1357 BASELINE ROAD, OTTAWA

SMARTCENTRES AND GROUPE SELECTION

Urban Design Review Panel Submission - Formal Review

June 5th, 2020

SMARTCENTRES REAL ESTATE INVESTMENT TRUST

Groupe Sélection

ACDF ARCHITECTURE

LLOYD PHILLIPS & ASSOCIATES LTD. PLANNING CONSULTANTS

VP VERSION PAYSAGE ARCHITECTES PAYSAGISTES

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INTRODUCTION

SMARTCENTRES

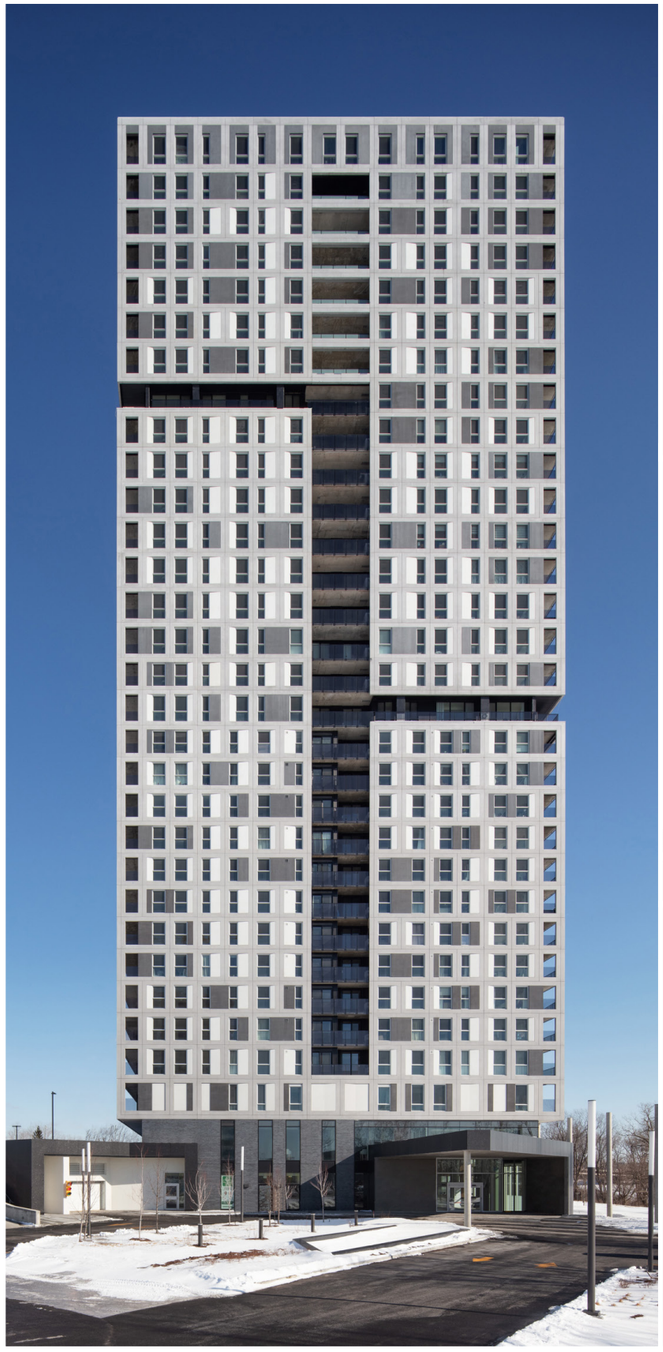
SmartCentres Real Estate Investment Trust is the culmination of a long-standing and highly successful alliance between Calloway REIT and SmartCentres. The acquisition of SmartCentres® by Calloway REIT in 2015 created a powerful Canadian real estate provider that is fully integrated with expertise in acquisition, asset management, planning, development, leasing, operations, property management and construction, all under one roof.

With proven expertise in retail development and operation, SmartCentres' capabilities have grown to include a variety of urban, mixed-use, residential and industrial developments, including a number of master planned communities such as SmartCentres Place at the Vaughan Metropolitan Centre in Ontario.

With the many capabilities of both companies coming together as one unified entity, SmartCentres® REIT is well positioned to take advantage of numerous opportunities as it helps shape the landscape of Canada's real estate market.

OUR STRENGTH

As a fully integrated real estate company, SmartCentres® continually advances its portfolio to ensure its properties are in demand for retailers and attractive for customers. In addition to a leading Canadian portfolio of unenclosed shopping centres, the company has a joint venture with Simon Property Group for Toronto Premium Outlets and Premium Outlets Montréal. SmartCentres® is also the lead developer for SmartCentres Place at the Vaughan Metropolitan Centre, the largest mixed use development in Canada.



GROUPE SÉLECTION

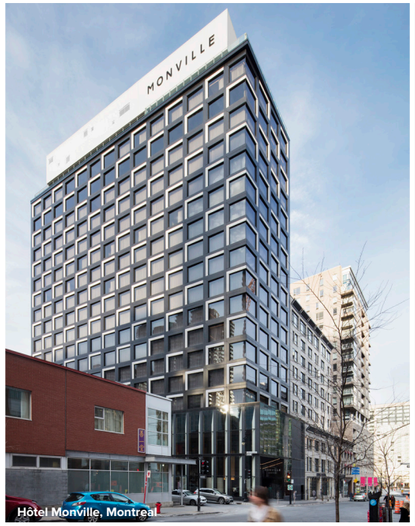
CREATORS OF LIVING ENVIRONMENTS

Groupe Sélection is a leader in the creation of multi-generational living environments. The company specializes in crafting stimulating living environments by promoting a dynamic lifestyle within their communities through innovative and preventative health practices. Groupe Sélection proudly celebrated their 30th anniversary, while capping off a period of rapid and dynamic growth. Since 2013, the number of multi-generational and retirement apartments in the company's portfolio has increased by 300% to more than 13,000 units. Groupe Sélection now has more than 50 projects in development, construction and operation. Throughout this period of rapid growth, they have retained a singular focus on their residents as evidenced by consistently maintaining a customer satisfaction rating above 95%. This achievement has been made possible thanks to the contributions of the almost 5,000 devoted employees who make up the Groupe Sélection team.

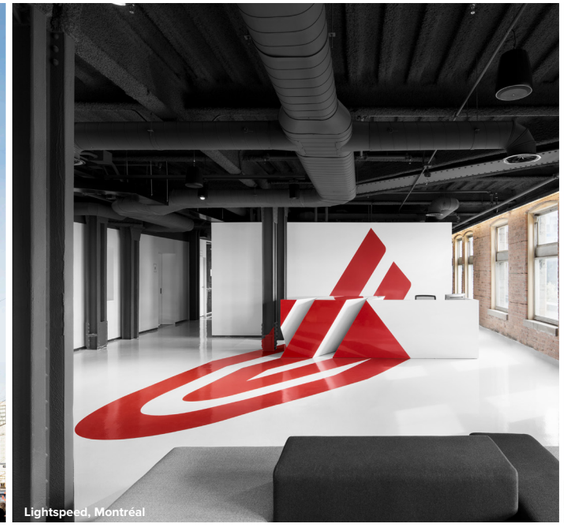
"At Groupe Sélection, It is our mission to devote ourselves daily to improve the well-being of our customers, employees and partners by developing and revitalizing their way of life, by focusing on prevention and by promoting ethics, respect, kindness, integrity, creativity and excellence."

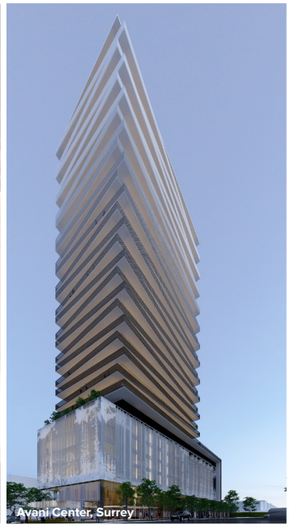
VERSION PAYSAGE

After having worked for about fifteen years for different architectural firms as landscape manager in the Landscaping section, Jean-Jacques Binoux, senior landscape architect, founded in 2000 the firm Version Paysage which offers all the services in landscape and urban design, as well as all the skills needed to carry out large-scale projects. The office is recognized by the Canadian and Quebec Landscape Architects Associations. The firm brings together an experienced team of landscape Architects and Urban Designers. These combine expertise in design, production, project management, estimation, quote writing and 3D presentation. Since the quality of the environment is at the heart of its concerns, the firm has developed an urban and commercial approach that aims to reduce the ecological footprint of projects by integrating the principles of sustainable development. The team‘s working methodology places primary importance on the physical, natural and cultural contexts of the site, and favors a coherent organization of project data in order to respect the deadlines and budgets of its clients. The firm‘s approach is contemporary, innovative and respectful of the environment. Several built projects are witness to the aspirations of the company, which combines the search for relevant and striking themes with the inventive use of materials and assemblages. Version Paysage ensures a good understanding of the mandate, the respect of the schedule, budget management control, integrated management of the project conception and the production process between the different disciplines, as well asa rigorous quality control»

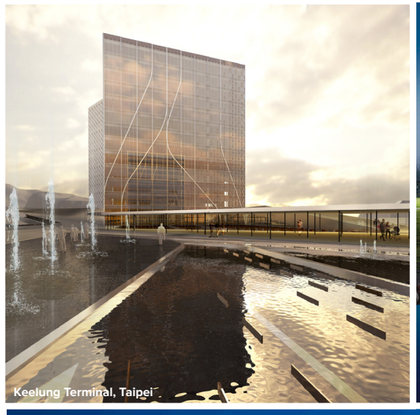


Hôtel Monville, Montreal

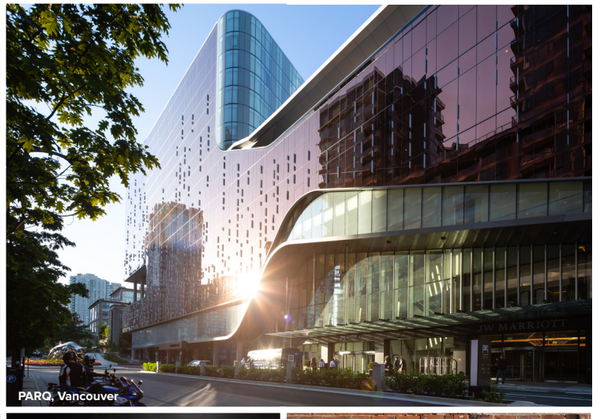

Lightspeed, Montréal

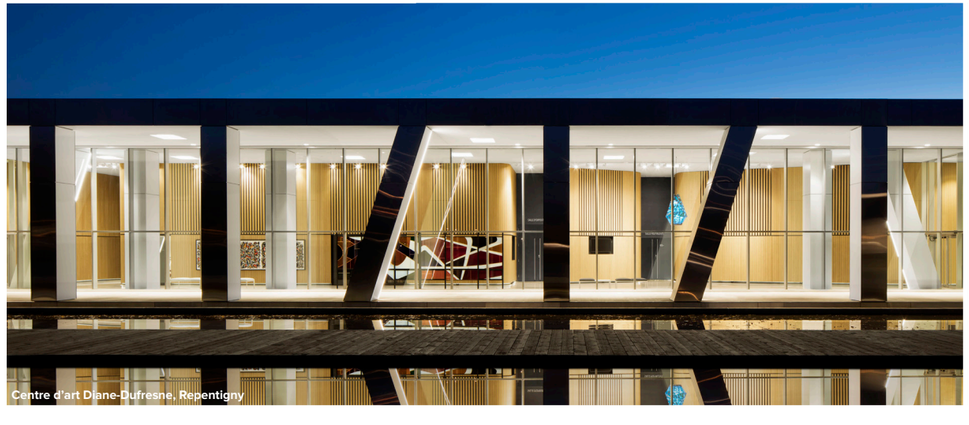

Avani Center, Surrey


Grosvenor Pacific Tower, Vancouver


Keelung Terminal, Taipei


Égoûts St-Germain, St-Hubert


PARQ, Vancouver


Centre d'art Diane-Dufresne, Repentigny


Orientalisme at the Musée de Beaux Arts, Montreal

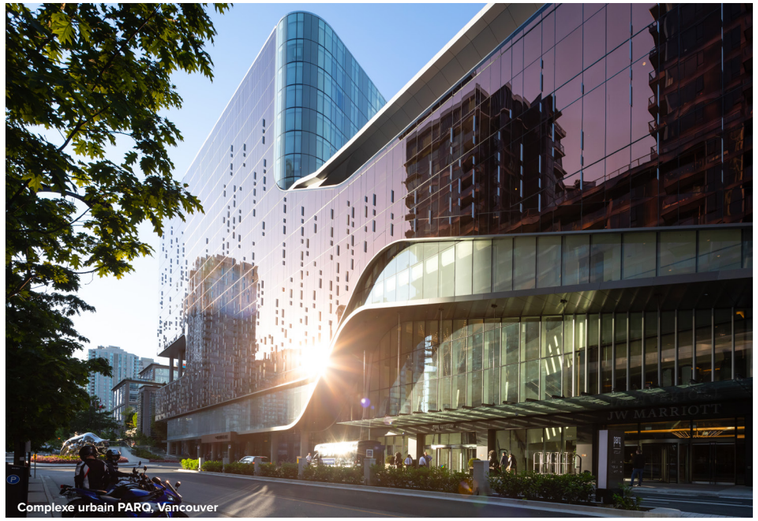

Samsung-AdGear Offices, Montréal

ACDF

With its creative energy and its broad expertise, ACDF designs inspiring spaces in which North American pragmatism meets European flamboyance. Every creation is a careful response to the project's objectives and constraints in order to mobilize the full potential of the site and its surroundings. ACDF uses a clear and bold language that highlights the project's key design principles with sophisticated detailing and materials.

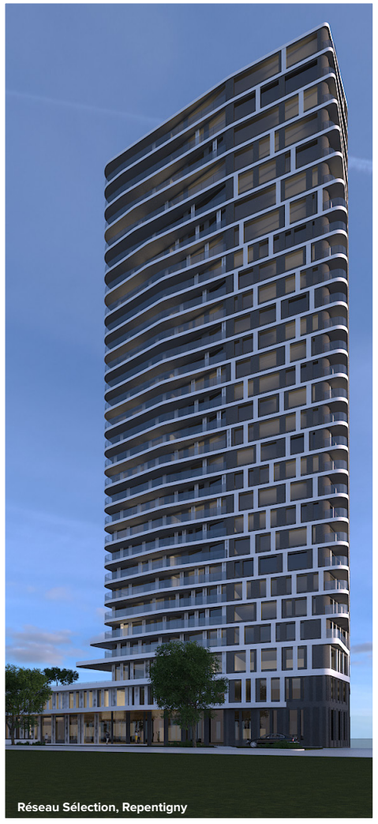
The firm's major achievements established its reputation in Quebec, Canada and around the world. The **86-people** team has a flexible structure that allows it to take on residential, commercial and institutional projects of every scale. This team structure encourages everyone in the firm to constantly reinvent themselves through design, research and experimentation. The firm's innovative work has been celebrated on many occasions. Among them, ACDF received in 2010 a Governor General's Medal in Architecture and in 2013, Maxime-Alexis Frappier, one of the firm's co-founders received the Young Architect Award from the Royal Architecture Institute of Canada.

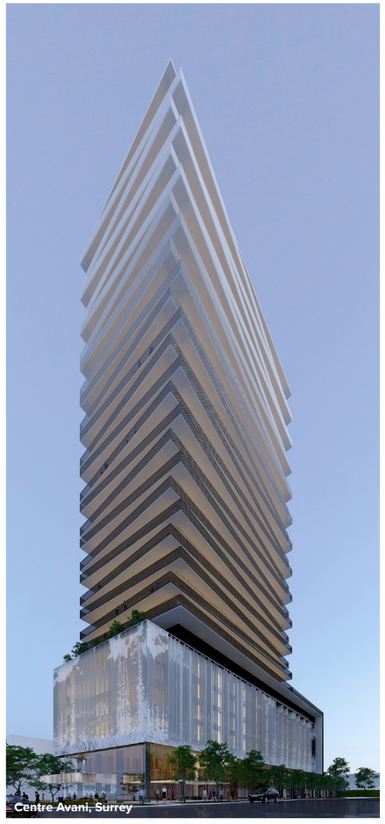

Hôtel Monville, Montréal


Complexe urbain PARQ, Vancouver


Tour Longueuil


The Pacific par Grosvenor, Vancouver


Réseau Sélection, Repentigny


Centre Avani, Surrey


Réseau Sélection Panorama, St-Dorothée

ACDF MIXED-USE AND RESIDENTIAL

Our team enjoys first-class expertise in the realization of collective housing projects. In the past 5 years alone, we have managed the design of over 4,000 collective housing units for rental, condominium, residence for independent seniors, infirmary and hospitality (short and long stay) projects. We are currently designing projects totaling more than 1500 units in Montreal, Vancouver BC, Brossard, Châteauguay, Ste. Dorothée, Lévis, Sherbrooke, Surrey BC, Rock Forest and Westmount. Please find below an abbreviated list of our most recent achievements and some images on the following pages.

MIXED-USE PROJECT

Hôtel Monville, Montreal (269 rooms), 35M$, 2018

Milan appartments, Brossard (180 units), Groupe Mochelle, en cours de réalisation

Berthiaume-du Tremblay Appartements, Montréal (40 units), Fondation Berthiaume du Tremblay et Bâtir son Quartier, ongoing

Hospitalières de Montréal Apartments, Montreal (200 units), Fondation Berthiaume-du Tremblay et Bâtir son Quartier, ongoing

The Pacific by Grosvenor, Vancouver BC, Grosvenor (224 units, 42 floors), 75M$, ongoing

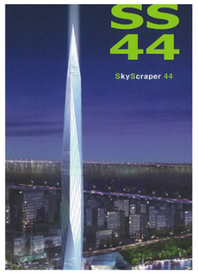
Lucien L'Allier condominiums, Montréal (520 units), 120M$, en cours de réalisation

Avani Tower, Surrey BC, Virani Group (230 units, 38 floors), 65M$, ongoing

Réseau Sélection Panorama, Sainte-Dorothée, Laval (350 units), 2019

PARQ Casino and Resort (Mixed use project including 2 hôtels (550 rooms) 630M$, 2018n

PUBLICATIONS AND AWARDS



PUBLICATIONS

Architecture Bois, october-november 2018, Maison sur le Lac

New York Times, 2018 september 1st, Hôtel Monville

Canadian Interiors, jully- august 2018, Monville Hotel

ID+C, august 2018, Monville Hotel

Diseno Interior, august 2018, Monville Hotel

Frame magazine, may june 2018, Lightspeed 2

Office MD magazine, may 2018, Lightspeed 2

Distrito oficina april 2018 : Playster

Diseno interior, april 2018 : Lightspeed 2

Hinge magazine, march 2018 : Lightspeed 2

ARTRAVEL Magazine,february 2018 : Maison sur le Lac

Diseno Interior, march2018 : Samsung Adgear

The other office 3 - Frame - Lightspeed 2

On Office, UK, No.123, September 2017, Playster

Yapi, Istanbul, No.431, October 2017, Playster

Id+C, Korea, No.278, October 2017, Adgear-Samsung

Divisare, Italy, january 2018, web : Lightspeed

HINGE, China, december 2017, Adgear-Samsung

I-Plus, Korea, No. 25, Playster

OnOffice, november 2017, magazine, Playster

Architectural Record, septembre 5 of 2017, magazine, Lightspeed 2

Architectural Record, june 23 2017, web, Maison sur le Lac

Designboom, june 15 2016 : «ACDF architects wraps lake house in canada with wooden band» Maison sur le Lac

Azure, Jun 2017, 8 pages on Adgear-Samsung offices

I-Housing, Archiworld,March 2017 : Korean Book, Chalet Blanche

Hinge Magazine, Mach 2017 : Diane-Dufresne Art Centre

DETAIL, FEBUARY 21FT : DIANE-DUFRESNE ART CENTRE

Hinge Magazine, Febuary 2017 : Chalet Blanche

C3 SPECIAL, DECEMBER 2016 : LIGHTSPEED, KOREA

INTERIORS, NOVEMBER/DECEMBER 2016 : LIGHTSPEED

MONOCLE, NOVEMBER 2016 :DIANE-DUFRESNE ART CENTRE

CANADIAN INTERIORS, OCTOBER 2016 : LIGHTSPEED

CANADIAN ARCHITECT, NOVEMBER 2016 : DIANE-DUFRESNE ART CENTRE

LA PRESSE, LE SOLEIL, OCTOBER 31, 2016 : CHALET BLANCHE

CONCEPT, OCTOBER 2016 : DIANE-DUFRESNE ART CENTRE

LA PRESSE, SEPTEMBER 15, 2016 : HÔTEL MONVILLE

INTERIOR DESIGN, AOÛT 2016 : CENTRE D'ART DIANE-DUFRESNE

ARCHDAILY, JULY 26, 2016 : CHALET BLANCHE

AWARDS

2018 Jury's award, Commercial Real Estate Awards : Parq
2018 Architizer award : Grosvenor
2018 Shaw Contract Design Award : Playster
2018 Finalist of the Dezeen Award, Workspace Interior category: Lightspeed 2
2018 Frame Award, jury's choice : Lightspeed 2
2018 Grand Prix du Design, office between 5 000 and 20 000ft ² : Playster office
2017 Best of Canada, Canadian Interiors Magazine : Playster office
2017 Interior Design Magazine Best of Year Awards: Lightspeed2 office
2017 Interior Design Magazine Best of Year Awards: Playster office
2017 Interior Design Magazine Best of Year Awards: Maison sur le Lac
2017 American Architecture Prize, Maison Sur Le Lac
2017 American Architecture Prize, Samsung Adgear office
2017 Prix Galla Constellation, category Service Company
2017 Finalist for the Award of excellence from the ordre des architectes du Québec(OAQ), Chalet Blanche
2017 Finalist for the Award of excellence from the ordre des architectes du Québec(OAQ), Bureaux Playster
2017 Finalist for the Award of excellence from the ordre des architectes du Québec(OAQ), Bureaux Samsung Adgear
2017 Finalist for the Award of excellence from the ordre des architectes du Québec(OAQ), Centre D'art Diane-Dufresne
2017 Grand Prix du Design, Non Categorized Special : Centre d'art Diane-Dufresne
2017 Finalist for the new aquatic centre of Laval
2016 Interior Design Magazine, Best of Year Awards: Chalet Blanche
2016 Grand Prix du Design, Office over 20 000ft ² : Lightspeed office
2016 Best of Canada, Canadian Interiors Magazine: Lightspeed office
2016 American Architecture Prize, Silver Prize, Interior Design / Interior house : Chalet Blanche
2015 Finalist for the excellence award from the ordre des architectes du Québec(OAQ), Interior Amenity Category
2015 Finalist for the excellence award from the ordre des architectes du Québec(OAQ), Non Categorized: Scenography for the Wonders and Mirages of Orientalism Exhibition at the Montreal Museum of Fine Arts
2015 Interior Design Magazine Best of Year Awards, Mid-Size Tech Office: Bureaux Lightspeed
2015 Make It Work Best Reception Desk, Américain Interior Design Magazine: Bureaux Lightspeed
2015 Make It Meet, Best Breakout, Américain Interior Design Magazine: Bureaux Lightspeed
2015 Make It Public, Budget Office, Américain Interior Design Magazine: Bureaux Lightspeed
2013 Young Architect Prize from the Royal Institute of Architecture of Canada, Maxime-Alexis Frappier
2013 Excellence award from the canadian institute of steel construction (CISC) : Guy-Bélisle de Saint-Eustache Library
2013 Finalist for the excellence award from the ordre des architectes du Québec (OAQ), Interior Design category : Maison de la culture du Maroc in Montreal
2013 Finalist for the excellence award from the ordre des architectes Du Québec (OAQ), Institutional Building Category: Centre aquatique Desjardins of St-Hyacinthe
2013 Finalist, architecture competition : Blainville's public library
2013 Architecture Prize from the conference of the library and information community of Quebec (ABQLA): Bibliothèque Laure-Conan in La Malbaie

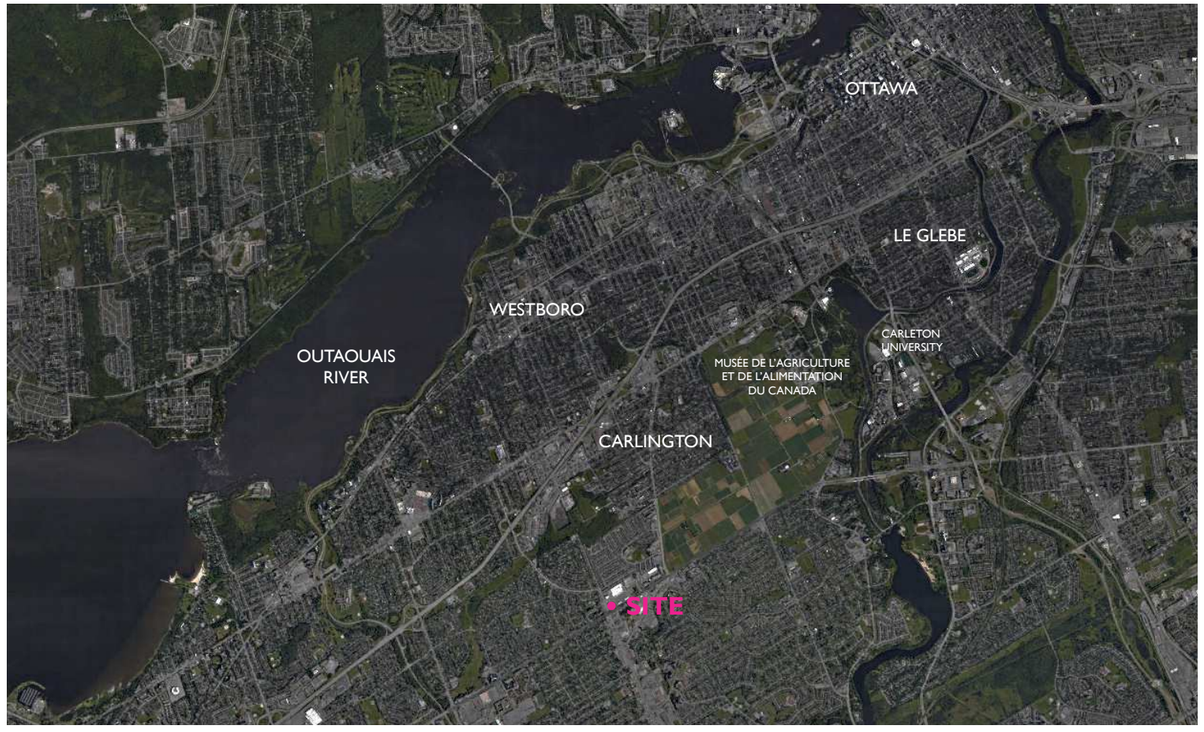
PROPOSAL OVERVIEW

SUMMARY

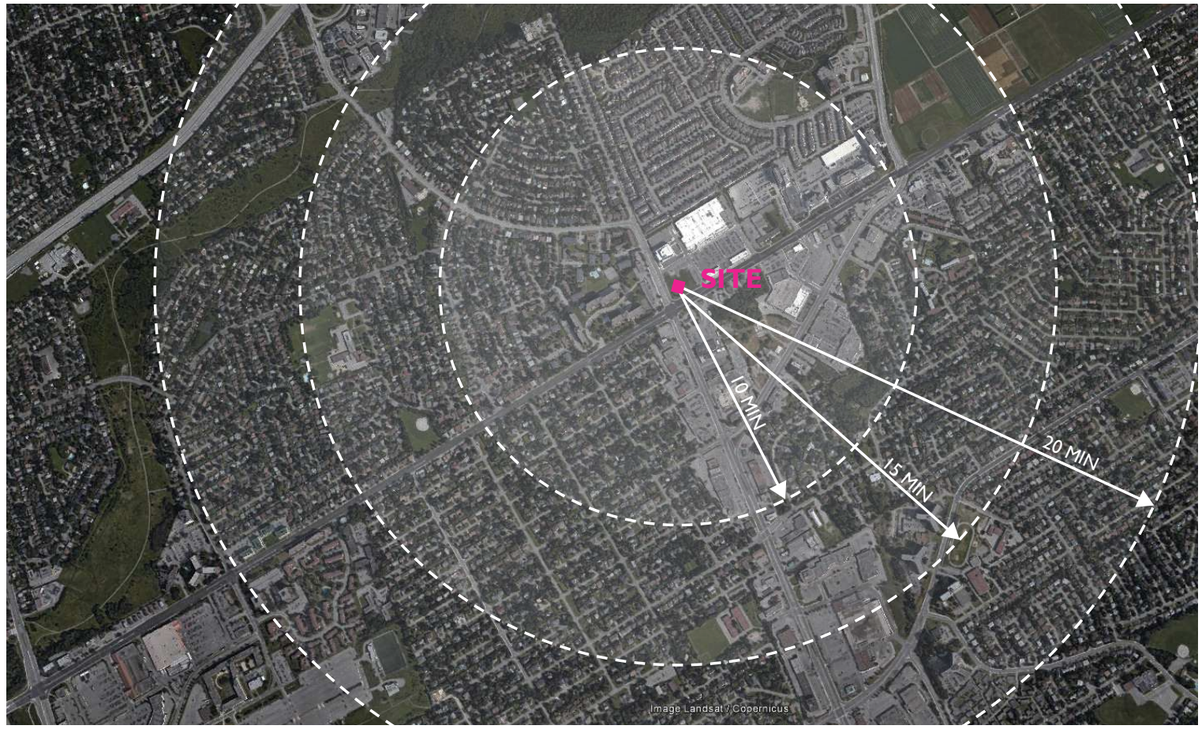
Location:	1357 Baseline road
Zoning:	AM Zone Urban Exception 1711 S248, S249
Residential Units:	200 Senior Residence units 28 Care rooms 174 Rental apartments
Target Market:	55 to 74 for Rental apartments 75+ for Signature Senior Residence
Retail/Commercial:	548 m2
Parking:	244 spaces (residential + care rooms) 20 spaces (retail) 60 spaces (visitor) 324 spaces (total)
Bike parking:	150 bikes (residential) 17 bikes (non-residential) 167 bikes (total)
Height:	15 storeys - 48,0 m (Rental apartments (West) tower) 15 storeys - 46.5 m (Senior Residence (East) tower) 1 storey podium - 4.95m Maximum allowed height : 50m
Floor space index*:	2,95 (proposed) 3,50 (maximum)

* for Phase 3 development only. FSI when considering the whole lot for zoning purposes is <2

SITE CONTEXT AND ZONING



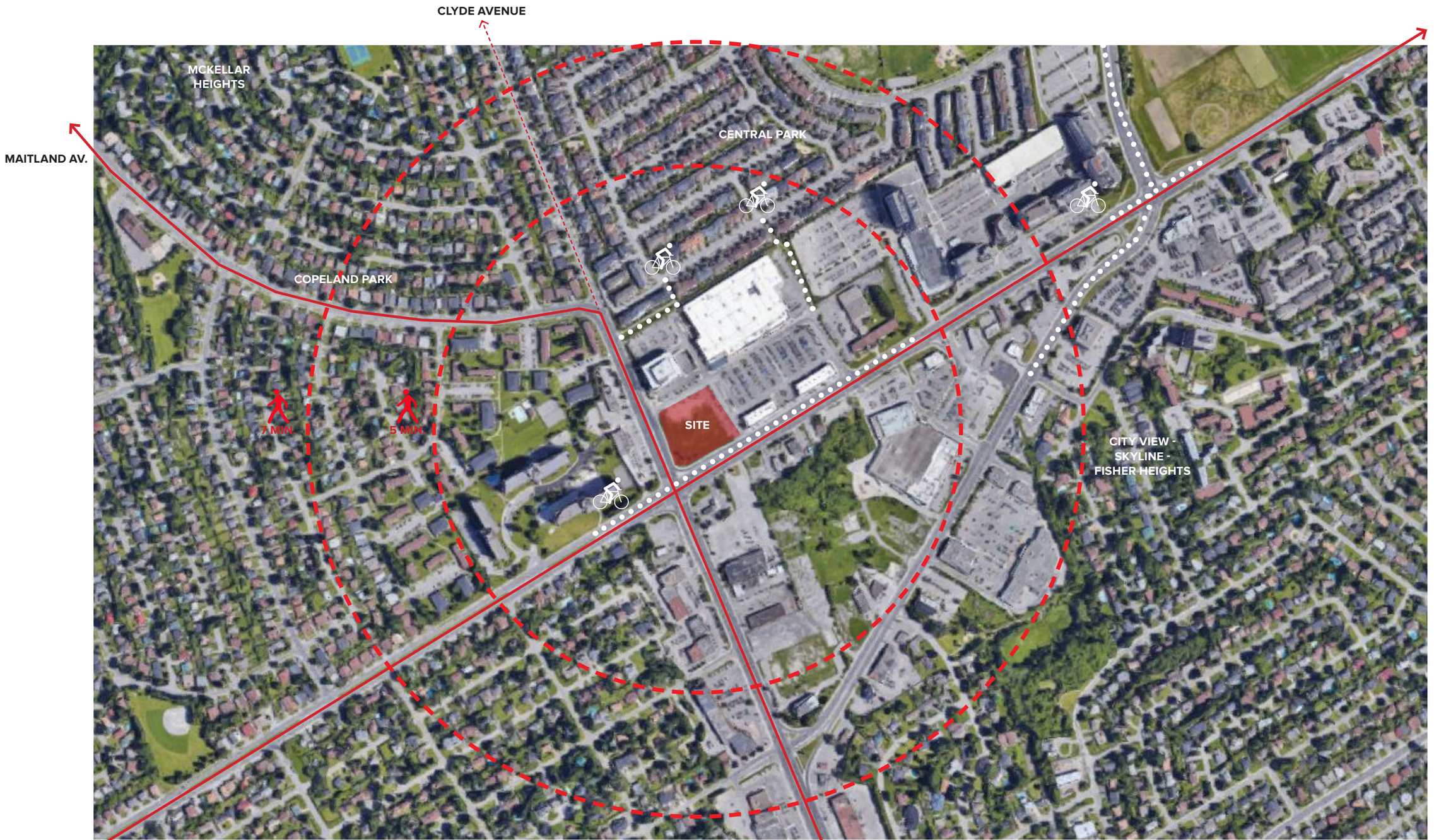
Site location



Walking distance

N

SITE LOCATION



URBAN CONTEXT

ZONING

AM(1711), S248, S249

PROPOSED PERMITTED USES
Selected uses relevant to project. See Section 185 of Zoning By-law for complete list.

Residential use: Retirement home, Residential Care Facility and Ancillary uses to the above
Non-Residential use: Retail Store, Restaurant, Retail food store
(City of Ottawa Zoning By-law - Section 185 AM Zone)

Project may not be a *residential use building*, which would include solely *residential units*
(City of Ottawa Zoning By-law - Urban Exception 1711, 4)

MAX. FLOOR SPACE INDEX

3.5 if 80% or more of the required parking is provided below grade
2 in other cases
(City of Ottawa Zoning By-law - Section 185)

Floor space index: ratio of the *gross floor area* of a building on the total area of the lot on which the building is located
(City of Ottawa Zoning By-law - Section 54 Definitions)

Gross floor area: total area of each floor whether located above, at or below grade, measured from the interiors of outside walls and including floor area occupied by interior walls and floor area created by bay windows, but excluding;
- floor area occupied by shared mechanical, service and electrical equipment that serve the building
- common hallways, corridors; stairwells, elevator shafts and other voids, steps and landings
- bicycle parking; motor vehicle parking or loading facilities
- common laundry, storage and washroom facilities that serve the building or te-nants
- common storage areas that are accessory to the principal use of the building
- common amenity area and play areas accessory to a principal use on the lot
- living quarters for a caretaker of the building
(City of Ottawa Zoning By-law - Section 54 Definitions)

SETBACKS

Any building located within 20 metres of Baseline Road or Clyde Avenue must be setback to provide a minimum distance of 6.0 metres between the curb of any widened right-of-way secured through a site plan approval along Baseline Road and Clyde Avenue and may not be setback more than a maximum of 7.0 metres from the street edge lot line
(City of Ottawa Zoning By-law - Urban Exception 1711, 13)

BUILDING HEIGHT

Maximum: 25 meters, or 50 meters with 20 meter setback from Clyde and Baseline
Minimum: 7 meters
(City of Ottawa Zoning By-law - Schedule 248)

Mechanical, service, elevator or stairway penthouses can project above height limit
(City of Ottawa Zoning By-law - Schedule 64)

PARKING

Project is in Area B
City of Ottawa Zoning By-law - Section 101, Schedule 1A

Minimum Parking rate
Retirement home:
0.25 per dwelling unit + 1 per 100m2 of medical, health or personnal services
Retail Store: 2.5 per 100m2 of gross floor area
(City of Ottawa Zoning By-law - Table 101, R20, N79)

Minimum Visitor Parking Space Rate: 0.2 per dwelling unit
(City of Ottawa Zoning By-law - Section 102)

Maximum Parking rate:
Retirement home: 1.75 per dwelling unit including visitor
Retail Store: 3.6 per 100m2
(City of Ottawa Zoning By-law - Section 103)

A maximum of 750 surface parking spaces may be provided for the entire site.
(City of Ottawa Zoning By-law - Urban Exception 1711, 18)

An above grade parking garage is only permitted where it is screened from view from the street and adjacent residential zones by landscaping and architectural features.
(City of Ottawa Zoning By-law - Urban Exception 1711, 8)

Parking Space: Min. Size: 2.6m x 5.2m
(City of Ottawa Zoning By-law - Section 106, 1)

Parking Garage Aisle Min. Width: 6.0m for double traffic lane
(City of Ottawa Zoning By-law - Section 107, 1), a), iii)

BIKE PARKING

Min. bike parking spaces: 0.25 per dwelling or rooming unit
(City of Ottawa Zoning By-law - Table 111A)
Bicycle Parking Space Provisions: See *City of Ottawa Zoning By-law - Table 111B*

PERMITTED PROJECTION INTO REQUIRED YARDS

Covered or uncovered balcony :
The greater of 2m or 50% of the required front yard or corner side yard, but no closer than 1m to a property line
City of Ottawa Zoning By-law - Section 65, Table 65, 6)

GROUND FLOOR AREA

« except for any building located within the area to be reserved for residential or office development as set out in clause 20(c) the ground floor of buildings as referenced by subsection 13 shall be restricted to the main commercial uses of this AM zone with lobby areas and access areas for upper floor uses being limited to an aggregate maximum 15% of the GFA of the ground floor of each building.»
(City of Ottawa Zoning By-law - Urban Exception 1711, 5)

« for a building or buildings located within the area to be reserved for future residential and/or office development as set out in clause 20(c), the requirements set out in subsection 5 for ground floor uses and the limitation of 15% of GFA of ground floor area for second floor access and lobbies will only apply for that portion of a building that is not a residential use building located within 20 metres of the Clyde Avenue lot line»
(City of Ottawa Zoning By-law - Urban Exception 1711, 6)

PHOTOGRAPHIC ANALYSIS

1. Corner of Baseline Road and Clyde Avenue

2. View to the West from Baseline Road

3. Corner of Baseline Road and Clyde Avenue

4. View to the North from Baseline Road

5. View to the South from Clyde avenue

6. View to the South-East from Clyde avenue

7. View to the North-East from Baseline road

8. View to the South from Clyde avenue

9. View to the North from Baseline road

10. View to the East from Baseline road

CONCEPTUAL APPROACH

The proposed project is located at the intersection of Clyde Avenue and Baseline Road, west of Downtown Ottawa, at the south-west corner of the Laurentian Place Mall. It consists of a mix of different uses, primarily senior residences and apartments, but also care rooms, various amenities and services for residents and retail space. This proposed complex will create an **enriched human scaled environment** along Baseline Road and Clyde Avenue, hence structuring the visual urban landscape along these two arterial mainstreets and dramatically improving conditions for pedestrians, cyclists and users of public transportation networks.

The basis for the design of the proposed development required careful consideration of multiple constraints and opportunities related to the site, municipal guidelines, urban context and required program. The result is a **coordinated effort** to propose a development that adheres to the City of Ottawa's Urban Design Guidelines (specifically for development along arterial mainstreets and for high-rise buildings, when applicable), to the client's requirements and constraints and to our own vision of a meaningful and **carefully planned building harmoniously woven in the urban fabric** and contributing to the amelioration of the surrounding neighbourhood. Large, generous sidewalks are provided accompanied by landscaped buffer zones which create a separation from the heavy traffic found on Baseline Road and Clyde Avenue and provide a sense of identity and human scale. The planting materials proposed for the landscaped buffer zones and the Privately-Owned Public Space (POPS) were selected considering their tolerance to urban conditions (road salt, heat, occasional dry spells). Direct access from public sidewalks to building and commercial entries permit easy and direct accessibility to the interior spaces. A significant landmark feature incorporating a landscaped plaza and commercial terrace celebrates the corner of Clyde and Baseline. The ground floor functions along Baseline and Clyde animate the urban landscape with multiple entries to commercial spaces and terraces relating to lobby spaces within the apartment complex. Service functions such as garbage and recycling storage, entries to interior underground parking and delivery spaces have been integrated architecturally along the eastern service road.

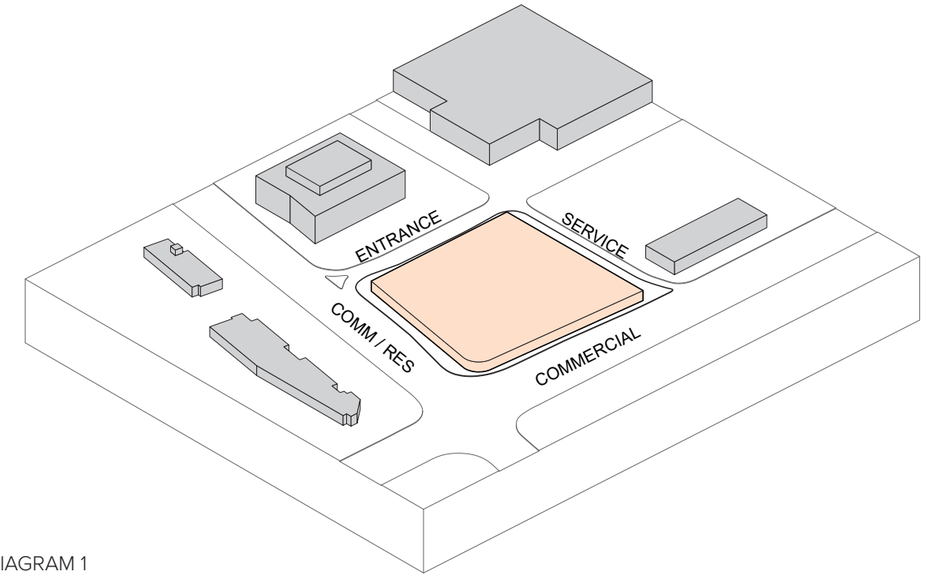


DIAGRAM 1

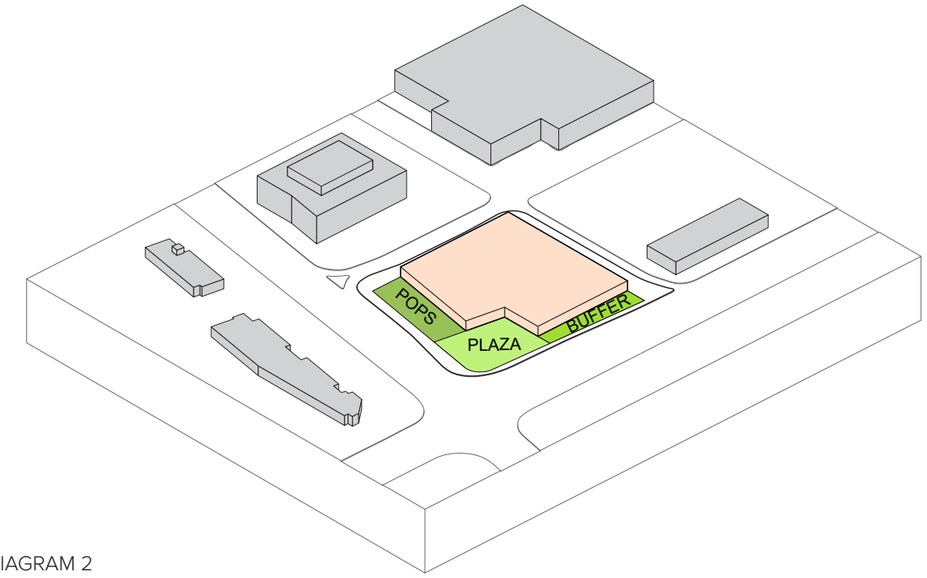


DIAGRAM 2

The site is surrounded by four roads, each with a different level of traffic, function and character. Baseline Road, to the south of the site, is a wide, high-speed thoroughfare and major east-west road in the area. It has a noisy and frenetic environment and is lined with commercial spaces near the site. Clyde Avenue is a wide north-south thoroughfare with considerable traffic and offers a direct connection to the nearby TransCanada Highway via Maitland Avenue. At the corner of Baseline Road, its commercial character changes to form the main gateway to the McKellar Heights and Copeland Park residential neighbourhoods, north and west of the site. The north of the building's site is bordered by a main private entrance roadway to the Laurentian Place Mall from Clyde Avenue, while a secondary entrance to the same mall arriving from Baseline Road defines the eastern edge of the site. These 4 bordering roadways provide **4 different urban interface strategies** at grade-level : a commercial interface along Baseline, a park (POPS) along Clyde, blending its commercial and residential character, the principal pedestrian entrances to the two towers along the north roadway and a service interface along the east roadway with access to the underground parking garage. These 4 strategies form the basis for the program and planning of the development's podium and pedestrian interface, a crucial aspect of the proposed project's contribution to the neighbourhood. This podium also serves to hide parking spaces from pedestrians to create a more pleasant environment. (See DIAGRAM 1)

To reduce the unpleasant proximity to busy Clyde Avenue and Baseline Road for the pedestrian, the building is set back to create a landscaped buffer between the facade and the road. This **generous landscaped space** allows the project to mediate the sloping topography while providing flexible functions on a single level. These two landscape buffers meet at the corner to form a larger **public plaza**, an important architectural event that animates the corner and provides an additional distance from the busy intersection. This corner plaza serves as a main entry point for the proposed functions at grade. (See DIAGRAM 2)

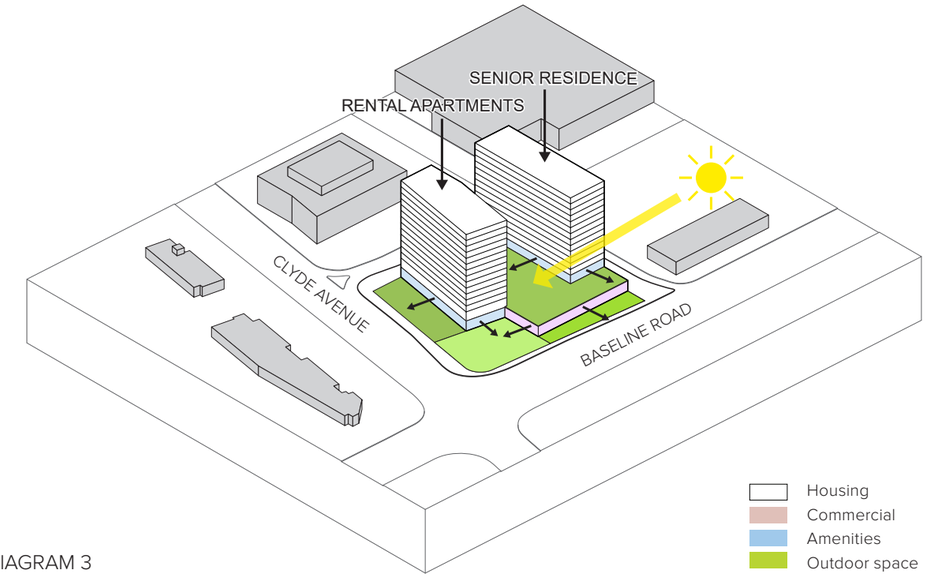


DIAGRAM 3

The different functions of the project address the proposed urban interface of the site. The **ground floor of the base is highly animated** with numerous entries linking interior functions to the exterior spaces surrounding the building. Retail units punctuate the building frontage along Baseline Road, with access from the landscape buffer and from the corner plaza. The two main pedestrian entrances to the residential components of the project are located on the northern face of the building where vehicular access is less hectic at a reduced speed. They are protected from the climate by generous canopies. Drop-off zones are provided allowing passengers to disembark in **safety**. The entrance to the interior parking garage, the ambulance access to the care units, the garbage enclosure, commercial shipping zone and other technical elements are located along the eastern access roadway, physically removed from the Baseline Road sidewalk and **visually discrete**.

Along Clyde Avenue, the common amenities of the Western rental apartment building open onto a private terrace overlooking the POPS as well as onto a terrace overlooking the corner plaza. The **dialogue between the public exterior spaces and the common amenities** provide a blend of public and private life, highlighting the proximity to the residential neighbourhoods. The **POPS** along Clyde Avenue provides **extensive green space and vegetation**, much needed in the highly mineral immediate context surrounding the site and visually referencing the residential character of the neighbourhoods nearby. A **network of pathways** linking the buffer zone along Baseline Road, the landscaped plaza and the POPS along Clyde Avenue and continuing around the building to the north and to the east of the building, create a pedestrian circuit for the building residents. The plaza and POPS will offer protected pedestrian circulation for the passengers from the planned BRT stop on the corner of Clyde and Baseline.

The vast podium offers the opportunity for an extensive landscaped rooftop terrace and a **sun-filled urban oasis** to house the required outdoor amenities for the Seniors' residence. To maximize natural light for all residents and for the outdoor amenities, the roof terrace opens to the south, framed by the two towers to the east and the west, and a lower five storey wing to the north, ensuring the two volumes read distinctly but allowing the overall project to read as a whole. This creates a **large raised garden overlooking the city** to the south and removed from the busy traffic below. A setback of the west tower reduces its imposing volume on the street, balances the two towers and allows the seniors' dining room to open onto the light-filled outdoor garden punctuated by exterior amenities (pickle ball court, shuffleboard, petanque, vegetable garden, exterior kitchen and BBQ, garden swings and benches allowing for relaxation) (see DIAGRAM 3).

The building's articulation uses contrasts to render the **dynamic composition** and to offer a landmark building at the intersection of two main arteries within the west end of the city. The horizontal lines of the light-coloured linear balconies and dark grey balustrades encircling the two towers contrast with the dark corrugated metallic skins of the towers. Sculpted vertical panels separating the balconies playfully animate the façades while capturing the sunlight on their curved surfaces. Generous fenestration offers panoramic views of the city from within the apartments. An architectural base delineated by dark grey brick protects the building envelope at the ground floor level. Using well-crafted details, these elements will provide **visual interest and longevity** for the building façades.

The common spaces for the building residents located on the ground floor and the second floor provide large glazed surfaces overlooking landscaped terraces. Well defined exterior public spaces adjoining interior common spaces create a human scale pedestrian environment adjacent to the building. These spaces benefit from several access points encouraging fluid circulation for the residents between the interior of the building and its surroundings while increasing the **sense of neighbourhood**.

The project improves significantly the surrounding urban environment at the junction of Clyde Avenue and Baseline Road by integrating sustainable design principles which create a longlasting and durable contribution to the built environment of the city of Ottawa.

The Groupe Sélection complex offers housing for senior citizens with many amenities which will encourage its residents to enjoy life in the immediate area with appropriate services. This project is an effective way to counter urban sprawl and to reduce increased energy and environmental requirements linked to low density development.

The interior parking garage, the landscaped roof terrace of the second floor, the sixth-floor invasive green roof of the project and the surrounding on-grade landscaped areas reduce significantly the presence of **heat islands** frequently found in developed sectors of the city. The landscaped roof terrace provides a peaceful outdoor space directly related to the common areas of the seniors' residence and allows its occupants to enjoy activities and gatherings out of doors. As well, a community garden for the building's residents is located on the second floor roof terrace. No exterior parking is provided by the project.

Indigenous plants that are resistant to harsh climate, insects, dry spells and low maintenance are selected for these landscaped areas. This selection contributes to a reduction in the use of valuable resources. (see Landscape Concept Annex)

The project encourages **active transport** by providing interior bicycle storage for its residents and caretakers as well as some exterior bicycle parking for the retail clients and employees. A network of landscaped pedestrian circulation encircles the building encouraging residents to actively exercise and allows easy pedestrian access to the building and surrounding services. Benches are located along these pathways to allow pedestrians to rest when required or for chance meetings. The corner of Baseline Road and Clyde Avenue is well served by public transport and hence will help to reduce additional private vehicular traffic generated by the new residents.

Underground rainwater retention basins for the building eliminate **rainwater runoff** and undue stress on existing municipal infrastructure capacities.

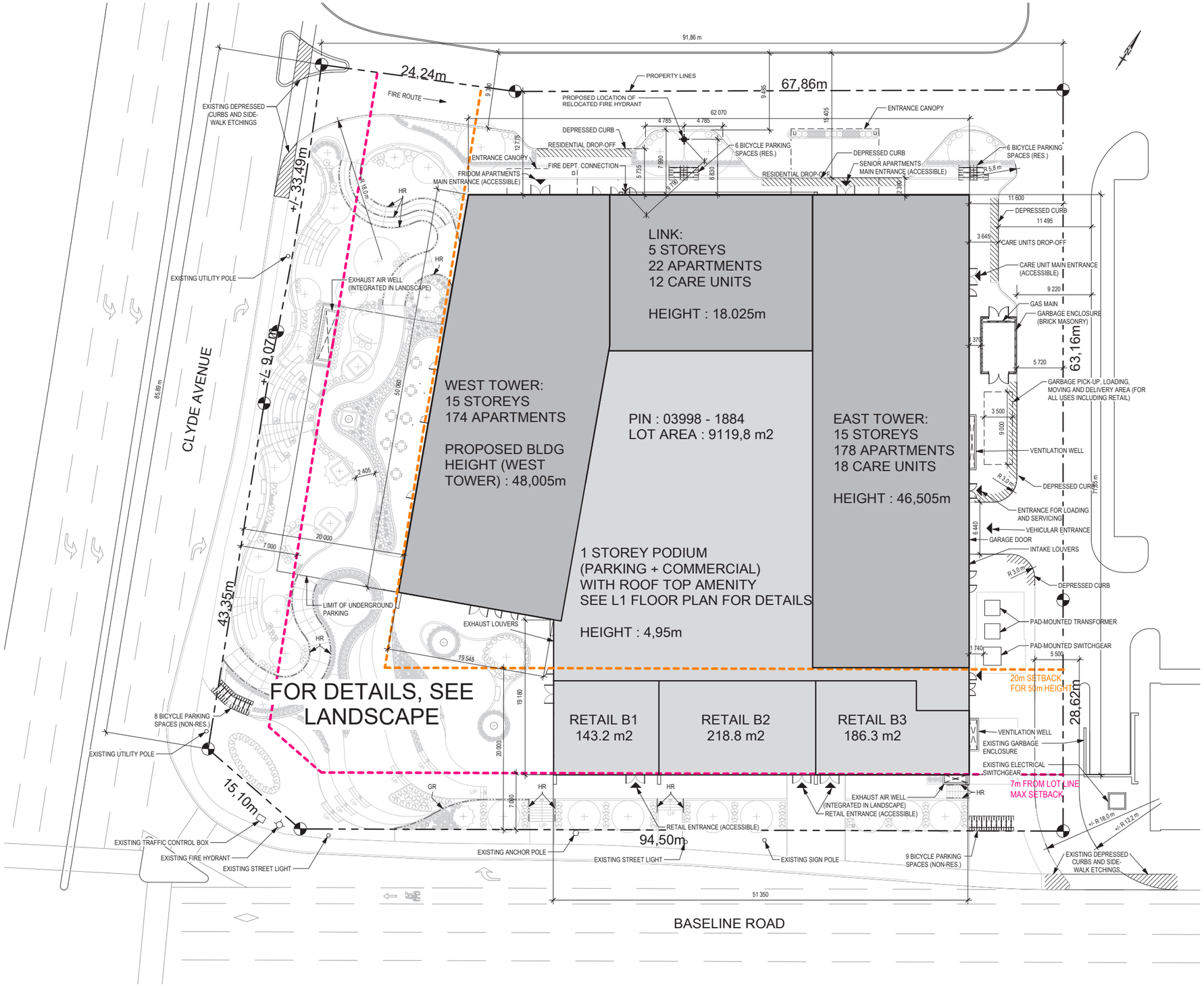
Continuous linear balconies provide private outdoor living spaces for the residents, while offering **protection from the sun and rain** during the summer months.

Operable windows are used to provide **natural ventilation** and help reduce mechanical heating and cooling requirements for the building.

PLANS

SITE PLAN

SCALE: 1/500

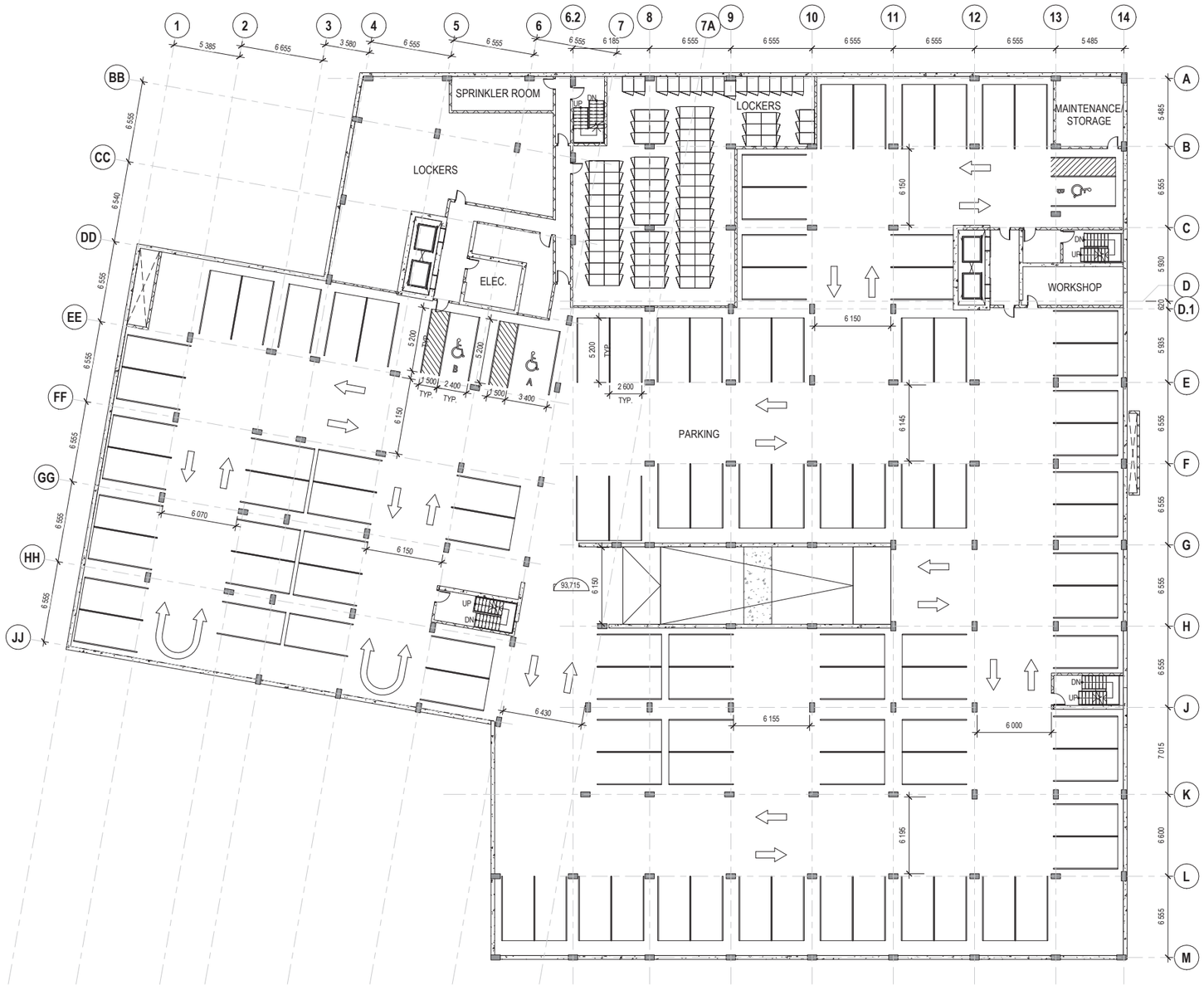


FLOOR PLAN - P3

SCALE: 1/400

FLOOR PLAN - P2

SCALE: 1/400

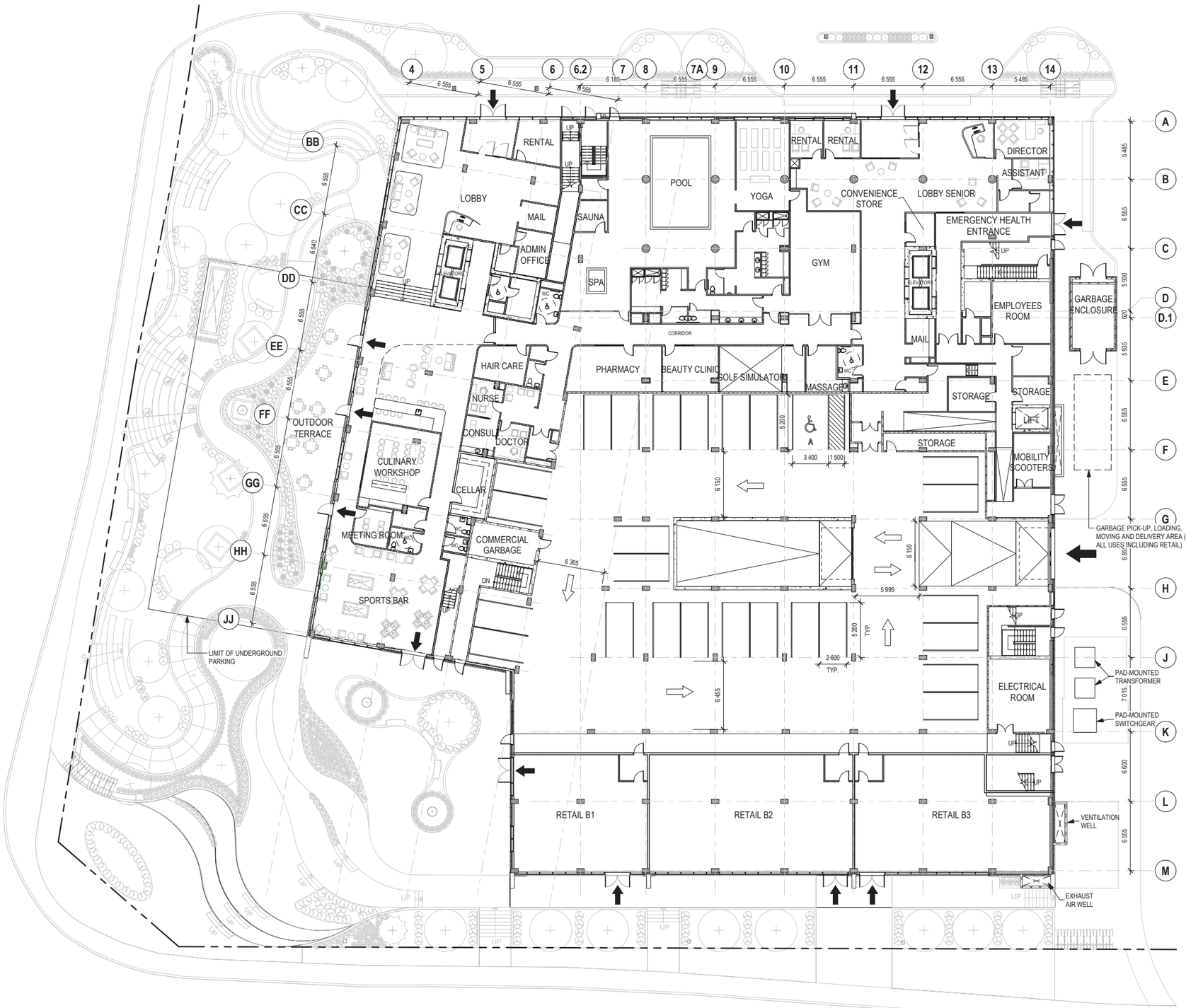


FLOOR PLAN - P1

SCALE: 1/400

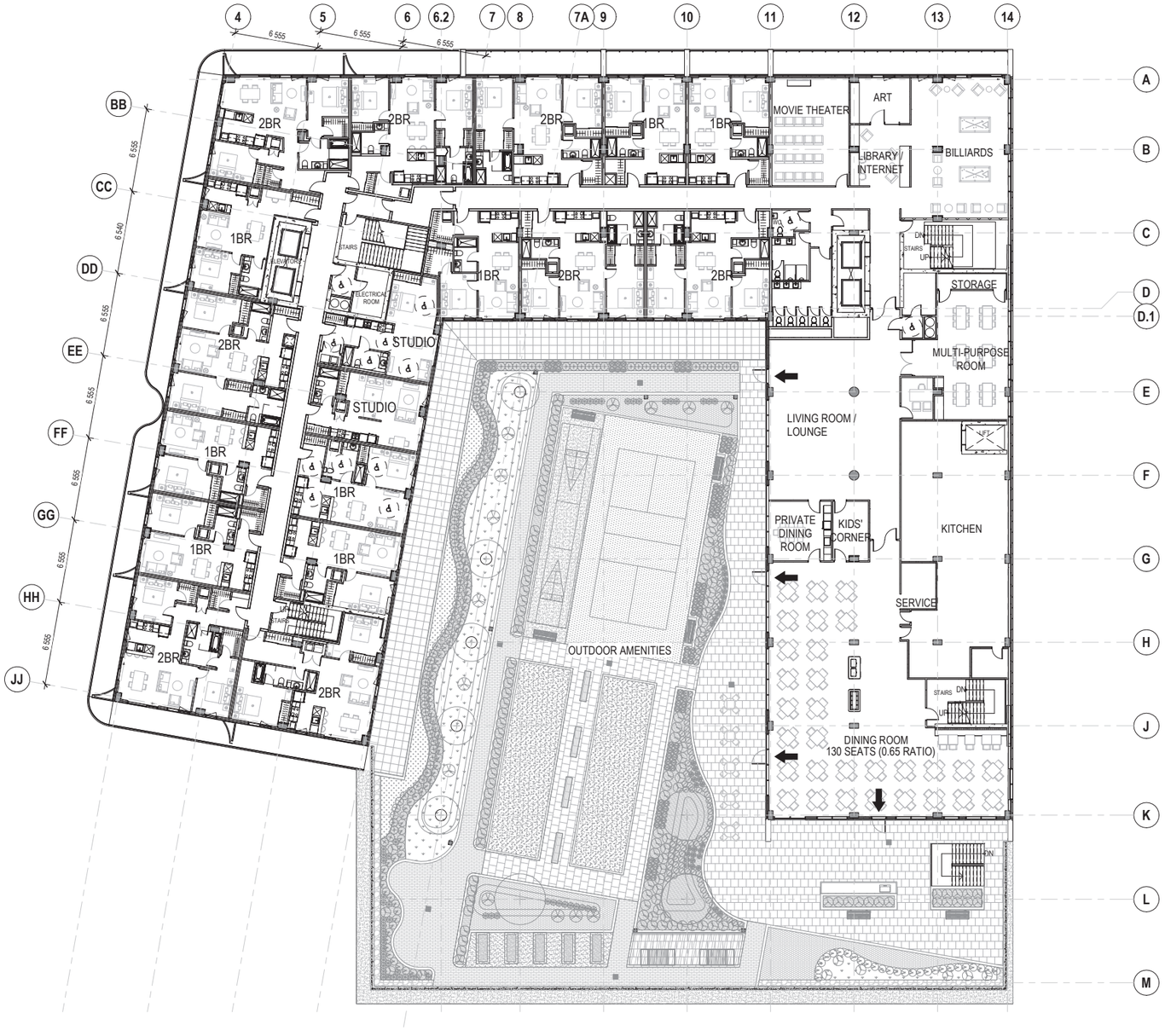
FLOOR PLAN - LEVEL 1

SCALE: 1/400



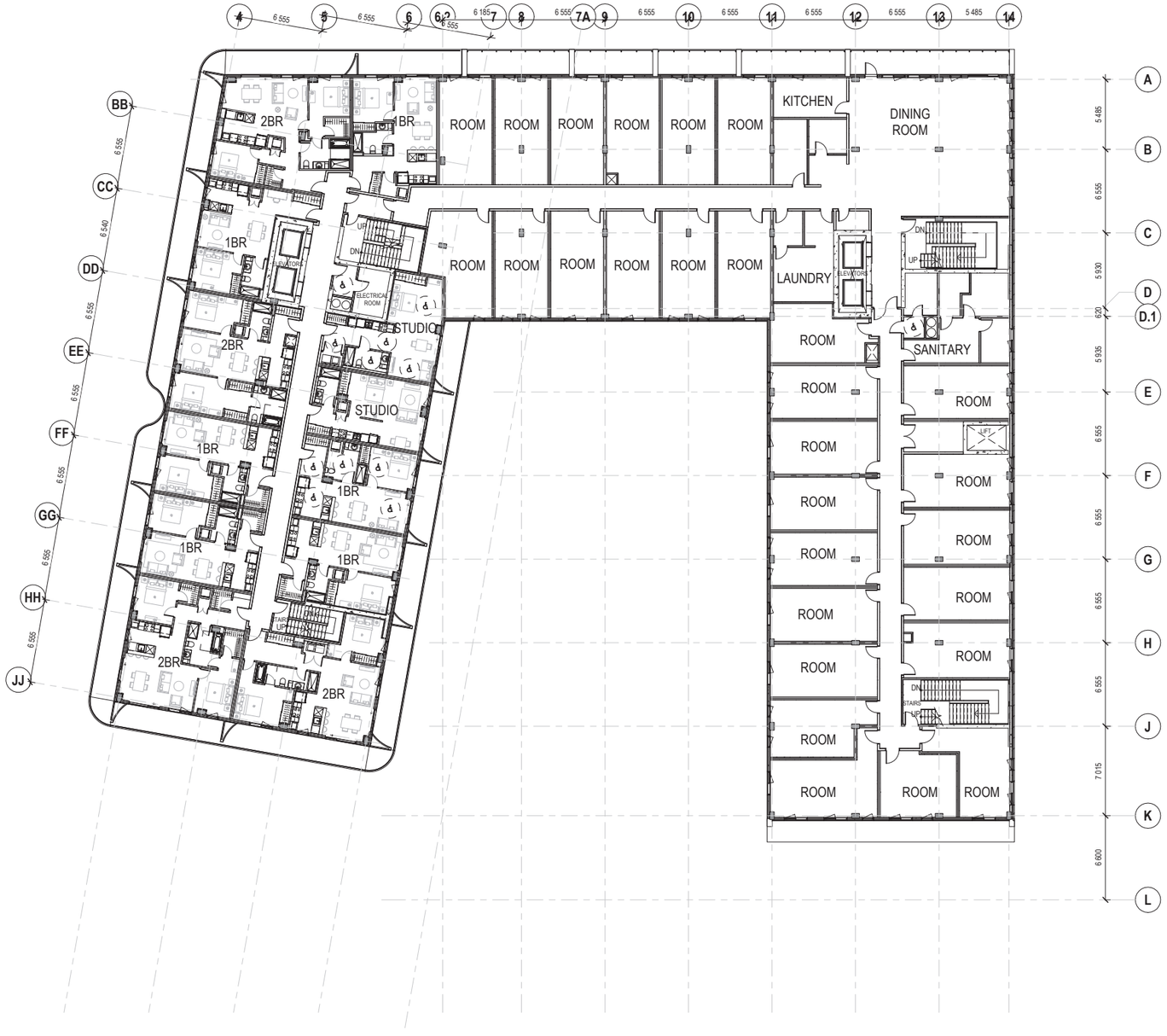
FLOOR PLAN - LEVEL 2

SCALE: 1/400



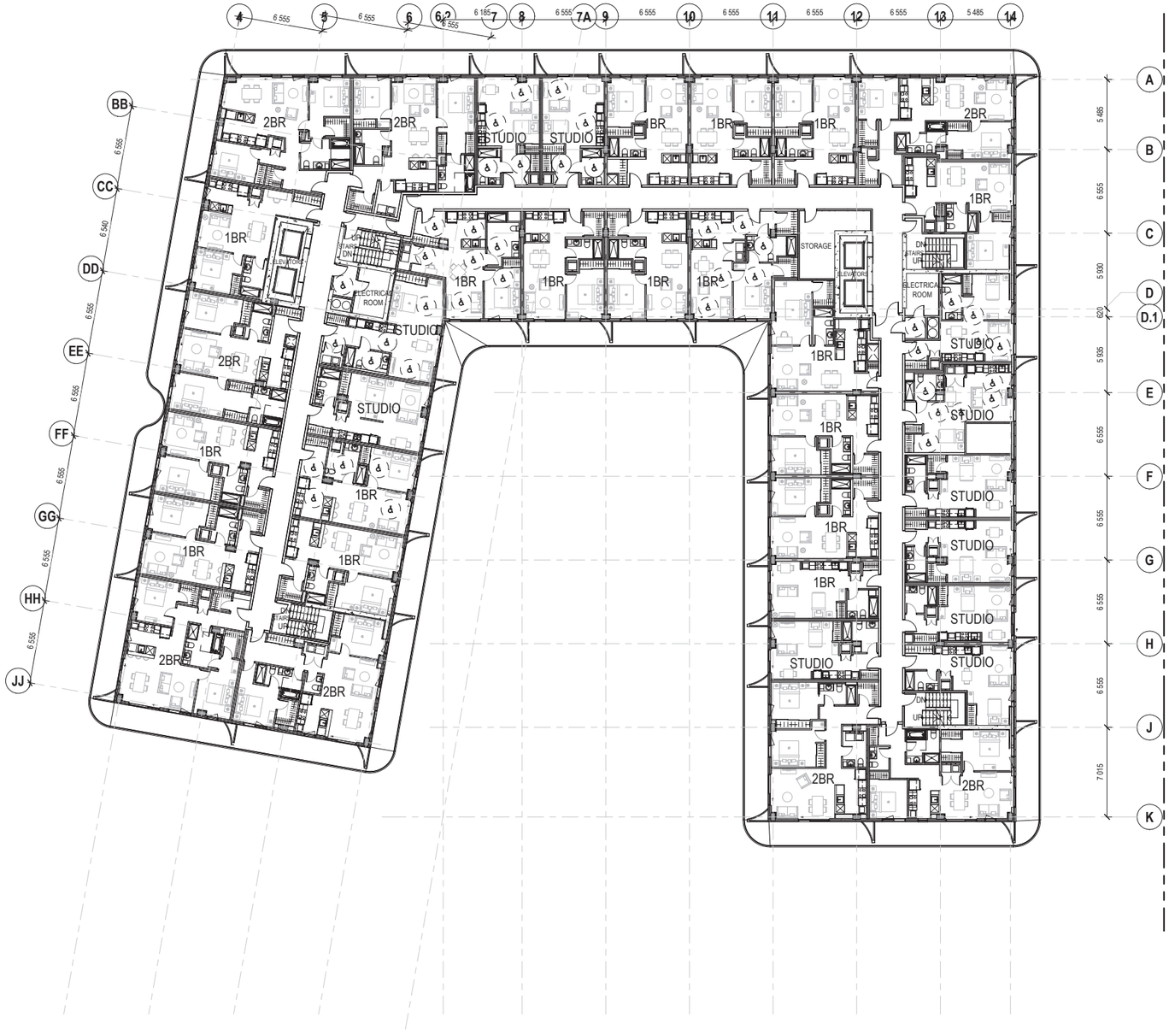
FLOOR PLAN - LEVEL 3

SCALE: 1/400



FLOOR PLAN - LEVEL 4

SCALE: 1/400

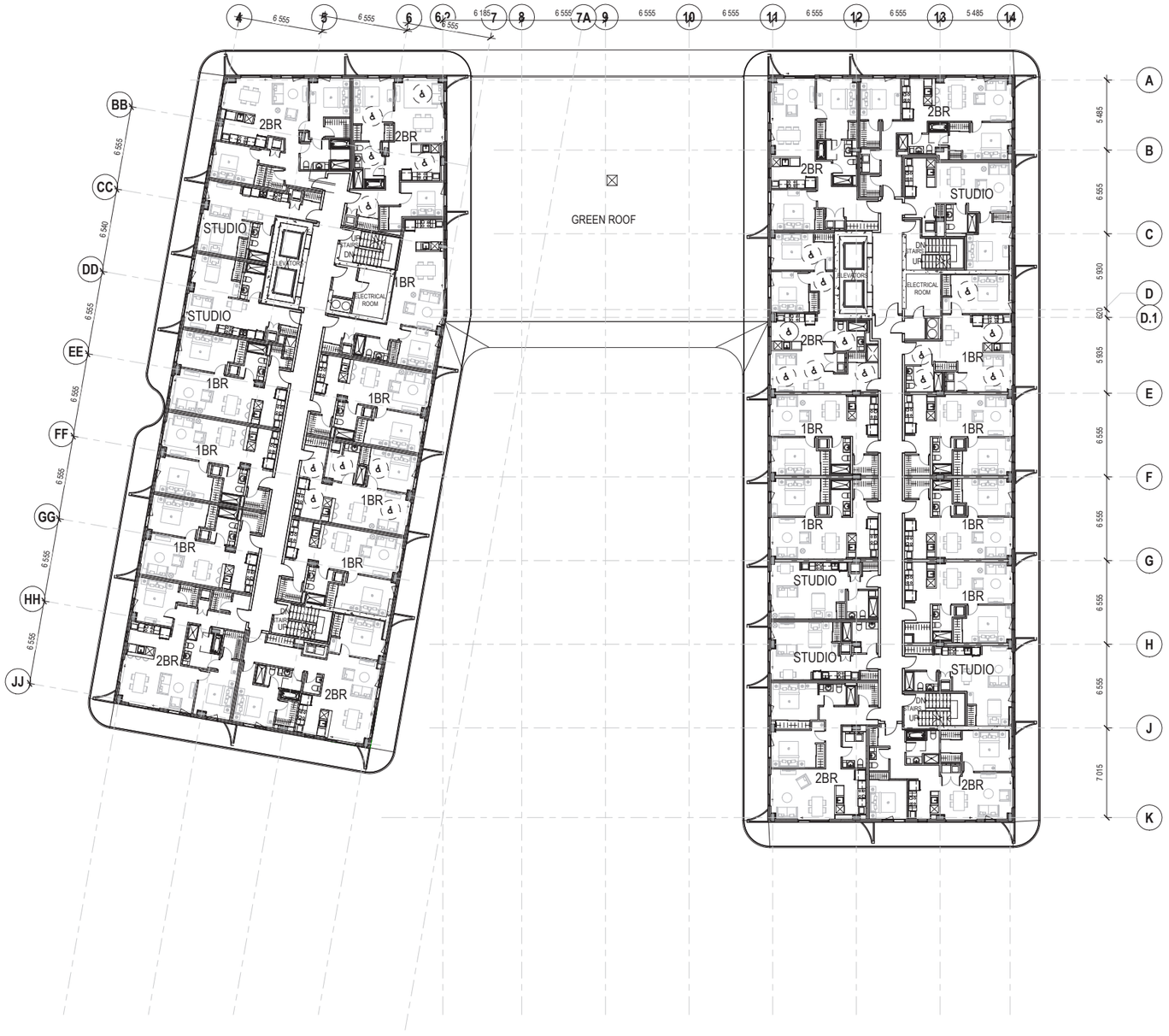


FLOOR PLAN - LEVEL 5

SCALE: 1/400

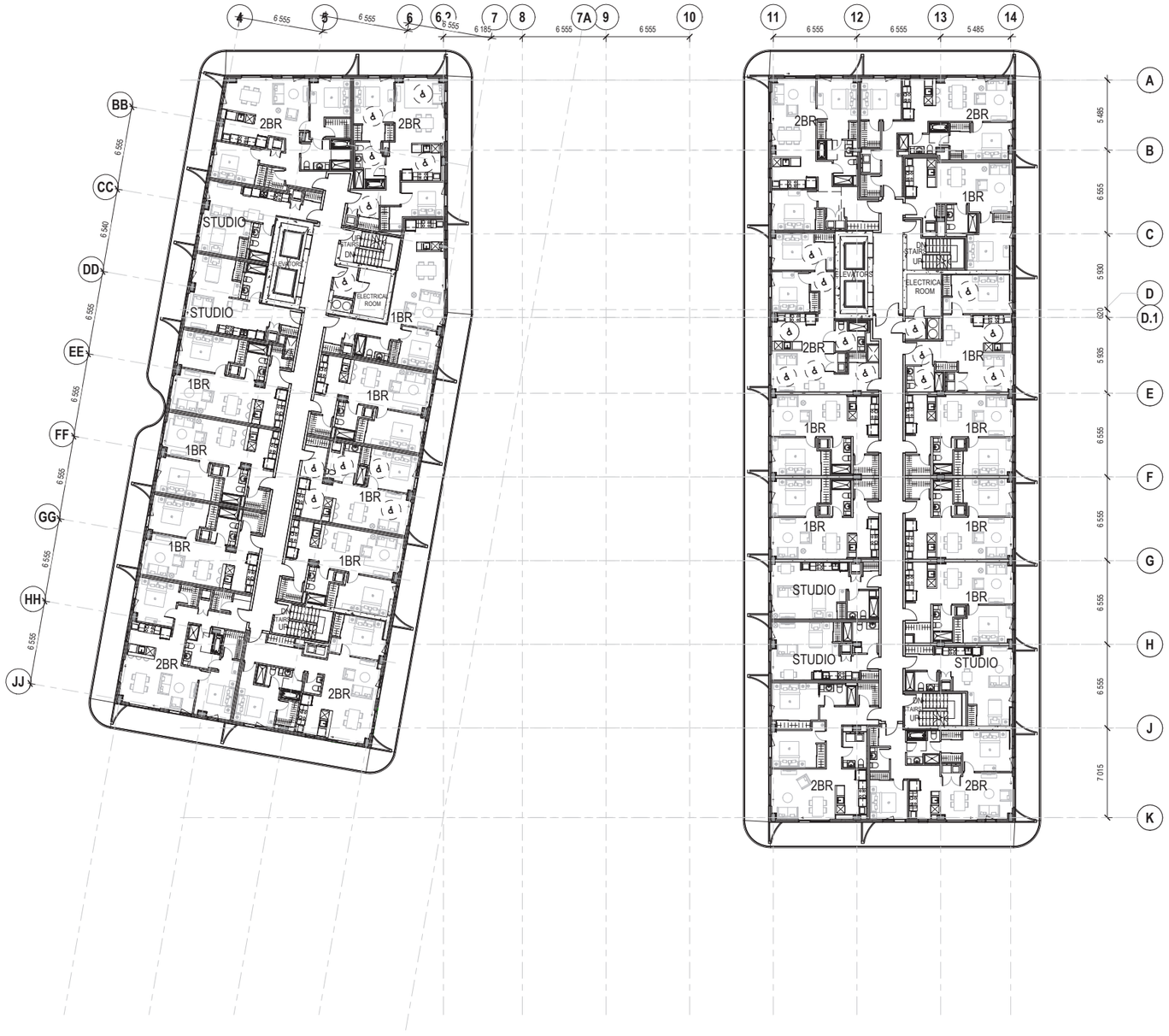
FLOOR PLAN - LEVEL 6

SCALE: 1/400



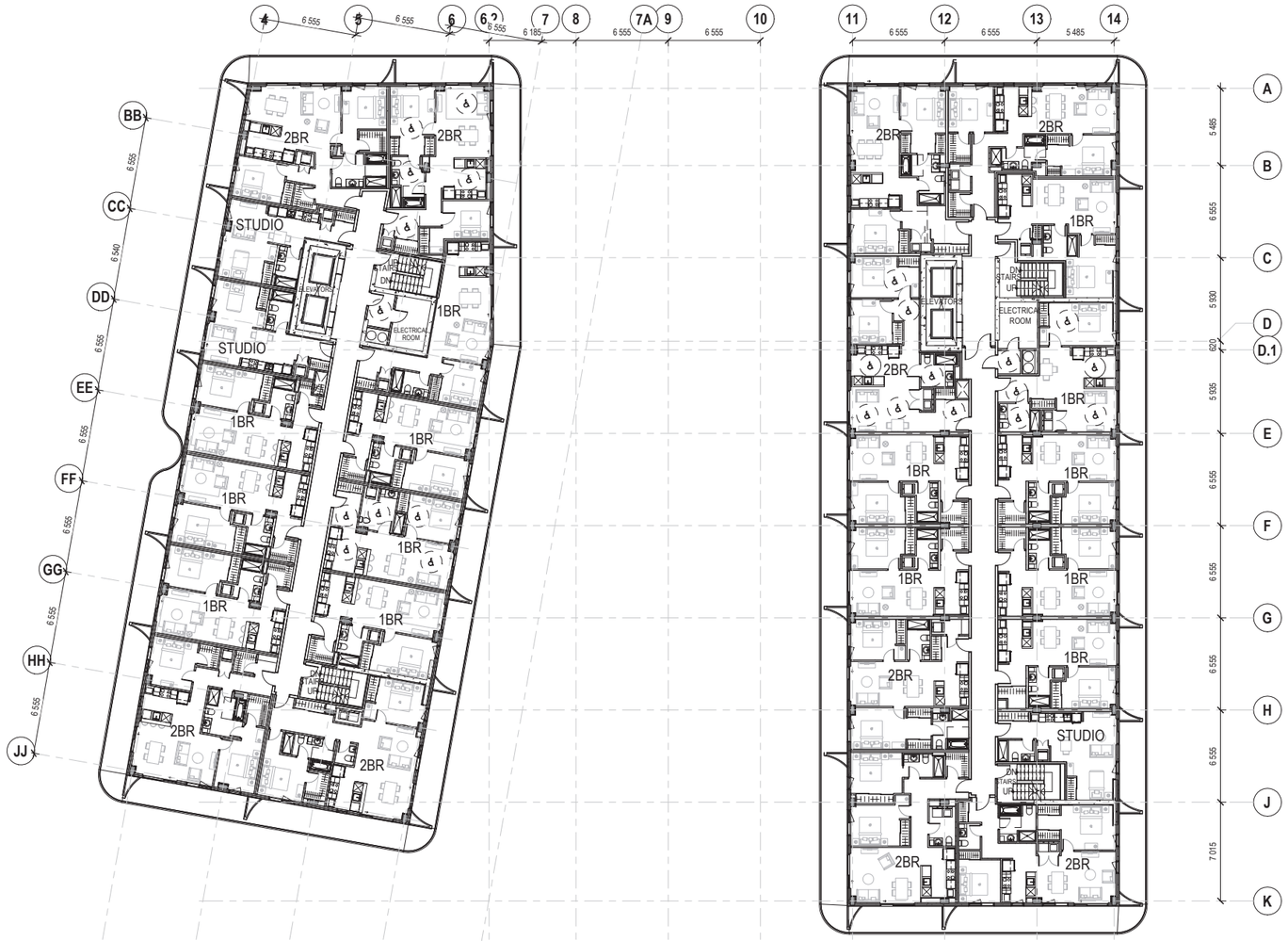
FLOOR PLAN - LEVELS 7 TO 12

SCALE: 1/400



FLOOR PLAN - LEVEL 13

SCALE: 1/400



FLOOR PLAN - LEVELS 14 TO 15

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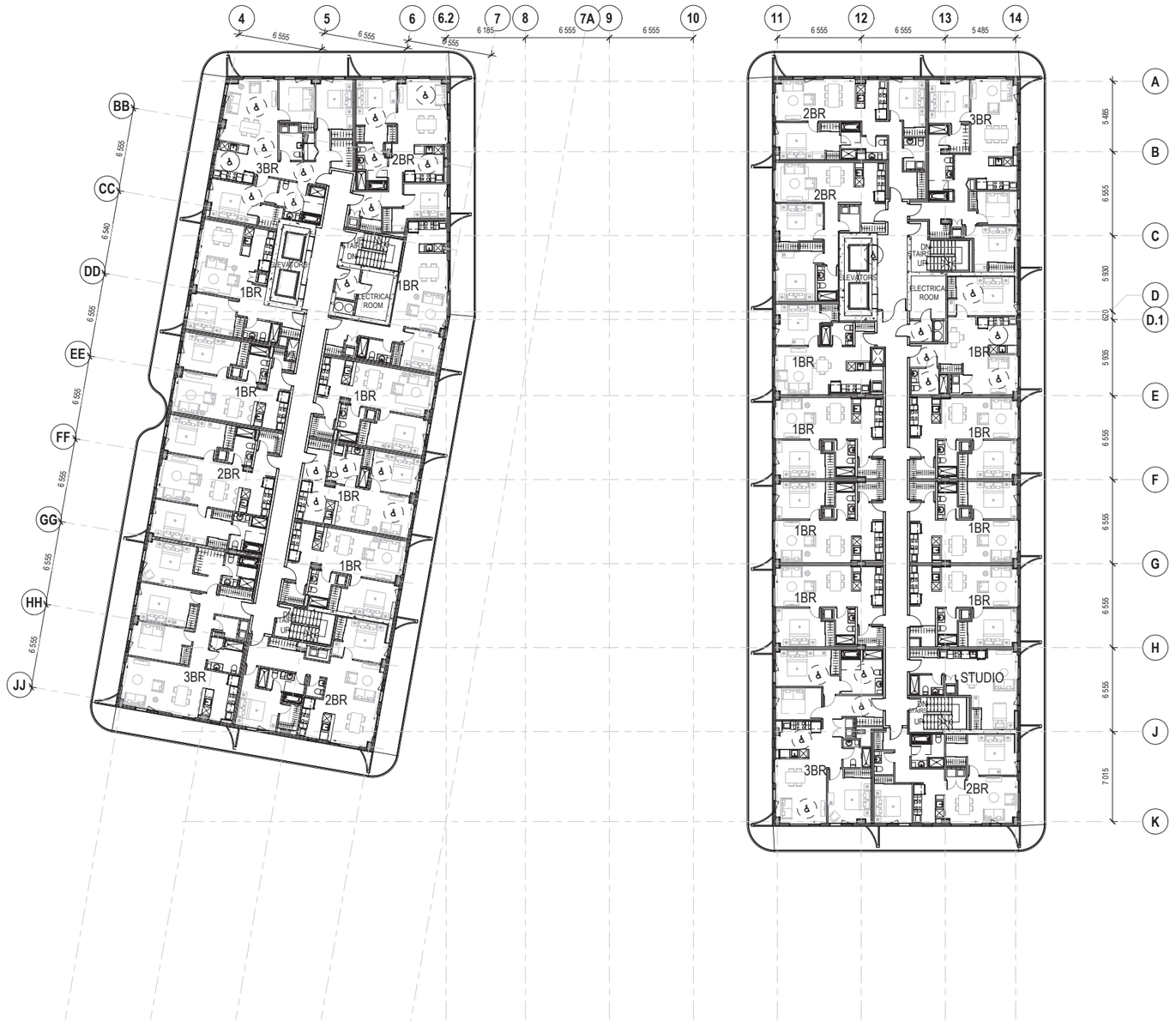


NORTH ELEVATION

SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

EAST ELEVATION

SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

SOUTH ELEVATION

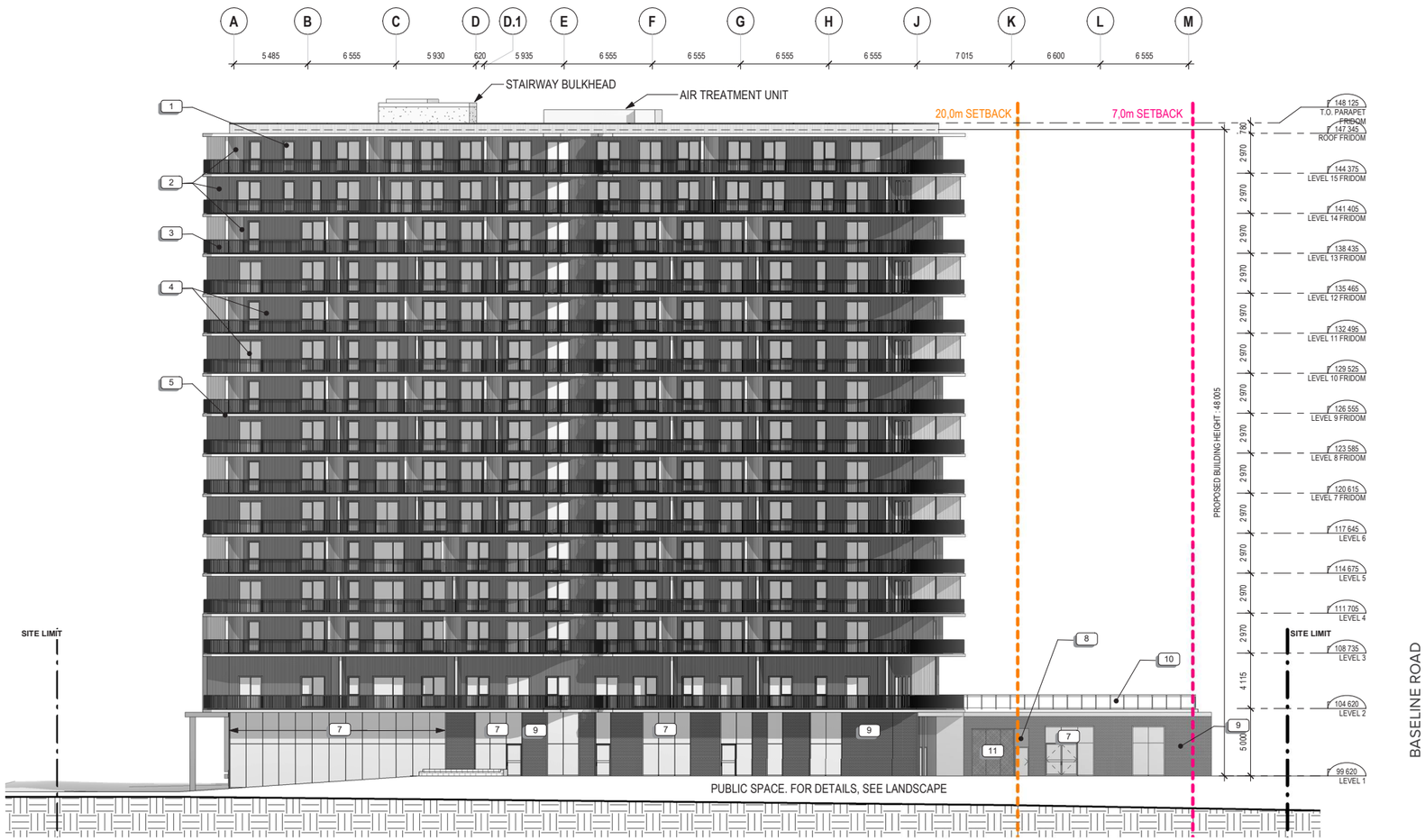
SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

SOUTH ELEVATION

SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS



SECTION - EAST-WEST

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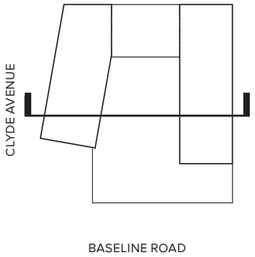

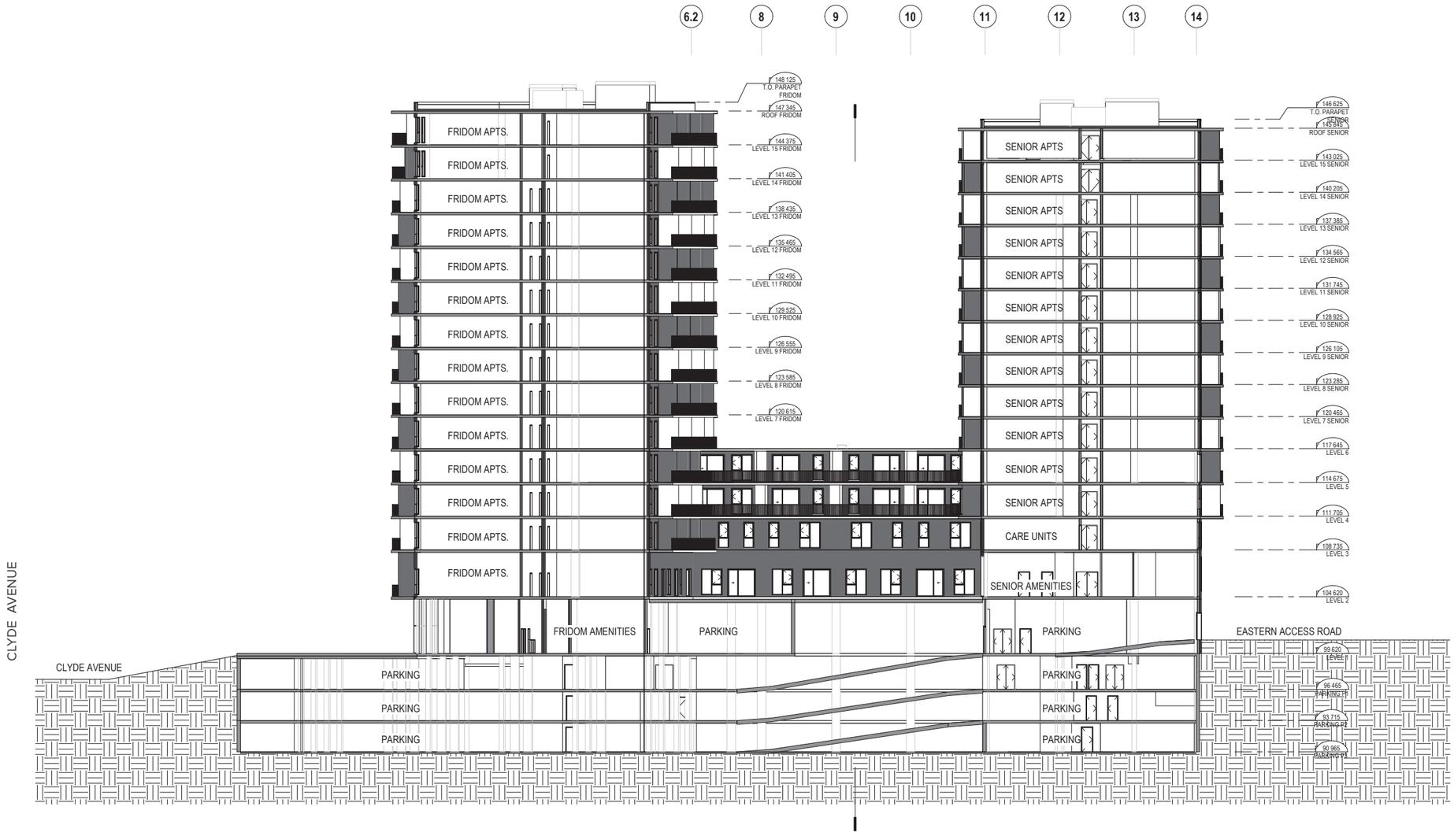

SECTION - NORTH-SOUTH

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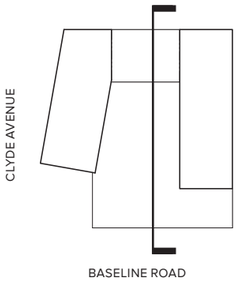
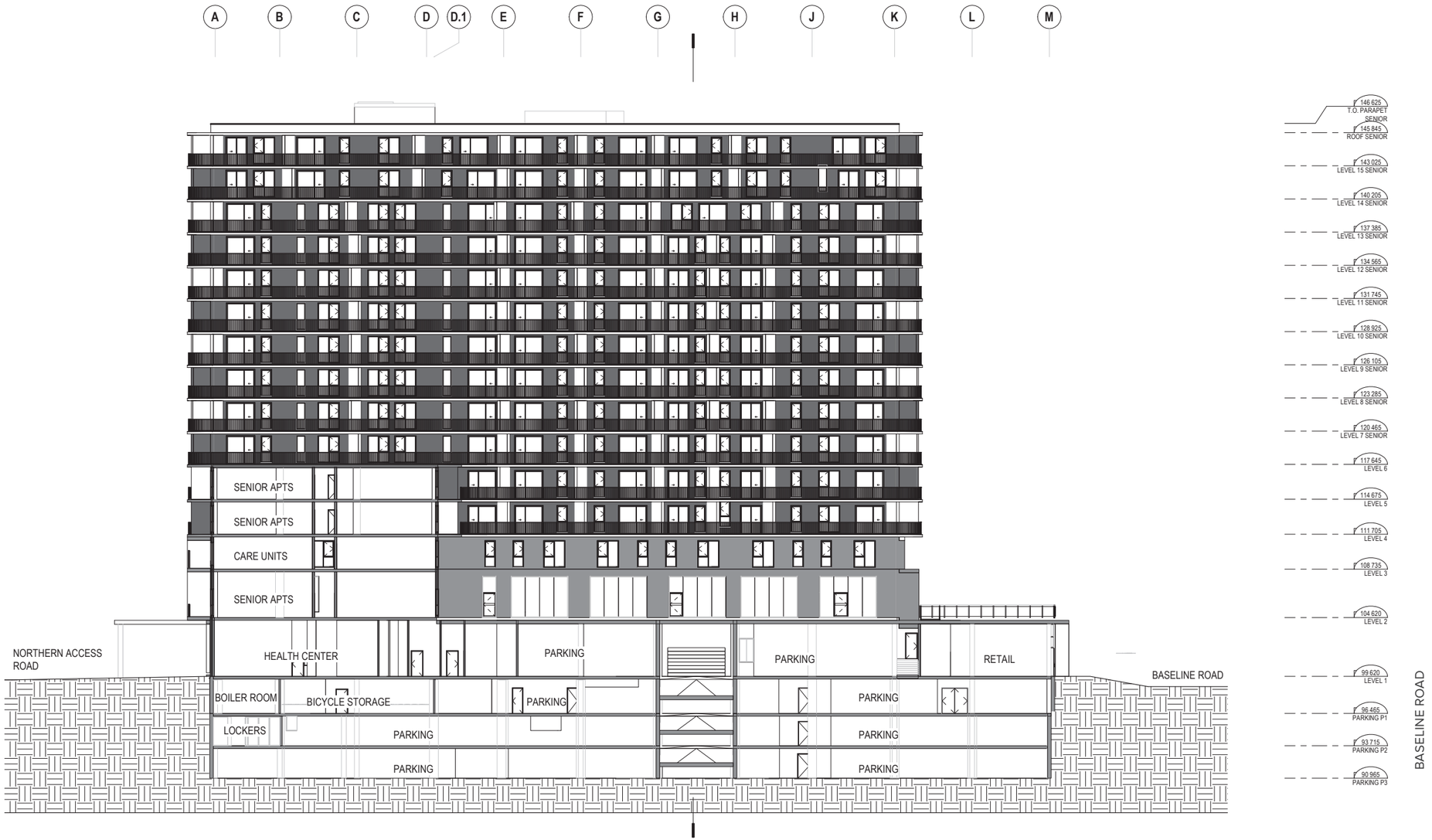




MATERIAL DESCRIPTION

BLACK ALUMINIUM RAILING (3)*

EXPOSED CONCRETE BALCONY (5)

BALCONY PRIVACY SCREENS - BLACK CORRUGATED PANEL ON FLAT SIDE (1 & 2)

BALCONY PRIVACY SCREENS - PALE GREY CORRUGATED STEEL ON CURVED SIDE, WHITE METALLIC PANEL ON FRONT FACE (2)

ALUMINIUM GUARDRAIL WITH CLEAR GLASS PANELS (10)

HYBRID ALUMINIUM/PVC WINDOW AND PATIO DOORS, BLACK FRAME (4)

FASCIA AND FACE OF BALCONY SLAB IN WHITE METALLIC PANELS (6)

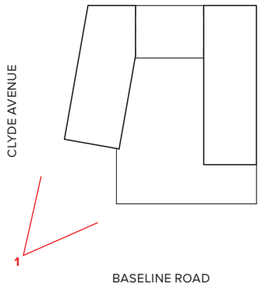
ALUMINIUM CURTAIN WALL WITH CLEAR GLASS AND GREY - COLORED SPANDREL GLASS (7)

DARK GREY ALUMINIUM PANEL (8)

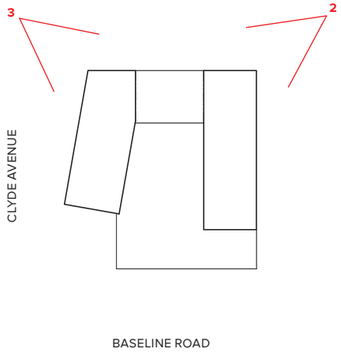
DARK GREY BRICK MASONRY (9)

*NUMBERS IN PARENTHESES REFER TO IDENTIFICATION IN ELEVATION DRAWINGS

EXTERIOR VIEWS

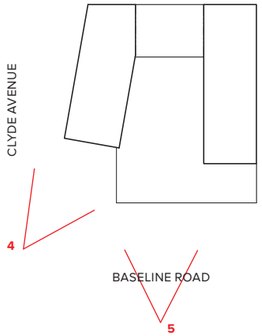


1.Street view, corner of Baseline Road and Clyde Avenue



2. Building entry located on northern access roadway at the junction of the eastern access roadway

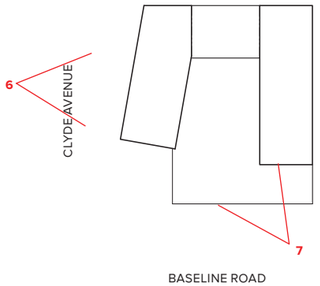
3. Street view of northern access roadway and Clyde Avenue



4. Corner of Baseline Road and Clyde Avenue illustrating the corner plaza and POPS along Clyde Avenue

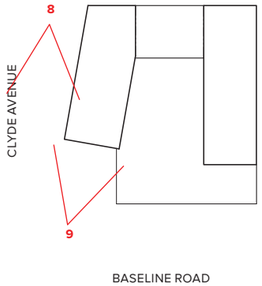
5. View from Baseline Road

EXTERIOR VIEWS



6. Aerial view of Clyde Avenue illustrating POPS and corner plaza

7. Street view along Baseline Road showing commercial frontage



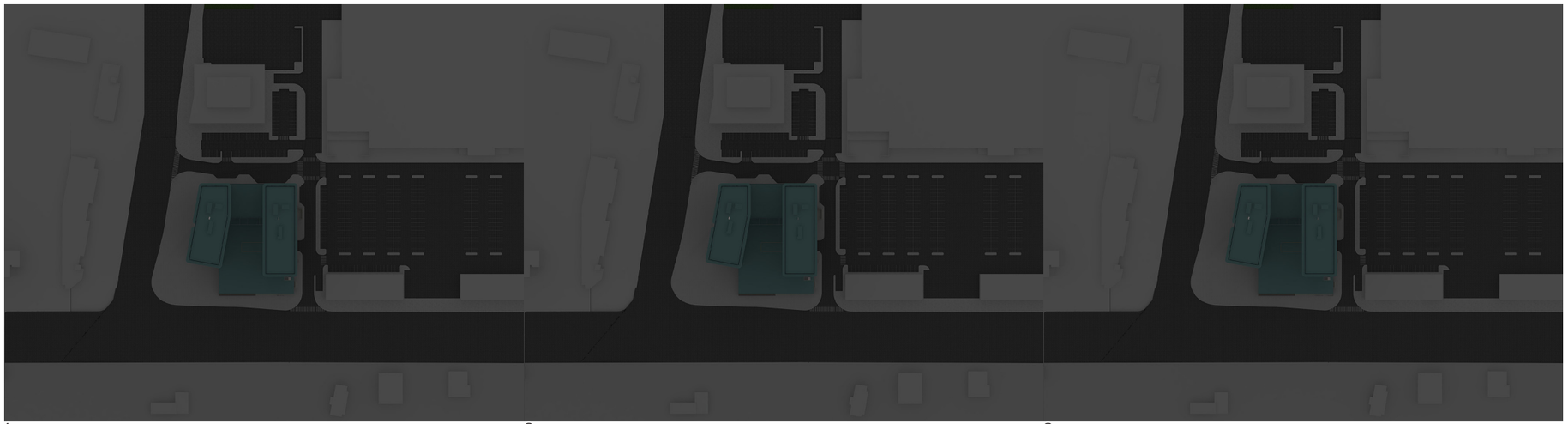
8. Pedestrian circulation through POPS leading to the corner plaza

9. Plaza at the corner of Clyde Avenue and Baseline Road animated by commercial and residential activities.

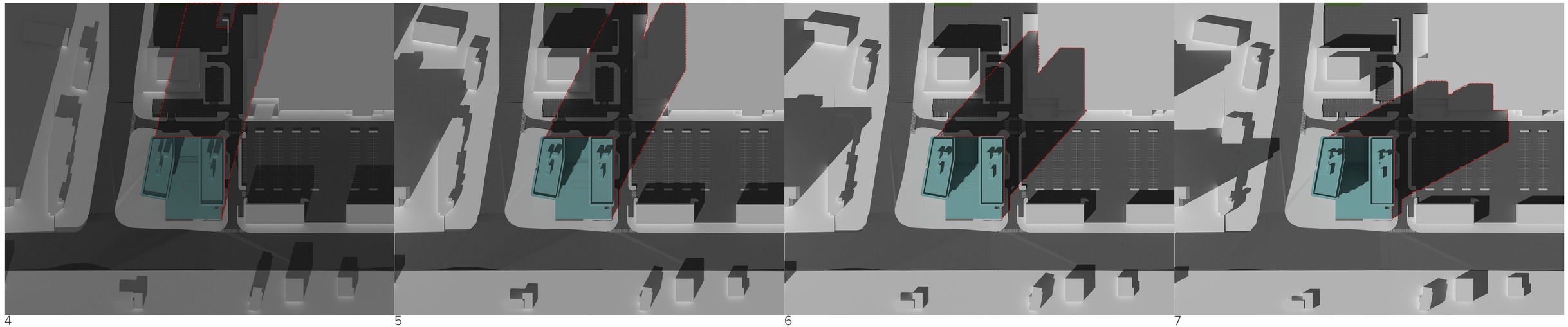
SUN/SHADOW STUDY

SUN/SHADOW STUDY - 21 DECEMBER - WINTER SOLSTICE

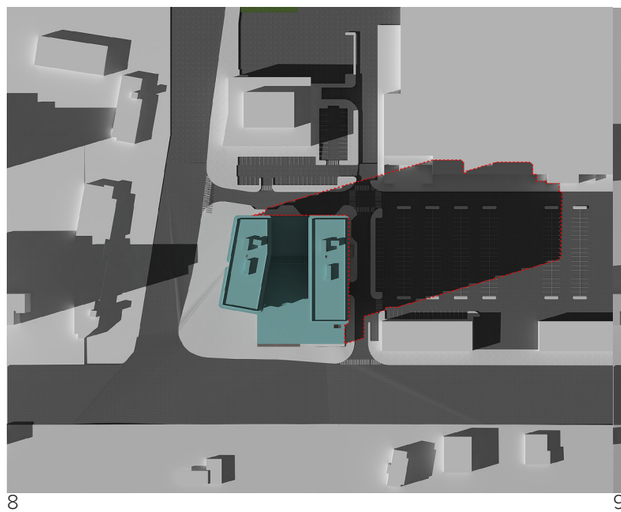
1 - 6:00 AM
2 - 7:00 AM
3 - 8:00 AM
4 - 9:00 AM
5 - 10:00 AM
6 - 11:00 AM
7 - 12:00 PM
8 - 1:00 PM
9 - 2:00 PM
10 - 3:00 PM
11 - 4:00 PM
12 - 5:00 PM
13 - 6:00 PM



1 2 3



4 5 6 7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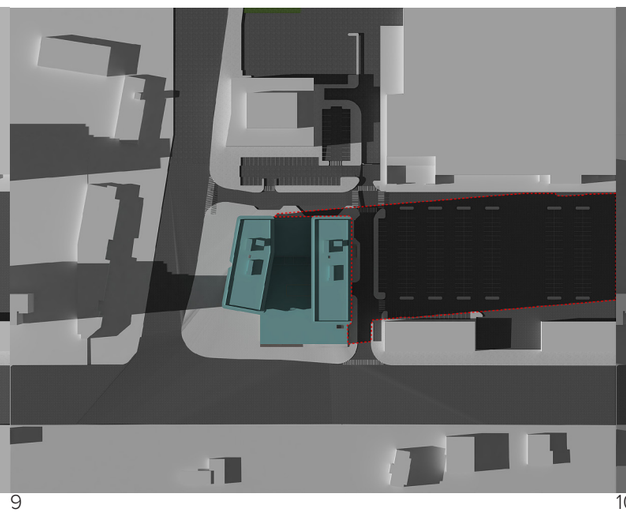
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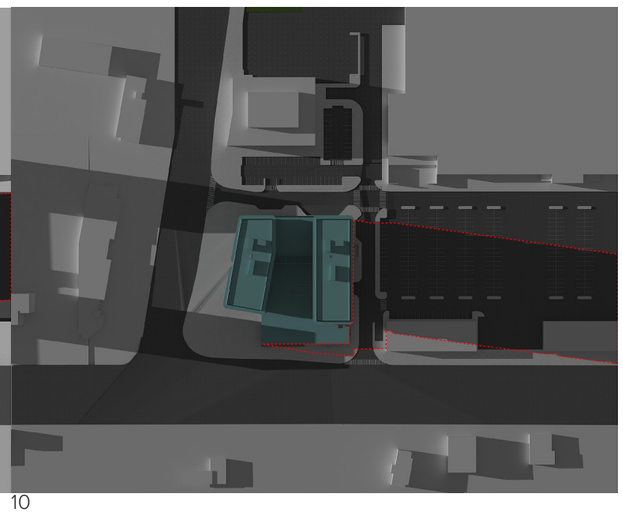

10

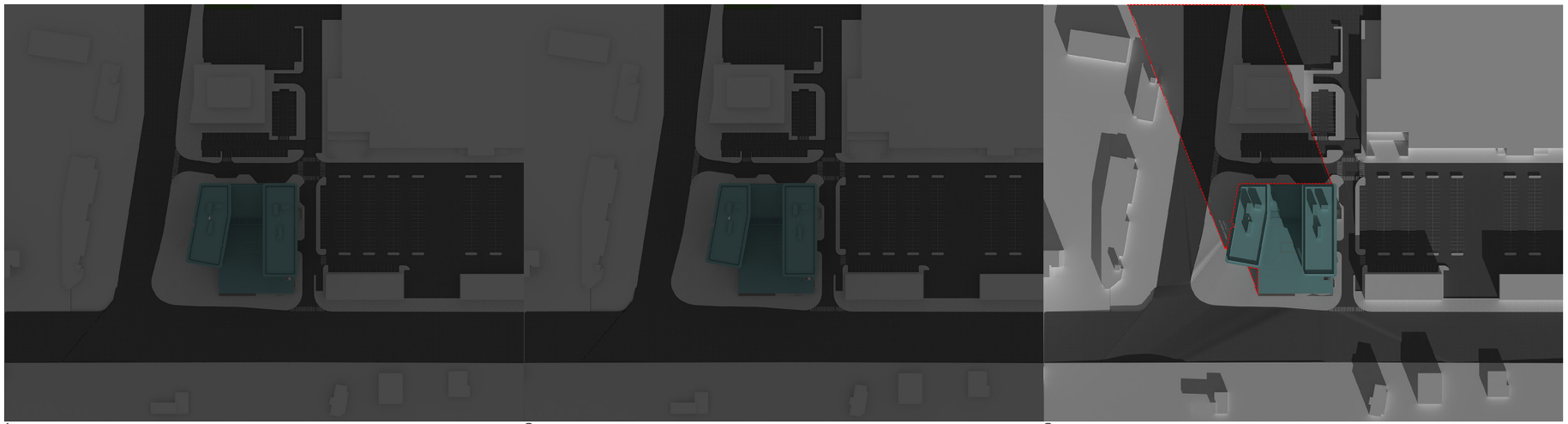

11


12

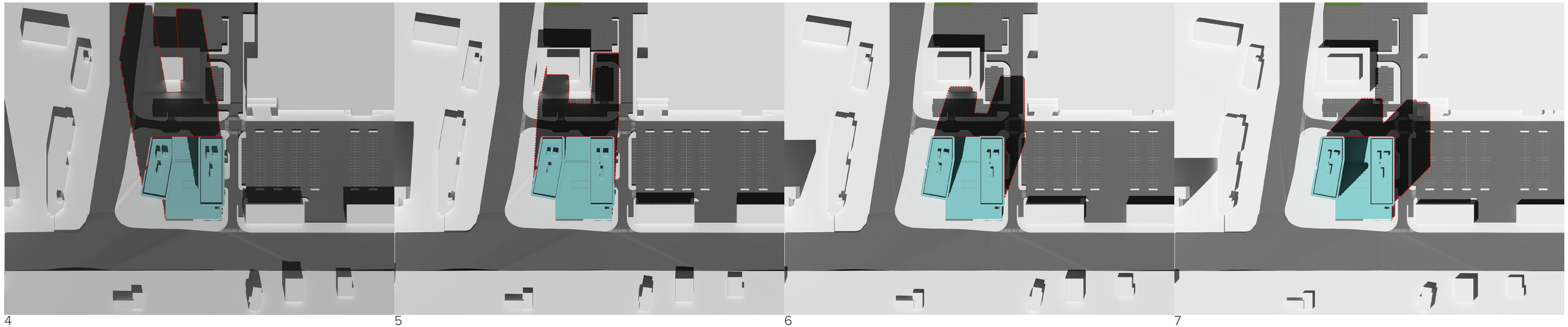

13

SUN/SHADOW STUDY - 23 SEPTEMBER - EQUINOX

1 - 6:00 AM
2 - 7:00 AM
3 - 8:00 AM
4 - 9:00 AM
5 - 10:00 AM
6 - 11:00 AM
7 - 12:00 PM
8 - 1:00 PM
9 - 2:00 PM
10 - 3:00 PM
11 - 4:00 PM
12 - 5:00 PM
13 - 6:00 PM



1 2 3

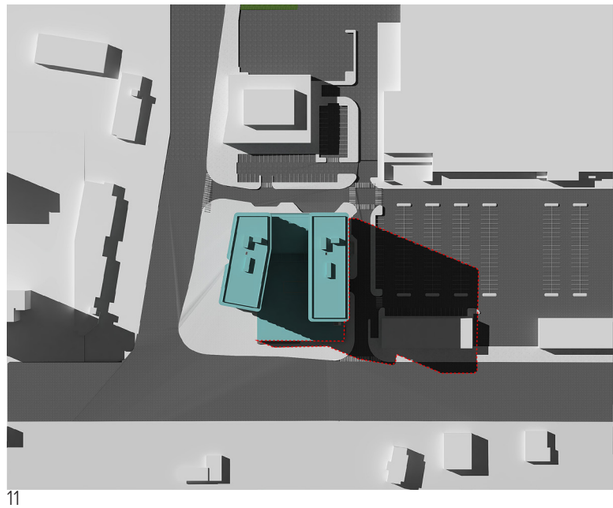


4 5 6 7

8

9

10



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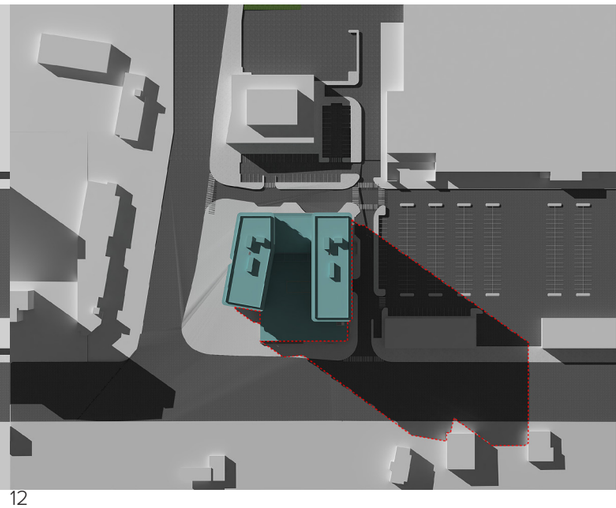

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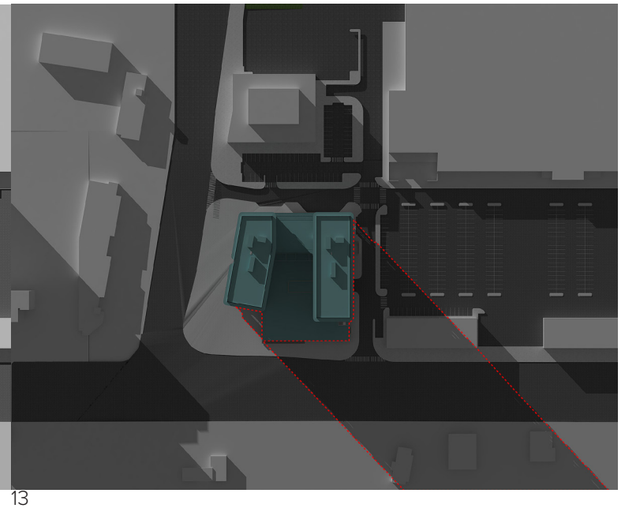

13

SUN/SHADOW STUDY - JUNE 21ST - SUMMER SOLSTICE

1 - 6:00 AM
2 - 7:00 AM
3 - 8:00 AM
4 - 9:00 AM
5 - 10:00 AM
6 - 11:00 AM
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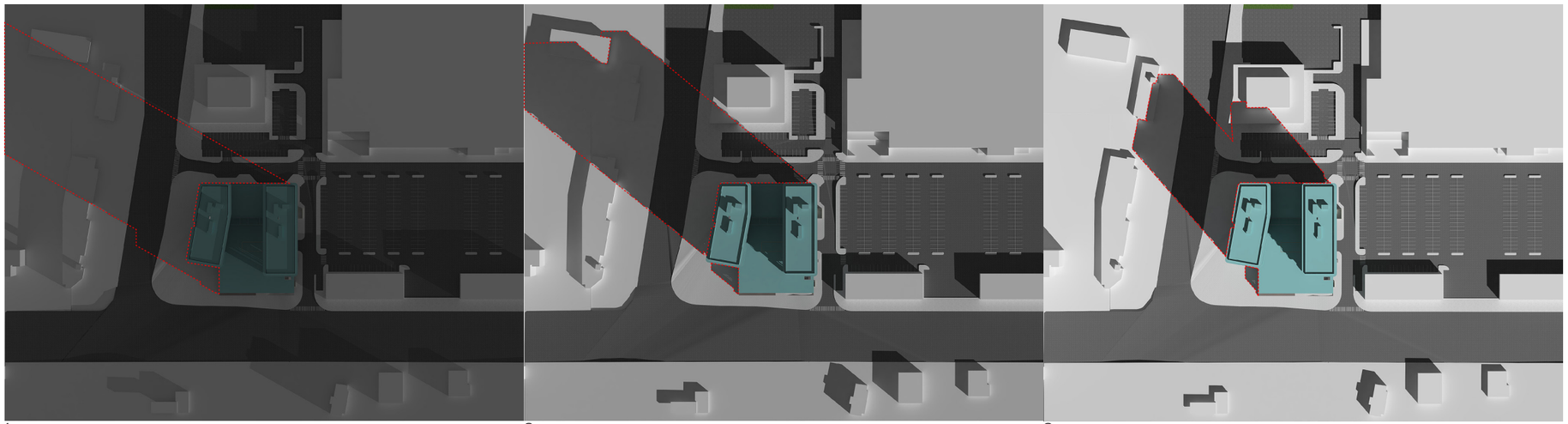
9 - 2:00 PM
10 - 3:00 PM
11 - 4:00 PM
12 - 5:00 PM
13 - 6:00 PM



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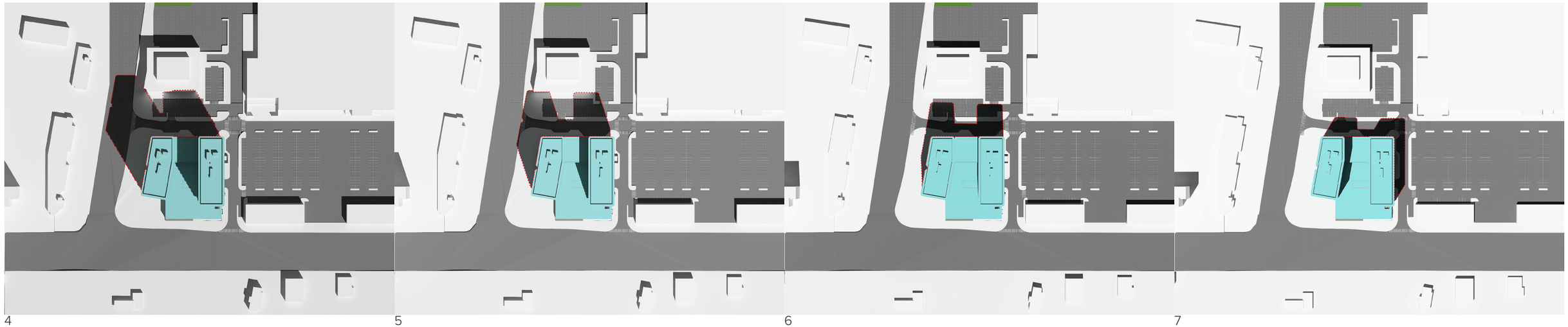
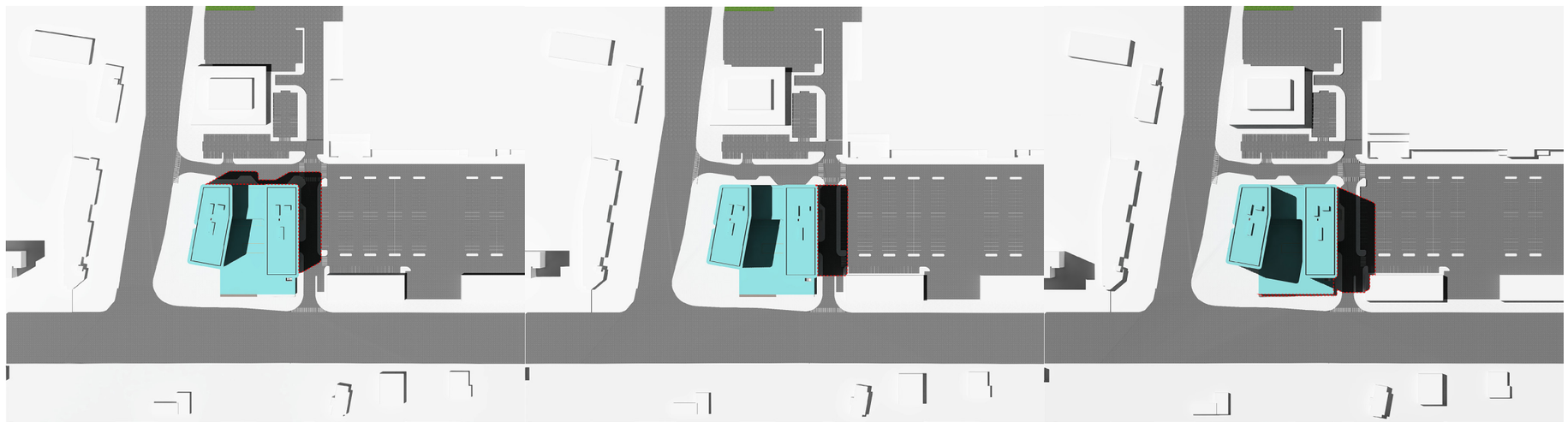


4 5 6 7

SUN/SHADOW STUDY - JUNE 21ST - SUMMER SOLSTICE



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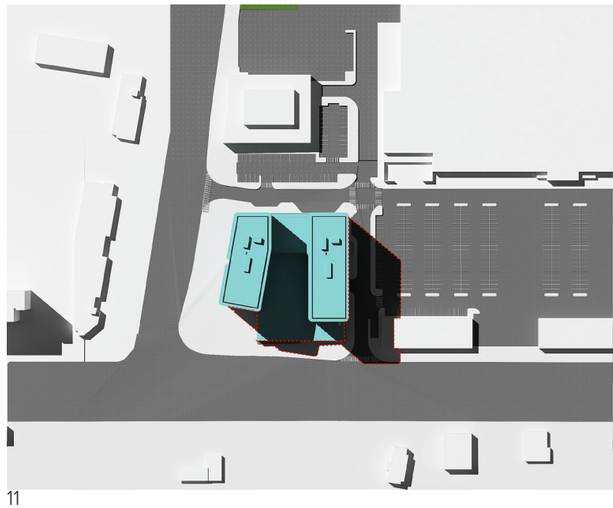

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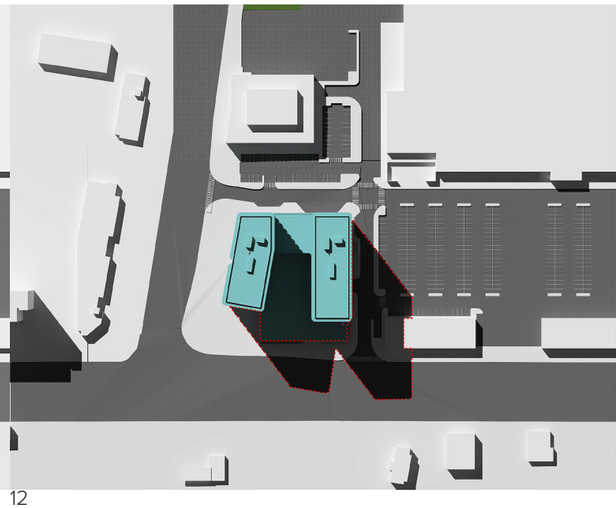

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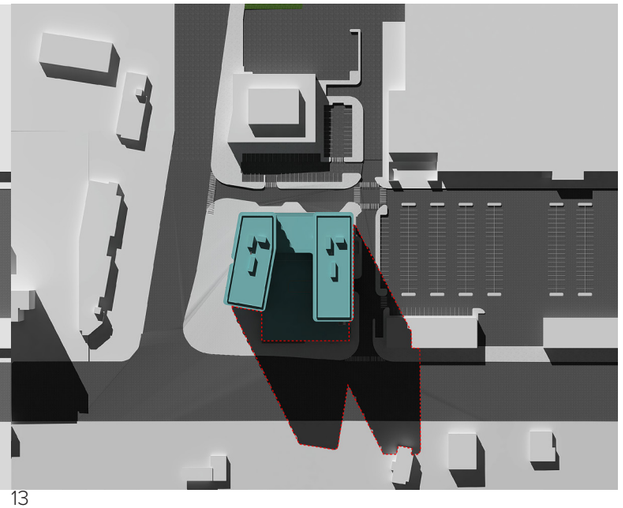

13

STATISTICS

STATISTICS

Levels	PARKING STALLS Parking Stalls Residential*	Retail	Visitor	Bikes
P3	111			
P2	103			
P1	53		31	138
L1		20	6	29
L2				
L3				
L4				
L5				
L6				
L7				
L8				
L9				
L10				
L11				
L12				
L13				
L14				
L15				
Total	**267**	**20**	**37**	**167**
	324			**167**

*Includes stalls for residents' medical, health and personal services (Health Center)

	AREAS (m2)									
	Parking	Retail	Senior Residence				Rental Apartments			
Levels	Gross	Gross	Gross	Rentable	Common	% Rentable	Gross	Rentable	Common	% Rentable
P3	4 945,3									
P2	4 945,3									
P1	4 945,3									
L1	1 861,9	568,8	1 278,3		1 136,0		747,8		660	
L2			1 607,2	440,1	1 019,1	27,4%	1 041,3	870,3		83,6%
L3		Rooming units ->	1 649,3	1 084,4	287,0	65,7%	1 001,6	844,7		84,3%
L4			1 653,9	1 375,9		83,2%	992,7	882,1		88,9%
L5			1 613,5	1 386,8		85,9%	1 035,2	882,7		85,3%
L6			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L7			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L8			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L9			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L10			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L11			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L12			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L13			1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
L14			1 133,4	983,6		86,8%	1 027,7	892,8		86,9%
L15			1 133,4	983,6		86,8%	1 027,7	892,8		86,9%
Total	**16 697,9**	**568,8**	**19 136,5**	**14 130,2**	**2 442,1**	**73,8%**	**15 095**	**12 409**	**660**	**82,2%**

	OTTAWA GFA[2] (m2)					
	Retail	Senior Residence[1]	Rental Apartments	Amenity area		
Levels	Ottawa GFA	Ottawa GFA	Ottawa GFA	Private[3]	Communal int.	Communal ext.
P3						
P2						
P1						
L1	548,3	572,4			1 150,0	108,0
L2		429,5	844,2	167,2	705,9	1 256,1
L3	Rooming units ->	1 055,4	818,3	111,5	205	23
L4		1 359,3	855,2	334,5		
L5		1 367,6	855,2	325,2		
L6		954,1	859,6	260,1		
L7		954,1	859,6	260,1		
L8		954,1	859,6	260,1		
L9		954,1	859,6	260,1		
L10		954,1	859,6	260,1		
L11		954,1	859,6	260,1		
L12		954,1	859,6	260,1		
L13		987,0	859,6	250,8		
L14		952,4	860,3	232,3		
L15		952,4	860,3	232,3		
Total	**548,3**	**14 354,8**	**11 970,5**	**3 474,6**	**2 060,6**	**1 387,3**
	26 873,6			**6 922,5**		

[1] On level 1, includes ancillary health, personal and recreational services

[2] See Ottawa Gross Floor Area definition

[3] Average 9,3 m2 balcony

PARKING REQUIREMENTS - CITY OF OTTAWA		
Residential	Min. 0,25 per dwelling (retirement homes + care units)	*100,5*
	Max. 1,75 per dwelling	704
Health Center*	Min. 1 per 100 m2	*2,3*
Retail *	Min. 2,5 per 100 m2	*14,2*
	Max. 3,6 per 100 m2	20,5
Visitor ratio **	Min. 0,1 per dwelling (except first 12)	37
TOTAL	Minimum	*154*
	Maximum	764
	Proposed	**324**

* Stalls are required for areas dedicated to resident's medical, health and personnal services.

* Rooming units are not included in the calculation

BIKE PARKING REQUIREMENTS - CITY OF OTTAWA		
Residential	Min 0,25/dwelling (retirement home + care units)	100,5
Retail	Min. 1 per 250 m2 of retail	2,3
Minimum required (total)		103
Proposed		**167**

FLOOR SPACE INDEX	
Total area of the lot	9 120 m2
GFA*	26 874 m2
Maximum floor space index**	3,50
Proposed floor space index approx.	**2,95**

* See City of Ottawa definition of Gross floor area

**If 80% or more of the required parking is provided below grade

AMENITY REQUIREMENTS	(m2)
6 m2 per dwelling	**2 412**
Care units: 10% of flooring area	**106**
Total required	**2 518**
Total proposed	**6 922**

COMMUNAL AMENITY REQUIREMENTS		(m2)
Total required	50% of total required amenity	**1 259**
	One common area larger than 54m2 ?	**Yes**
Total proposed		**3 448**

UNIT TYPES AND COUNT

	Care rooms	Senior Residence									Rental Apartments								
		Studio	Studio ad.	1 BR	1 BR ad.	2 BR	2 BR ad.	3 BR	3 BR ad.	Total	Studio	Studio ad.	1 BR	1 BR ad.	2 BR	2 BR ad.	3 BR	3 BR ad.	Total
		OBC required -->	6		15		8		1	30	OBC required -->	4		13		9		1	26
L2	0	0	0	3	0	3	0	0	0	6	1	1	4	1	5	0	0	0	12
L3	28	0	0	0	0	0	0	0	0	0	1	1	5	1	4	0	0	0	12
L4	0	6	4	9	2	3	0	0	0	24	1	1	4	1	5	0	0	0	12
L5	0	3	2	12	3	3	0	0	0	23	1	1	4	1	5	0	0	0	12
L6	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L7	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L8	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L9	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L10	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L11	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L12	0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0	13
L13	0	1	0	6	1	5	1	0	0	14	2	0	6	1	3	1	0	0	13
L14	0	1	0	7	1	3	0	1	1	14	0	0	5	1	2	1	1	1	11
L15	0	1	0	7	1	3	0	2	0	14	0	0	5	1	3	0	2	0	11
	0	33	6	86	15	48	8	3	1	170 / 30	20	4	75	14	48	9	3	1	146 / 28
Total	28	39		101		56		4		200	24		89		57		4		174
	N/A	19,5%		50,5%		28,0%		2,0%		100,0%	13,8%		51,1%		32,8%		2,3%		100,0%
	28	200									174								
	Grand Total	402																	

AVERAGE DWELLING AREA

	Signature Senior Residence (m2)						Rental Apartme			
	Care rooms	Studio	1 BR	2 BR	3 BR		Studio	1 BR	2 BR	3 BR
Proposed	38,7	50,8	69,8	102,7	146,2		48,0	61,7	92,6	121,6

ANNEX I : LANDSCAPE CONCEPT

1357 BASELINE ROAD
LANDSCAPE CONCEPT

VERSION PAYSAGE
ARCHITECTES PAYSAGISTES

372 Sainte-Catherine Street West #218
Montreal, Qc, H3B 1A2
(514) 499-7083
versionpaysage@gmail.com
www.versionpaysage.com

SMARTCENTRES

Groupe Sélection

ACDF ARCHITECTURE

LLOYD PHILLIPS & ASSOCIATES LTD.
PLANNING CONSULTANTS

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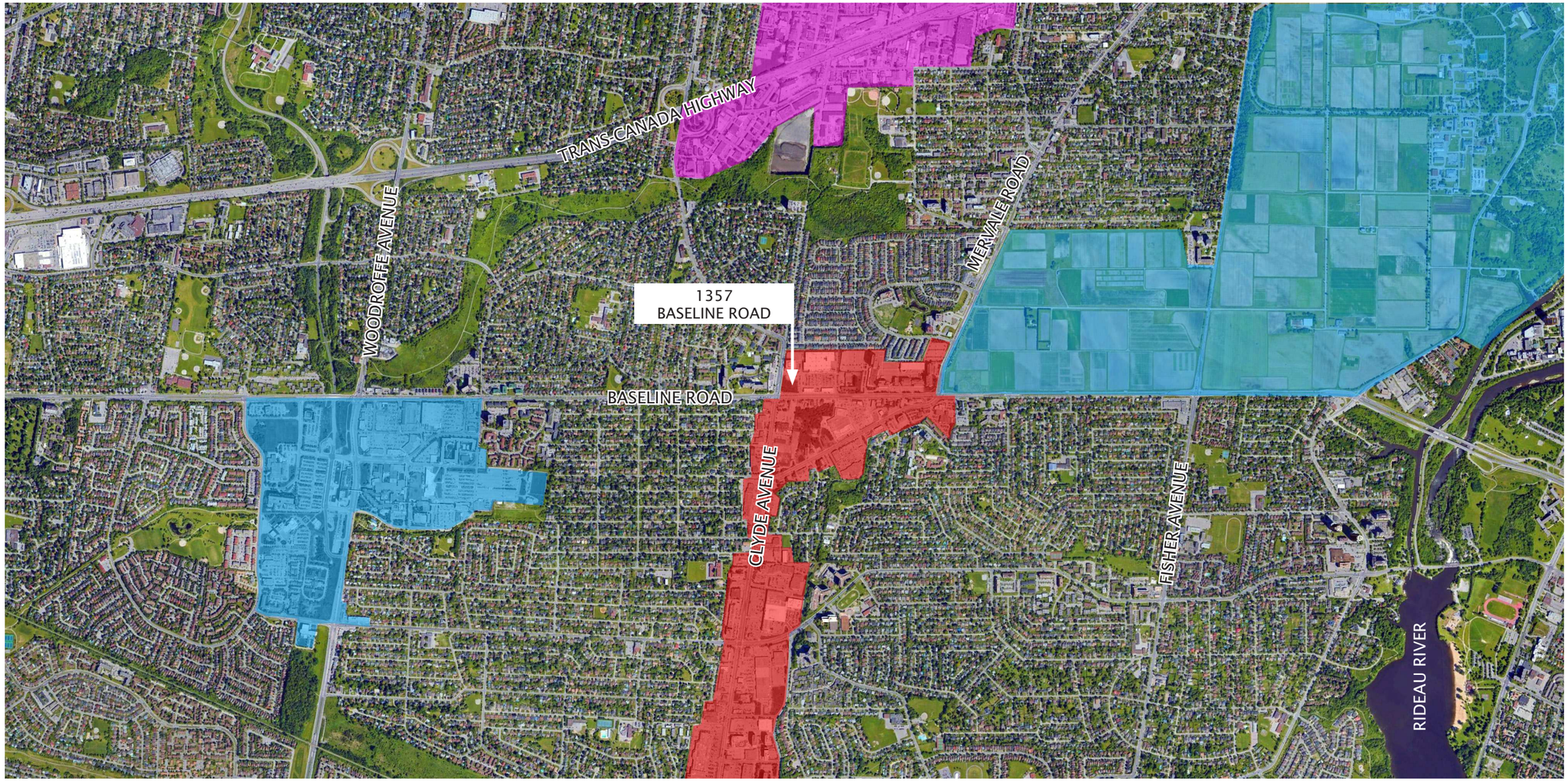
SURROUNDING CONTEXT



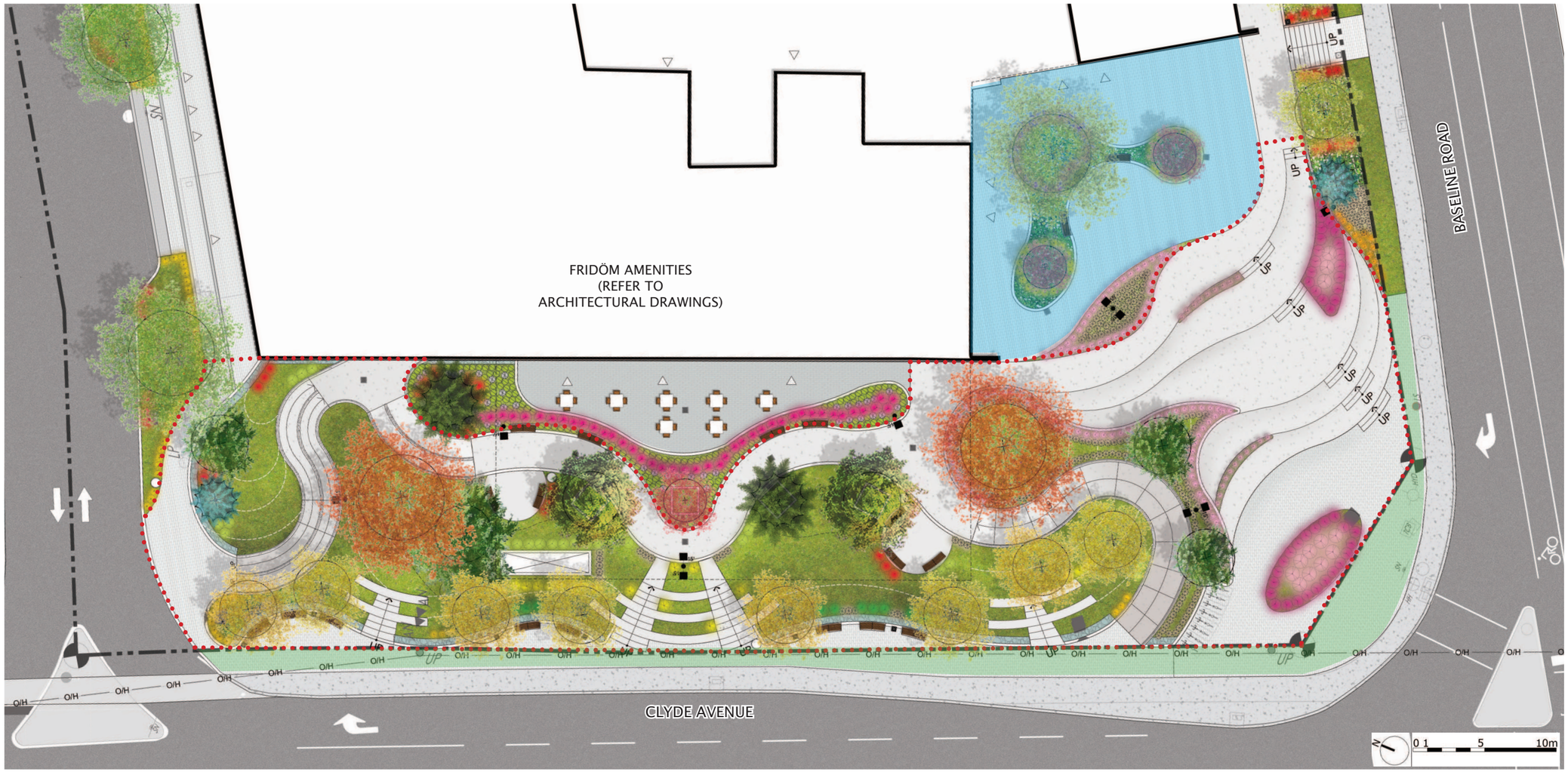
COMMERCIAL AREA
INDUSTRIAL AREA
INSTITUTIONS AREA
RESIDENTIAL AREA

LANDSCAPE PLAN

- ACCESS FROM CLYDE AVENUE
- CONCRETE ACCESSIBILITY RAMP TO POPS UPPER LEVEL
- SUBSPACE FOR PEDESTRIAN WITH BENCHES
- INTEGRATED CONCRETE BENCHES WITH STAIRS ON THE SLOPE FOR POPS
- PLANTED SPACES WITH ADDED TOPOGRAPHY FOR MORE HEIGHT AND ORGANIC AMBIANCE
- AIR WELL (REFER TO ARCHITECTURAL DRAWINGS) COVERED BY SHRUBS AND ORNAMENTAL GRASSES
- POPS - INTEGRATED CONCRETE BENCHES WITH STAIRS ON THE SLOPE CONNECTING TWO LEVELS
- FRIDÖM AMENITIES PRIVATE TERRACE WITH VEGETATED PRIVACY SCREEN
- SUBSPACES FOR PEDESTRIAN WITH BENCHES - UPPER LEVEL
- COLUMNAR TREES ALONG CLYDE AVENUE IN ORDER TO RESPECT THE SAFE DISTANCE FROM EXISTING POWER LINE
- CONCRETE STAIRS (REFER TO GRADING PLAN)
- BICYCLE PARKING SPACES
- COMMERCIAL TERRACE IN PAVERS
- CONCRETE CURVY AMPHITHEATRE WITH STAIRS

- SENIOR RESIDENCE DROP-OFF
- CARE UNIT DROP-OFF
- GAS MAIN
- GARBAGE ENCLOSURE (REFER TO ARCHITECTURAL DRAWINGS)
- VENTILATION WELL (REFER TO ARCHITECTURAL DRAWINGS)
- RETAIL & RESIDENTIAL PARKING ENTRANCE
- PAD-MOUNTED TRANSFORMER (REFER TO ARCHITECTURAL DRAWINGS)
- VENTILATION WELL (REFER TO ARCHITECTURAL DRAWINGS)COVERED BY GROUNDCOVER AREA
- BICYCLE PARKING SPACES
- COMMERCIAL ACCESS PLATFORM IN PAVERS

PRIVATELY-OWNED PUBLICLY ACCESSIBLE SPACES (POPS) LANDSCAPE PLAN



POPS SPACE INSIDE LOT LIMIT: 1650 M2

POPS SPACE OUTSIDE LOT LIMIT: 200 M2

COMMERCIAL TERRACE INSIDE LOT LIMIT: 300 M2

TOTAL SPACES THAT CAN BE USED AS PUBLICLY ACCESSIBLE SPACES: 2150 M2

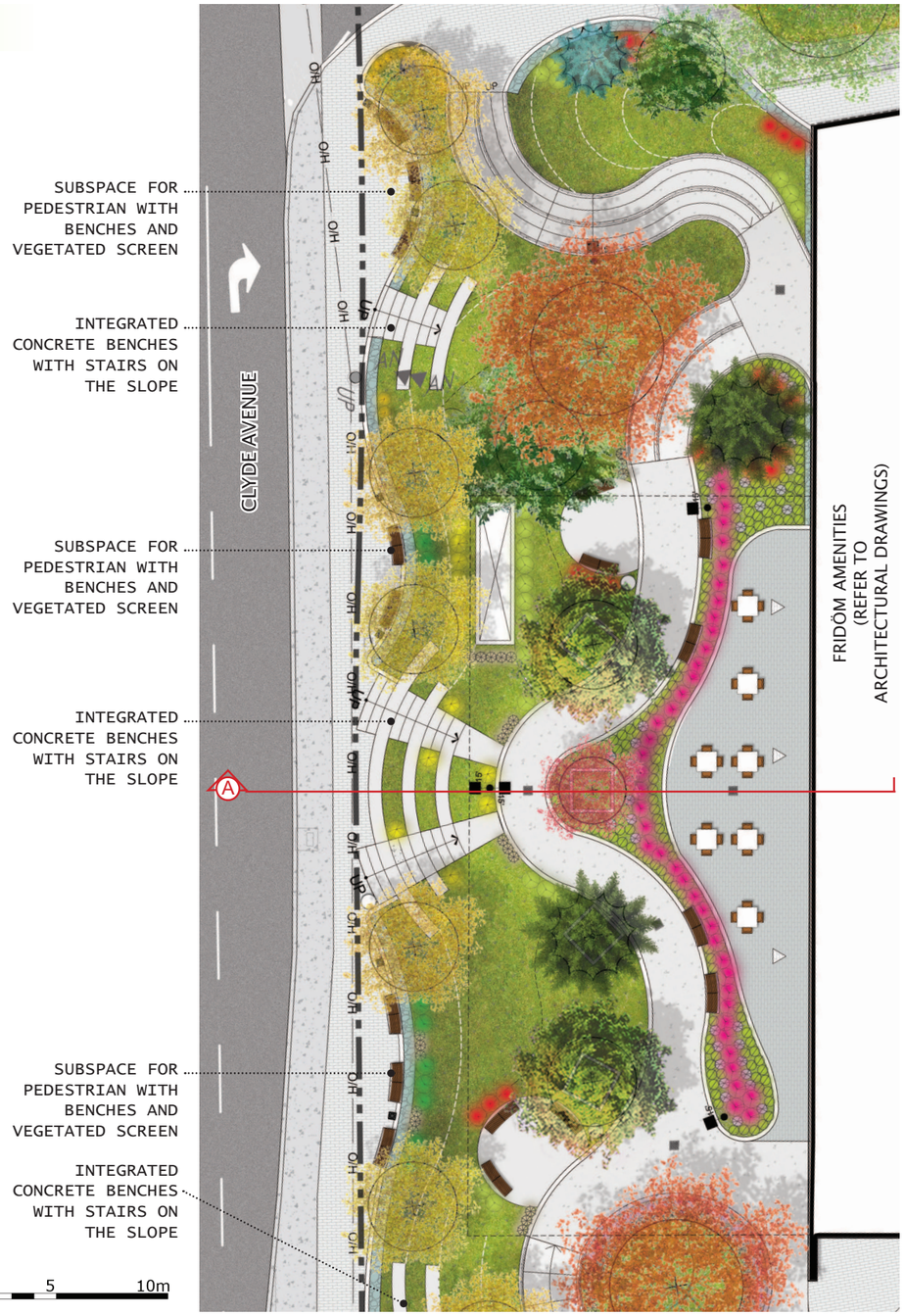
*AS WAS PREVIOUSLY STATED IN PRE-CONSULTATION COMMENTS,
THE POPS IS TO BE MINIMUM 817M2 IN SIZE.

POPS - ACCESSIBILITY

POPS SUBSPACE - CLYDE SIDEWALK LEVEL

PERSPECTIVE

NOTE: THE PERSPECTIVE IS FOR INFORMATION ONLY, REFER TO THE LANDSCAPE PLAN FOR MORE DETAILS.



BENCHES

13,6M OF STREET FRONTAGE +

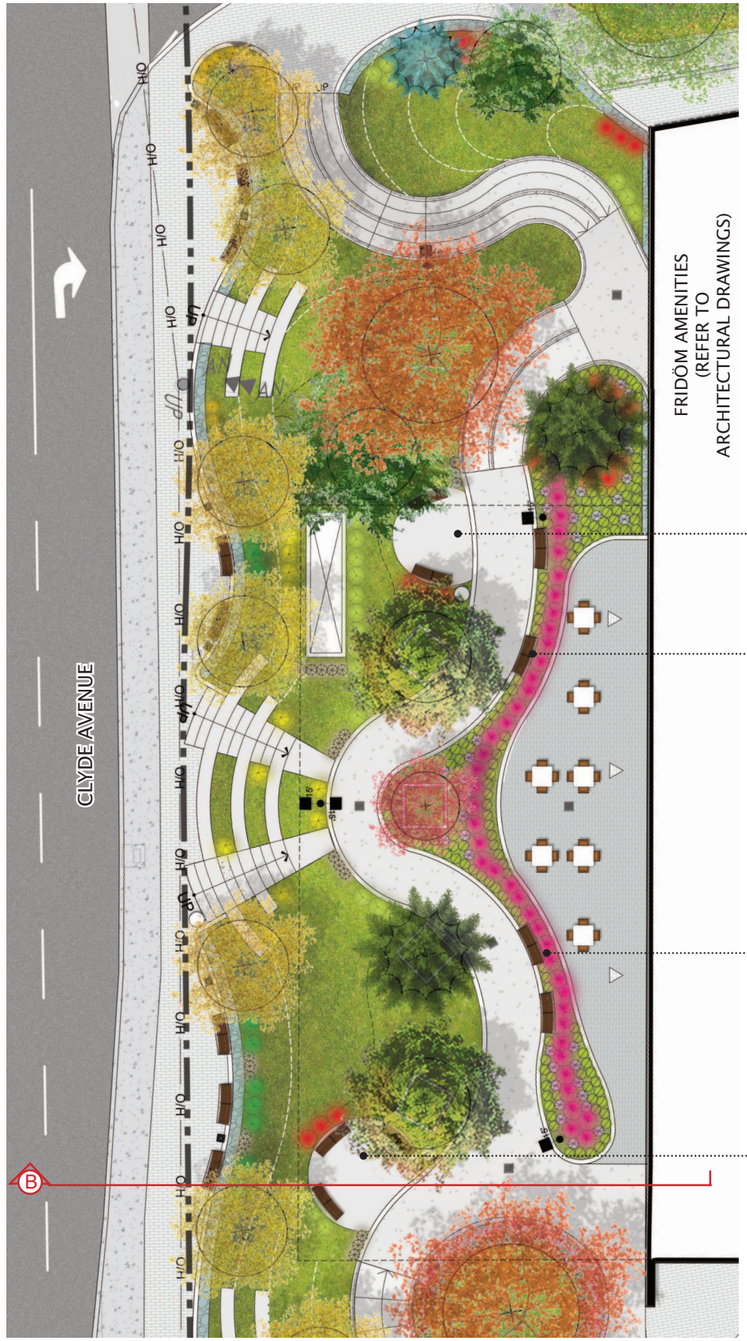
TOTAL: 31M OF STREET FRONTAGE =

INTEGRATED CONCRETE SEATING WITH STEPS

17,4M OF STREET FRONTAGE

45% OF STREET FRONTAGE (68,5M ALONG CLYDE AVENUE,APPROXIMATELY)

POPS SUBSPACE - CLYDE UPPER LEVEL



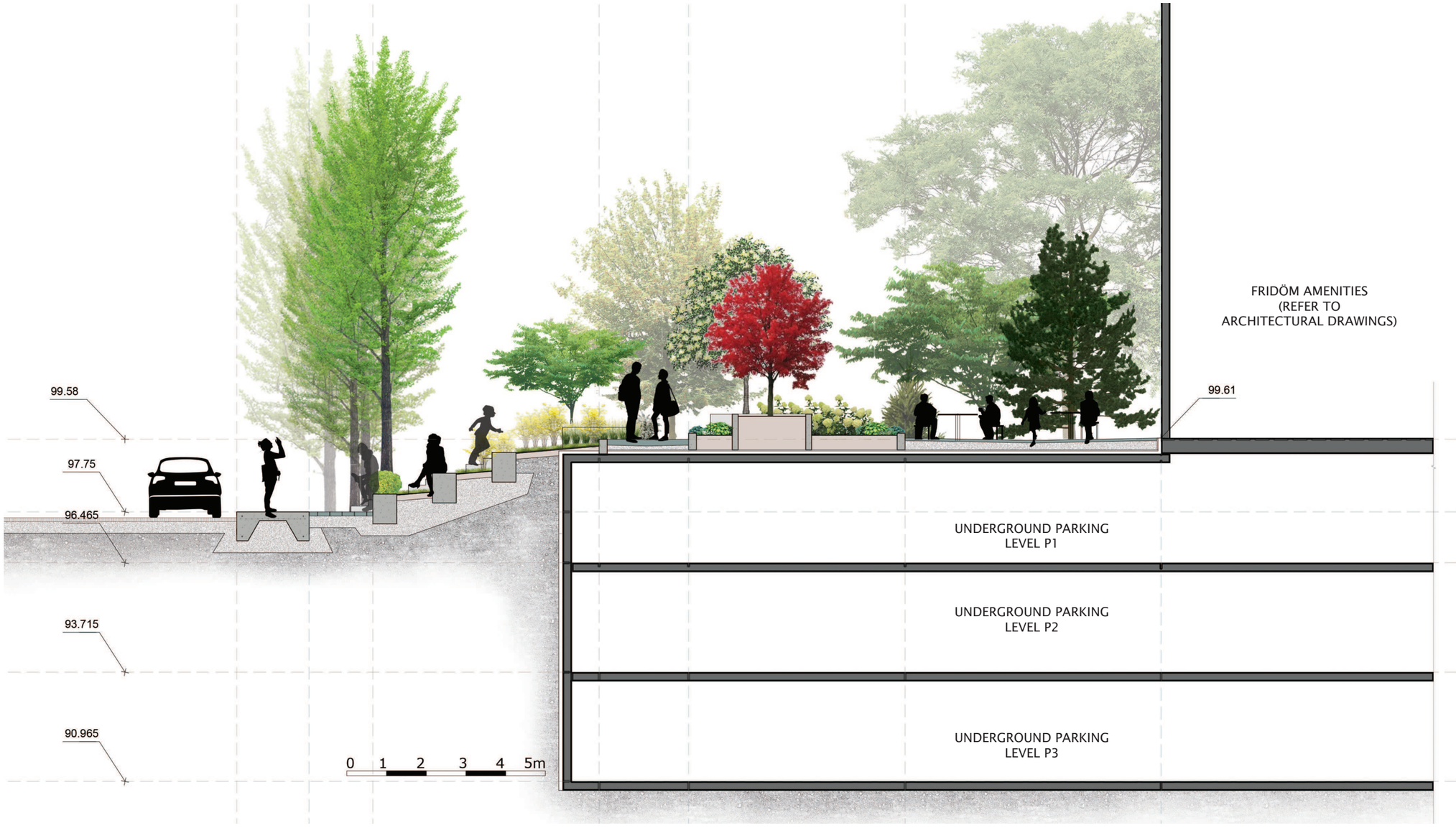
PERSPECTIVE

NOTE: THE PERSPECTIVE IS FOR INFORMATION ONLY, REFER TO THE LANDSCAPE PLAN FOR MORE DETAILS.

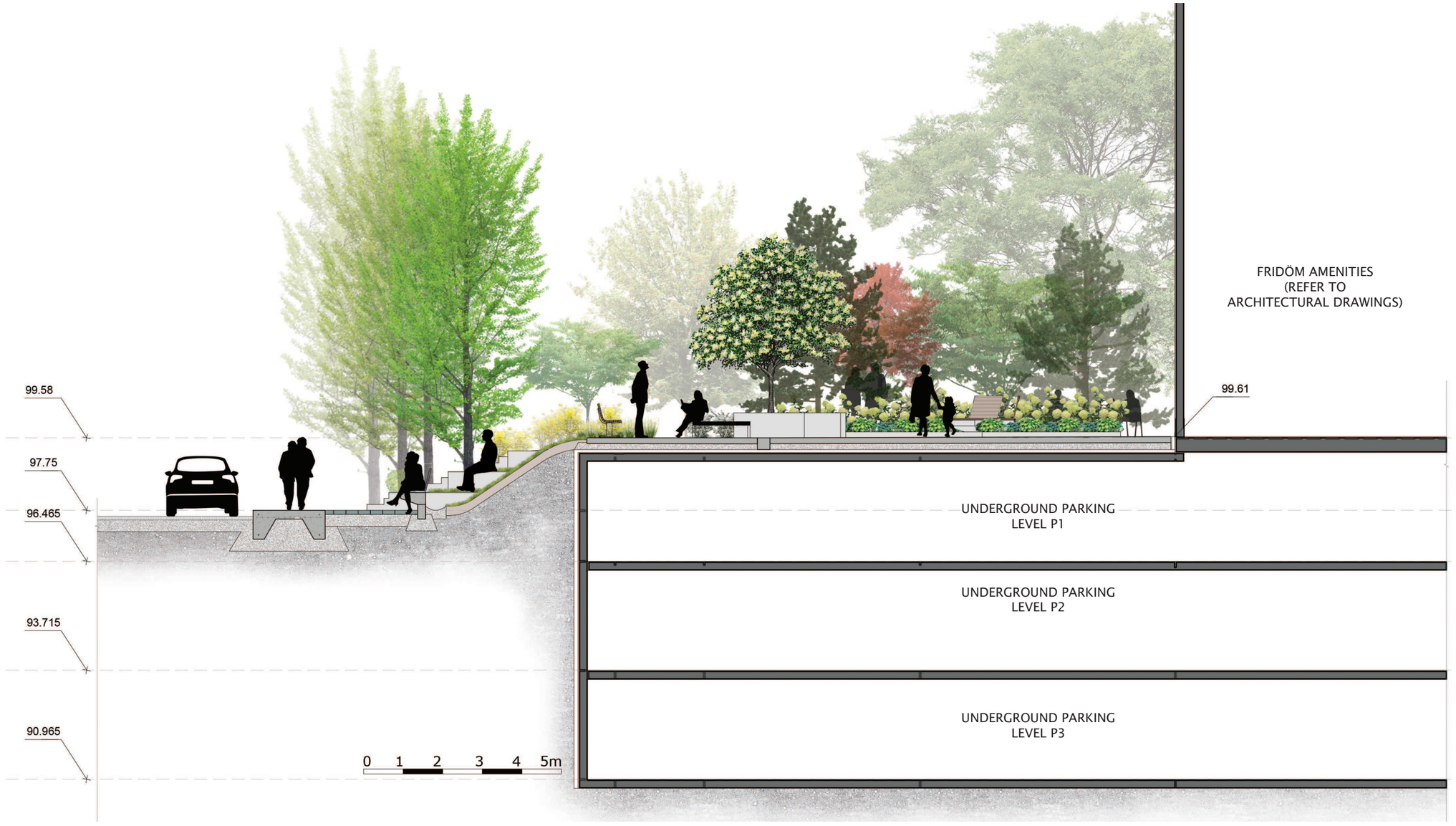
BENCHES

INTEGRATED CONCRETE BENCHES
WITH WOOD SEATING

POPS SUBSPACE - CLYDE - SECTION A



POPS SUBSPACE - CLYDE - SECTION B



POPS SUBSPACE - CLYDE AND BASELINE CORNER - AERIAL VIEW

POPS SUBSPACE - CLYDE AND BASELINE CORNER - PEDESTRIAN VIEW

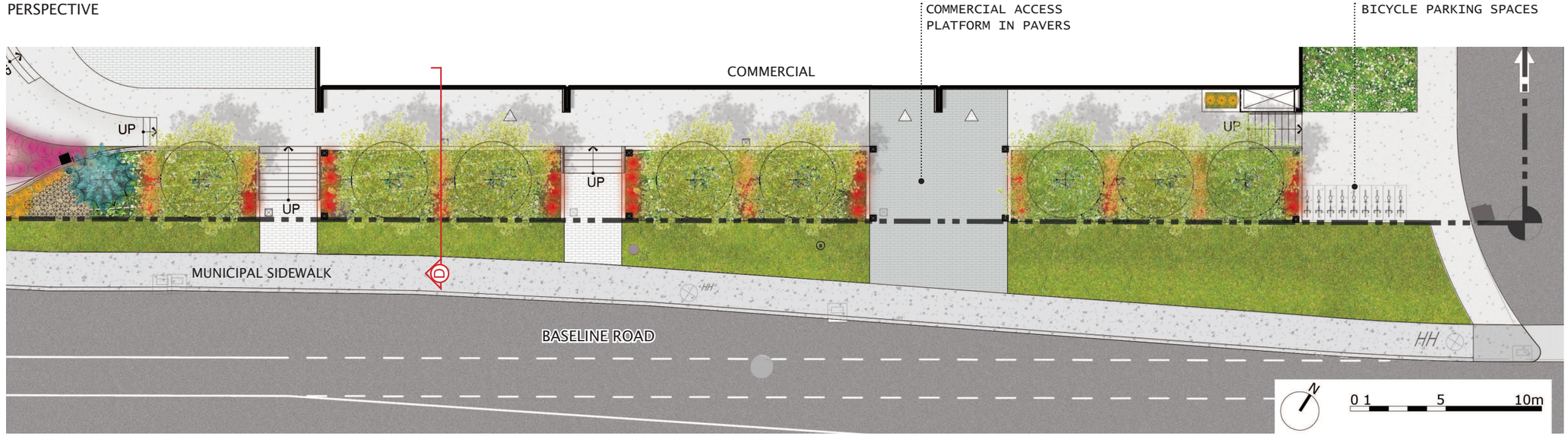
POPS SUBSPACE - CLYDE AND BASELINE CORNER

INTEGRATED CONCRETE SEATING WITH STEPS

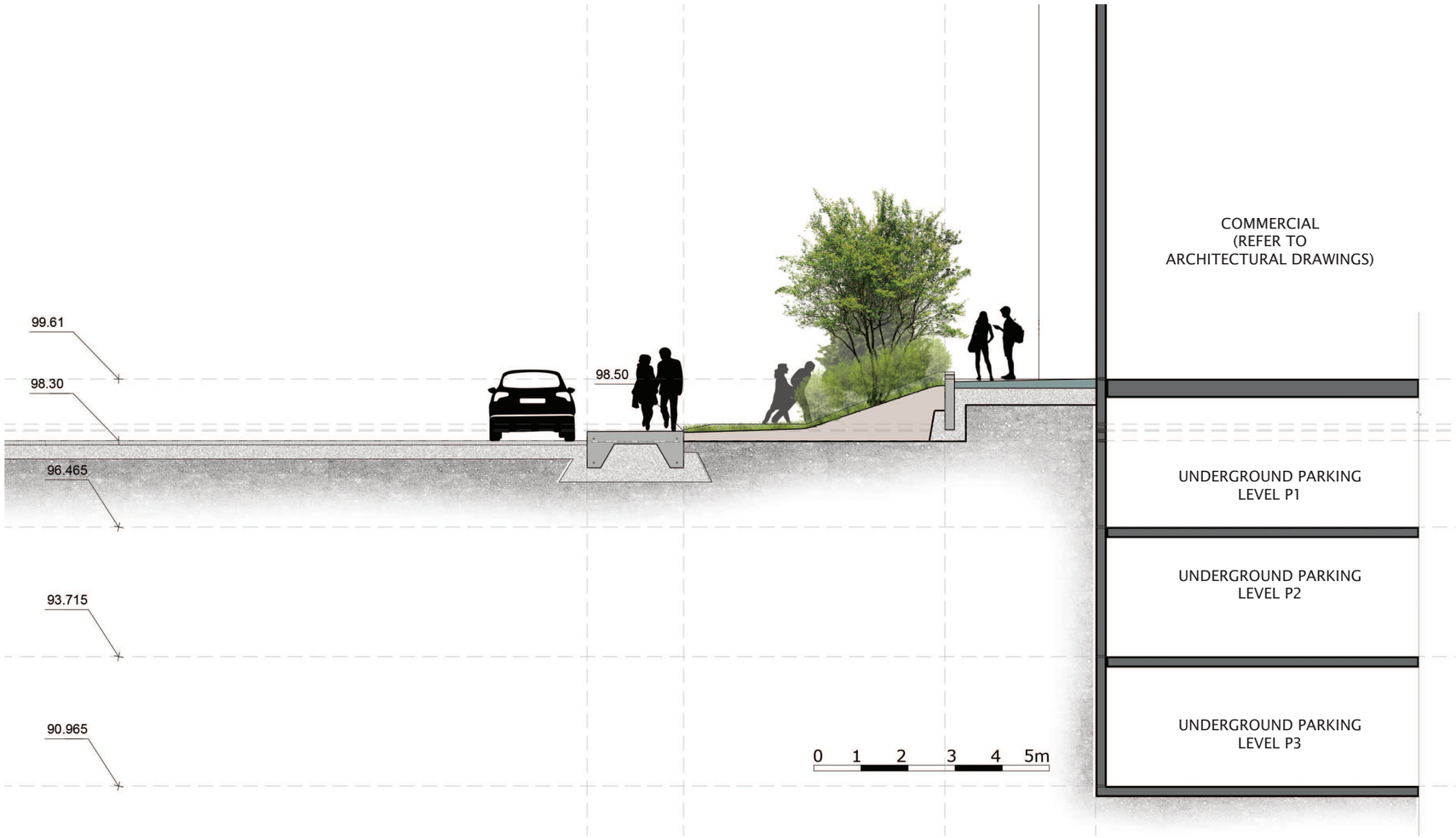
POPS SUBSPACE - CLYDE AND BASELINE CORNER - SECTION C

COMMERCIAL ACCESS PLATFORM

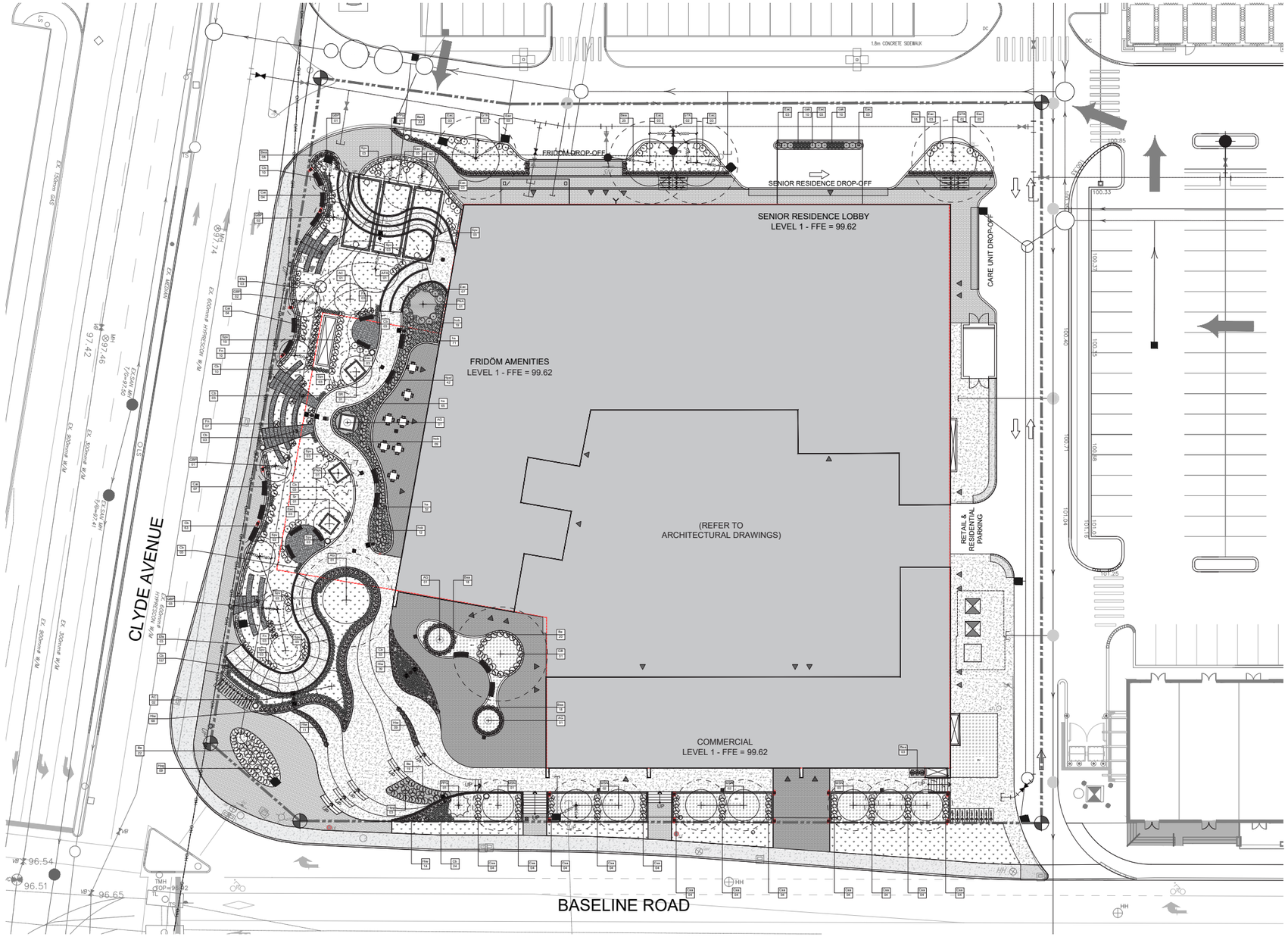
PERSPECTIVE



COMMERCIAL ACCESS PLATFORM - SECTION D



PLANTATION PLAN (LEVEL 1)

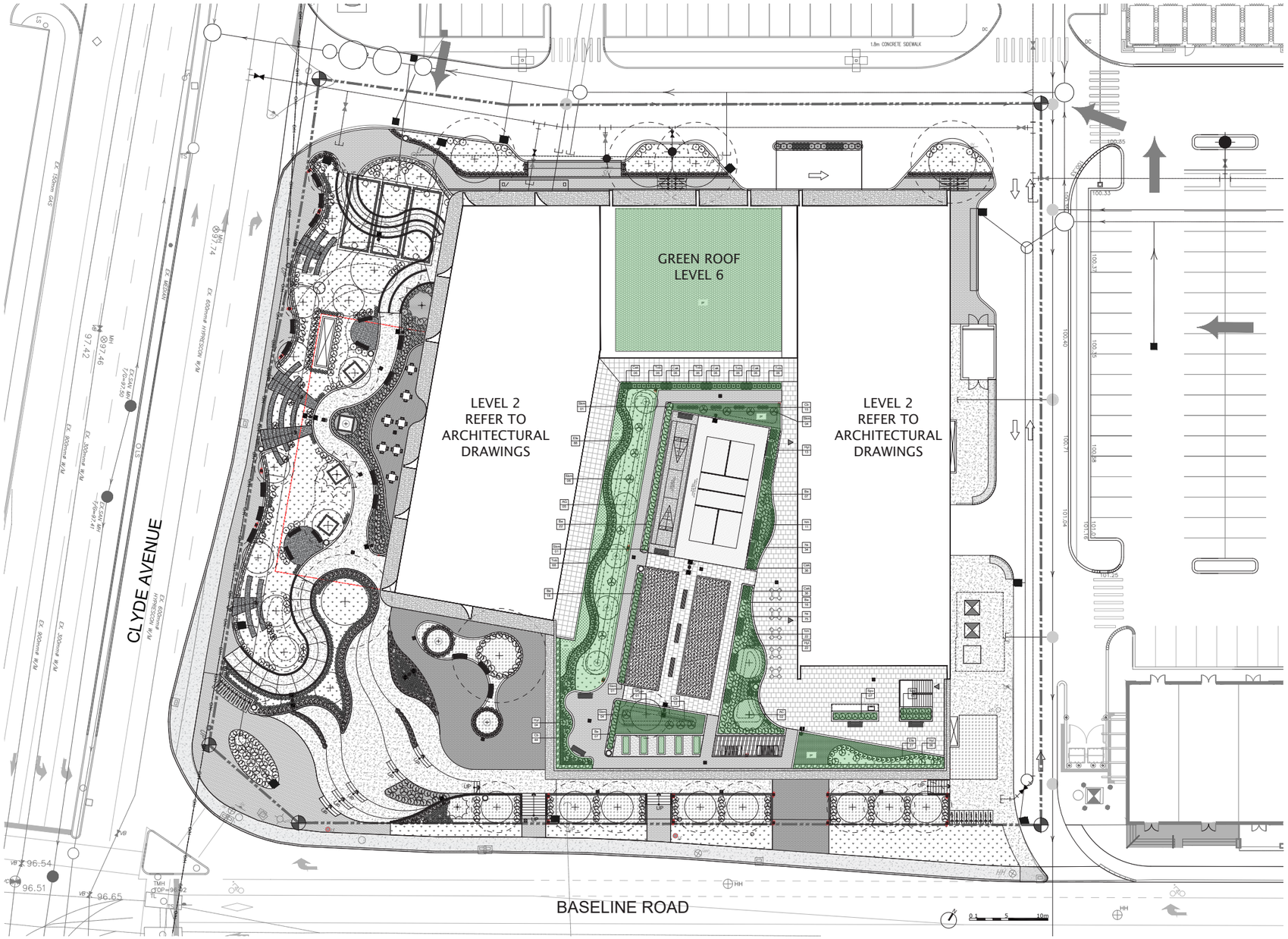


PLANT LIST (LEVEL 1)

PLANT SCHEDULE (LEVEL 1)						
ID	QUANTITY	*BOTANICAL NAME*	COMMON NAME	PURCHASE SIZE	CTC DISTANCE	METHOD OF PLANTING
DECIDUOUS TREES				Caliper		
AC	4	*Amelanchier canadensis*	Shadblow Serviceberry	50mm	variable	balled & burlapped
AFA	2	*Acer X Freemanii* 'Autumn Blaze'	Maple 'Autumn Blaze'	50mm	variable	balled & burlapped
AG	3	*Acer ginnala* 'Flame' (tige)	Amur Maple	multi-stem	variable	balled & burlapped
GB	1	*Ginkgo biloba*	Maidenhair Tree	50mm	variable	balled & burlapped
GBP	8	*Ginkgo biloba* 'Princeton sentry'	Maidenhair Tree 'Princeton sentry'	50mm	variable	balled & burlapped
GTK	4	*Gléditsia triacanthos* 'Skyline'	Thornless Common Honeylocust 'Skyline'	50mm	variable	balled & burlapped
MSN	8	*Malus* 'Spring Snow'	Crabapple 'Spring Snow'	50mm	variable	balled & burlapped
SR	2	*Syringa reticulata* 'Ivory Silk'	Japanese Tree Lilac 'Ivory Silk'	50mm	variable	balled & burlapped
CONIFEROUS TREES				Height	ctc	
PN	2	*Pinus nigra 'A* ustriaca'	Austrian Pine	2000mm	variable	pot
PPG	2	*Picea pungens glauca*	Colorado Blue Spruce	2000mm	variable	balled & burlapped
DECIDUOUS SHRUBS				Height	ctc	
Be	61	*Berberis thunbergii* 'Rose Glow'	Japanese Barberry 'Rose glow'	800mm	800mm	pot
Bea	123	*Berberis thunbergii* 'Aurea Nana'	Japanese Barberry 'Aurea Nana'	600mm	600mm	pot
Cai	17	*Cornus alba* 'Ivory Halo'	Dogwood 'Ivory Halo'	800mm	800mm	pot
Csa	48	*Cornus stolonifera* 'Artic fire'	Dogwood 'Artic fire'	800mm	800mm	pot
Eac	46	*Euonymus alatus* 'Compactus'	Dwarf Burning Bush	800mm	variable	pot
Efe	6	*Euonymus fortunei* 'Et gold'	Wintercreeper Euonymus 'Et gold'	600mm	variable	pot
Fn	23	*Forsythia* 'Nothern Gold'	Forsythia 'Nothern Gold'	800mm	variable	pot
Hiw	141	*Hydrangea arborescens* 'Invincibelle Wee White	Smooth Hydrangea	600mm	600mm	pot
Hpg	9	*Hydrangea paniculata* 'Grandiflora'	Panicle Hydrangea 'Grandiflora'	800mm	800mm	pot
Hpsf	42	*Hydrangea paniculata* 'Sundae Fraise'	Panicle Hydrangea 'Sundae Fraise'	800mm	800mm	pot
Spv	37	*Spiraea x* Van Houtteii	Bridal Wreath Spirea	800mm	800mm	pot
ORNAMENTAL GRASSES				Pot size	ctc	
cak	20	*Calamagrostis acutiflora* 'Karl Foerster'	Feather Reed Grass 'Karl Foerster'	3l	450mm	pot
cb	276	*Calamagrostis brachytricha*	Reed Grass	3l	450mm	pot
PERENNIALS				Pot size	C/C	
hob	40	*Hosta* 'Big daddy'	Plantain Lily 'Big daddy'	3l	500mm	pot
hs	168	*Hosta* 'Autumn Frost'	Plantain Lily 'Autumn Frost'	3l	350mm	pot
GROUNDCOVER		*M2*		Pot size		
av	296	*Arenaria verna* 'Aurea'	Sandwort	3l	300mm	pot

TOTAL QUANTITIES (LEVEL 1)	
DECIDUOUS TREES	*32*
CONIFEROUS TREES	*4*
DECIDUOUS SHRUBS	*553*
ORNAMENTAL GRASSES	*296*
PERENNIALS	*208*
GROUNDCOVER (m2)	*296*

PLANTATION PLAN (LEVEL 2)



GREEN ROOF
(LEVEL 2 AND 6)

PLANT LIST (LEVEL 2)

PLANT SCHEDULE (LEVEL 2)						
ID	QUANTITY	*BOTANICAL NAME*	COMMON NAME	PURCHASE SIZE	CTC DISTANCE	METHOD OF PLANTING
DECIDUOUS TREES				Caliper		
AC	2	*Amelanchier canadensis*	Shadblow Serviceberry	50mm	variable	balled & burlapped
AG	5	*Acer ginnala* 'Flame' (tige)	Amur Maple	multi-stem	variable	balled & burlapped
SR	1	*Syringa reticulata* 'Ivory Silk'	Japanese Tree Lilac 'Ivory Silk'	50mm	variable	balled & burlapped
DECIDUOUS SHRUBS				Height	ctc	
Be	70	*Berberis thunbergii* 'Rose Glow'	Japanese Barberry 'Rose glow'	800mm	800mm	pot
Efe	115	*Euonymus fortunei* 'Et gold'	Wintercreeper Euonymus 'Et gold'	600mm	variable	pot
Hyl	45	*Hydrangea paniculata* 'Limelight'	Panicle Hydrangea 'Limelight'	800mm	variable	pot
Skm	17	*Syringa vulgaris* 'Krasavitsa Mosky'	Common Lilac	800mm	800mm	pot
Spv	17	*Spiraea x* Van Houtteii	Bridal Wreath Spirea	800mm	800mm	pot
CONIFEROUS SHRUBS				Height	ctc	
Tob	90	*Thuya occidentalis* 'Boisbriand'	Boisbriand Arborvitae	1200mm	900mm	balled & burlapped
ORNAMENTAL GRASSES				Pot size	ctc	
cak	96	*Calamagrostis acutiflora* 'Karl Foerster'	Feather Reed Grass 'Karl Foerster'	3l	450mm	pot
cb	56	*Calamagrostis brachytricha*	Reed Grass	3l	450mm	pot
PERENNIALS				Pot size	C/C	
hm	33	*Hakonechloa macra* 'All Gold'	Japanese Forest Grass	3l	450mm	pot
hs	109	*Hosta* 'Autumn Frost'	Plantain Lily 'Autumn Frost'	3l	350mm	pot
GROUNDCOVER		*M2*		Pot size		
cm	30	*Convallaria majalis*	Lily of the valley	3l	250mm	pot
pr	475	*Phlox subulata* 'Red Wings'	Moss Phlox	3l	400mm	pot

TOTAL QUANTITIES (LEVEL 2)	
DECIDUOUS TREES	*8*
DECIDUOUS SHRUBS	*264*
CONIFEROUS SHRUBS	*90*
ORNAMENTAL GRASSES	*152*
PERENNIALS	*142*
GROUNDCOVER (m2)	*505*

PROPOSED PLANTS (LEVEL 1)

AC - *Amelanchier canadensis*
Shadblow Serviceberry

AFA - *Acer X Freemanii* 'Automn Blaze'
Maple 'Autumn Blaze'

AG - *Acer ginnala* 'Flame' *(tige)*
Amur Maple

GB - *Ginkgo biloba*
Maidenhair Tree

GBP - *Ginkgo biloba* 'Princeton sentry'
Maidenhair Tree 'Princeton sentry'

GTK - *Gléditsia triacanthos* 'Skyline'
Thornless Common Honeylocust 'Skyline'

MSN - *Malus* 'Spring Snow'
Crabapple 'Spring Snow'

SR - *Syringa reticulata* 'Ivory silk'
Japanese Tree Lilac 'Ivory Silk'

PPG - *Picea pungens glauca*
Colorado Blue Spruce

PN - *Pinus nigra* 'Austriaca'
Austrian Pine

Be - *Berberis thunbergii* 'Rose Glow'
Japanese Barberry 'Rose glow'

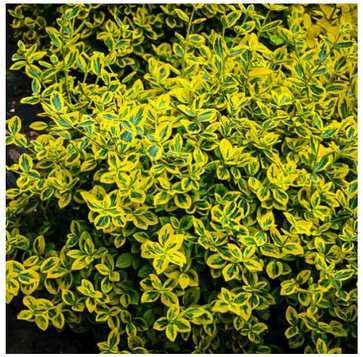
Be - *Berberis thunbergii* 'Aurea Nana'
Japanese Barberry 'Aurea Nana'

Cai - *Cornus alba* 'Ivory Halo'
Dogwood 'Ivory Halo'

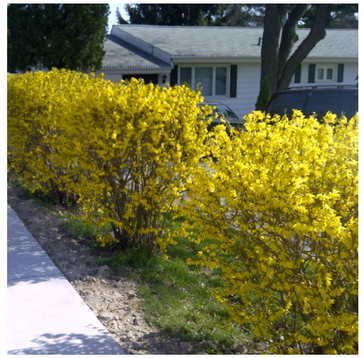
Csa - *Cornus stolonifera* 'Artic fire'
Dogwood 'Artic fire'

Eac - *Euonymus alatus* 'Compactus'
Dwarf Burning Bush

PROPOSED PLANTS (LEVEL 1)



Efe - *Euonymus fortunei* 'Et gold'
Wintercreeper Euonymus 'Et gold'



Fn - *Forsythia* 'Nothern Gold'
Forsythia `Nothern Gold`

Hiw - *Hydrangea arborescens* 'Invincibelle Wee White'
Smooth Hydrangea

Hpg - *Hydrangea paniculata* 'Grandiflora'
Panicle Hydrangea 'Grandiflora'

Hpsf - *Hydrangea paniculata* 'Sundae Fraise'
Panicle Hydrangea 'Sundae Fraise'

Spv - *Spiraea x Van Houtteii*
Bridal Wreath Spirea

cak - *Calamagrostis acutiflora* 'Karl Foerster'
Feather Reed Grass 'Karl Foerster'

cb - Calamagrostis brachytrica
Reed Grass

hob - *Hosta* 'Big daddy'
Plantain Lily 'Big daddy'

hs - *Hosta* 'Autumn Frost'
Plantain Lily 'Autumn Frost'

av - *Arenaria verna* 'Aurea'
Sandwort

NOTE: A VARIETY OF TREES, SHRUBS, ORNAMENTAL GRASSES, AND PERENNIALS IS CHOSEN ACCORDING TO THE LANDSCAPE DESIGN. THE ULTIMATE PURPOSE IS TO MAXIMIZE THE USE OF INDIGENOUS PLANT SPECIES THAT COULD ADAPT WELL TO URBAN CONDITIONS.

PROPOSED PLANTS (LEVEL 2)

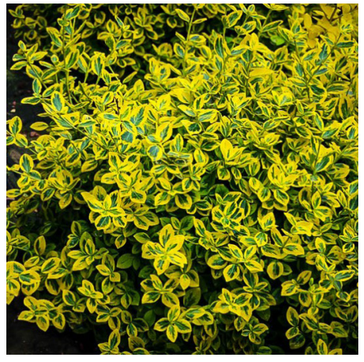
AC - *Amelanchier canadensis*
Shadblow Serviceberry

AFA - *Acer X Freemanii* 'Automn Blaze'
Maple 'Autumn Blaze'

AG - *Acer ginnala* 'Flame' *(tige)*
Amur Maple

Tob - *Thuya occidentalis* 'Boisbriand'
Boisbriand Arborvitae

Be - *Berberis thunbergii* 'Rose Glow'
Japanese Barberry 'Rose glow'



Efe - *Euonymus fortunei* 'Et gold'
Wintercreeper Euonymus 'Et gold'

Hyl - *Hydrangea paniculata* 'Limelight'
Panicle Hydrangea 'Limelight'

Smk - *Syringa vulgaris* 'Krasavitsa Mosky'
Common Lilac

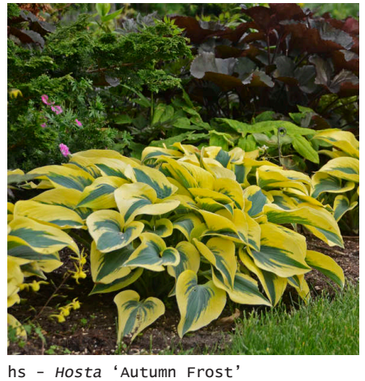
Spv - *Spiraea x Van Houtteii*
Bridal Wreath Spirea

cm - *Convallaria majalis*
Lily of the valley

cak - *Calamagrostis acutiflora* 'Karl Foerster'
Feather Reed Grass 'Karl Foerster'

cb - Calamagrostis brachytrica
Reed Grass

hm - *Hakonechloa macra* 'All Gold'
Japanese Forest Grass



hs - *Hosta* 'Autumn Frost'
Plantain Lily 'Autumn Frost'

pm - *Phlox subulata* 'Red Wings'
Moss Phlox

PROPOSED MATERIAL

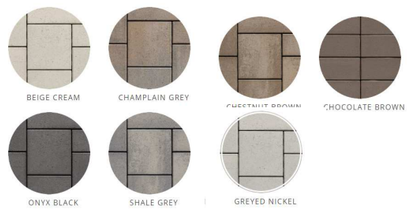
PATIO SLABS
FOR PRIVATE TERRACES

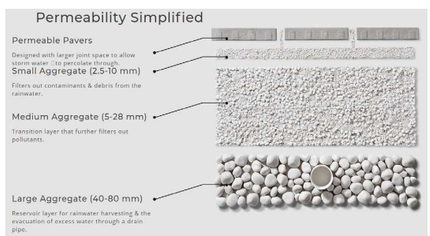
CONCRETE SURFACE
FOR WALKWAYS (POPS UPPER LEVEL) AND FURNITURE BASES

HYDROSEEDING GROUNDCOVERS - WHITE CLOVER, SANDWORT OR MOSS PHLOX
HYDROSEEDING GROUDCOVERS INSTEAD OF GRASS FOR MORE SUSTAINABLE AND WILDLIFE FRIENDLY, LOW MAINTENANCE LAWN
FOR VEGETATED AREAS (LEVEL 1, 2 AND 6)

PERMEABLE CONCRETE PAVEMENT
FOR WALKWAYS (POPS SIDEWALK LEVEL)

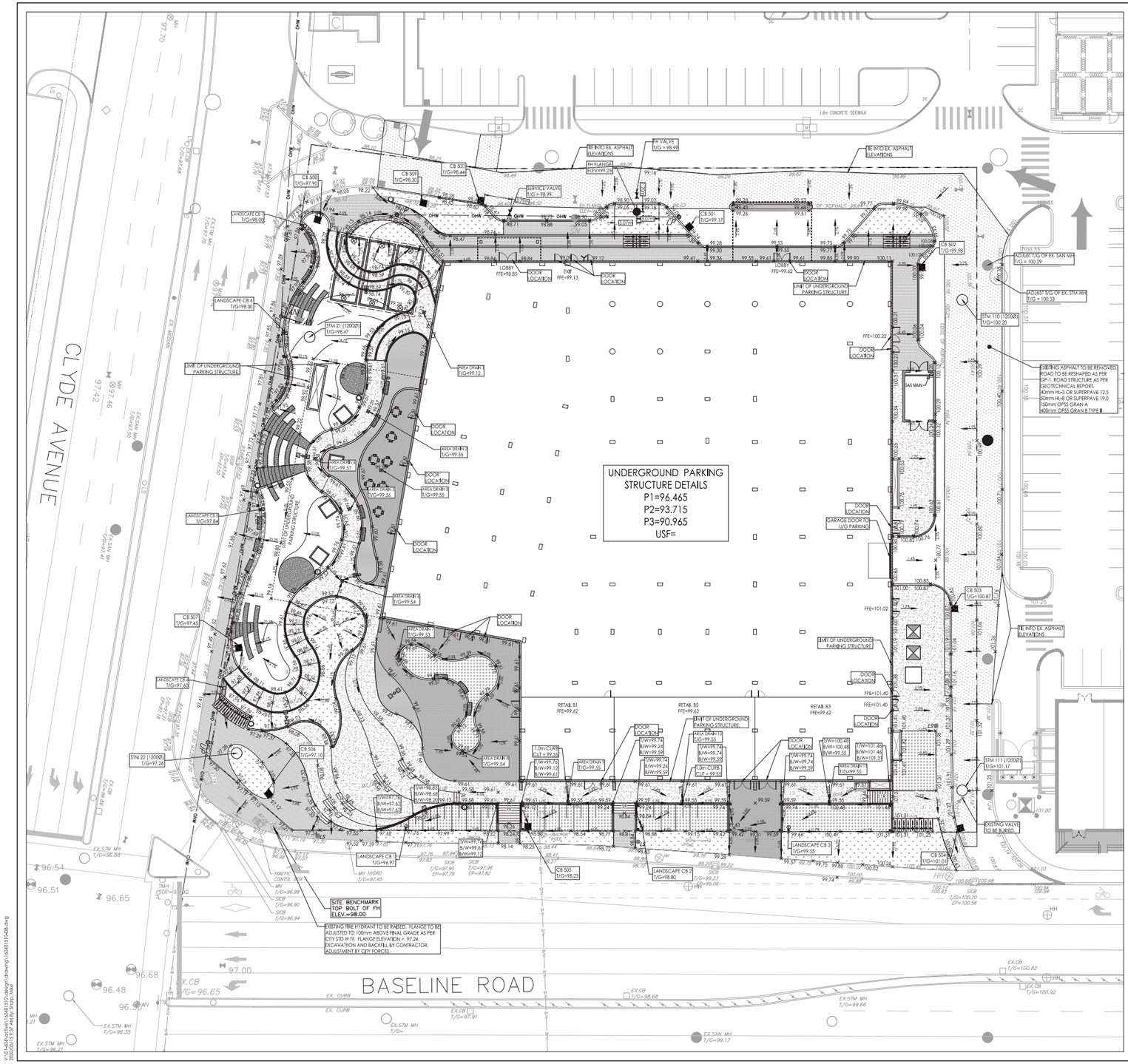
Color variation chart





GREEN ROOF (LEVEL 6) - HYDROPACK TRAY
AN ALL-IN-ONE SYSTEM THAT REQUIRES LITTLE MAINTENANCE AND MINIMIZES THE NEED FOR PERMANENT IRRIGATION SYSTEMS
FOR INACCESSIBLE GREEN ROOF ON 6TH LEVEL (DETAIL IN THE COMING PHASES)

ANNEX II : SERVICING AND GRADING STUDY



Stantec

Stantec Consulting Ltd.
400 - 1331 Clyde Avenue
Ottawa ON
Tel. 613.722.4420
www.stantec.com

Legend

- 99.99 — ORIGINAL GROUND ELEVATION
- 99.99 — PROPOSED ELEVATION
- 99.99 TOP — PROPOSED LOT CORNER ELEVATION / EXISTING ELEVATION AT LOT CORNER
- 2.0% — FLOW DIRECTION AND GRADE
- FF=99.99 — FINISHED FIRST FLOOR ELEVATION
- TF=99.84 — TOP OF FOUNDATION WALL ELEVATION
- USF=97.14 — UNDERSIDE OF FOOTING ELEVATION
- 3R — NUMBER OF RISERS
- 3R / 3% — TERRACING 3:1 SLOPE MAXIMUM (UNLESS OTHERWISE SHOWN)
- PROPOSED SWALE
- DIRECTION OF OVERLAND FLOW
- PROPOSED VALVE BOX
- PROPOSED VALVE CHAMBER
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CONCRETE CATCHBASINS
- PROPOSED SUB DRAIN CATCH BASIN. AS PER CITY OF OTTAWA STANDARD DETAIL DRAWINGS S29.
- PROPOSED AREA DRAINS TO BE CONNECTED TO INTERNAL PLUMBING OUTLETTING INTO CISTERN. (REFER TO ARCHITECTURAL AND MECHANICAL PLAN FOR DETAILS)
- PROPOSED FRENCH DRAIN COLLECTION SYSTEM. TO BE CONNECTED TO INTERNAL PLUMBING OUTLETTING INTO CISTERN. (REFER TO MECHANICAL PLAN FOR DETAILS)
- DC — PROPOSED DEPRESSED CURB LOCATION
- PROPOSED HEAVY DUTY ASPHALT RE-INSTATEMENT AREA

Notes

1. RISER HEIGHT = 0.15m

PAVEMENT STRUCTURE AS PER PATERSON GEOTECH REPORT TITLED "SUPPLEMENTAL GEOTECHNICAL INVESTIGATION" PROPOSED MIXED DEVELOPMENT, CLYDE AVENUE AT BASELINE ROAD, OTTAWA, ON.
DATED APRIL 3, 2019. REPORT No. PG4871-1

LIGHT DUTY
50mm HL-3 OR SUPERPAVE 12.5
150mm OPSS GRAN A
300mm OPSS GRAN B TYPE II

HEAVY DUTY
40mm HL-3 OR SUPERPAVE 12.5
50mm HL-8 OR SUPERPAVE 19.0
150mm OPSS GRAN A
400mm OPSS GRAN B TYPE II

1	REVISED AS PER CITY COMMENTS	MJS	DT	20.05.15
0	ISSUED TO CITY FOR SPA	MJS	DT	20.01.09
Revision		By	Appd.	YY.MM.DD

File Name: 160401510-08		MJS	KS	MJS	19.09.23
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

LICENSED PROFESSIONAL ENGINEER
D. C. THIFFAULT
100186107
15/05/2020
PROVINCE OF ONTARIO

Client/Project

SELECTION GROUP INTERNATIONAL INC.
2400 BOUL. DANIEL JOHNSON
LAVAL, QUEBEC
H7T 3A4

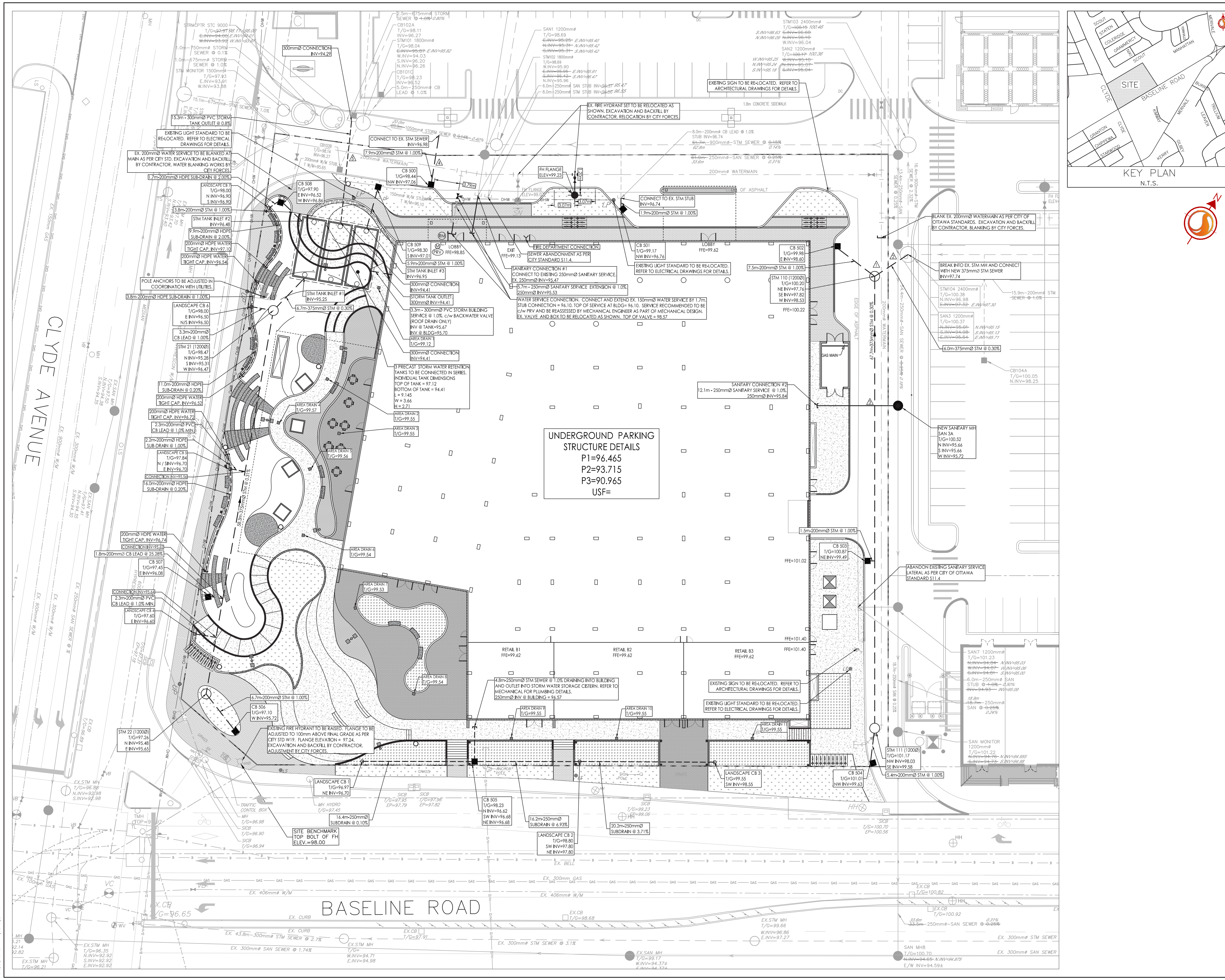
1357 BASELINE ROAD
OTTAWA, ON, CANADA

Title

GRADING PLAN

Project No.	Scale	
160401510	1:250	0 2.5 7.5 12.5m
Drawing No.	Sheet	Revision
GP-1	4 of 8	1

D07-12-20-0005



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Ottawa ON
Tel. 613.722.4420
www.stantec.com

Legend

- PROPOSED WATERMAIN
- PROPOSED VALVE AND VALVE BOX
- PROPOSED REDUCER
- PROPOSED FIRE HYDRANT
- PROPOSED WATER METER
- PROPOSED REMOTE WATER METER
- PROPOSED PRESSURE REDUCING VALVE
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CATCHBASIN MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED SUB DRAIN AND SUBDRAIN CATCH BASIN AS PER CITY OF OTTAWA STANDARD DETAIL DRAWINGS S29. PIPE TO BE HDPE PREFORATED SMOOTH INNER WALL c/w FILTER SOCK
- PROPOSED FRENCH DRAIN COLLECTION SYSTEM. TO BE CONNECTED TO INTERNAL PLUMBING OUTLETTING INTO CISTERN. (REFER TO MECHANICAL PLAN FOR DETAILS)
- PROPOSED AREA DRAINS TO BE CONNECTED TO INTERNAL PLUMBING OUTLETTING INTO CISTERN. (REFER TO ARCHITECTURAL AND MECHANICAL PLAN FOR DETAILS)
- DC PROPOSED DEPRESSED CURB LOCATIONS
- THERMAL INSULATION ON STORM SEWER WHERE COVER IS LESS THAN 1.5m. THERMAL INSULATION ON WATERMAIN WHERE COVER IS LESS THAN 2.4m AS PER W22.
- PROPERTY LINE

Notes

SEWER AND WATERMAIN CROSSING TABLE

CROSSING	STM INV	STM OBV	SAN INV	SAN OBV	WTR TOP	WTR BTM
1	97.78	98.16			97.28	97.08
2	97.75	98.13	95.12	95.37		
3	97.88	98.26	95.85	96.10		
4	97.03	97.23			96.06	95.86
5	94.32	94.62			95.72	95.52

* BRACKETS DENOTE ADJUSTED VALUE WITH CONCRETE PIPE THICKNESS

SCHEDULE OF INLET CONTROL DEVICES

AREA ID	STRUCTURE ID	TYPE	100YR HEAD (m)	100YR RELEASE RATE (L/s)
F101	STM110	108mmø VERTICAL SLIDING ORIFICE	2.05	32.8
*104	STM104	250mmø VERTICAL SLIDING ORIFICE	3.28	232.9
F100	TANK	150mmø VERTICAL SLIDING ORIFICE	2.51	74.5
101A	STM101	380mmø VERTICAL SLIDING ORIFICE	3.55	534.6

* ICD'S THAT REQUIRE REPLACEMENT

		By	Appd.	YY.MM.DD
1	REVISED AS PER CITY COMMENTS	MJS	DT	20.05.15
0	ISSUED TO CITY FOR SPA	MJS	DT	20.01.09

Revision

File Name: 160401510-DB	MJS	KS	MJS	19.09.23
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

LICENSED PROFESSIONAL ENGINEER
D. C. THIFFAULT
100186107
15/05/2020
PROVINCE OF ONTARIO

Client/Project

SELECTION GROUP INTERNATIONAL INC.
2400 BOUL. DANIEL JOHNSON
LAVAL, QUEBEC
H7T 3A4

1357 BASELINE ROAD
OTTAWA, ON, CANADA

Title

SITE SERVICING PLAN

Project No. 160401510

Scale 1:250 (0 2.5 7.5 12.5m)

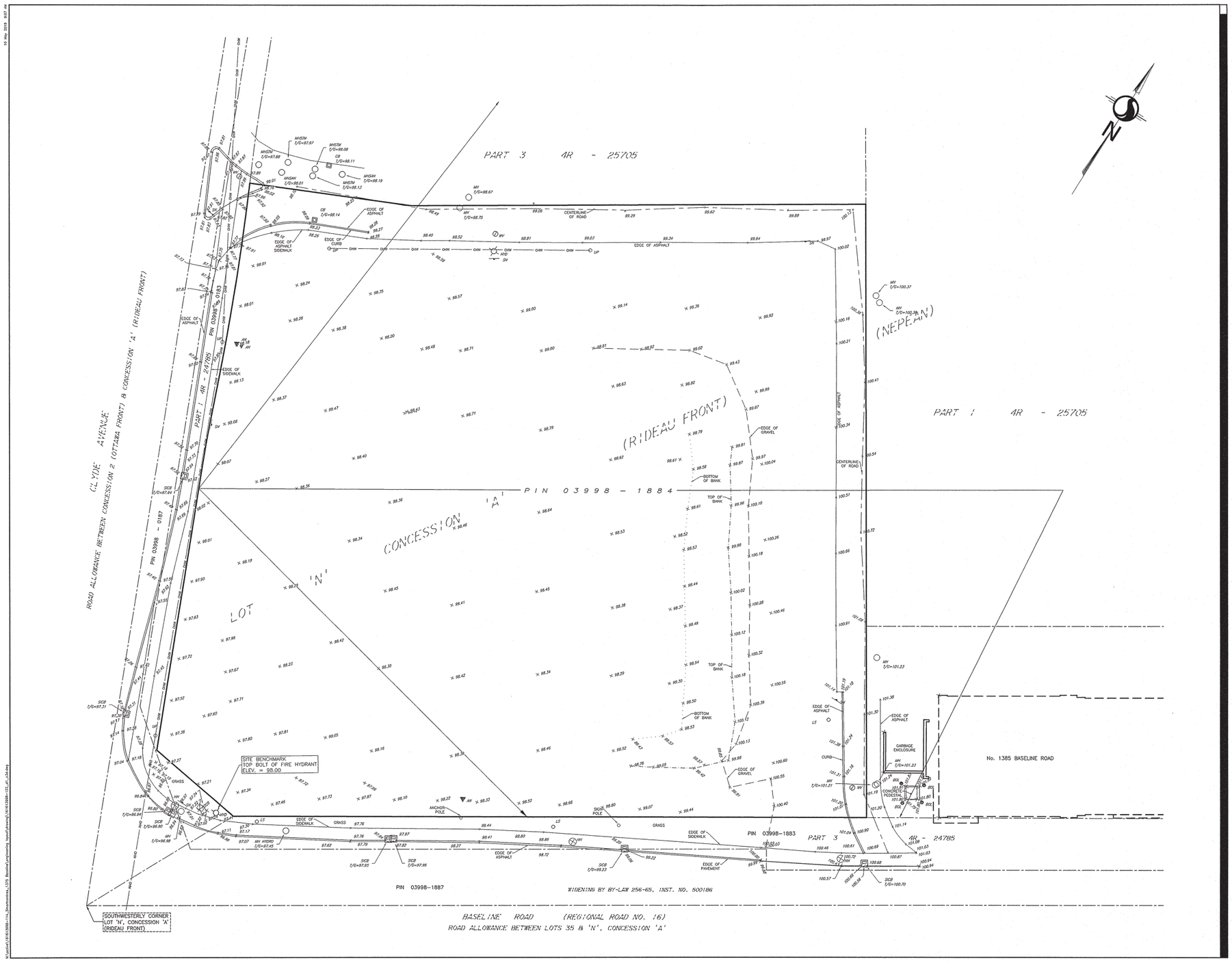
Drawing No. SSP-1

Sheet 3 of 8

Revision 1

D07-12-20-0005

ANNEX III : SURVEYOR'S CERTIFICATE



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Ottawa ON
Tel. 613.722.4420
www.stantec.com

TOPOGRAPHIC SKETCH OF

PART OF LOT 'N' CONCESSION 'A' (RIDEAU FRONT)

(GEOGRAPHIC TOWNSHIP OF NEPEAN)

CITY OF OTTAWA

Scale 1:250

0 5 0 5 10 15 METRES

Stantec Geomatics Ltd.
ONTARIO LAND SURVEYORS

METRIC CONVERSION

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

HORIZONTAL DATUM NOTE

PROJECTION: UNIVERSAL TRANSVERSE MERCATOR
(UTM, ZONE 18, CM79°00'W)
DATUM: NAD 83 (ORIGINAL)

THIS PLAN MAY BE CONVERTED TO GROUND BY DIVIDING BY A COMBINED SCALE FACTOR OF 0.999933.

BEARING NOTE

BEARINGS ARE GRID, DERIVED FROM THE CAN-NET VRS NETWORK OBSERVATIONS ON NCC HORIZONTAL CONTROL MONUMENTS 19773035 AND 19680191, CENTRAL MERIDIAN, 76°30' WEST LONGITUDE MTM ZONE 9, NAD83 (CSRS) (2010.0).

19773035 N:5006060.00 E:324888.04
19680191 N:5033563.88 E:338064.92

VERTICAL DATUM NOTE

ELEVATIONS ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM (CGVD-1928:1978).

LEGEND

■	DENOTES	-	FOUND MONUMENTS
□		-	SET MONUMENTS
IB		-	IRON BAR
IB⌀		-	ROUND IRON BAR
SIB		-	STANDARD IRON BAR
SSIB		-	SHORT STANDARD IRON BAR
CC		-	CUT CROSS
CPW		-	CONCRETE PIN
WIT		-	WITNESS
PIN		-	PROPERTY IDENTIFICATION NUMBER
M/MEAS		-	MEASURED
PROP		-	PROPORTIONED
OU		-	ORIGIN UNKNOWN
SG		-	STANTEC GEOMATICS LTD.
P		-	PLAN 4R25705
✦	AN	-	ANCHOR
●	BOL	-	BOLLARD
	CB	-	CATCH BASIN
	SICB	-	SIDE INLET CB
	MH	-	MAINTENANCE HOLE UNIDENTIFIED
	MH HYDRO	-	MAINTENANCE HOLE HYDRO
	MHSAN	-	MAINTENANCE HOLE SANITARY
	MHSTM	-	MAINTENANCE HOLE STORM
	HYD	-	FIRE HYDRANT
	SN	-	SIGN
	TCB	-	TRAFFIC CONTROL BOX
	UP	-	UTILITY POLE
	VB	-	VALVE BOX
	VC	-	VALVE CHAMBER
	WV	-	WATER VALVE
		-	OVERHEAD WIRE

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

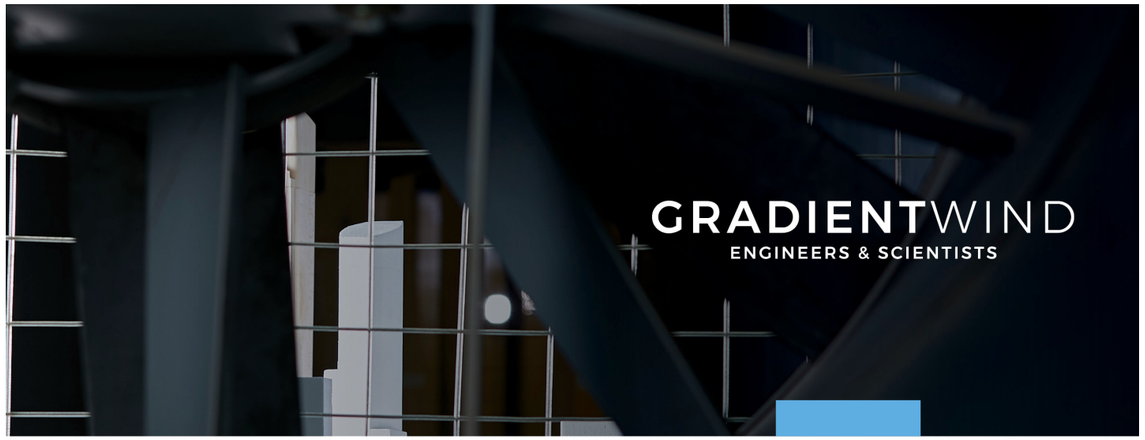
1. THE SURVEY WAS COMPLETED ON THE 29th DAY OF APRIL 2019 .

May 10/19
DATE

T. HARTWICK
ONTARIO LAND SURVEYOR

DRAWN: TMT CHECKED: TH PM: TH FIELD: CA PROJECT No.: 161613998-122

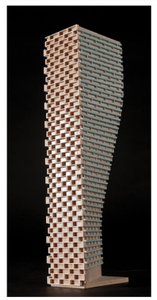
ANNEX IV : WIND STUDIES

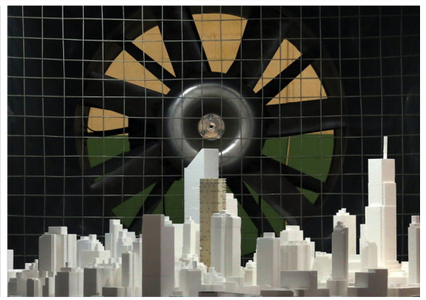


PEDESTRIAN LEVEL WIND STUDY

1357 Baseline Road
Ottawa, Ontario

Report: 19-141-PLW





November 21, 2019

DRAFT

PREPARED FOR
Selection Group International Inc.
2400 Boulevard Daniel-Johnson
Laval, QC H7T 3A4

PREPARED BY
Edward Urbanski, M.Eng., Junior Wind Scientist
Sacha Ruzzante, MASc., Junior Wind Scientist
Justin Ferraro, P.Eng., Principal

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
GRADIENTWIND.COM

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ENGINEERS & SCIENTISTS

EXECUTIVE SUMMARY

This report describes a pedestrian level wind (PLW) study undertaken to satisfy site plan control application requirements for a proposed development located at 1357 Baseline Road in Ottawa, Ontario (hereinafter referred to as “subject site”). Our mandate within this study is to investigate pedestrian wind comfort and safety within and surrounding the subject site, and to identify any areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where necessary.

Our work is based on industry standard computer simulations using the computational fluid dynamics (CFD) technique and data analysis procedures, City of Ottawa wind comfort and safety criteria, architectural drawings provided by ACDF Architecture in November 2019, surrounding street layouts and existing and approved future building massing information obtained from the City of Ottawa, as well as recent site imagery via Google Earth Pro and the Copernicus Open Access Hub.

A complete summary of the predicted wind comfort and safety conditions at grade level and within the amenity terraces is provided in Section 5 of this report and illustrated in Figures 3A-6B, and Figures 7A-7D (following the main text). The results and recommendations are summarized as follows:

1) Wind comfort conditions within and surrounding the subject site at grade level are predicted to be mostly calm and acceptable for all anticipated uses throughout the year. Of importance, primary building entrances are predicted to be suitable for standing or better throughout the year. Additionally, while wind channelling is predicted to impact the laneway along the north side of the subject site, conditions are predicted to be suitable for strolling, or better, throughout the year. The noted conditions are considered acceptable for the anticipated uses of the areas.

2) Regarding the amenity terraces, wind conditions are predicted to be mostly calm and acceptable during the typical use period of late spring through early autumn, as described in Section 5.

3) Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas surrounding the subject site at grade level were found to experience conditions that are classified as uncomfortable or dangerous.

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ENGINEERS & SCIENTISTS

TABLE OF CONTENTS

GRADIENTWIND
ENGINEERS & SCIENTISTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Selection Group International Inc. to undertake a pedestrian level wind (PLW) study to satisfy site plan control application requirements for a proposed development located at 1357 Baseline Road in Ottawa, Ontario (hereinafter referred to as "subject site"). Our mandate within this study is to investigate pedestrian wind comfort and safety within and surrounding the subject site, and to identify any areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where necessary.

Our work is based on industry standard computer simulations using the computational fluid dynamics (CFD) technique and data analysis procedures, City of Ottawa wind comfort and safety criteria, architectural drawings provided by ACDF Architecture in November 2019, surrounding street layouts and existing and approved future building massing information obtained from the City of Ottawa, as well as recent site imagery via Google Earth Pro and the Copernicus Open Access Hub.

2. TERMS OF REFERENCE

The subject site is located at 1357 Baseline Road in Ottawa, Ontario and is situated on the north corner at the intersection of Baseline Road and Clyde Avenue. The proposed development comprises two 15-storey buildings. On the west side of the development, the Fridom Residence building rises approximately 52 meters (m) to the top of its mechanical penthouse, while on the east side the Signature Senior Residence building rises 49 m to the top of its mechanical penthouse. The buildings are connected by a stepped podium of one-storey on the south side and five storeys on the north side.

The development includes parking at grade and on three levels below grade. The ground floor plan of the development includes retail, lobby, and office spaces, as well as an indoor amenity space that leads to an outdoor amenity area on the west side of the Fridom Residence building. Level 2 of the Signature Senior Residence building comprises various indoor amenities. The remaining floors contain residential space. The floorplate steps back on the south side at Level 2 to create a horseshoe building planform and an outdoor amenity area on the roof of the 1-storey podium. The two buildings share a 5-storey podium at the north end and rise independently from Levels 6-15.

Public spaces are included at grade level around the full perimeter of the subject site with amenity terraces on the west side and southwest corner of the site. The lower podium includes a large public outdoor terrace, which is mostly situated between the two buildings but also extends around the south side of the Signature Senior Residence building. The main entrances to the Fridom Residence building, Health Centre, and Signature Senior Residence building are situated on the north side, while retail entrances are located on the south side fronting Baseline Road.

Regarding wind exposures, the near-field surroundings of the subject site (defined as an area falling within a 500-m radius of the site) will experience urban wind exposures from the west clockwise to the northwest of the site due to the presence of the High-Rise Manor complex, a mix of open and suburban wind exposures from the north clockwise to the south, and predominantly suburban exposures for the remaining compass directions. The far-field surroundings (defined as the area beyond the near field and within a five kilometer (km) radius) are characterized by a mix of open and suburban wind exposures. From the northwest clockwise to north, the terrain is primarily suburban, while the presence of isolated tall buildings (1205-1305 Baseline Road) produce an urban exposure that acts to decrease the mean wind, while the presence of the Ottawa River produces an open exposure within this area that acts to increase the mean wind while decreasing turbulence intensity. From the northeast clockwise to east, the terrain is predominantly suburban, although the presence of Dow's Lake and the Ottawa Experimental Farm contribute an open exposure within this quadrant, resulting in a mixed open-suburban exposure. The remaining compass directions produce suburban exposures, with isolated open areas that increase the mean wind. Figure 1 illustrates the subject site and surrounding context, while Figures 2A-2D illustrate the computational model used to conduct the study.

3. OBJECTIVES

The principal objectives of this study are to (i) determine pedestrian level wind comfort and safety conditions at key areas within and surrounding the subject site; (ii) identify areas where wind conditions may interfere with the intended uses of outdoor spaces; and (iii) recommend suitable mitigation measures, where required.

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ENGINEERS & SCIENTISTS

4. METHODOLOGY

The approach followed to quantify pedestrian wind conditions over the subject site is based on CFD simulations of wind speeds across the subject site and its surroundings within a virtual environment, meteorological analysis of the Ottawa area wind climate, and synthesis of computational data with City of Ottawa wind comfort and safety criteria[1]. The following sections describe the analysis procedures, including a discussion of the noted pedestrian wind criteria.

4.1 Computer-Based Context Modelling

A computer-based PLW study was performed to determine the influence of the wind environment on pedestrian comfort over the proposed development site. Pedestrian comfort predictions, based on the mechanical effects of wind, were determined by combining measured wind speed data from CFD simulations with statistical weather data obtained for Ottawa Macdonald-Cartier International Airport.

The general concept and approach to CFD modelling is to represent building and topographic details in the immediate vicinity of the study site on the surrounding model, and to create suitable atmospheric wind profiles at the model boundary. The wind profiles are designed to have similar mean and turbulent wind properties consistent with actual site exposures.

An industry standard practice is to omit trees, vegetation, and other existing and planned landscape elements from the model due to the difficulty of providing accurate seasonal representation of vegetation. The omission of trees and other landscaping elements produces slightly more conservative (i.e., windier) wind speed values.

4.2 Wind Speed Measurements

The PLW analysis was performed by simulating wind flows and gathering velocity data over a CFD model of the site for 12 wind directions. The CFD simulation model was centered on the study building, complete with surrounding massing within a diameter of approximately 1,040 m.

[1] City of Ottawa Terms of References: Wind Analysis
https://documents.ottawa.ca/sites/default/files/torwindanalysis_en.pdf

Mean and peak wind speed data obtained over the study site for each wind direction were interpolated to 36 wind directions at 10° intervals, representing the full compass azimuth. Measured wind speeds approximately 1.5 m above local grade, and 1.5 m above the various amenity terraces, were referenced to the wind speed at gradient height to generate mean and peak velocity ratios, which were used to calculate full-scale values. The gradient height represents the theoretical depth of the boundary layer of the earth's atmosphere, above which the mean wind speed remains constant. Appendices A and B provide greater detail of the theory behind wind speed measurements.

4.3 Meteorological Data Analysis

A statistical model for winds in Ottawa was developed from approximately 40 years of hourly meteorological wind data recorded at Ottawa Macdonald-Cartier International Airport and obtained from Environment and Climate Change Canada. Wind speed and direction data were analyzed for each month of the year in order to determine the statistically prominent wind directions and corresponding speeds, and to characterize similarities between monthly weather patterns. Based on this portion of analysis, the four seasons are represented by grouping data from consecutive months based on similarity of weather patterns, and not according to the traditional calendar method. Summer is defined as June-September, autumn as October and November, winter as December-March, and spring as April and May.

The statistical model of the Ottawa area wind climate, which indicates the directional character of local winds on a seasonal basis, is illustrated on the following page. The plots illustrate the seasonal distribution of measured wind speeds and directions in kilometers per hour (km/h). Probabilities of occurrence of different wind speeds are represented as stacked polar bars in sixteen azimuth divisions. The radial direction represents the percentage of time for various wind speed ranges per wind direction during the measurement period. The preferred wind speeds and directions can be identified by the longer length of the bars. For Ottawa, the most common winds occur for westerly wind directions, followed by those from the east, while the most common wind speeds are below 36 km/h. The directional preference and relative magnitude of wind speed changes somewhat from season to season.

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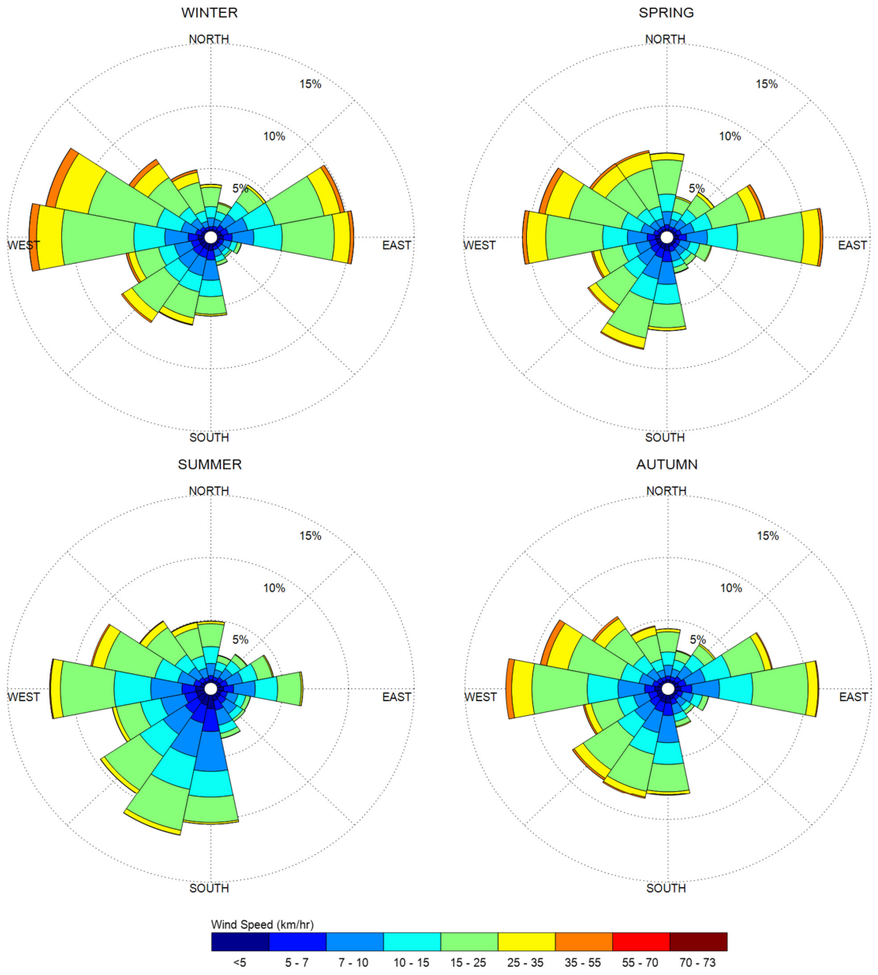
SEASONAL DISTRIBUTION OF WINDS FOR VARIOUS DIRECTIONS
OTTAWA MACDONALD-CARTIER INTERNATIONAL AIRPORT



Notes:

1. Radial distances indicate percentage of time of wind events.
2. Wind speeds are mean hourly in km/h, measured at 10 m above the ground.

4.4 Pedestrian Comfort and Safety Criteria – City of Ottawa

Pedestrian comfort and safety criteria are based on the mechanical effects of wind without consideration of other meteorological conditions (i.e., temperature, relative humidity). The comfort guidelines assume that pedestrians are appropriately dressed for a specified outdoor activity during any given season. Five pedestrian comfort classes are based on 80% non-exceedance mean wind speed ranges, which include (1) Sitting; (2) Standing; (3) Strolling; (4) Walking; and (5) Uncomfortable. More specifically, the comfort classes and associated mean wind speed ranges are summarized as follows:

1) **Sitting:** Mean wind speeds no greater than 10 km/h occurring at least 80% of the time. The gust equivalent mean wind speed is approximately 16 km/h.

2) **Standing:** Mean wind speeds no greater than 14 km/h occurring at least 80% of the time. The gust equivalent mean wind speed is approximately 22 km/h.

3) **Strolling:** Mean wind speeds no greater than 17 km/h occurring at least 80% of the time. The gust equivalent mean wind speed is approximately 27 km/h.

4) **Walking:** Mean wind speeds no greater than 20 km/h occurring at least 80% of the time. The gust equivalent mean wind speed is approximately 32 km/h.

5) **Uncomfortable:** Uncomfortable conditions are characterized by predicted values that fall below the 80% target for walking. Brisk walking and exercise, such as jogging, would be acceptable for moderate excesses of this criterion.

The pedestrian safety wind speed criterion is based on the approximate threshold that would cause a vulnerable member of the population to fall. A 0.1% exceedance gust wind speed of 90 km/h is classified as dangerous. The gust speeds, and equivalent mean speeds, are selected based on 'The Beaufort Scale', presented on the following page, which describes the effects of forces produced by varying wind speed levels on objects. Gust speeds are included because pedestrians tend to be more sensitive to wind gusts than to steady winds for lower wind speed ranges. For strong winds approaching dangerous levels, this effect is less important because the mean wind can also create problems for pedestrians. The mean gust speed ranges are selected based on 'The Beaufort Scale', which describes the effect of forces produced by varying wind speeds on levels on objects.

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THE BEAUFORT SCALE

Number	Description	Wind Speed (km/h)	Description
2	Light Breeze	6-11	Wind felt on faces
3	Gentle Breeze	12-19	Leaves and small twigs in constant motion; Wind extends light flags
4	Moderate Breeze	20-28	Wind raises dust and loose paper; Small branches are moved
5	Fresh Breeze	29-38	Small trees in leaf begin to sway
6	Strong Breeze	39-49	Large branches in motion; Whistling heard in electrical wires; Umbrellas used with difficulty
7	Moderate Gale	50-61	Whole trees in motion; Inconvenient walking against wind
8	Gale	62-74	Breaks twigs off trees; Generally impedes progress

Experience and research on people's perception of mechanical wind effects has shown that if the wind speed levels are exceeded for more than 80% of the time, the activity level would be judged to be uncomfortable by most people. For instance, if a mean wind speed of 10 km/h (gust equivalent mean wind speed of 16 km/h) was exceeded for more than 20% of the time most pedestrians would judge that location to be too windy for sitting. Similarly, if mean wind speed of 20 km/h (gust equivalent mean wind speed of 32 km/h) at a location were exceeded for more than 20% of the time, walking or less vigorous activities would be considered uncomfortable. As most of these criteria are based on subjective reactions of a population to wind forces, their application is partly based on experience and judgment.

Once the pedestrian wind speed predictions have been established at tested locations, the assessment of pedestrian comfort involves determining the suitability of the predicted wind conditions for their associated spaces. This step involves comparing the predicted comfort class to the desired comfort class, which is dictated by the location type represented by the sensor (i.e., a sidewalk, building entrance, amenity space, or other). An overview of common pedestrian location types and their desired comfort classes are summarized on the following page.

DESIRED PEDESTRIAN COMFORT CLASSES FOR VARIOUS LOCATION TYPES

Location Types	Desired Comfort Classes
Major Building Entrances	Standing
Secondary Building Access Points	Walking
Primary Public Sidewalks	Strolling
Secondary Public Sidewalks / Bicycle Paths	Walking
Outdoor Amenity Spaces	Sitting / Standing / Strolling
Cafés / Patios / Benches / Gardens	Sitting
Transit Shelters	Standing
Public Parks / Plazas	Standing / Strolling
Garage / Service Entrances	Walking
Parking Lots	Strolling / Walking
Vehicular Drop-Off Zones	Standing / Strolling / Walking

5. RESULTS AND DISCUSSION

The foregoing discussion of predicted pedestrian wind conditions is accompanied by Figures 3A-6B (following the main text) illustrating the seasonal wind conditions at grade level and within the common amenity terraces at grade level and Level 2. The colour contours indicate various comfort classes predicted for certain regions. Wind conditions comfortable for sitting or more sedentary activities are represented by the colour green, standing are represented by yellow, strolling by orange, and conditions suitable for walking are represented by blue. The colour magenta represents wind conditions considered uncomfortable for walking. In addition to the standard wind comfort class results, Figures 7A-7D illustrate the percentage of time the amenity terraces will be suitable for sitting on a seasonal basis. Pedestrian wind comfort is summarized below for each seasonal period.

5.1 Wind Comfort Conditions – Grade level

Following the introduction of the subject site, wind conditions at grade level within and surrounding the site are predicted to be moderately calm during the summer season and moderately windy throughout the remaining colder seasons.

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- Spring Season: Wind conditions are predicted to be suitable for a mix of sitting and standing around most of the site. Conditions to the north of the site are predicted to be suitable for a mix of standing and strolling (Figure 3A).
- Summer Season Wind conditions are predicted to be suitable for sitting over most areas, while conditions to the north of the site are predicted to be mostly suitable for standing (Figure 4A).
- Autumn Season Conditions are similar to those predicted during the spring season, but somewhat calmer (Figure 5A).
- Winter Season Conditions are similar to those predicted during the spring season, but moderately windier (Figure 6A).

Wind speeds are predicted to satisfy the strolling comfort class, or better, over all pedestrian areas, which is acceptable. Primary building entrances are predicted to be suitable for standing or better throughout the year. While wind channelling is predicted to impact the laneway area along the north side of the subject site, pedestrian wind comfort is predicted to be suitable for strolling, or better, throughout the year, which is acceptable.

5.2 Wind Comfort Conditions – West Grade Level Amenity Terrace

Wind conditions within the amenity terrace situated on the west side of the study site at grade level are predicted to be calm and acceptable for sitting during the spring, summer, and autumn seasons. During the winter season, conditions are predicted to be mostly suitable for sitting with the southwest corner of the terrace becoming suitable for standing (Figure 6B). Figure 7D indicates that this terrace will be suitable for sitting for at least 75% of the time during the winter season without mitigation.

5.3 Wind Comfort Conditions – Southwest Grade Level Amenity Terrace

The following discussion is focused on wind conditions within the terrace situated on the southwest corner of the study site; pedestrian wind comfort is summarized below for each seasonal period.

- Spring Season: Conditions are predicted to be mostly suitable for sitting, with isolated regions suitable for standing near the west side and southwest corner of the terrace (3B). Additionally, Figure 7A indicates that the entire terrace will be suitable for sitting for at least 70% of the time during the spring season without mitigation.
- Summer Season Conditions are predicted to be suitable for sitting (Figure 4B).
- Autumn Season Conditions are predicted to be suitable for sitting (Figure 5B).
- Winter Season Conditions are similar to those predicted during the spring season (Figure 6B). Additionally, Figure 7D indicates that the entire terrace will be suitable for sitting for at least 70% of the time during the winter season without mitigation.

Conditions within the southwest amenity terrace are suitable for the anticipated uses during the typical use period of late spring through early autumn without mitigation.

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5.4 Wind Comfort Conditions – Level 2 Amenity Terrace

The following discussion is focused on wind conditions within the Level 2 amenity terrace; pedestrian wind comfort is summarized below for each seasonal period. Based on the architectural drawings provided at the time of the study, perimeter guardrails were not modelled. The introduction of guardrails along the exposed perimeter of the terrace would result in calmer wind conditions within the main roof area.

- Spring Season: Conditions are predicted to be mostly suitable for sitting, with a region suitable for standing on the south side of the terrace. The main roof area between the two buildings is suitable for sitting (Figure 3B). Figure 7A indicates this terrace is suitable for sitting for at least 70% of the time, with isolated regions suitable for sitting for at least 60% of the time near the south and southeast corners of the terrace during the spring season.
- Summer Season Conditions are predicted to be suitable for sitting (Figure 4B).
- Autumn Season Conditions are similar to those predicted during the spring season, but moderately calmer (Figure 5B). Figure 7C indicates that most of this terrace will be suitable for sitting for at least 75% of the time.
- Winter Season Conditions are similar to those predicted during the spring season, as illustrated in Figure 6B. Figure 7D indicates that most of the terrace will also be suitable for sitting for at least 70% of the time.

Conditions within the Level 2 amenity terrace are suitable for the anticipated uses during the typical use period of late spring through early autumn without mitigation. The introduction of standard-height guardrails along the exposed perimeter is expected to further improve wind conditions, particularly within the windier areas near the southern edge of the terrace.

5.5 Wind Comfort Conditions – Surrounding Area Beyond the Subject Site

Wind conditions over surrounding sidewalks beyond the development site, as well as at nearby primary building entrances, will be acceptable for their intended pedestrian uses during each seasonal period upon the introduction of the subject site. Pedestrian wind comfort and safety have been quantified for the specific configuration of existing and foreseeable construction around the study site. Future changes (i.e., construction or demolition) of these surroundings may cause changes to the wind effects in two ways, namely: (i) changes beyond the immediate vicinity of the site would alter the wind profile approaching the site; and (ii) development in proximity to the site would cause changes to local flow patterns. More specifically, development in urban centers generally creates reduction in the mean wind and localized increases in the gustiness of the wind.

6. SUMMARY

A complete summary of the predicted wind comfort and safety conditions at grade level and within the amenity terraces is provided in Section 5 of this report and illustrated in Figures 3A-6B, and Figures 7A-7D (following the main text). Based on computer simulations using the CFD technique, meteorological data analysis of the Ottawa wind climate, City of Ottawa wind comfort and safety criteria, and experience with similar developments in Ottawa, we conclude the following:

4) Wind comfort conditions within and surrounding the subject site at grade level are predicted to be mostly calm and acceptable for all anticipated uses throughout the year. Of importance, primary building entrances are predicted to be suitable for standing or better throughout the year. Additionally, while wind channelling is predicted to impact the laneway along the north side of the subject site, conditions are predicted to be suitable for strolling, or better, throughout the year. The noted conditions are considered acceptable for the anticipated uses of the areas.

5) Regarding the amenity terraces, wind conditions are predicted to be mostly calm and acceptable during the typical use period of late spring through early autumn, as described in Section 5.

6) Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no areas surrounding the subject site at grade level were found to experience conditions that are classified as uncomfortable or dangerous.

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This concludes our pedestrian level wind study and report. Please advise the undersigned of any questions or comments.

Sincerely,

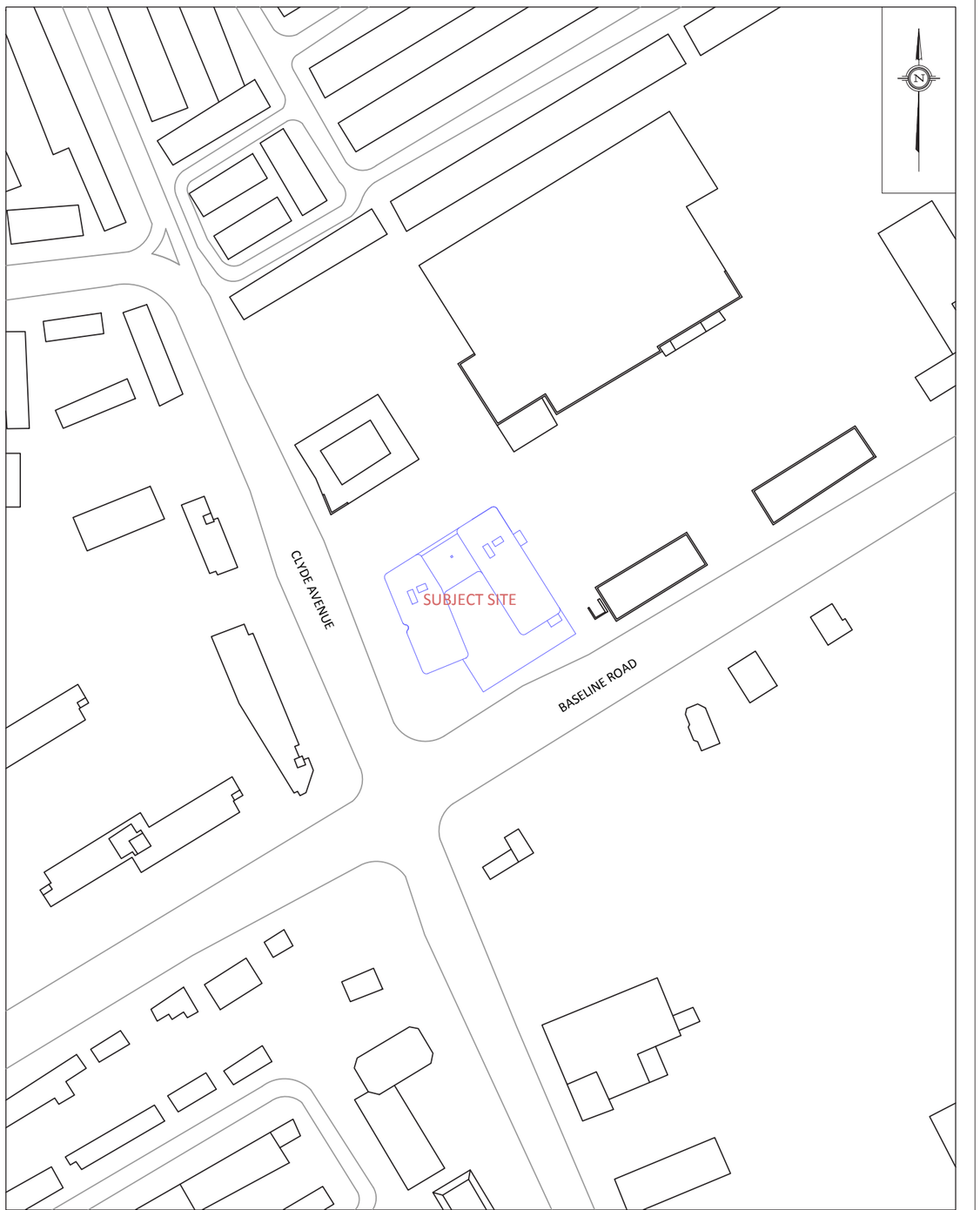
Gradient Wind Engineering Inc.

Edward Urbanski, M.Eng.
Junior Wind Scientist

Justin Ferraro, P.Eng.
Principal

Sacha Ruzzante, MASc.
Junior Wind Scientist

Gradient Wind File #19-141



GRADIENTWIND	PROJECT: 1357 BASELINE ROAD, OTTAWA PEDESTRIAN LEVEL WIND STUDY	DESCRIPTION
	SCALE:	DRAWING NO:

FIGURE 1:

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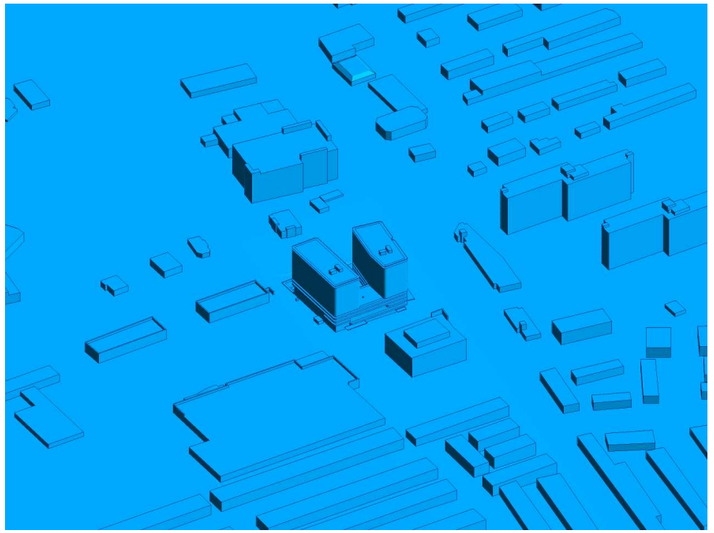

FIGURE 2A: COMPUTATIONAL MODEL, NORTH PERSPECTIVE

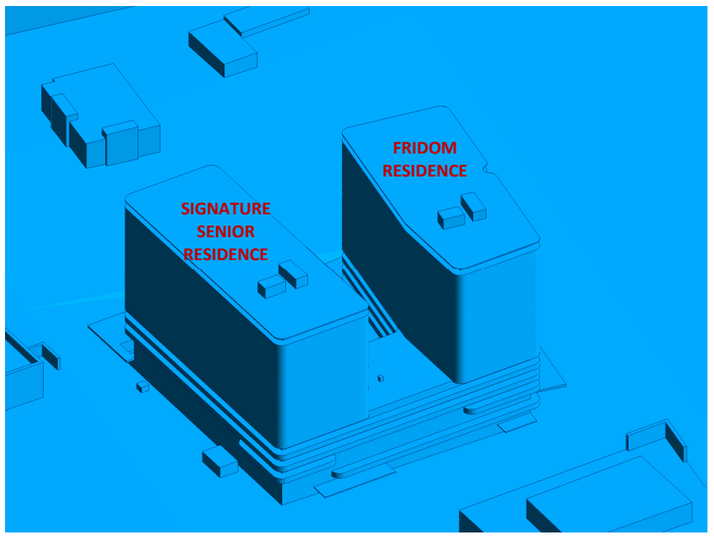

FIGURE 2B: CLOSE UP OF FIGURE 2A

FIGURE 2C: COMPUTATIONAL MODEL, SOUTH PERSPECTIVE

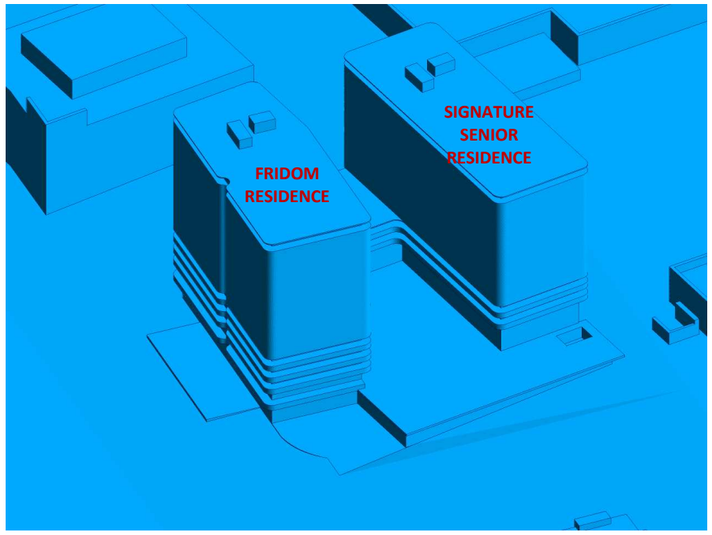

FIGURE 2D: CLOSE UP OF FIGURE 2C

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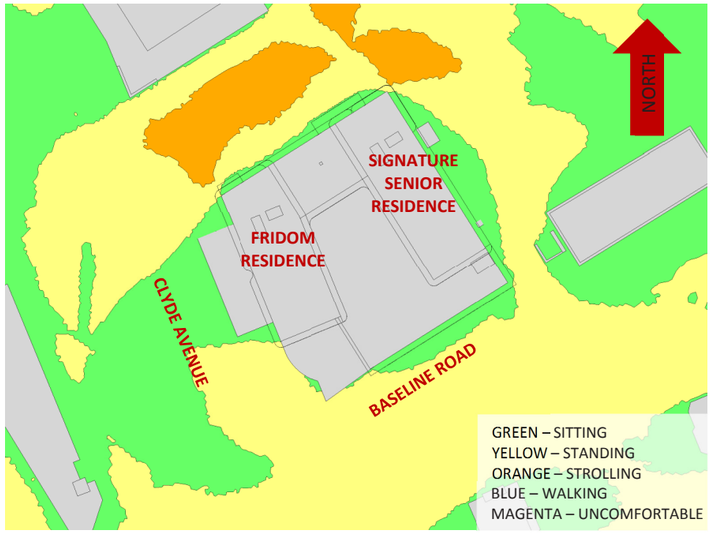

FIGURE 3A: SPRING – WIND CONDITIONS AT GRADE LEVEL

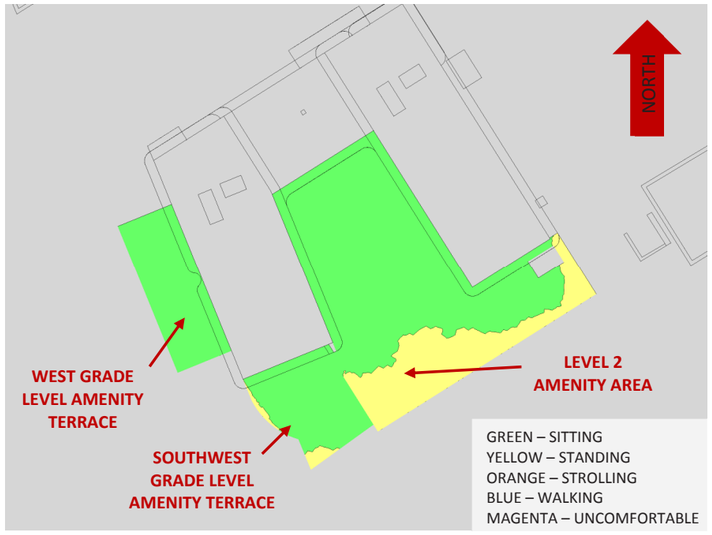

FIGURE 3B: SPRING – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES

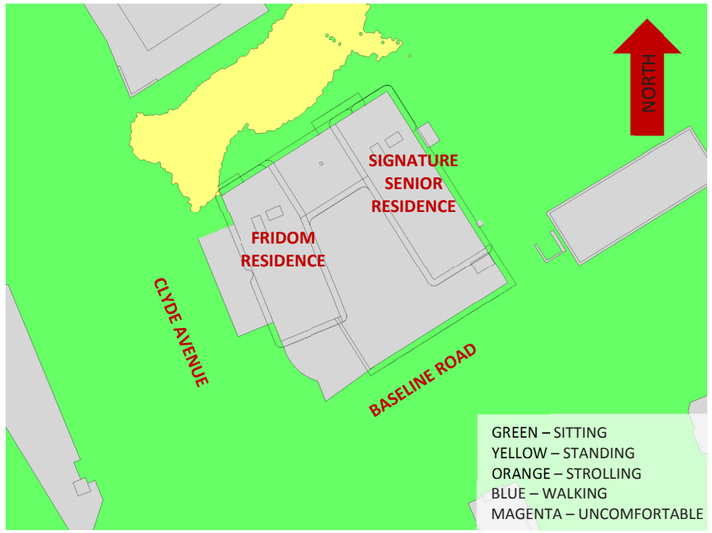

FIGURE 4A: SUMMER – WIND CONDITIONS AT GRADE LEVEL

FIGURE 4B: SUMMER – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES

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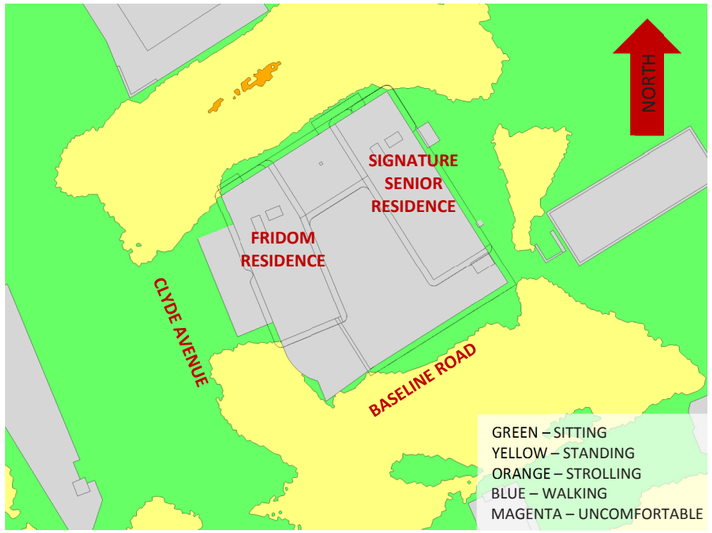

FIGURE 5A: AUTUMN – WIND CONDITIONS AT GRADE LEVEL

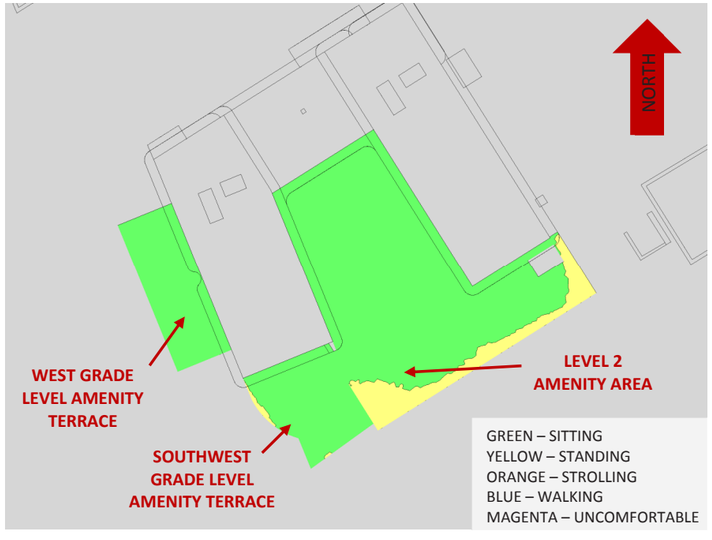

FIGURE 5B: AUTUMN – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES

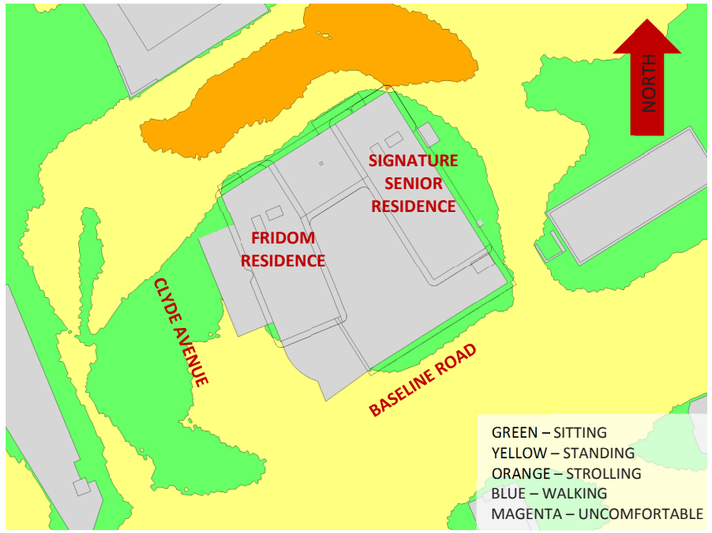

FIGURE 6A: WINTER – WIND CONDITIONS AT GRADE LEVEL

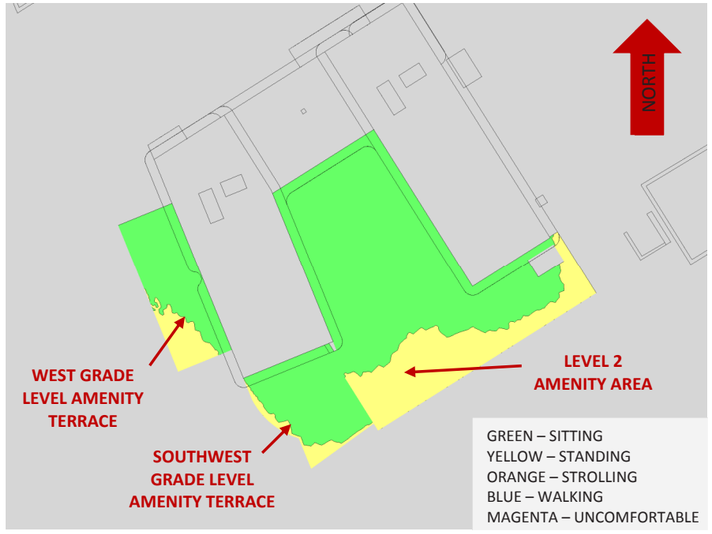

FIGURE 6B: WINTER – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES

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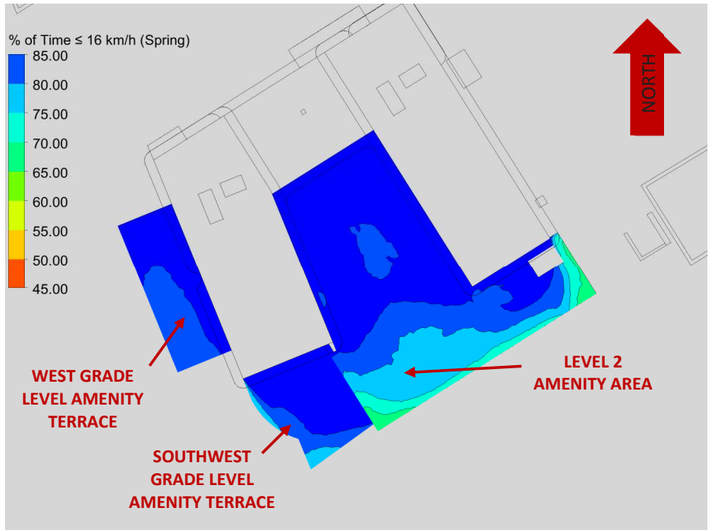

FIGURE 7A: SPRING – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)

FIGURE 7B: SUMMER – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)

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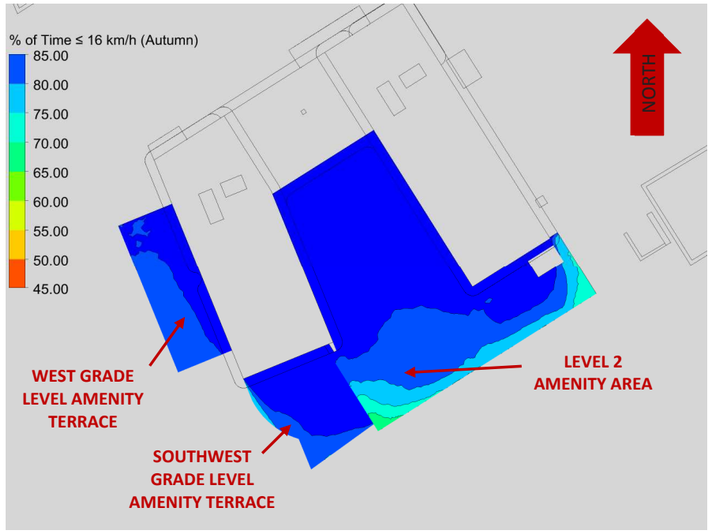

FIGURE 7C: AUTUMN – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)

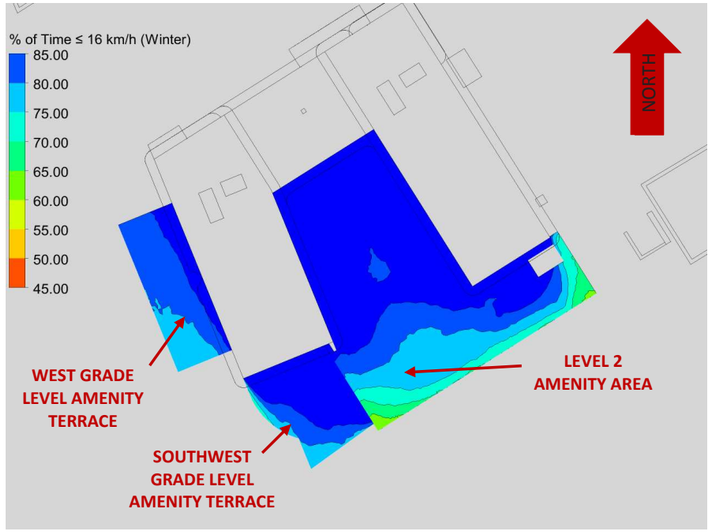

FIGURE 7D: WINTER – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)

APPENDIX A

SIMULATION OF THE NATURAL WIND

The information contained within this appendix is offered to provide a greater understanding of the relationship between the physical wind tunnel testing method and virtual computer-based simulations

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SIMULATION OF THE NATURAL WIND

Wind flowing over the surface of the earth develops a boundary layer due to the drag produced by surface features such as vegetation and man-made structures. Within this boundary layer, the mean wind speed varies from zero at the surface to the gradient wind speed at the top of the layer. The height of the top of the boundary layer is referred to as the gradient height, above which the velocity remains more-or-less constant for a given synoptic weather system. The mean wind speed is taken to be the average value over one hour. Superimposed on the mean wind speed are fluctuating (or turbulent) components in the longitudinal (i.e. along wind), vertical and lateral directions. Although turbulence varies according to the roughness of the surface, the turbulence level generally increases from nearly zero (smooth flow) at gradient height to maximum values near the ground. While for a calm ocean the maximum could be 20%, the maximum for a very rough surface such as the center of a city could be 100%, or equal to the local mean wind speed. The height of the boundary layer varies in time and over different terrain roughness within the range of 400 metres (m) to 600 m.

Simulating real wind behaviour in a wind tunnel, or by computational simulations (CFD), requires simulating the variation of mean wind speed with height, simulating the turbulence intensity, and matching the typical length scales of turbulence. It is the ratio between wind tunnel turbulence length scales and turbulence scales in the atmosphere that determines the geometric scales that models can assume in a wind tunnel. Hence, when a 1:200 scale model is quoted, this implies that the turbulence scales in the wind tunnel and the atmosphere have the same ratios. Some flexibility in this requirement has been shown to produce reasonable wind tunnel predictions compared to full scale. In model scale the mean and turbulence characteristics of the wind are obtained with the use of spires at one end of the tunnel and roughness elements along the floor of the tunnel. The fan is located at the model end and wind is pulled over the spires, roughness elements and model. It has been found that, to a good approximation, the mean wind profile can be represented by a power law relation, shown below, giving height above ground versus wind speed.

$$U = U_g \left(\frac{Z}{Z_g} \right)^{\alpha}$$

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Where; U = mean wind speed, U_g = gradient wind speed, Z = height above ground, Z_g = depth of the boundary layer (gradient height) and α is the power law exponent.

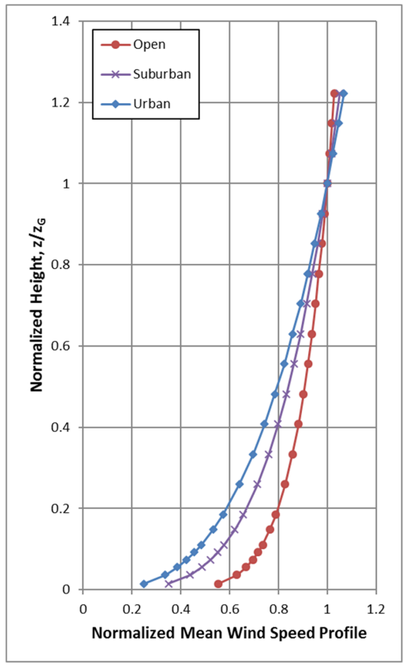
Figure A1 on the following page plots three velocity profiles for open country, and suburban and urban exposures. The exponent α varies according to the type of upwind terrain; α ranges from 0.14 for open country to 0.33 for an urban exposure. Figure A2 illustrates the theoretical variation of turbulence for open country, suburban and urban exposures.

The integral length scale of turbulence can be thought of as an average size of gust in the atmosphere. Although it varies with height and ground roughness, it has been found to generally be in the range of 100 m to 200 m in the upper half of the boundary layer. Thus, for a 1:300 scale, the model value should be between 1/3 and 2/3 of a metre. Integral length scales are derived from power spectra, which describe the energy content of wind as a function of frequency. There are several ways of determining integral length scales of turbulence. One way is by comparison of a measured power spectrum in model scale to a non-dimensional theoretical spectrum such as the Davenport spectrum of longitudinal turbulence. Using the Davenport spectrum, which agrees well with full-scale spectra, one can estimate the integral scale by plotting the theoretical spectrum with varying L until it matches as closely as possible the measured spectrum:

$$f \times S(f) = \frac{\frac{4(Lf)^2}{U_{10}^{\ 2}}}{\left[1 + \frac{4(Lf)^2}{U_{10}^{\ 2}}\right]^{\frac{4}{3}}}$$

Where, f is frequency, S(f) is the spectrum value at frequency f, U10 is the wind speed 10 m above ground level, and L is the characteristic length of turbulence.

Once the wind simulation is correct, the model, constructed to a suitable scale, is installed at the centre of the working section of the wind tunnel. Different wind directions are represented by rotating the model to align with the wind tunnel center-line axis.



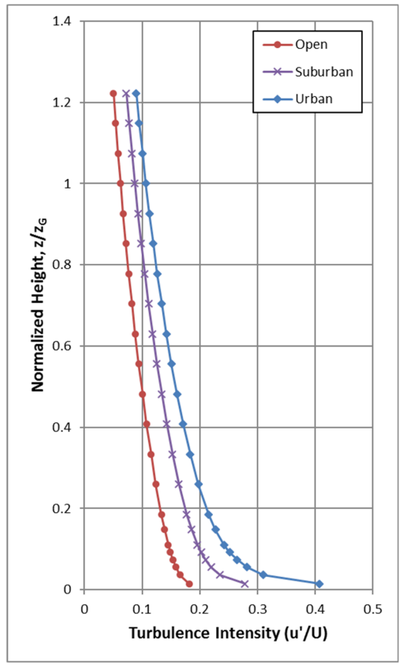


FIGURE A1 (LEFT): MEAN WIND SPEED PROFILES;
FIGURE A2 (RIGHT): TURBULENCE INTENSITY PROFILES

REFERENCES

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APPENDIX B

PEDESTRIAN LEVEL WIND MEASUREMENT METHODOLOGY

The information contained within this appendix is offered to provide a greater understanding of the relationship between the physical wind tunnel testing method and virtual computer-based simulations

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PEDESTRIAN LEVEL WIND MEASUREMENT METHODOLOGY

Pedestrian level wind studies are performed in a wind tunnel on a physical model of the study buildings at a suitable scale. Instantaneous wind speed measurements are recorded at a model height corresponding to 1.5 m full scale using either a hot wire anemometer or a pressure-based transducer. Measurements are performed at any number of locations on the model and usually for 36 wind directions. For each wind direction, the roughness of the upwind terrain is matched in the wind tunnel to generate the correct mean and turbulent wind profiles approaching the model.

The hot wire anemometer is an instrument consisting of a thin metallic wire conducting an electric current. It is an omni-directional device equally sensitive to wind approaching from any direction in the horizontal plane. By compensating for the cooling effect of wind flowing over the wire, the associated electronics produce an analog voltage signal that can be calibrated against velocity of the air stream. For all measurements, the wire is oriented vertically so as to be sensitive to wind approaching from all directions in a horizontal plane.

The pressure sensor is a small cylindrical device that measures instantaneous pressure differences over a small area. The sensor is connected via tubing to a transducer that translates the pressure to a voltage signal that is recorded by computer. With appropriately designed tubing, the sensor is sensitive to a suitable range of fluctuating velocities.

For a given wind direction and location on the model, a time history of the wind speed is recorded for a period of time equal to one hour in full-scale. The analog signal produced by the hot wire or pressure sensor is digitized at a rate of 400 samples per second. A sample recording for several seconds is illustrated in Figure B1. This data is analyzed to extract the mean, root-mean-square (rms) and the peak of the signal. The peak value, or gust wind speed, is formed by averaging a number of peaks obtained from sub-intervals of the sampling period. The mean and gust speeds are then normalized by the wind tunnel gradient wind speed, which is the speed at the top of the model boundary layer, to obtain mean and gust ratios. At each location, the measurements are repeated for 36 wind directions to produce normalized polar plots, which will be provided upon request.

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In order to determine the duration of various wind speeds at full scale for a given measurement location the gust ratios are combined with a statistical (mathematical) model of the wind climate for the project site. This mathematical model is based on hourly wind data obtained from one or more meteorological stations (usually airports) close to the project location. The probability model used to represent the data is the Weibull distribution expressed as:

$$P\left(>U_g\right) = A_\theta \bullet \exp\left[\left(-\frac{U_g}{C_\theta}\right)^{K\theta}\right]$$

Where,

P (> U_g) is the probability, fraction of time, that the gradient wind speed ***U_g*** is exceeded; ***θ*** is the wind direction measured clockwise from true north, ***A***, ***C***, ***K*** are the Weibull coefficients, (Units: A - dimensionless, C - wind speed units [km/h] for instance, K - dimensionless). ***A_θ*** is the fraction of time wind blows from a 10° sector centered on ***θ***.

Analysis of the hourly wind data recorded for a length of time, on the order of 10 to 30 years, yields the ***A_θ, C_θ*** and ***K_θ*** values. The probability of exceeding a chosen wind speed level, say 20 km/h, at sensor *N* is given by the following expression:

$$P_N\left(>20\right) = \Sigma_\theta P\left[\frac{\left(>20\right)}{\left(\frac{U_N}{U_g}\right)}\right]$$

$$P_N\,(>20) \;=\; \Sigma_\theta P\,\{>20/(U_N/Ug)\}$$

Where, ***U_N/U_g*** is the gust velocity ratios, where the summation is taken over all 36 wind directions at 10° intervals.

If there are significant seasonal variations in the weather data, as determined by inspection of the C_θ and K_θ values, then the analysis is performed separately for two or more times corresponding to the groupings of seasonal wind data. Wind speed levels of interest for predicting pedestrian comfort are based on the comfort guidelines chosen to represent various pedestrian activity levels as discussed in the main text.

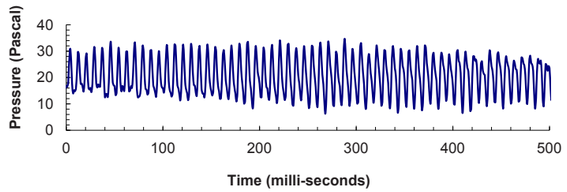

FIGURE B1: TIME VERSUS VELOCITY TRACE FOR A TYPICAL WIND SENSOR

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