - 5.79

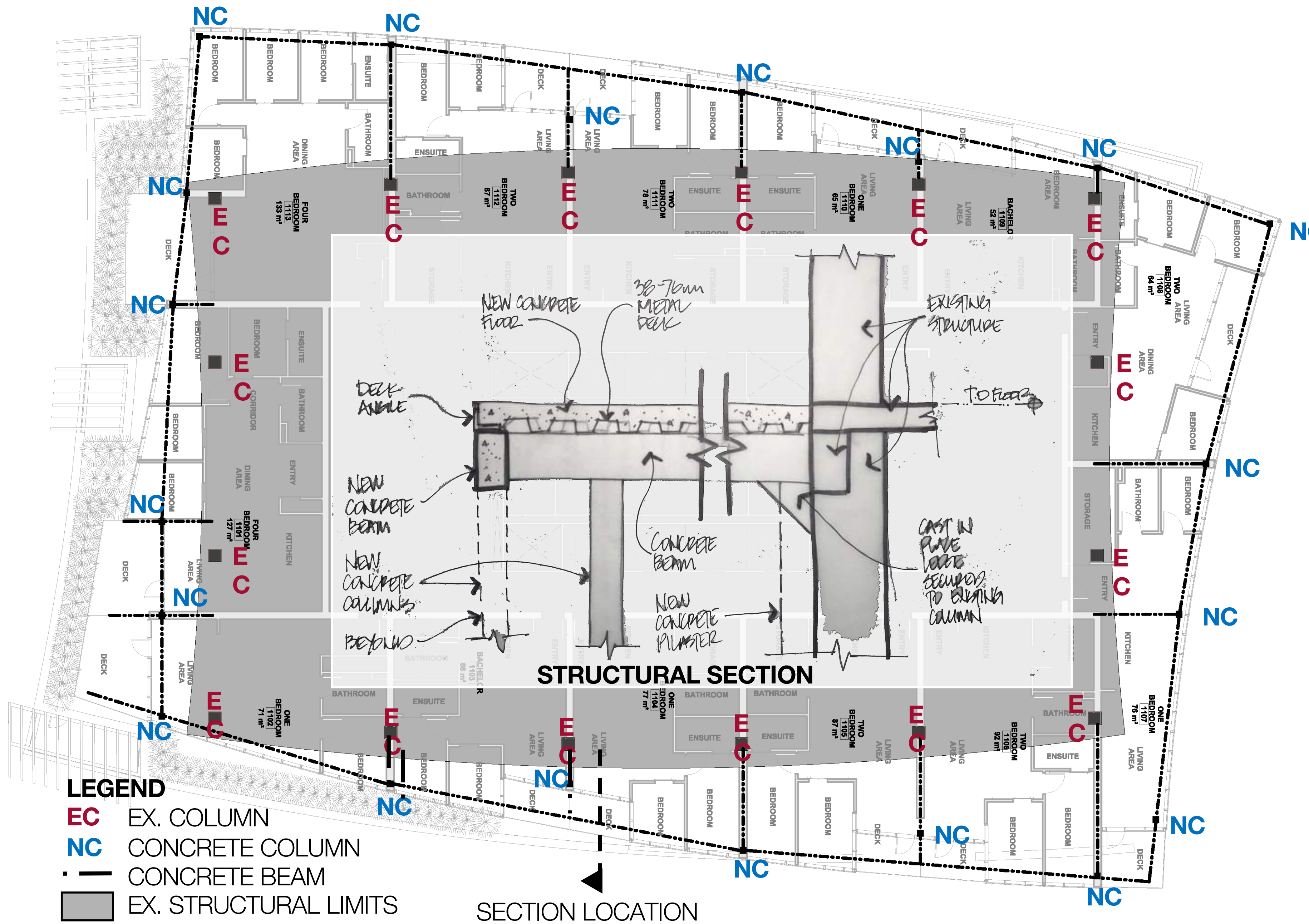
FLOOR ASSEMBLIES	
TYPE	**DESCRIPTION**
F1	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) REINFORCED STRUCTURAL CONCRETE SLAB (REFER TO STRUCTURAL DRAWINGS) 15mil VAPOUR/SOIL GAS BARRIER 5mm HARDBOARD 100mm VOID FORM/SOIL GAS VENTING LAYER (REFER TO STRUCTURAL)*
F2	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) REINFORCED CONCRETE TOPPING (REFER TO STRUCTURAL DRAWINGS) 38mm METAL DECK (REFER TO STRUCTURAL DRAWINGS)
F3	HARDWARE FLOOR ASSEMBLEY (65mm TOTAL THICKNESS) REINFORCED STRUCTURAL CONCRETE SLAB (REFER TO STRUCTURAL DRAWINGS) 15mil VAPOUR/SOIL GAS BARRIER 5mm HARDBOARD 100mm VOID FORM/SOIL GAS VENTING LAYER (REFER TO STRUCTURAL DRAWINGS)
F4	FLOOR FINISH (SEE FLOOR FINISH DRAWINGS) EXISTING CONCRETE FLOOR

PARTITION ASSEMBLIES	
TYPE	**DESCRIPTION**
P1	16mm "TYPE X" GYPSUM BOARD 16mm "TYPE X" GYPSUM BOARD 152mm STEEL STUDS @ 400mm O.C (VOID FILLED WITH ACOUSTICAL INSULATION) 25mm AIR SPACE 152mm STEEL STUDS @ 400mm O.C (VOID FILLED WITH ACOUSTICAL INSULATION)

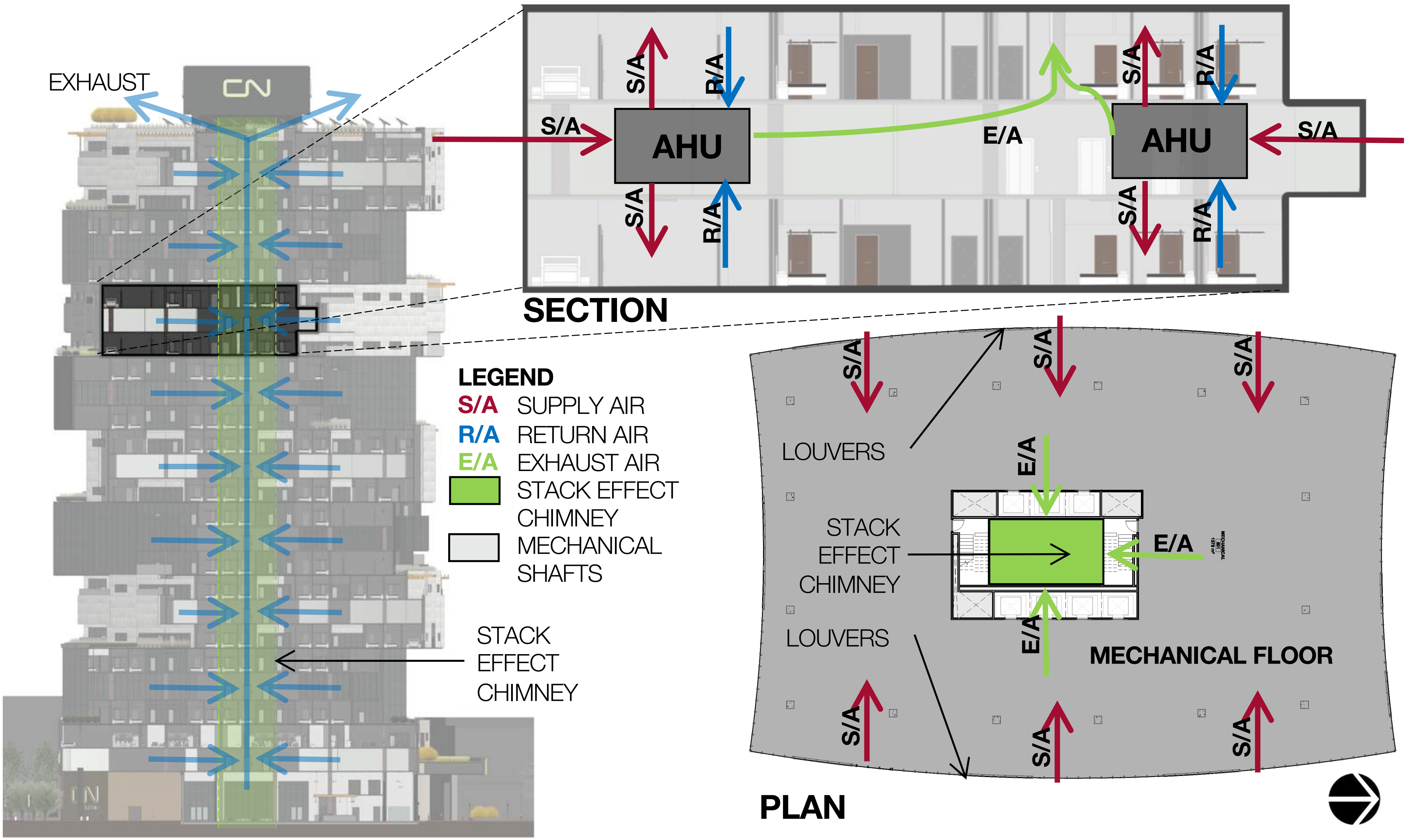
B.2.13 WALL SECTION



B.2.14 STRUCTURAL



B.2.15 MECHANICAL



B.2.16 RENDERING

VIEW FROM 100TH STREET

B.2.16 RENDERING

VIEW FROM 100TH STREET (NIGHT)

B.2.16 RENDERING

B.2.16 RENDERING

VIEW FROM 100^{TH} STREET (NIGHT)

B.2.16 RENDERING

PATHWAY VIEW

B.2.16 RENDERING

PATHWAY VIEW (NIGHT)

B.2.16 RENDERING

97^{TH} STREET OVERPASS

B.2.16 RENDERING

97TH STREET OVERPASS (NIGHT)

B.2.16 RENDERING

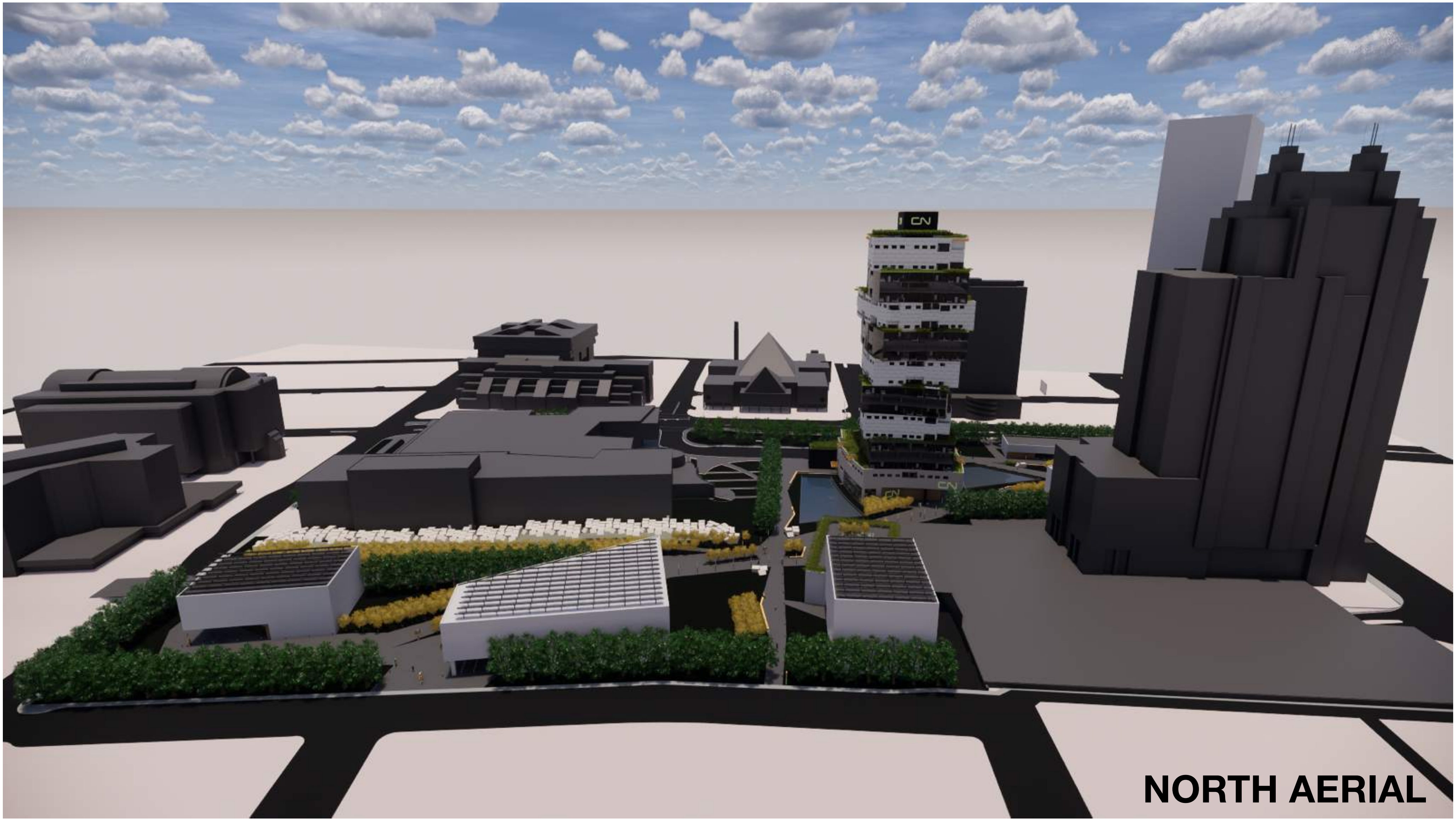
105TH AVENUE ENTRANCE 4

B.2.16 RENDERING

B.2.16 RENDERING

B.2.16 RENDERING

B.2.16 RENDERING

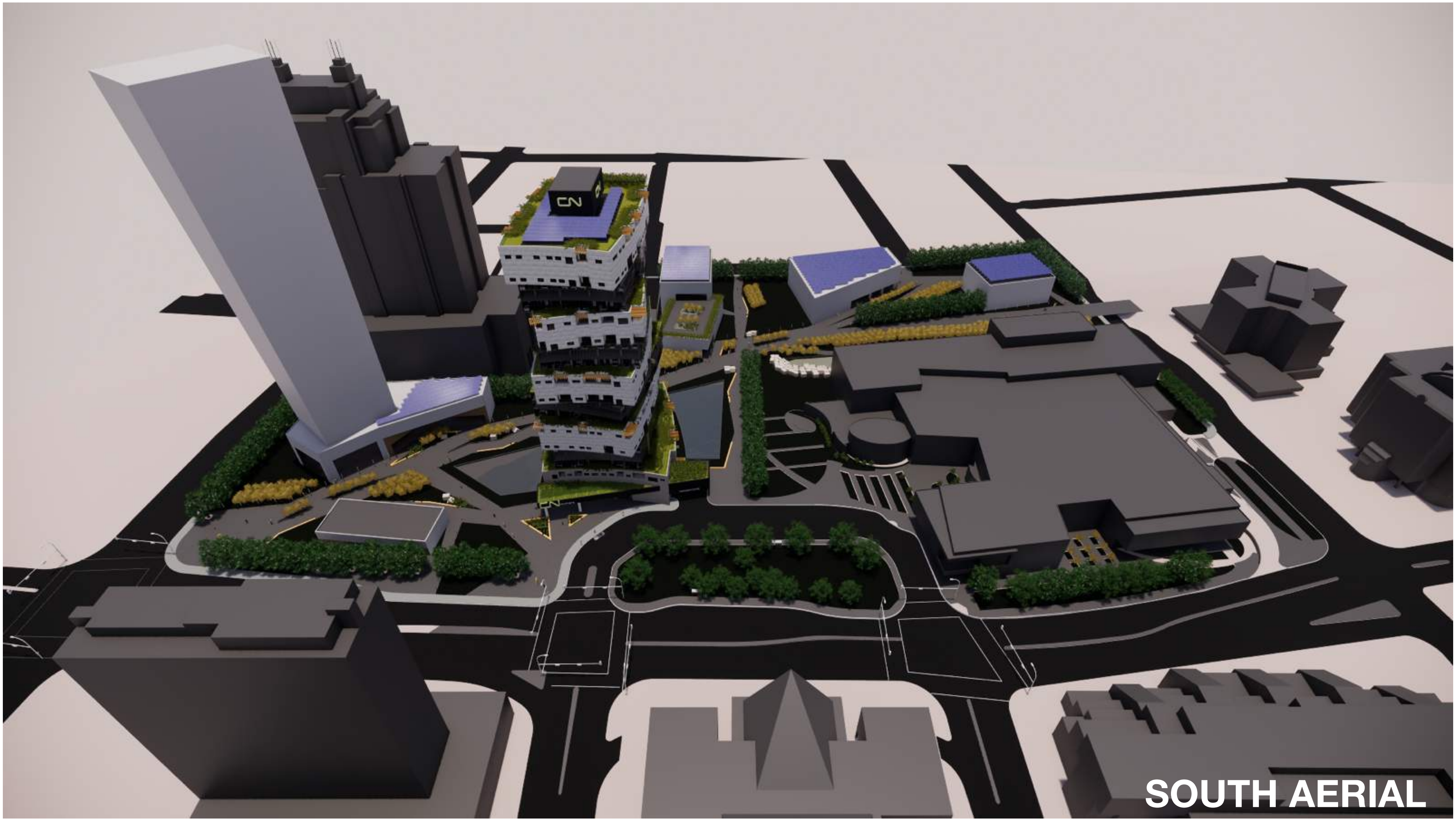


NORTH AERIAL

B.2.16 RENDERING

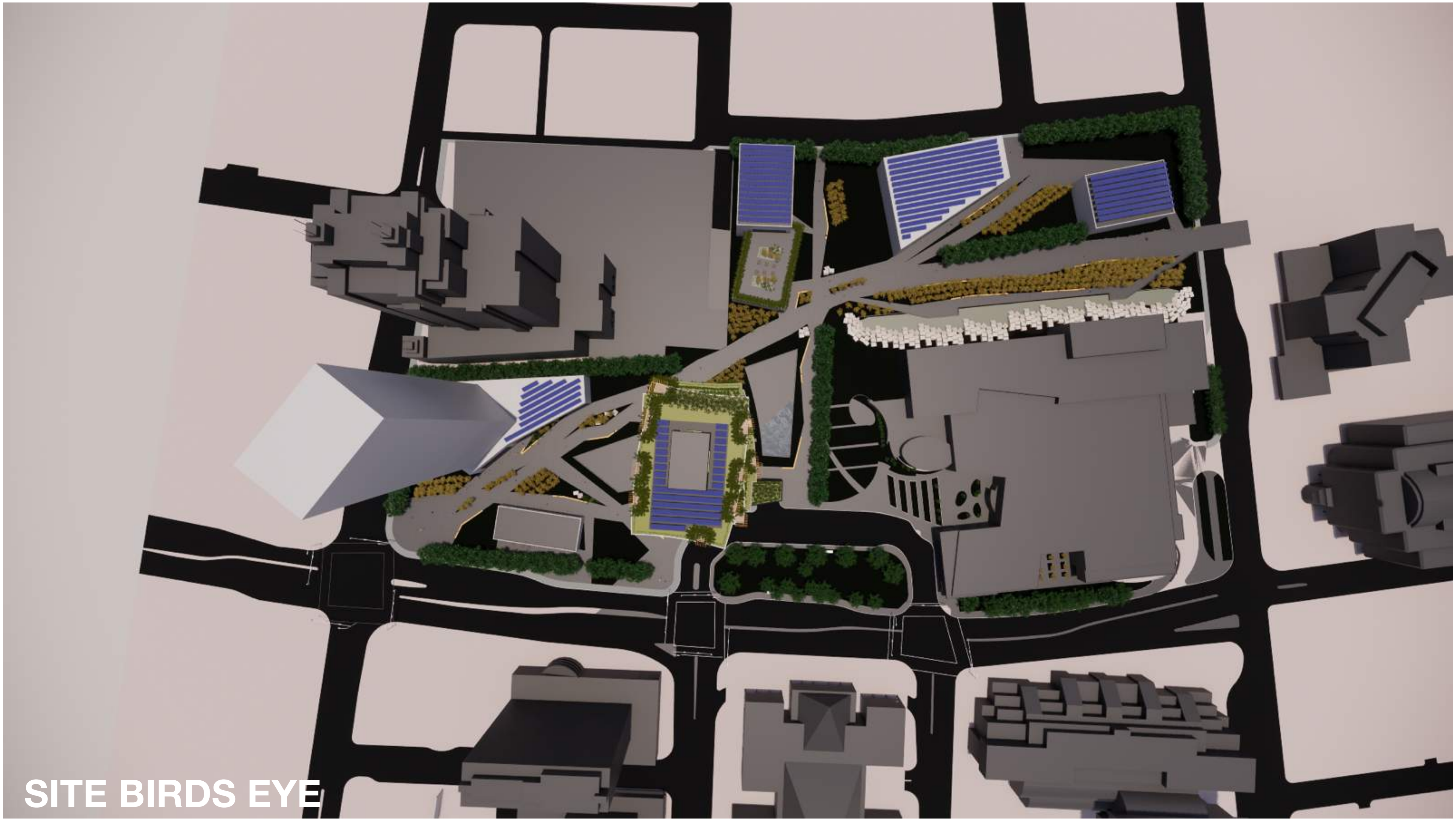
SOUTH-WEST AERIAL

B.2.16 RENDERING



SOUTH AERIAL

B.2.16 RENDERING



B.2.16 RENDERING

VIEW FROM ROYAL ALBERTA MUSEUM ENTRANCE

B.2.16 RENDERING

VIEW FROM ROYAL ALBERTA MUSEUM ENTRANCE (NIGHT)

B.2.17 PANORAMIC

104TH AVENUE & 101 STREET
DAY VIEW

104TH AVENUE & 101 STREET
NIGHT VIEW

SITE INTERIOR DAY VIEW

SITE INTERIOR NIGHT VIEW

LOBBY DAY VIEW

LOBBY NIGHT VIEW

QUESTIONS

THANK YOU

Jason McConaghie
AB090001EDM

RAIC 690B Syllabus Diploma Project

Final Diploma Project Presentation

Royal Architecture Institute of Canada

RAIC SYLLABUS