1357 BASELINE ROAD, OTTAWA SMARTCENTRES AND GROUPE SELECTION

Urban Design Review Panel Submission - Formal Review June 5th, 2020













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INTRODUCTION



SMARTCENTRES

SmartCentres Real Estate Investment Trust is the culmination of a longstanding 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.



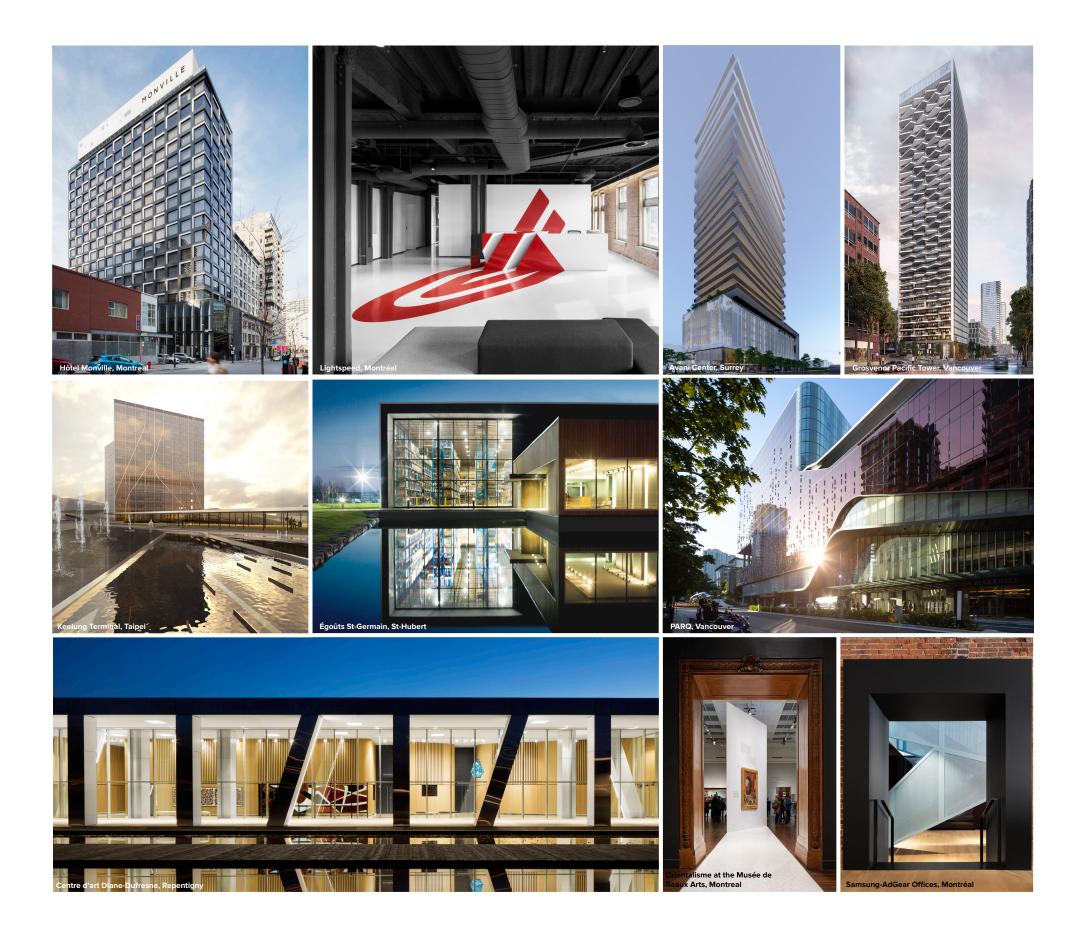
CREATORS OF LIVING ENVIRONMENTS

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."



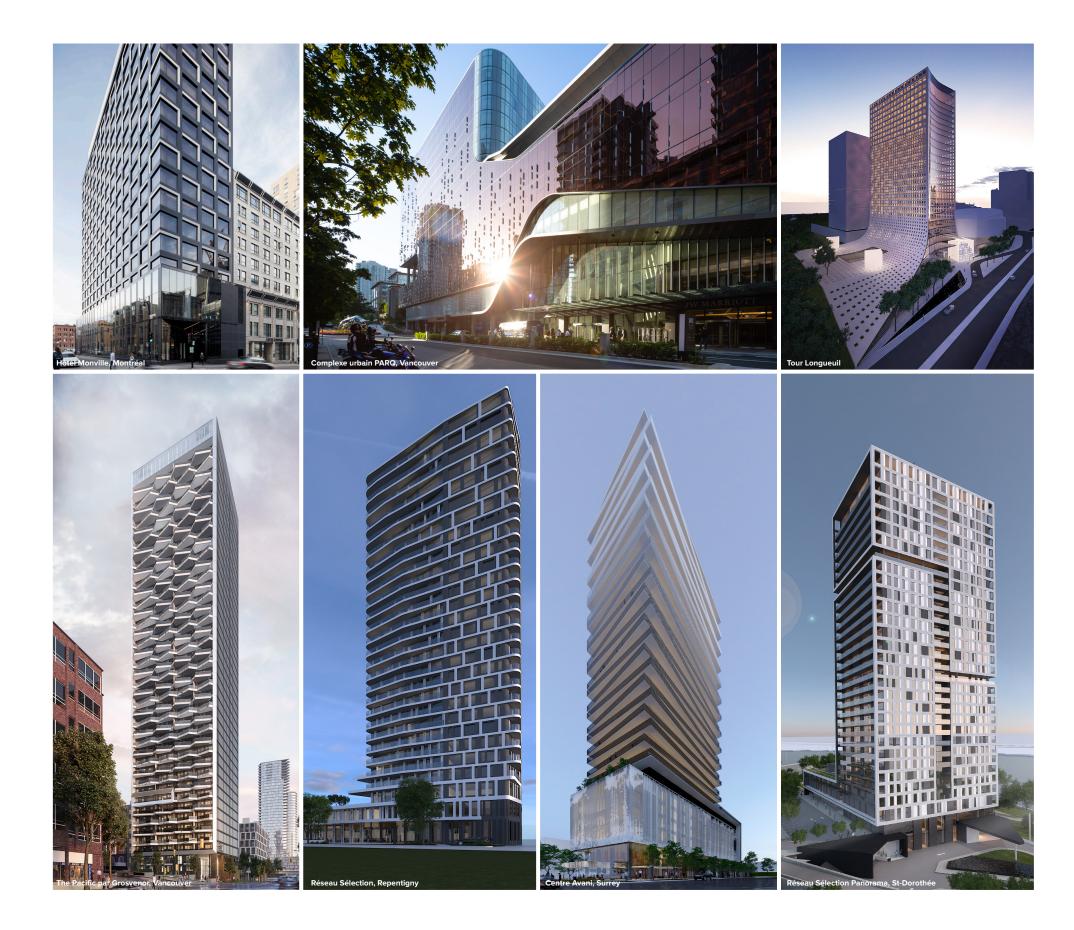
After having worked for about fifteen years for different architectural firms as landscape manager in the Landscaping section, Jean-Jacques Binoux, senior landscape architect, founded in 2000 the firm Version Paysage which offers all the services in landscape and urban design, as well as all the skills 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»



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-peo**ple** 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.



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

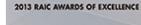
Lucien L'Allier condominiums, Montréal (520 units), 120M\$, en cours de réalisation

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

ANADI ARCHITEC













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

PUBLICATIONS AND AWARDS

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

Urban Exception 1711 200 Senior Residence units 174 Rental apartments 55 to 74 for Rental apartments 75+ for Signature Senior Residence 244 spaces (residential + care rooms)

324 spaces (total) 150 bikes (residential) Bike parking: 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

20 spaces (retail) 60 spaces (visitor)

1357 Baseline road

AM Zone

548 m2

S248, S249

28 Care rooms

Location:

Zoning:

Residential Units:

Target Market:

Parking:

Retail/Commercial:

Floor space index*: 2,95 (proposed) 3,50 (maximum)

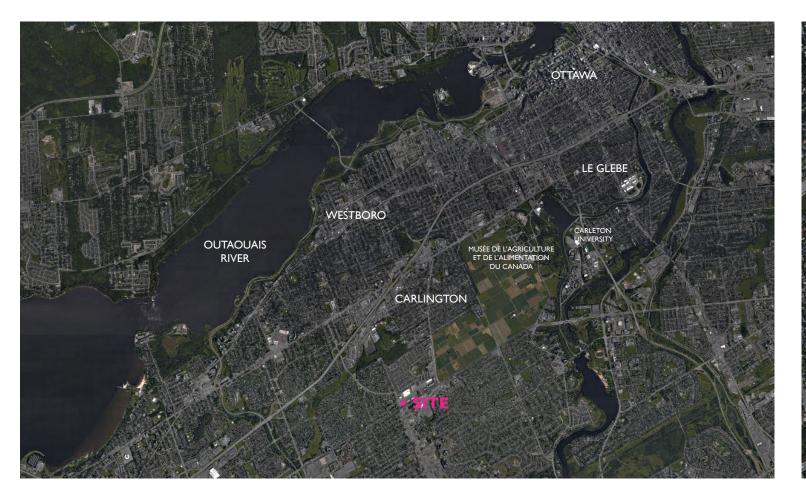
SUMMARY

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



PROPOSAL OVERVIEW

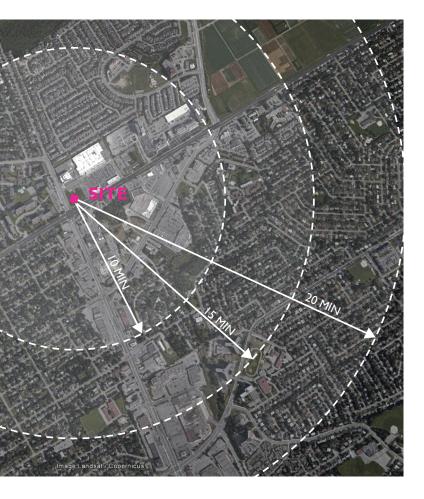
SITE CONTEXT AND ZONING



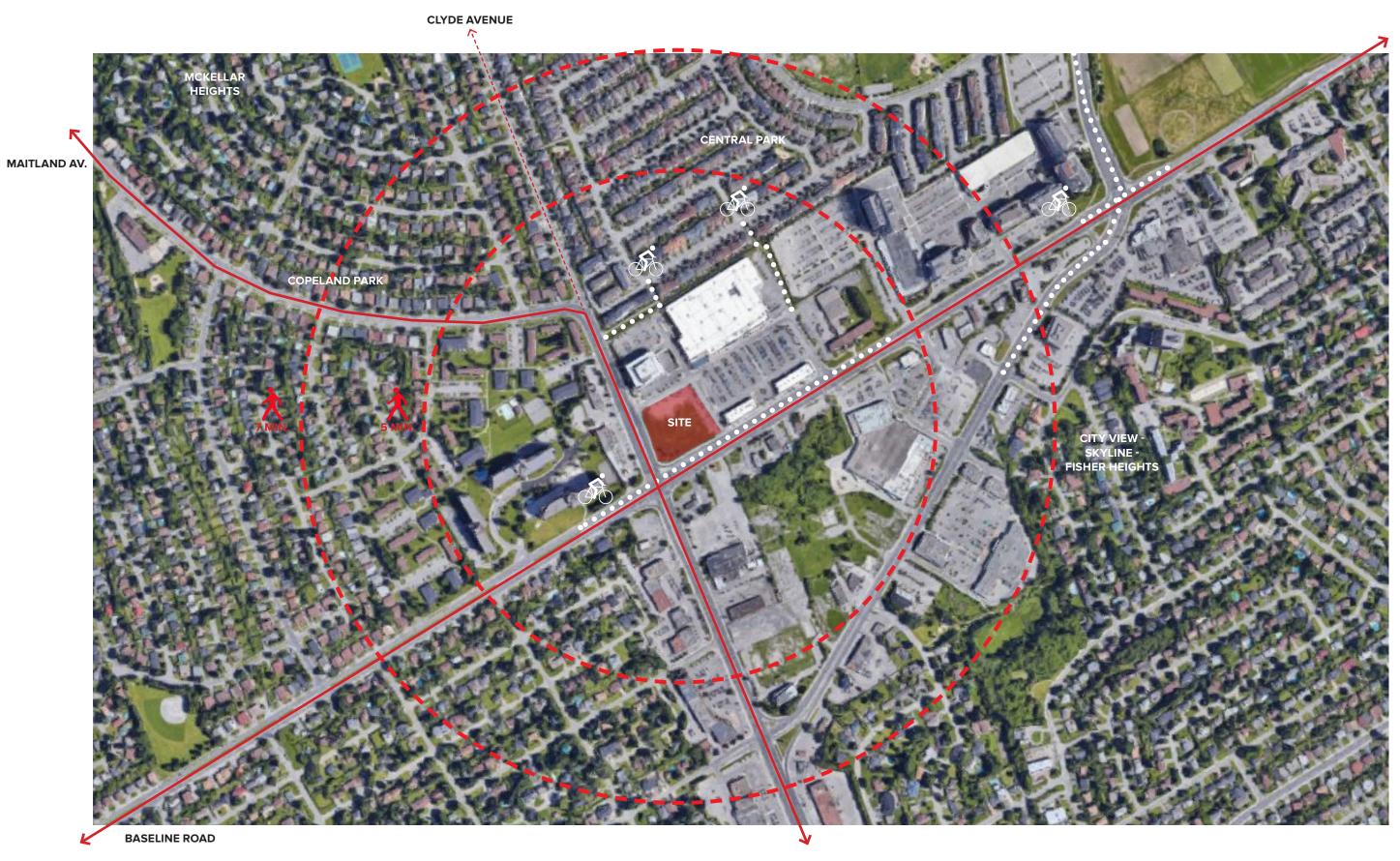
Site location

Walking distance

SITE LOCATION







CLYDE AVENUE / MERIVALE ROAD

1357 BASELINE ROAD, OTTAWA

SITE LOCATION





URBAN CONTEXT



ZONING	AM(1711), S248, S249		PARKING	Project is in Area B
PROPOSED PERMITTED USES Selected uses relevant to	Residential use:	Retirement home, Residential Care Facility and Ancillary uses to the above		City of Ottawa Zoni
project. See Section 185 of	Non-Residential use: Retail Store, Restaurant, Retail food store			Minimum Parking ra
Zoning By-law for complete list.	(City of Ottawa Zoning By-law - Section 185 AM Zone)			Retirement home:
			0.25 per dwelling u	
	Project may not be a residential use building, which would include solely			Retail Store: 2.5 per
	residential units			(City of Ottawa Zon
	(City of Ottawa Zoning By-law - Urban Exception 1711, 4)			
				Minimum Visitor Pa
MAX. FLOOR SPACE INDEX	3.5 if 80% or more of the required parking is provided below grade			(City of Ottawa Zon
	2 in other cases			Maximum Daulia au
	(City of Ottawa Zoning By-law - Section 185)			Maximum Parking r
				Retirement home: 1 Retail Store: 3.6 per
	Floor space index: rat	io of the <i>gross floor area</i> of a building on the total area of the		(City of Ottawa Zon
	lot on which the building is located			(City of Ottawa zon
	(City of Ottawa Zoning By-law - Section 54 Definitions)			A maximum of 750
				(City of Ottawa Zon
	Gross floor area: total area of each floor whether located above, at or below grade,			(0.0) 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
	measured from the interiors of outside walls and including floor area occupied by			An above grade pa
	interior walls and floor area created by bay windows, but excluding;			from the street and
	- floor area occupied by shared mechanical, service and electrical equipment that			features.
	serve the building		(City of Ottawa Zon	
	- common hallways, corridors; stairwells, elevator shafts and other voids, steps and			
	landings - bicycle parking; motor vehicle parking or loading facilities		Parking Space: Min	
	- common laundry, storage and washroom facilities that serve the building or te-			(City of Ottawa Zon
	nants	rage and washioon racinites that serve the building of te-		
	- common storage areas that are accessory to the principal use of the building			Parking Garage Ais
	- common amenity area and play areas accessory to a principal use on the lot			(City of Ottawa Zon
	- living quarters for a caretaker of the building			
	(City of Ottawa Zoning By-law - Section 54 Definitions)			
			BIKE PARKING	Min. bike parking sp
SETBACKS	Any building located v	vithin 20 metres of Baseline Road or Clyde Avenue must		(City of Ottawa Zon
	be setback to provide a minimum distance of 6.0 metres between the curb of any			Bicycle Parking Spa
		secured through a site plan approval along Baseline Road		
		d may not be setback more than a maximum of 7.0 metres	PERMITTED PROJECTION	Covered or uncove
	from the street edge I	ot line	INTO REQUIRED YARDS	The greater of 2m of
	(City of Ottawa Zoning By-law - Urban Exception 1711, 13)			closer than 1m to a
				City of Ottawa Zoni
BUILDING HEIGHT	Maximum: 25 meters, or 50 meters with 20 meter setback from Clyde and Baseline			-
	Minimum: 7 meters		GROUND FLOOR AREA	« except for any bui
	(City of Ottawa Zoning By-law - Schedule 248)			or office developme
				referenced by subs
	Mechanical, service, elevator or stairway penthouses can project above height limit			AM zone with lobby
	(City of Ottawa Zoning	g By-law - Schedule 64)		aggregate maximur
				(City of Ottawa Zon

« 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*)

ZONING SUMMARY

a B oning By-law - Section 101, Schedule 1A

g rate e: g unit + 1 per 100m2 of medical, health or personnal services per 100m2 of gross floor area *Coning By-law - Table 101, R20, N79)*

Parking Space Rate: 0.2 per dwelling unit *Coning By-law - Section 102)*

g rate: e: 1.75 per dwelling unit including visitor per 100m2 *Coning By-law - Section 103*)

50 surface parking spaces may be provided for the entire site. *Coning By-law - Urban Exception 1711, 18)*

parking garage is only permitted where it is screened from view nd adjacent residential zones by landscaping and architectural

Coning By-law - Urban Exception 1711, 8)

*I*in. Size: 2.6m x 5.2m *Coning By-law - Section 106, 1*)

Aisle Min. Width: 6.0m for double traffic lane *Coning By-law - Section 107, 1), a), iii)*

g spaces: 0.25 per dwelling or rooming unit *Coning By-law - Table 111A)* Space Provisions: See *City of Ottawa Zoning By-law - Table 111B*

overed balcony : m or 50% of the required front yard or corner side yard, but no a property line oning By-law - Section 65, Table 65, 6)

building located within the area to be reserved for residential oment as set out in clause 20(c) the ground floor of buildings as ubsection 13 shall be restricted to the main commercial uses of this oby areas and access areas for upper floor uses being limited to an num 15% of the GFA of the ground floor of each building.» *Coning By-law - Urban Exception 1711, 5*





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

We we to the South from Clyde avenue

1357 BASELINE ROAD, OTTAWA



9. View to the North 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.

DESIGN BRIEF

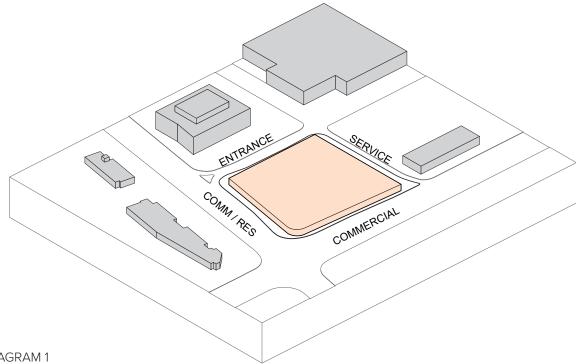
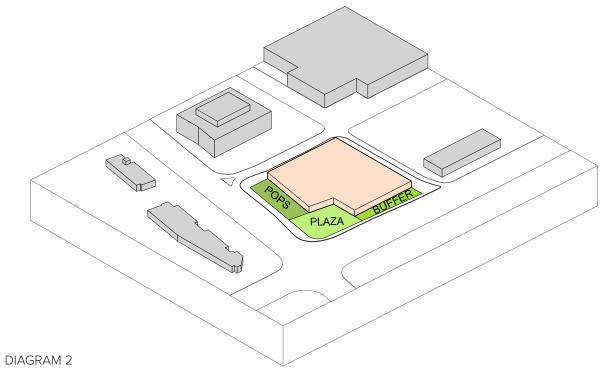


DIAGRAM 1

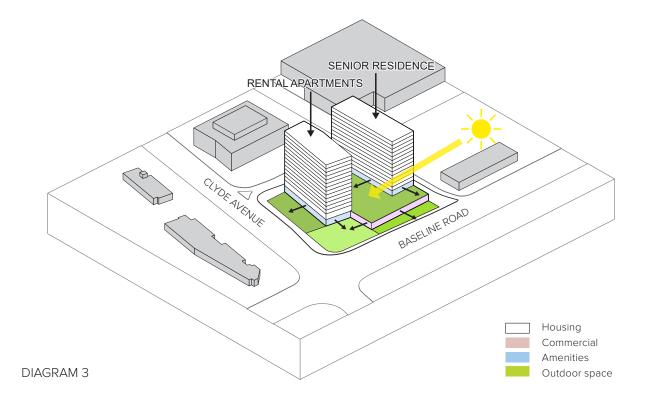
The site is surrounded by four roads, each with a different level of traffic, function and character. Baseline Road, to the south of the site, is a wide, high-speed thoroughfare and major east-west road in the area. It has a noisy and frenetic environment and is lined with commercial spaces near the 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)

DESIGN BRIEF



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**.

DESIGN BRIEF



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.

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.

months.

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

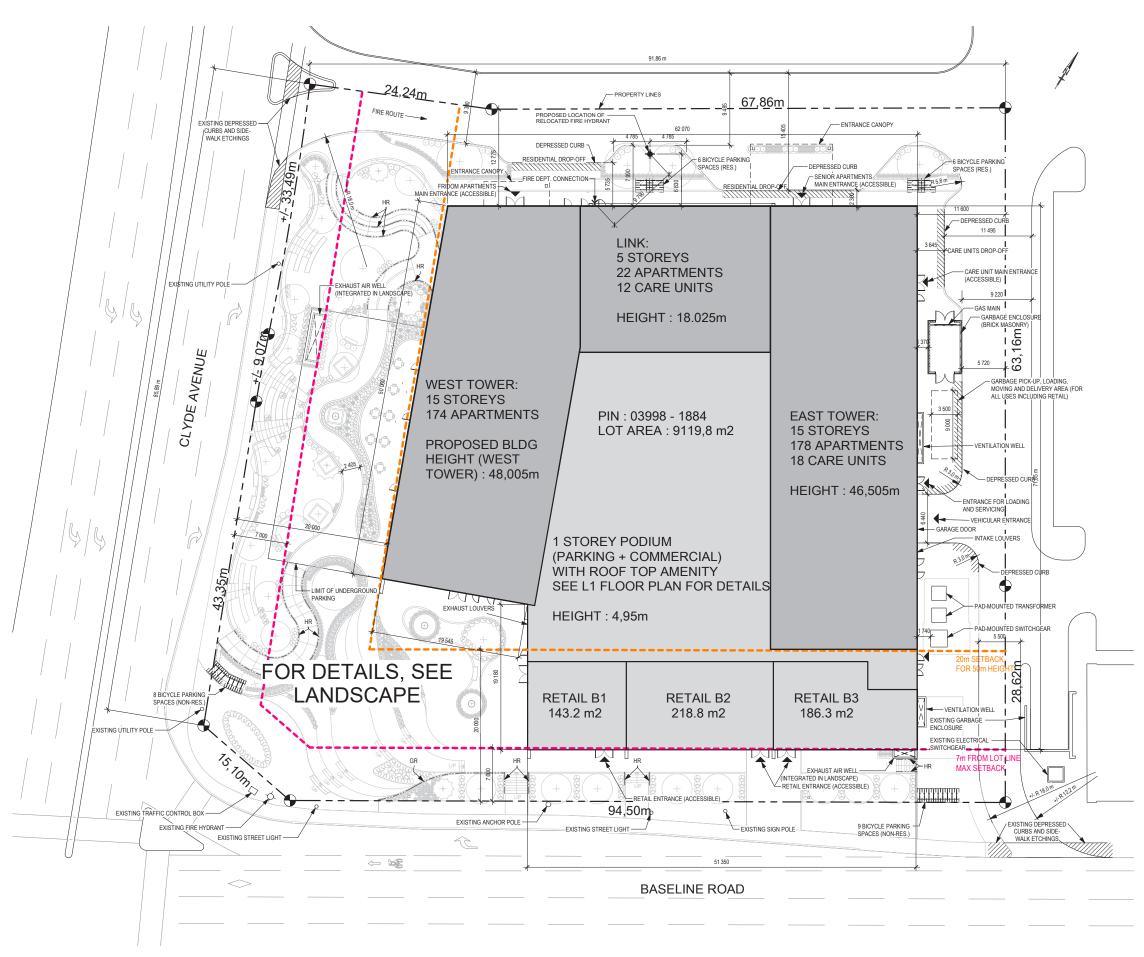
SUSTAINABILTY STATEMENT

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.

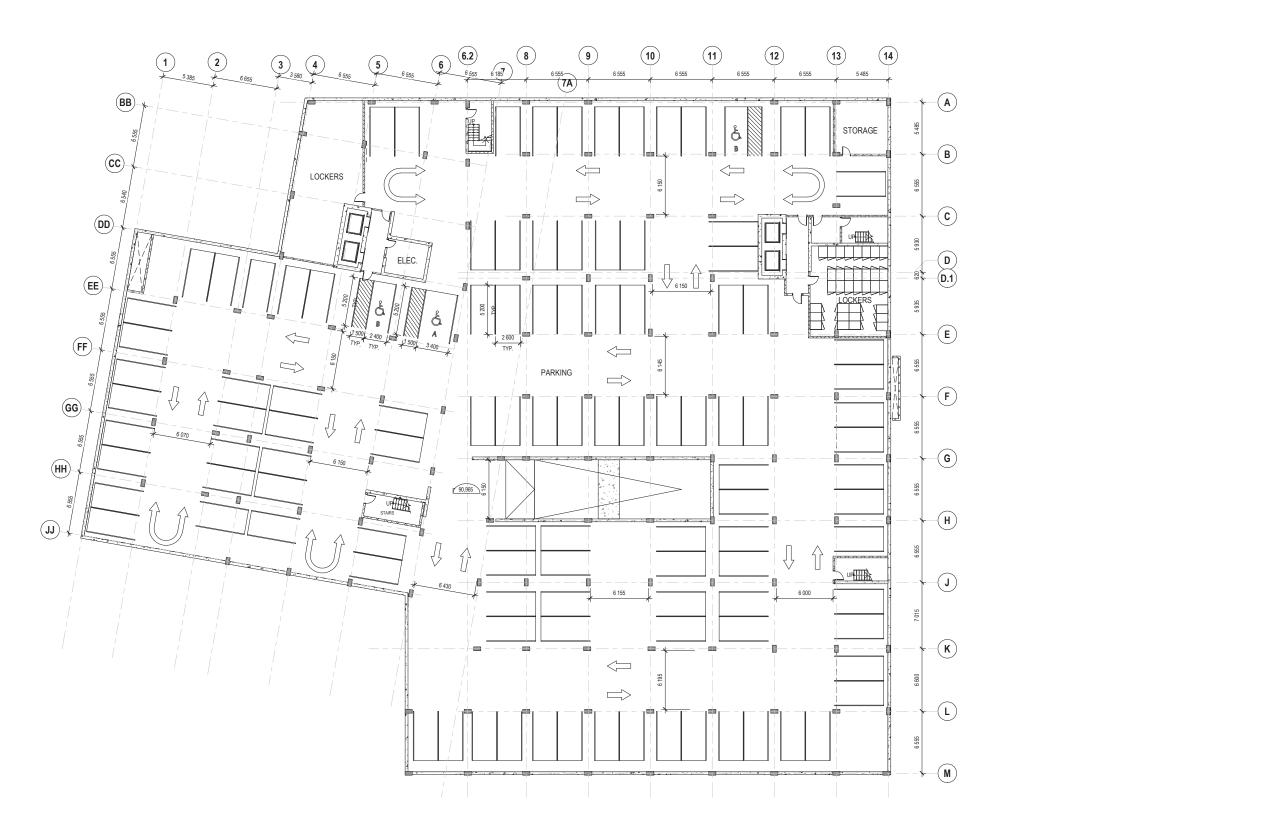
Indigenous plants that are resistant to harsh climate, insects, dry spells and low maintenance are selected for these landscaped areas. This selection contributes to a reduction in the use of valuable resources. (see Landscape Concept

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

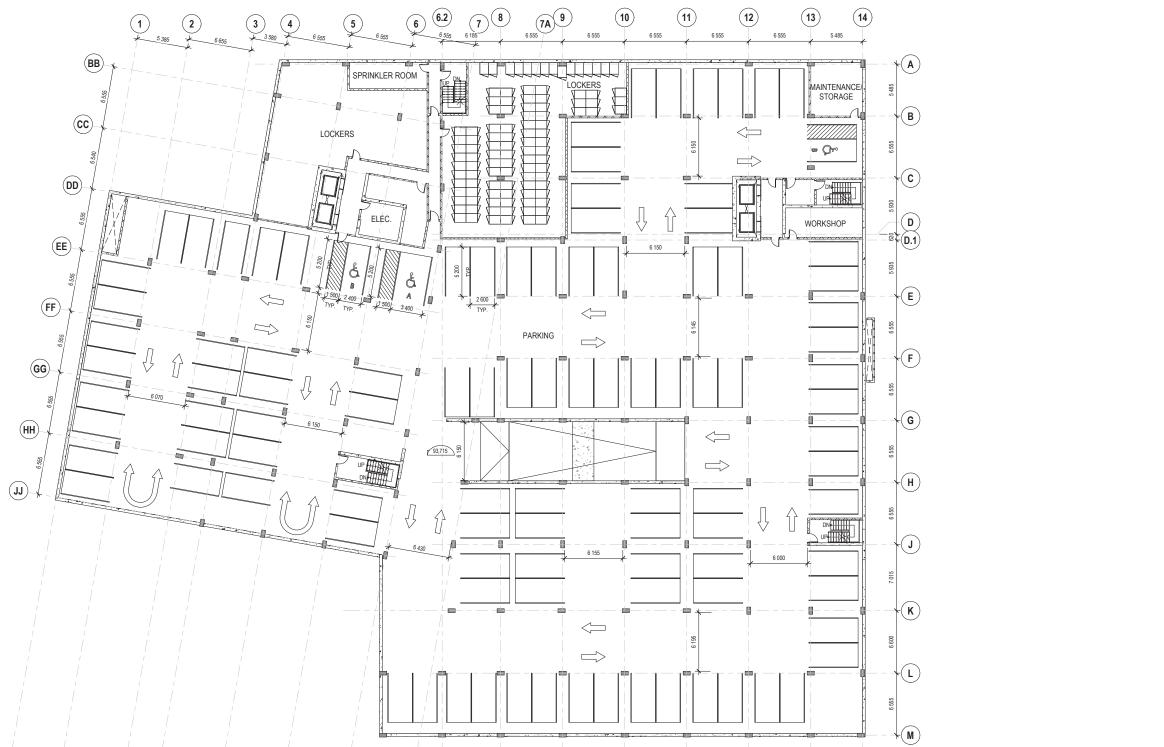
PLANS



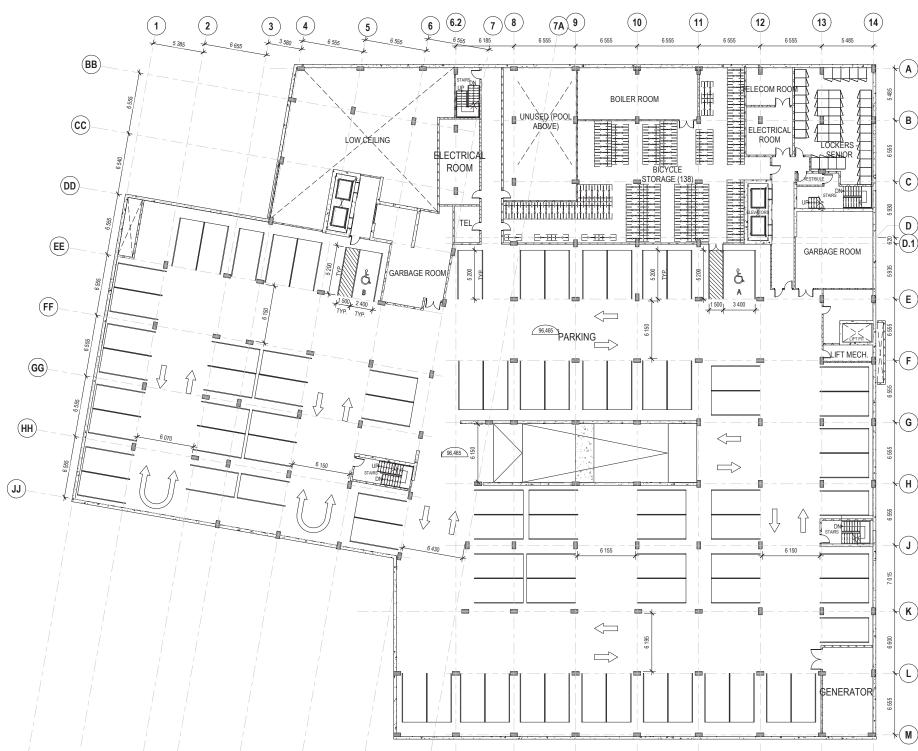




FLOOR PLAN - P3 SCALE: 1/400



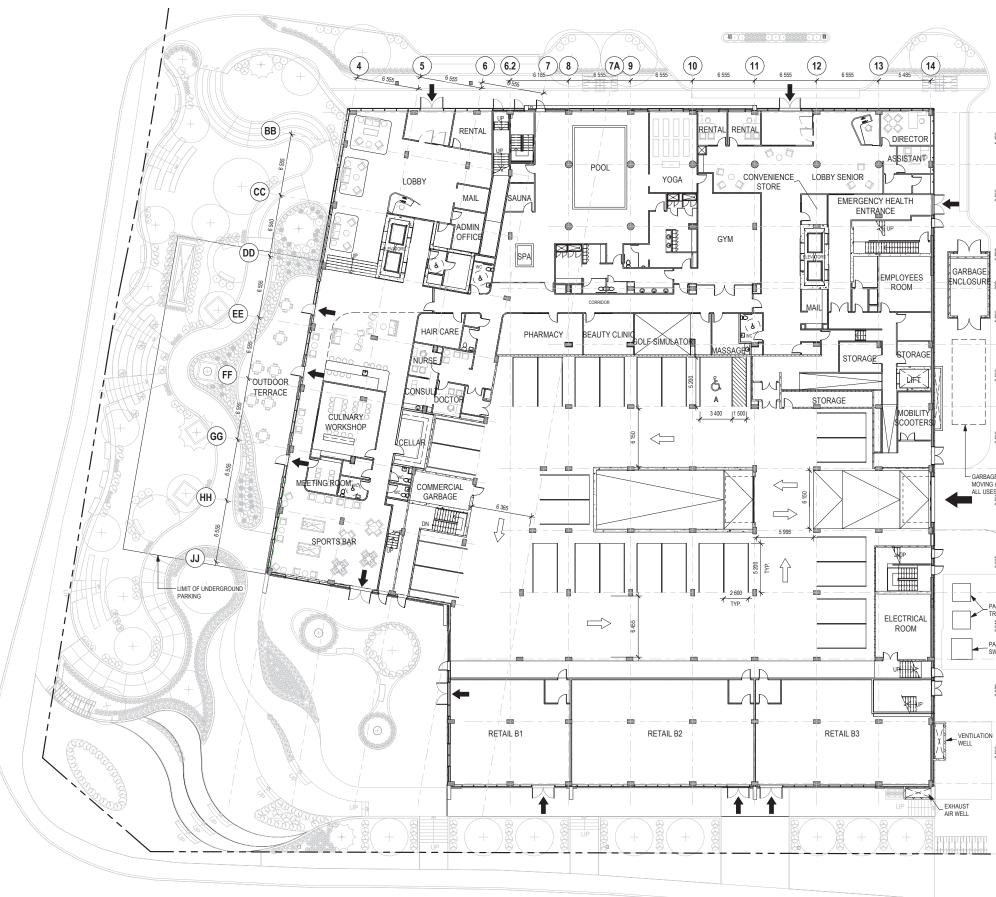
FLOOR PLAN - P2 SCALE: 1/400



1357 BASELINE ROAD, OTTAWA

FLOOR PLAN - P1 SCALE: 1/400

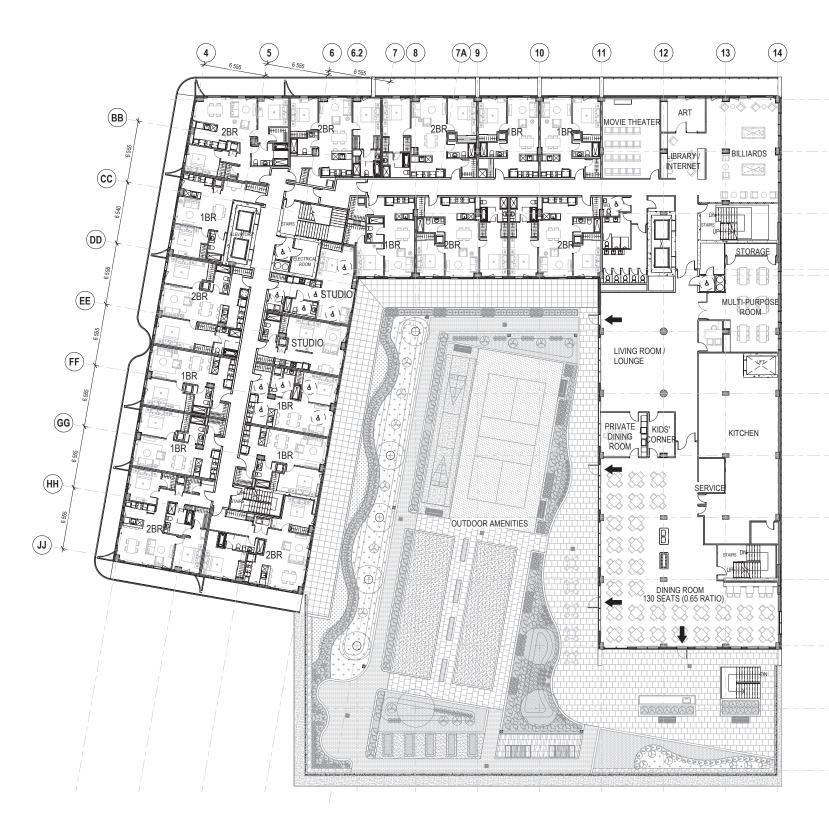
- **B C**
- E
- F G
- **H**
- K J



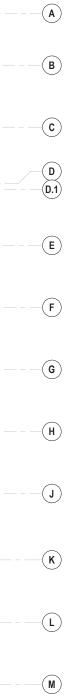
1357 BASELINE ROAD, OTTAWA

FLOOR PLAN - LEVEL 1 SCALE: 1/400



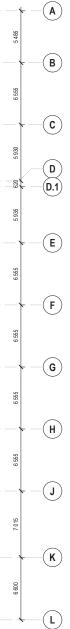


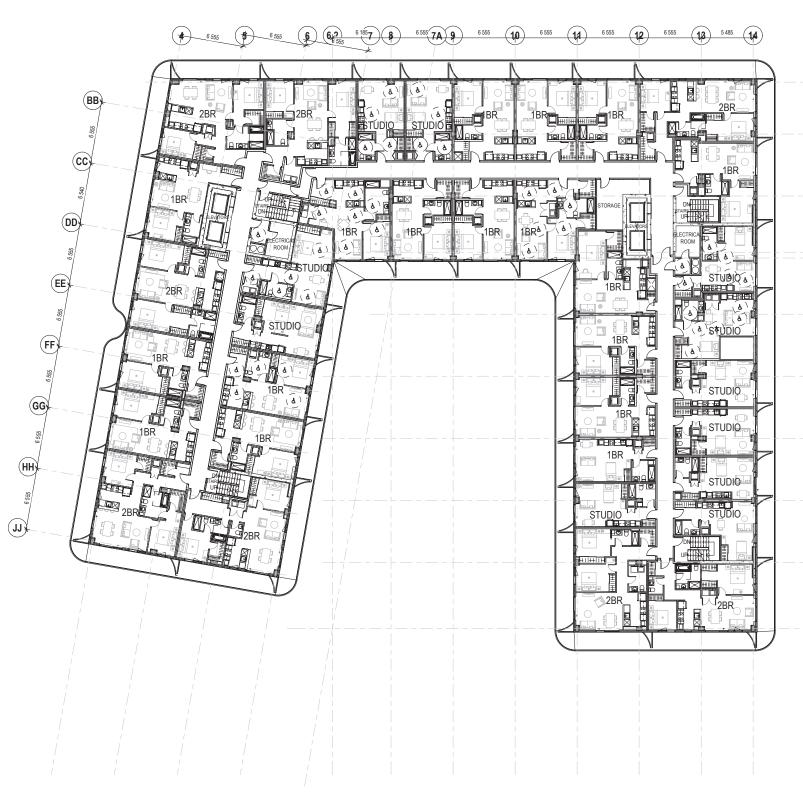
FLOOR PLAN - LEVEL 2 SCALE: 1/400





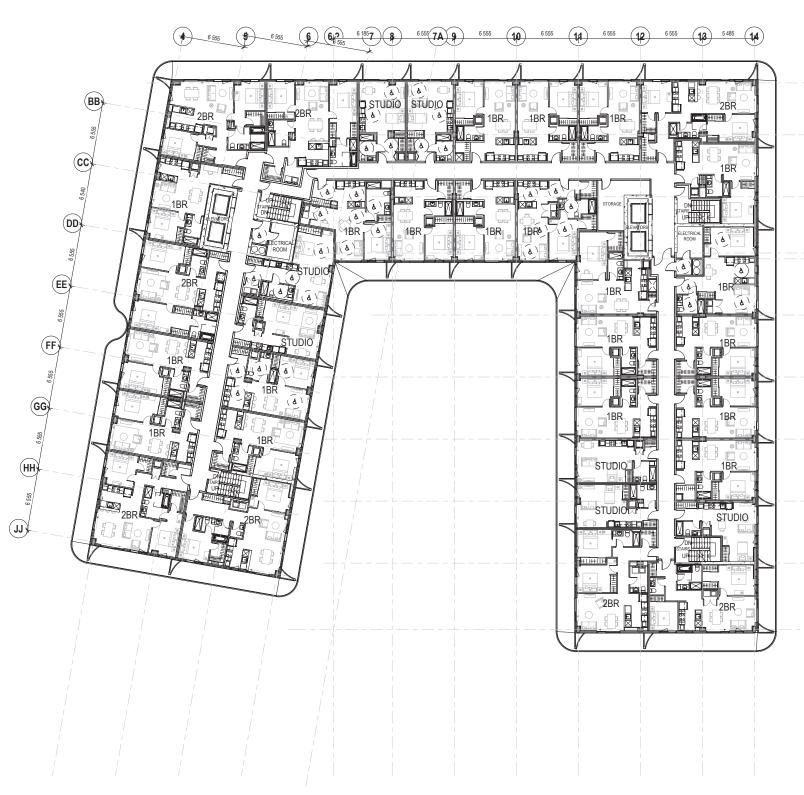
FLOOR PLAN - LEVEL 3 SCALE: 1/400



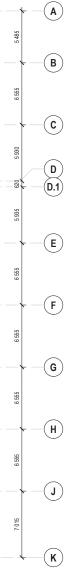


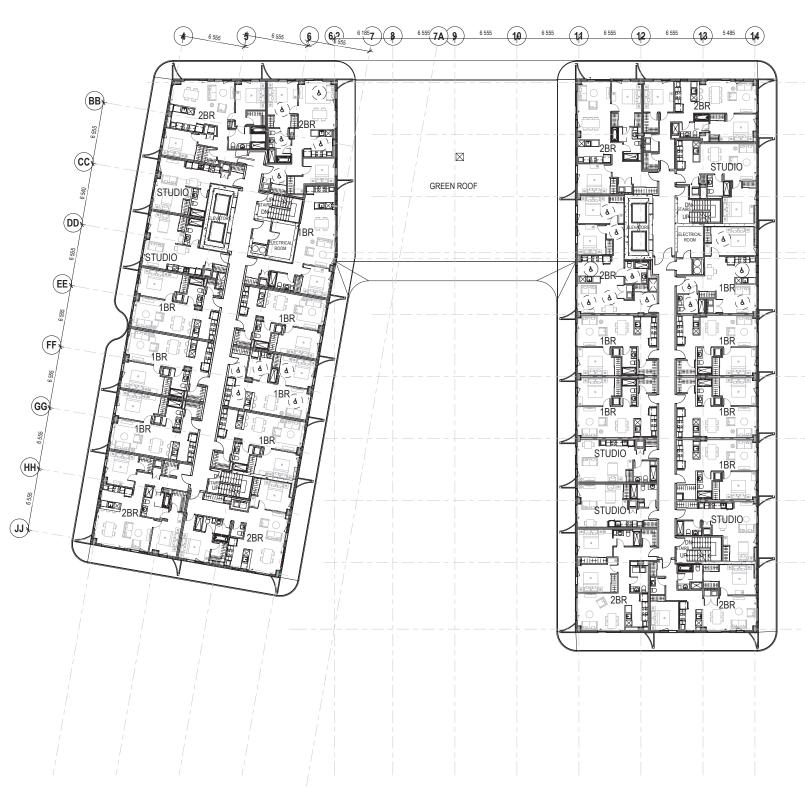
FLOOR PLAN - LEVEL 4 SCALE: 1/400

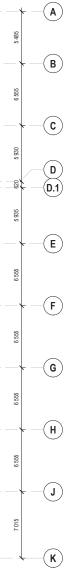


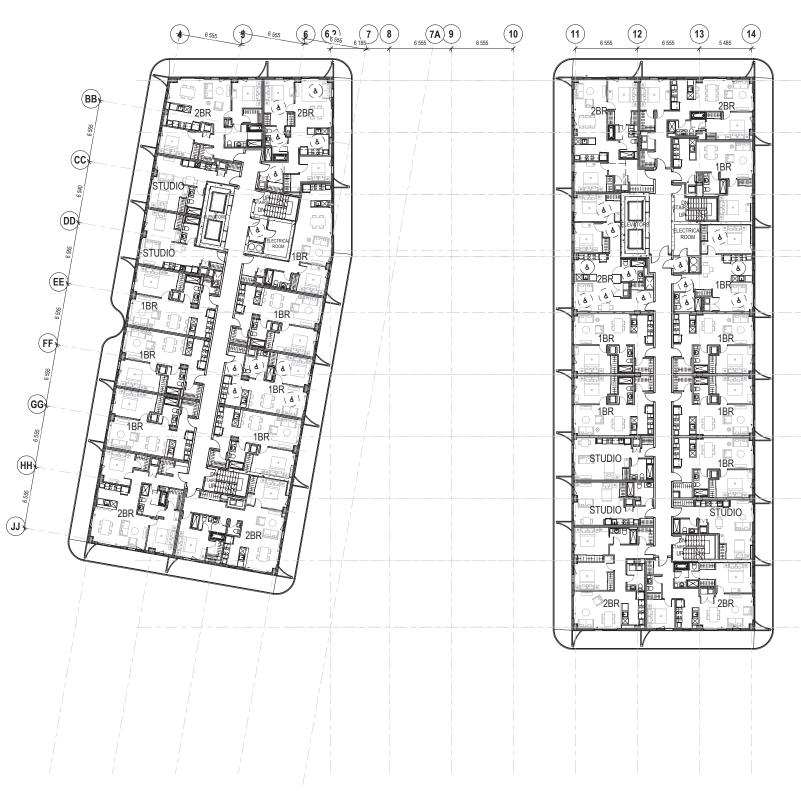


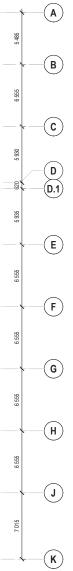
FLOOR PLAN - LEVEL 5 SCALE: 1/400

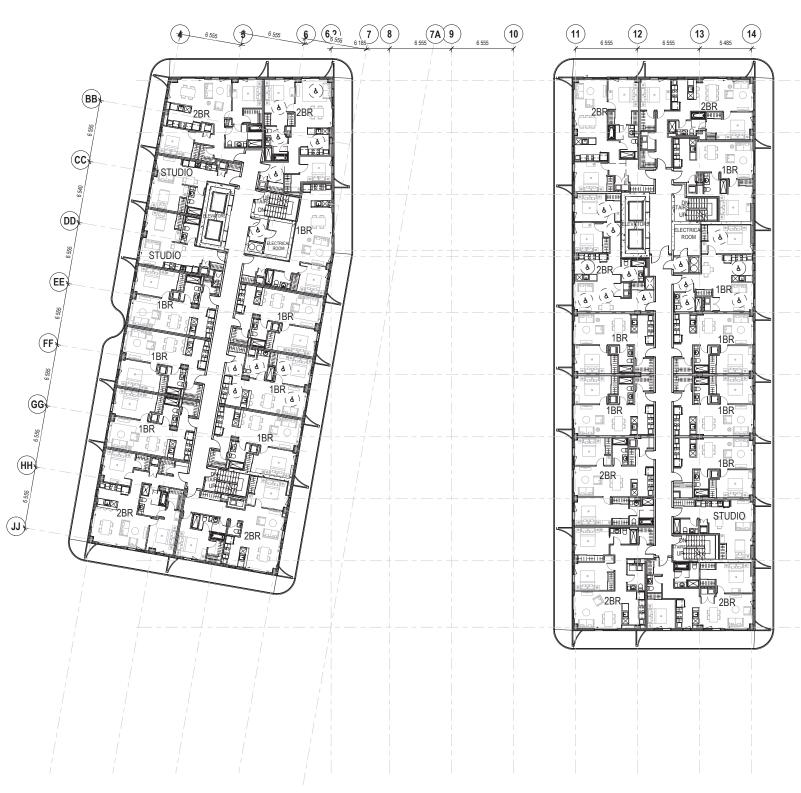




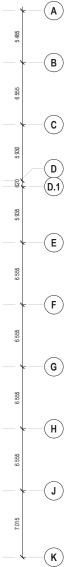


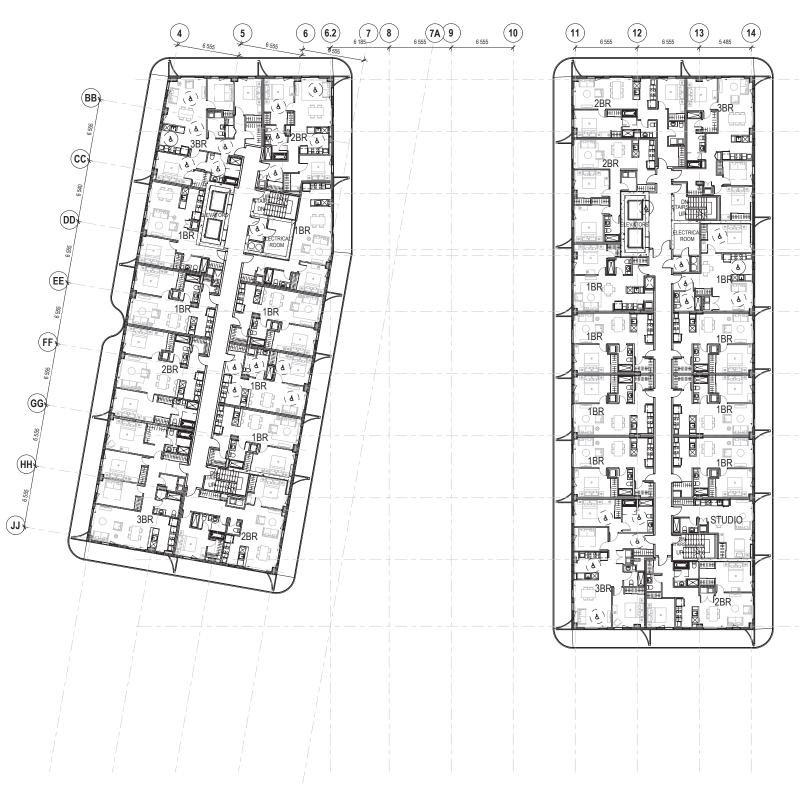




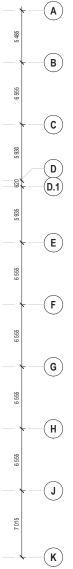


FLOOR PLAN - LEVEL 13 SCALE: 1/400





FLOOR PLAN - LEVELS 14 TO 15 SCALE: 1/400

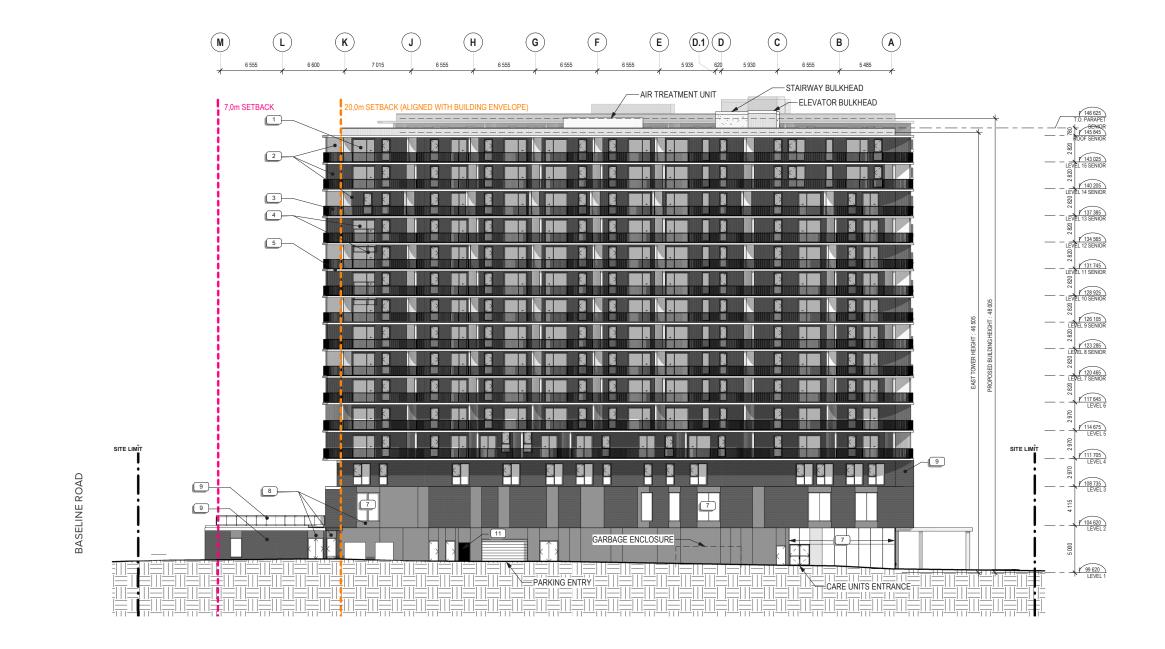




NORTH ELEVATION SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

CLYDE AVENUE





PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

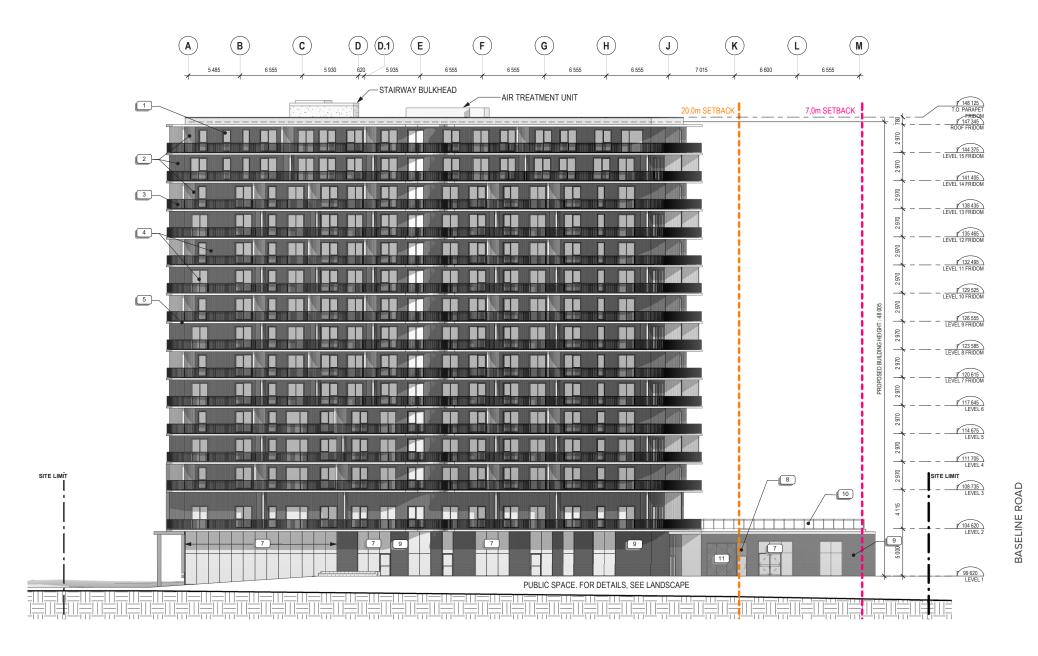


SOUTH ELEVATION

SCALE: 1/400

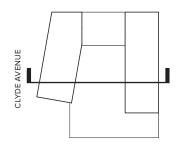
PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS

ULKHEAD		_
		146 625 T.O. PARAPET
	ko 1	
	780	
	820	NOOF OLIMON
	28	F 142 025
	820	
	2	P 140 205
	_	140 205 LEVEL 14 SENIOR
	282C	-
		137 385 LEVEL 13 SENIOR
	0	LEVEL 13 SENIOR
	2 82(\frown
		134 565 LEVEL 12 SENIOR
	2 820	LEVEL 12 DEMON
	28	F 424 745
		<u>131 745</u> LEVEL 11 SENIOR
	820	
	. 2	128 925 LEVEL 10 SENIOR
		LEVEL 10 SENIOR
	2 82C	_
		<u>P 126 105</u> LEVEL 9 SENIOR
	8	LEVEL 9 SENIOR
	2 820	\frown
47 005		<u>123 285</u> LEVEL 8 SENIOR
47	820	LEVELOGENON
	28	T 100 465
	`	<u>P 120 465</u> LEVEL 7 SENIOR
	820	
	~	<u> 117 645</u>
		LEVEL 6
	2 97(_
		P 114 675 LEVEL 5
		LEVEL 5
	2 97C	
	0	
_	2 970	
		<u>I 108 735</u> LEVEL 3
ה		
	4 1 15	
		104 620
		<u>104 620 \</u> LEVEL 2
	5 000	I
	2	
		99 620
	Π-	
-	_	

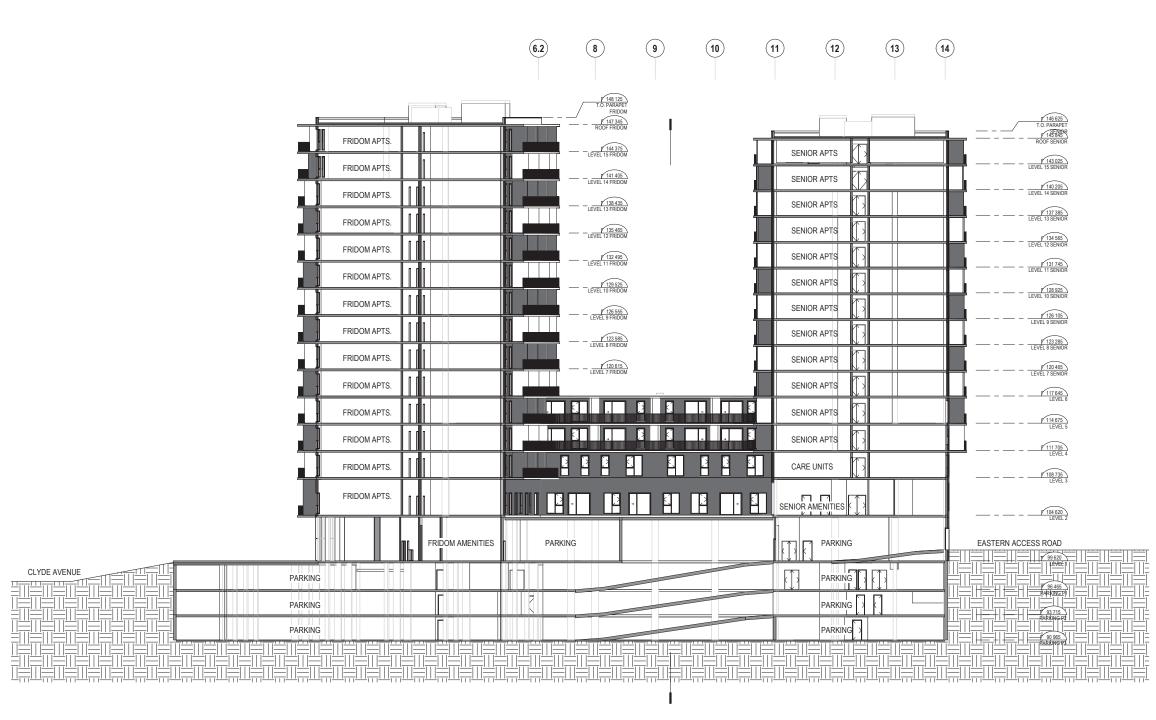


SOUTH ELEVATION SCALE: 1/400

PLEASE REFER TO PAGE 46 FOR IDENTIFICATION OF MATERIALS



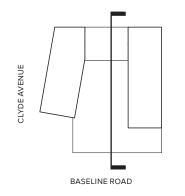






1357 BASELINE ROAD, OTTAWA

SECTION - EAST-WEST SCALE: 1/400



	B		(D.1) (E)	F	G H	L (K	L	M
	SENIOR APTS								
	SENIOR APTS								
L	CARE UNITS								
		<u> </u>							
						PARKING		RETAIL	
		PARKING	K PAF						_ EIII≕III≕ = = = = = =
		PARKING					PARKING		

SECTION - NORTH-SOUTH SCALE: 1/400

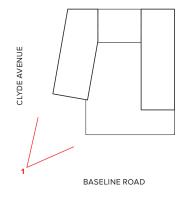
_	146 625 T.O. PARAPET	
	F 145 845 ROOF SENIOR	
	LEVEL 15 SENIOR	
	LEVEL 13 SENIOR	
	LEVEL 12 SENIOR	
	LEVEL 11 SENIOR	
	 LEVEL 9 SENIOR	
	_	
	_	
	_	
	<u>108 735</u> LEVEL 3	
	F 00 000	-
	<u>P 99 620</u> LEVEL 1	DAD
	<u>96 465</u> PARKING P1	E R(
		ELIN
	- <u>P 93 715</u> PARKING P2	AS
	_ <u>90 965</u> PARKING P3	Ē

1111	BASELINE ROAD



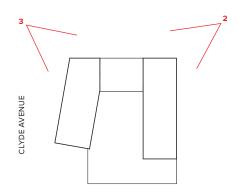
MATERIAL DESCRIPTION

 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)





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

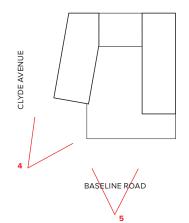


BASELINE ROAD



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

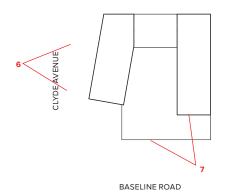
3. Street view of northern access roadway and Clyde Avenue





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

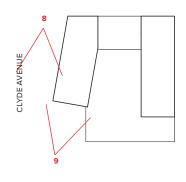
5. View from Baseline Road





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

7. Street view along Baseline Road showing commercial frontage



BASELINE ROAD



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.

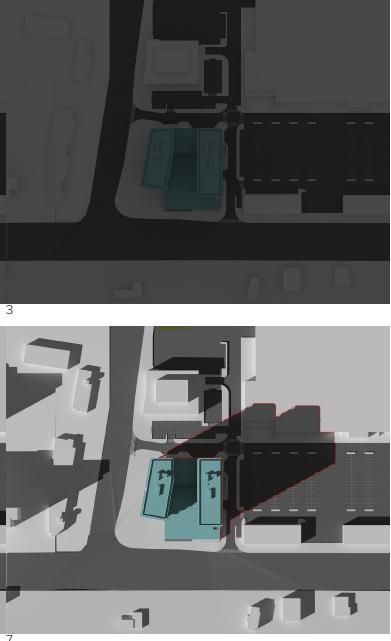
SUN/SHADOW STUDY

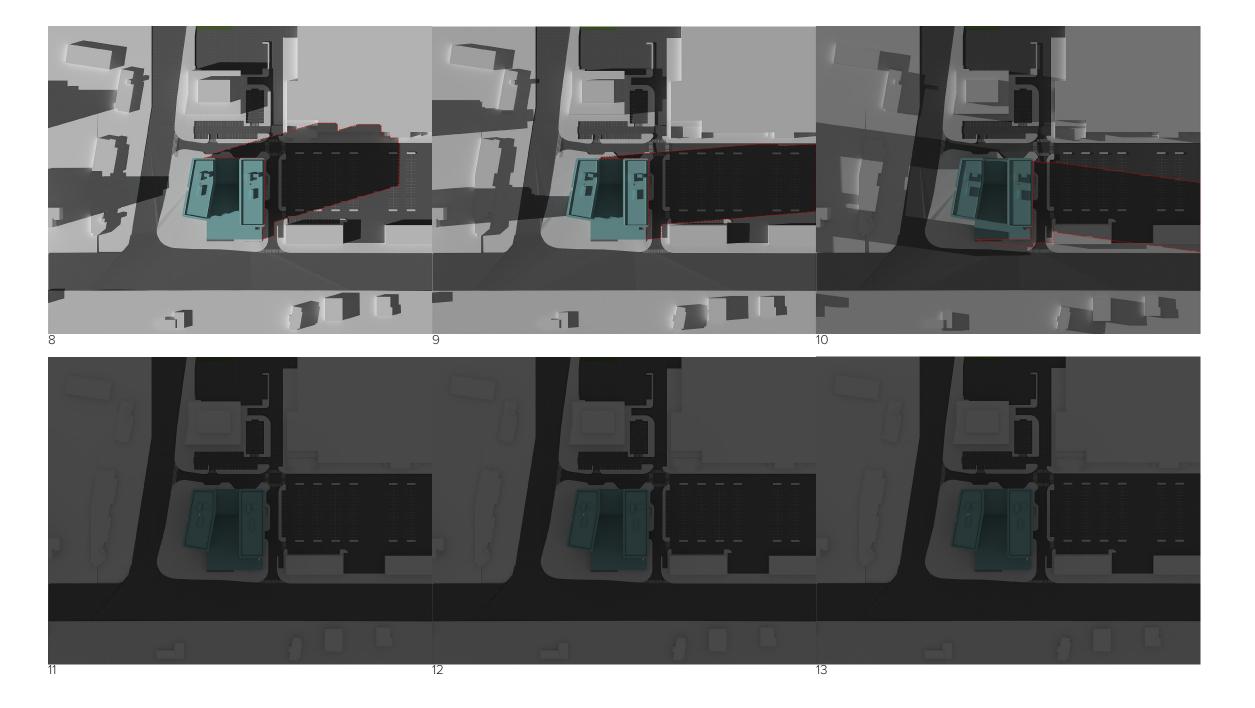
1 - 6:00 AM 2 - 7:00 AM 3 - 8:00 AM 4 - 9:00 AM 5 - 10:00 AM 6 - 11:00 AM 7 - 12:00 PM 8 - 1:00 PM 9 - 2:00 PM 10 - 3:00 PM 11 - 4:00 PM 12 - 5:00 PM 13 - 6:00 PM





SUN/SHADOW STUDY - 21 DECEMBER - WINTER SOLSTICE

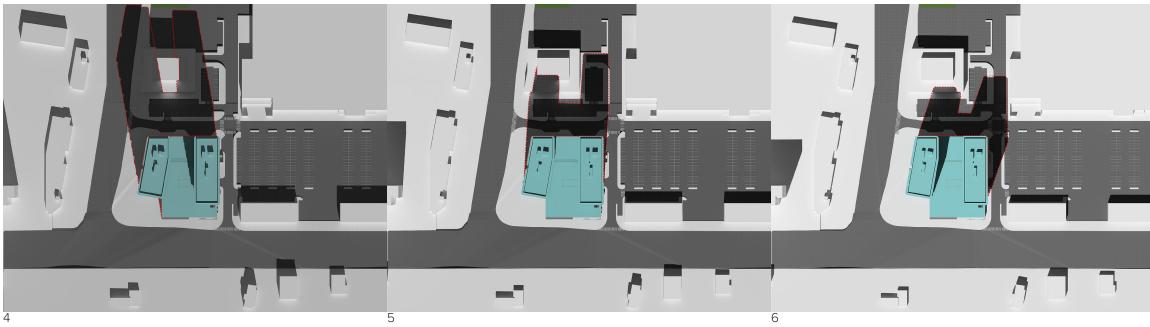




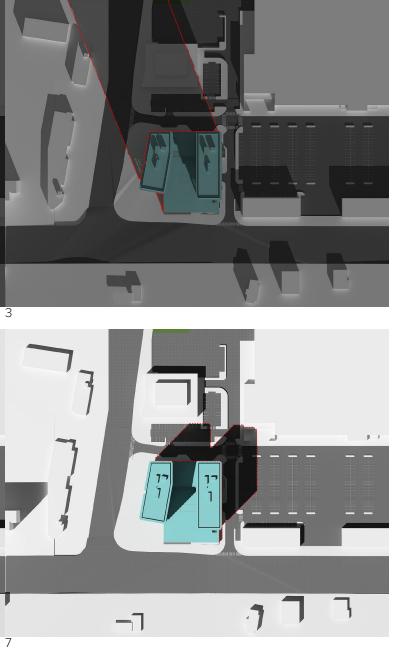
SUN/SHADOW STUDY - 21 DECEMBER - WINTER SOLSTICE

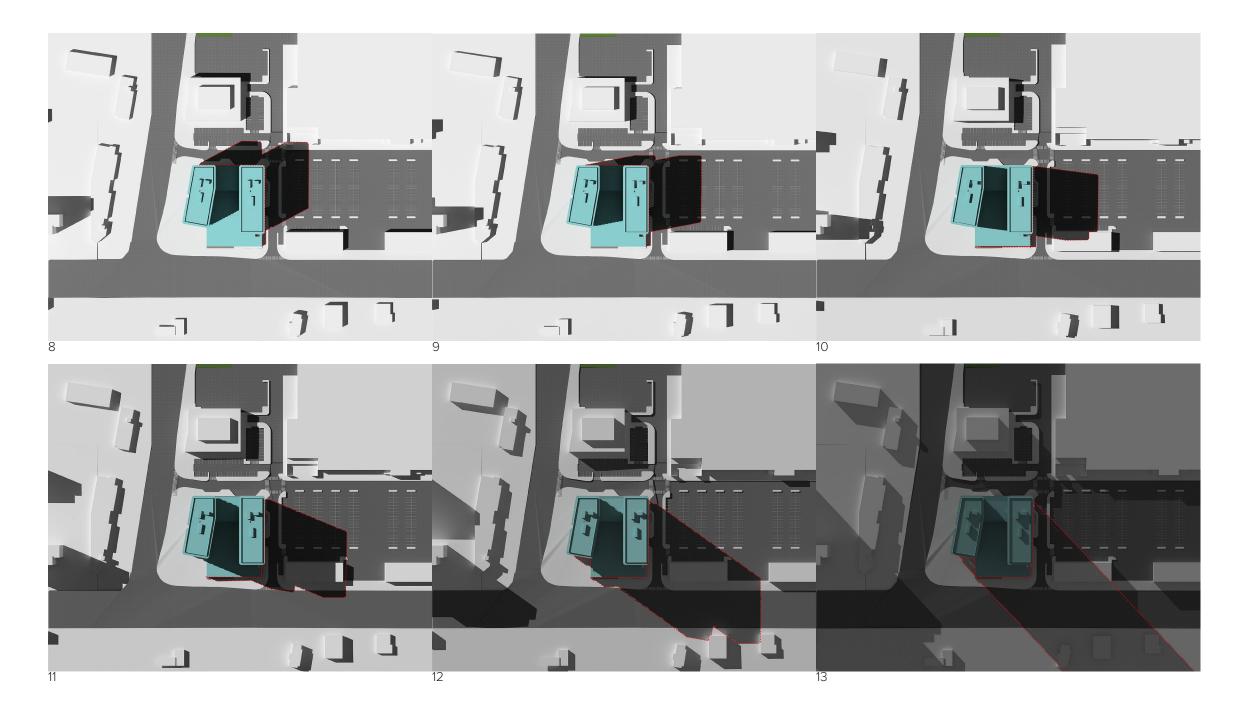
1 - 6:00 AM 2 - 7:00 AM 3 - 8:00 AM 4 - 9:00 AM 5 - 10:00 AM 6 - 11:00 AM 7 - 12:00 PM 8 - 1:00 PM 9 - 2:00 PM 10 - 3:00 PM 11 - 4:00 PM 12 - 5:00 PM 13 - 6:00 PM





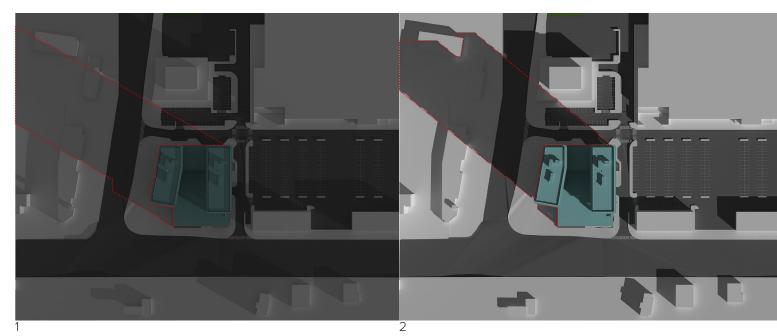
SUN/SHADOW STUDY - 23 SEPTEMBER - EQUINOX





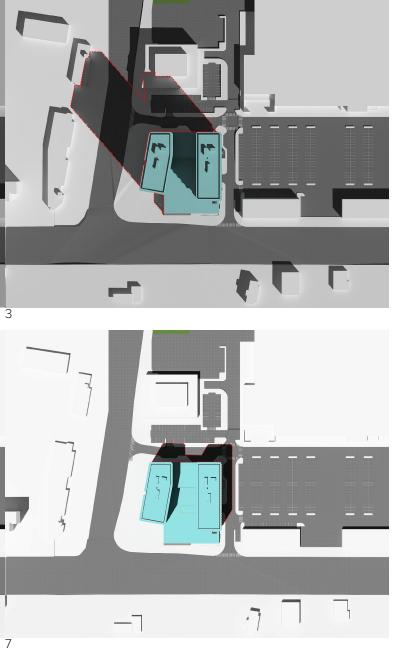
SUN/SHADOW STUDY - 23 SEPTEMBER - EQUINOX

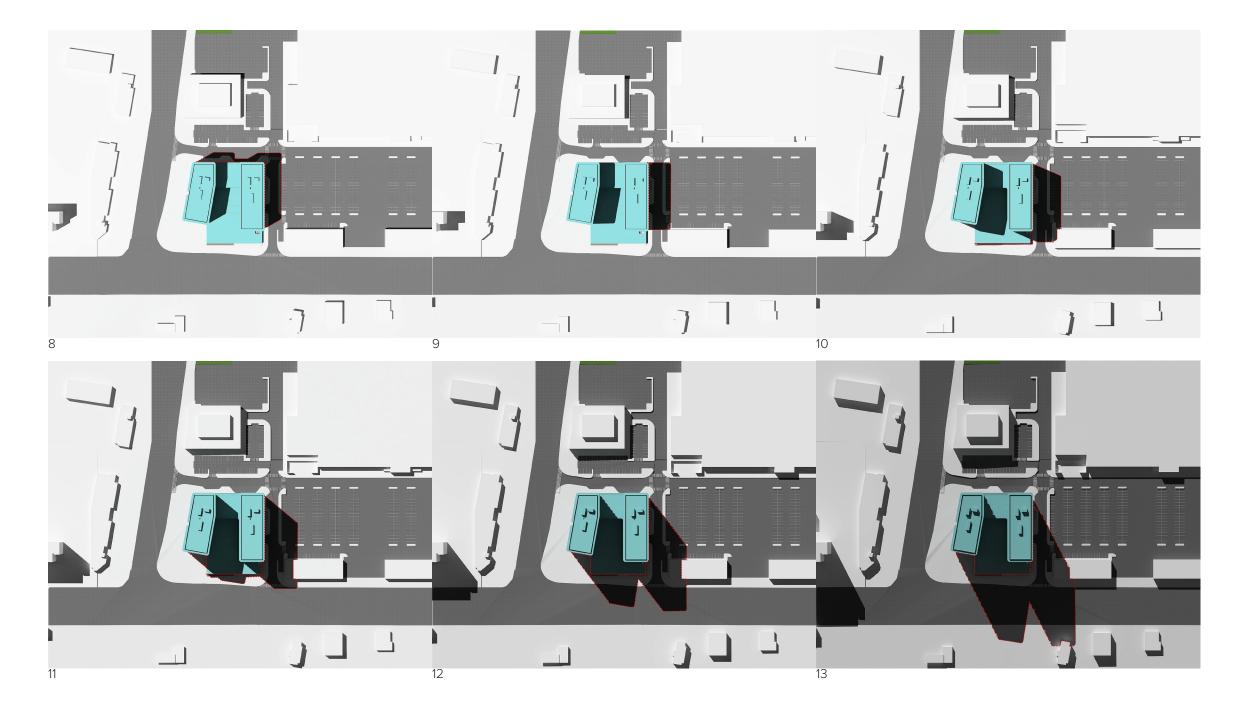
1 - 6:00 AM 2 - 7:00 AM 3 - 8:00 AM 4 - 9:00 AM 5 - 10:00 AM 6 - 11:00 AM 7 - 12:00 PM 8 - 1:00 PM 9 - 2:00 PM 10 - 3:00 PM 11 - 4:00 PM 12 - 5:00 PM 13 - 6:00 PM





SUN/SHADOW STUDY - JUNE 21ST - SUMMER SOLSTICE





SUN/SHADOW STUDY - JUNE 21ST - SUMMER SOLSTICE

STATISTICS

PARKING STALLS						
Levels	Parking Stalls					
Levels	Residential*	Retail	Visitor	Bikes		
Р3	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		

AREAS (m2)									
Parking	Retail		Senior Res	idence		Rental Apartments			
Gross	Gross	Gross	Rentable	Common	% Rentable	Gross	Rentable	Common	% Rentable
4 945,3									
4 945,3									
4 945,3									
1 861,9	568,8	1 278,3		1 136,0		747,8		660	
		1 607,2	440,1	1 019,1	27,4%	1 041,3	870,3		83,6%
	Rooming units ->	1 649,3	1 084,4	287,0	65,7%	1 001,6	844,7		84,3%
		1 653,9	1 375,9		83,2%	992,7	882,1		88,9%
		1 613,5	1 386,8		85,9%	1 035,2	882,7		85,3%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	984,5		86,9%	1 027,7	892,9		86,9%
		1 133,4	983,6		86,8%	1 027,7	892,8		86,9%
		1 133,4	983,6		86,8%	1 027,7	892,8		86,9%
16 697,9	568,8	19 136,5	14 130,2	2 442,1	73,8%	15 095	12 409	660	82,2%

Retail	Senior Residence ¹	Rental Apartments		Amenity area	3
Ottawa GFA	Ottawa GFA	Ottawa GFA	Private ³	Communal int.	Communal ext
548,3	572,4			1 150,0	108,0
	429,5	844,2	167,2	705,9	1 256,1
Rooming units ->	1 055,4	818,3	111,5	205	23
	1 359,3	855,2	334,5		
	1 367,6	855,2	325,2		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	954,1	859,6	260,1		
	987,0	859,6	250,8		
	952,4	860,3	232,3		
	952,4	860,3	232,3		
548,3	14 354,8	11 970,5	3 474,6	2 060,6	1 387,3

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

PARKING REQUIREME	INTS - 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

Residential	Min 0,25/dwelling (retirement home + care units)	100,5
Retail	Min. 1 per 250 m2 of retail	2,3
Minimum requ	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

548,3	14 354				
	26				
¹ On level 1, includes	ancillary health,				
² See Ottawa Gross Floor Area definit					
³ Average 9,3 m2 balcony					
3					
AMENITY REQUIREMENTS					
6 m2 per dwelling					
Care units: 10% of flo	ooring area				

6 m2 per dwelling
Care units: 10% of flooring area
Total required
Total proposed

NITY REQUIREM
50% of total re
One common

Total proposed

STATISTICS

ealth, personal and recreational services

efinition

(m2)
2 412
106
2 518
6 922

MENTS	(m2)
required amenity	1 259
n area larger than 54m2 ?	Yes

3 448

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.	Т	
	OBC required>	6		15		8		1	30	OBC required>	4		13		9		1		
2 0	0	0	3	0	3	0	0	0	6	1	1	4	1	5	0	0	0		
28	0	0	0	0	0	0	0	0	0	1	1	5	1	4	0	0	0		
0	6	4	9	2	3	0	0	0	24	1	1	4	1	5	0	0	0		
0	3	2	12	3	3	0	0	0	23	1	1	4	1	5	0	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
0	3	0	6	1	4	1	0	0	15	2	0	6	1	3	1	0	0		
3 0	1	0	6	1	5	1	0	0	14	2	0	6	1	3	1	0	0		
4 0	1	0	7	1	3	0	1	1	14	0	0	5	1	2	1	1	1		
5 0	1	0	7	1	3	0	Z	0	14	0	0	5	1	3	0	2	0		
0	33	6	86	15	48	8	3	1	170 / 30	20	4	75	14	48	9	3	4	1	
28		39		101		56		4	200	24			89		57		4		
N/A 28	19	,5%	5	0,5%	23 200	8,0%		2,0%	100,0%	13,8%	6	53	1,1%	32,8% 1 74		2,3%			

	AVERAGE DWELLING AREA											
			Signature Senio	r 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





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





ACDF LLOYD PHILLIPS & ASSOCIATES LTD.

1357 BASELINE ROAD, OTTAWA

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_	POPS SUBSPACE - CLYDE - SECTION B	10
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_	POPS SUBSPACE - CLYDE AND BASELINE CORNER - PEDESTRIAN VIEW	12
_	POPS SUBSPACE - CLYDE AND BASELINE CORNER	13
_	POPS SUBSPACE - CLYDE AND BASELINE CORNER - SECTION C	14
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_	COMMERCIAL ACCESS PLATFORM - SECTION D	16
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_	PROPOSED MATERIAL	24

1357 BASELINE ROAD

VP VERSION PAYSAGE SMARTCENTERS. SGroupe ACCOUNT AND A COUNT AND A ACCOUNT AND A ACCOU

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

TABLE OF CONTENTS

SURROUNDING CONTEXT







1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

COMMERCIAL AREA INDUSTRIAL AREA INSTITUTIONS AREA RESIDENTIAL AREA



ACCESS FROM CLYDE AVENUE ...

CONCRETE ACCESSIBILITY . RAMP TO POPS UPPER LEVEL SUBSPACE FOR PEDESTRIAN .. WITH BENCHES INTEGRATED CONCRETE BENCHES WITH STAIRS ON

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.

CONCRETE CURVY AMPHITHEATRE WITH STAIRS

VP VERSION PAYSAGE STATISTICS Selection ACCOPT AND PHILLIPS & ASSOCIATES LTD.

1357 BASELINE ROAD



ANNEX I: LANDSCAPING

LANDSCAPE PLAN

PRIVATELY-OWNED PUBLICLY ACCESSIBLE SPACES (POPS) LANDSCAPE PLAN



*AS WAS PREVIOUSLY STATED IN PRE-CONSULTATION COMMENTS,

SMARTCENTRES' Sélection ACCDF HUNNING CONSULTANTS

THE POPS IS TO BE MINIMUM 817M2 IN SIZE.

1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA



LANDSCAPE PRESENTATION

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

ANNEX I : LANDSCAPING



1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

VERSION PAYSAGE ARCHITECTES PAYSAGISTES SMARTCENTRES: SGROUPE Sélection ACDEF LLOYD PHILLIPS & ASSOCIATES LTD.

ANNEX I : LANDSCAPING

POPS - ACCESSIBILITY

POPS SUBSPACE - CLYDE SIDEWALK LEVEL



SUBSPACE FOR .. PEDESTRIAN WITH BENCHES AND VEGETATED SCREEN

INTEGRATED CONCRETE BENCHES WITH STAIRS ON THE SLOPE

CLYDE AVENUE

SUBSPACE FOR .. PEDESTRIAN WITH BENCHES AND VEGETATED SCREEN

INTEGRATED. CONCRETE BENCHES WITH STAIRS ON THE SLOPE

PERSPECTIVE

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

VERSION PAYSAGE STATES SCIENTES SCIENCES SCIENCES SCIENCES ACCOMPANY AND CONSULTANTS

BENCHES 13,6M OF STREET FRONTAGE + TOTAL: 31M OF STREET FRONTAGE =

VP



INTEGRATED CONCRETE SEATING WITH STEPS 17,4M OF STREET FRONTAGE 45% OF STREET FRONTAGE (68,5M ALONG CLYDE AVENUE,APPROXIMATELY) SUBSPACE FOR .. PEDESTRIAN WITH BENCHES AND VEGETATED SCREEN

INTEGRATED CONCRETE BENCHES WITH STAIRS ON THE SLOPE

10m

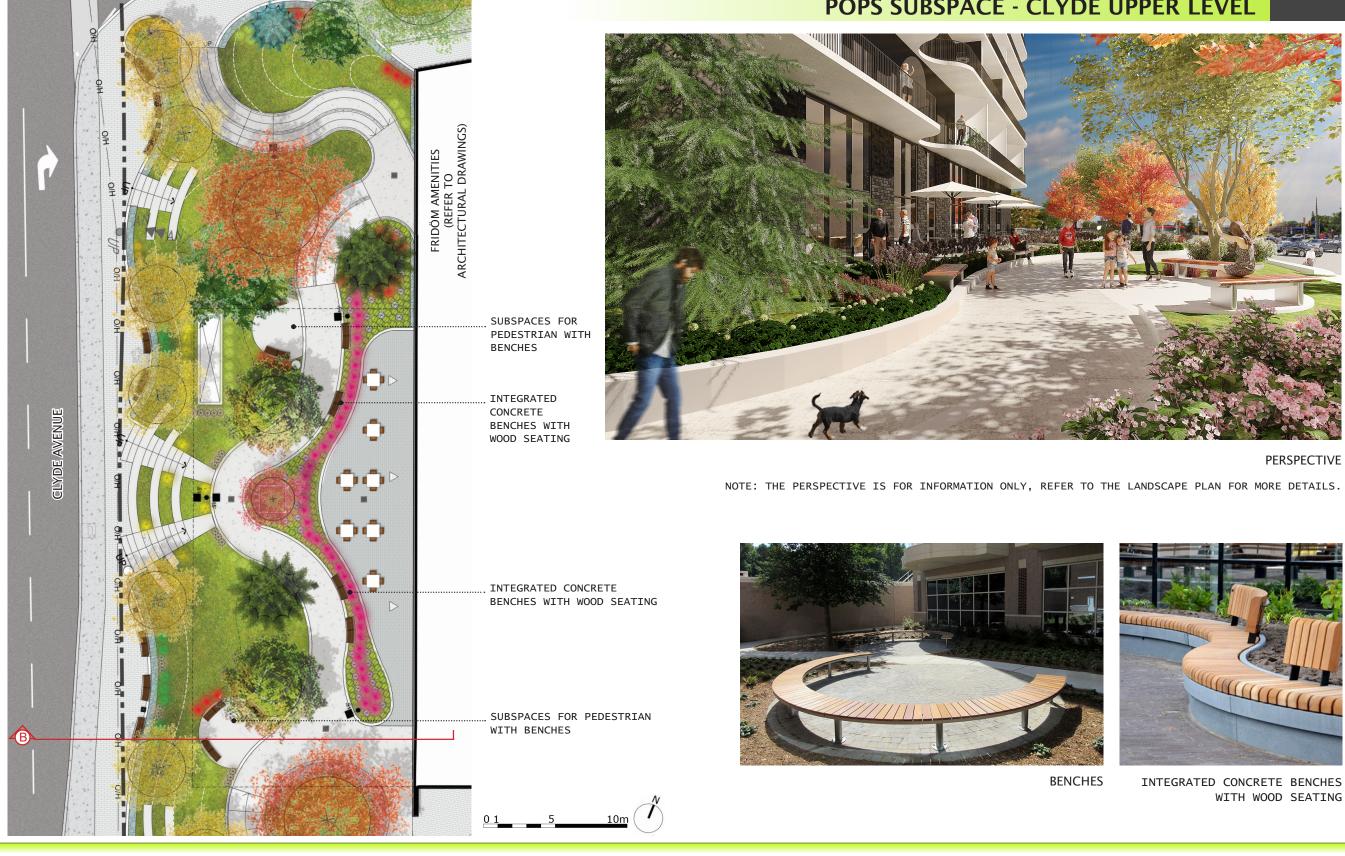
1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING



POPS SUBSPACE - CLYDE UPPER LEVEL



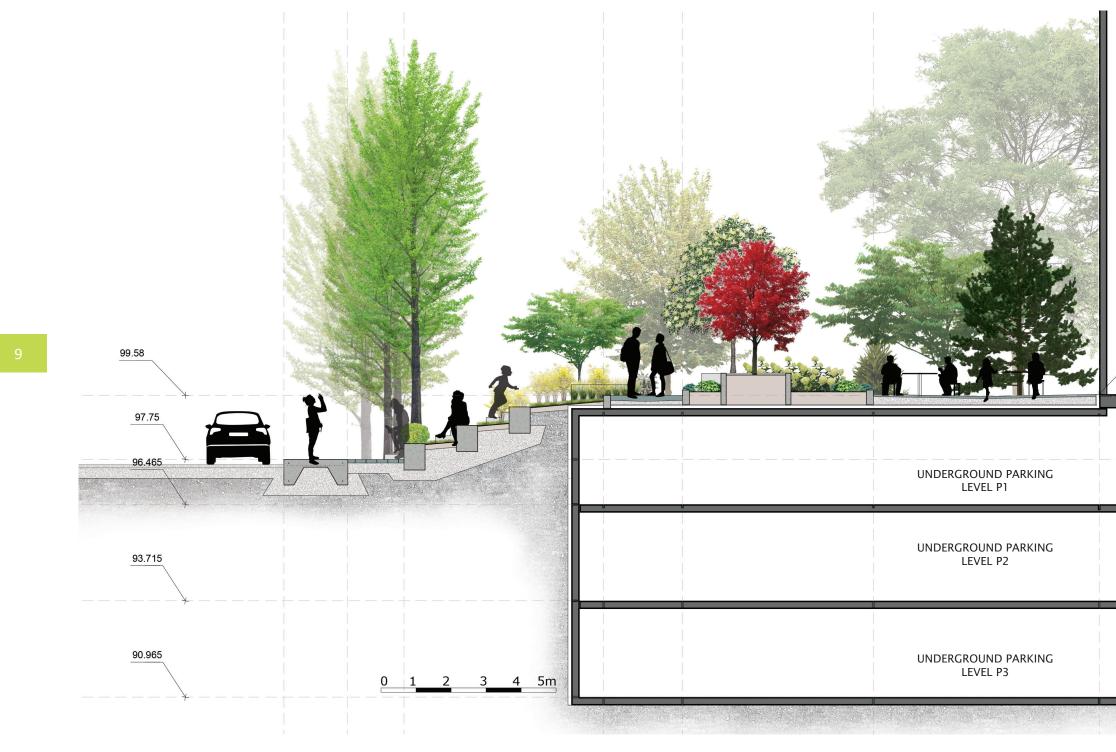
VP VERSION PAYSAGE ARCHITECTES PAYSAGISTES SMARTCENTRES. SGROUPE SACONDE SACON

1357 BASELINE ROAD, OTTAWA

1357 BASELINE ROAD

ANNEX I : LANDSCAPING

POPS SUBSPACE - CLYDE - SECTION A







1357 BASELINE ROAD

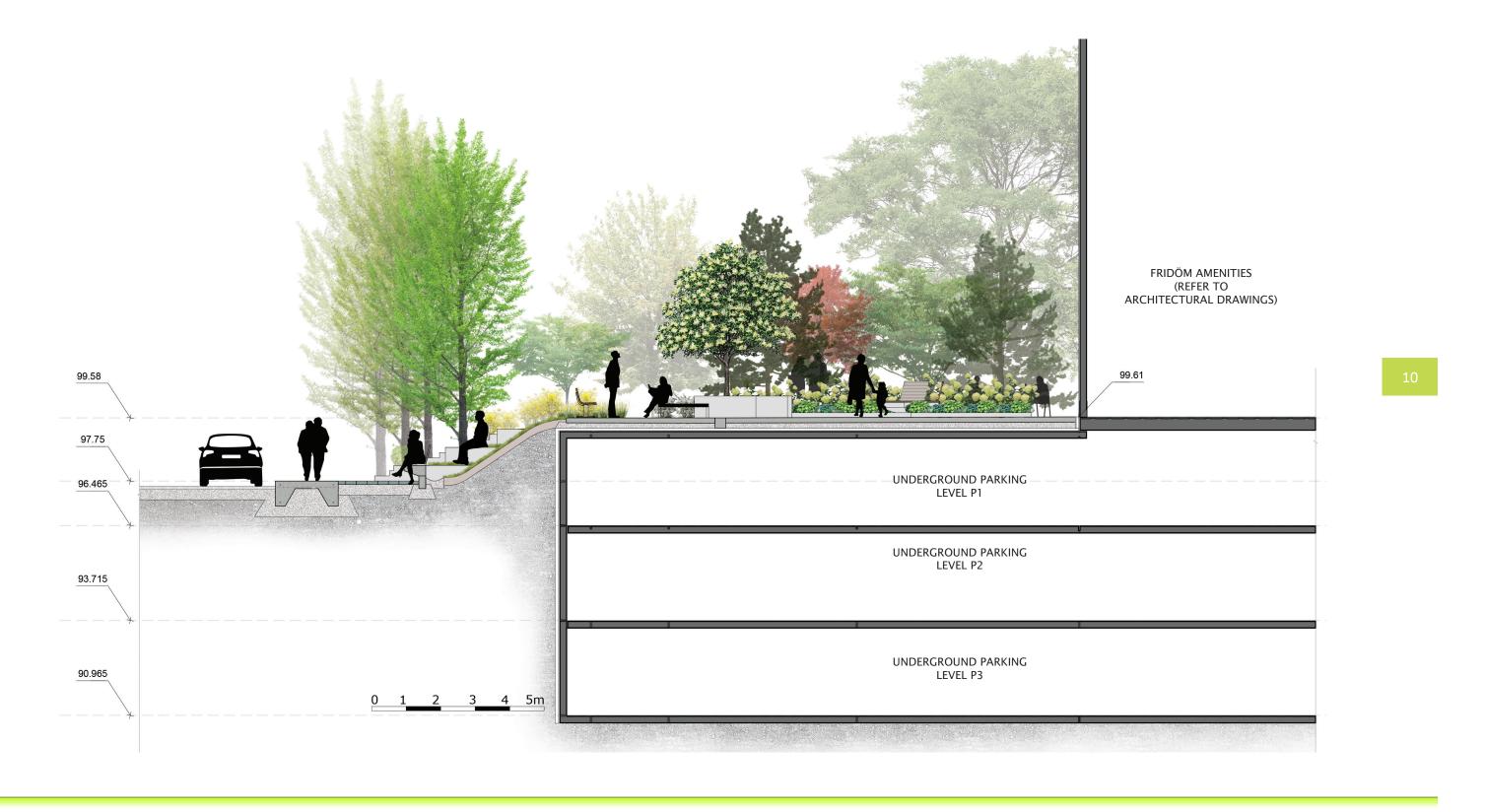
1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

FRIDÖM AMENITIES (REFER TO ARCHITECTURAL DRAWINGS)

99.61	

POPS SUBSPACE - CLYDE - SECTION B



VP VERSION PAYSAGE ARCHITECTES PAYSAGISTES SMARTCENTRES: SGROUPE SACHTECTES PAYSAGISTES

1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

POPS SUBSPACE - CLYDE AND BASELINE CORNER - AERIAL VIEW







1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

POPS SUBSPACE - CLYDE AND BASELINE CORNER - PEDESTRIAN VIEW





1357 BASELINE ROAD

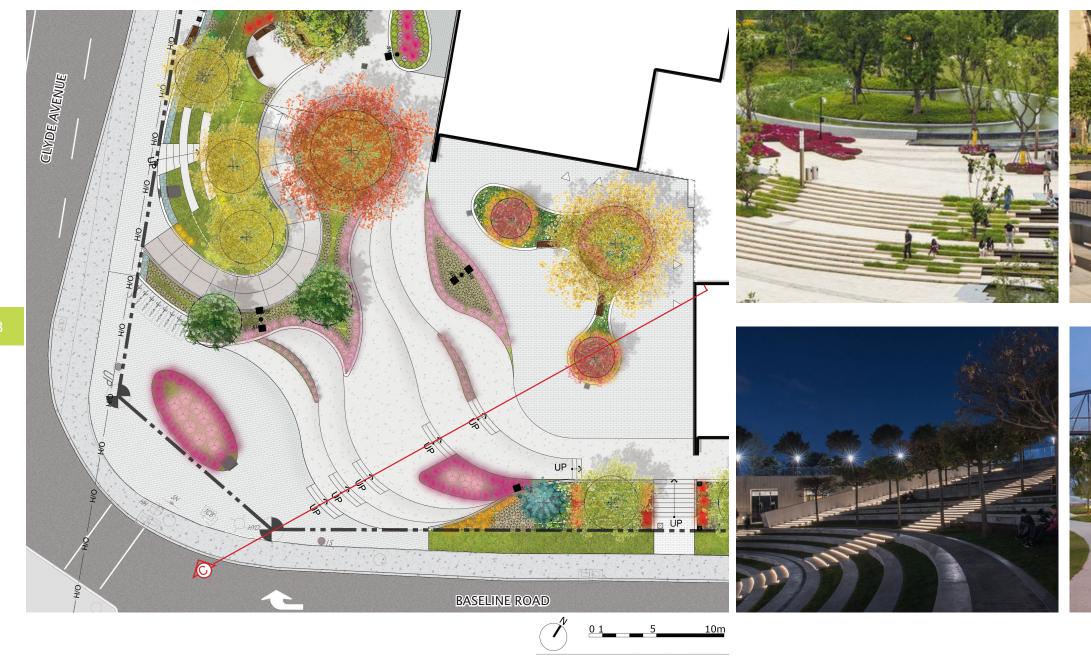
1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

LANDSCAPE PRESENTATION

12

POPS SUBSPACE - CLYDE AND BASELINE CORNER





1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING





INTEGRATED CONCRETE SEATING WITH STEPS

POPS SUBSPACE - CLYDE AND BASELINE CORNER - SECTION C





1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

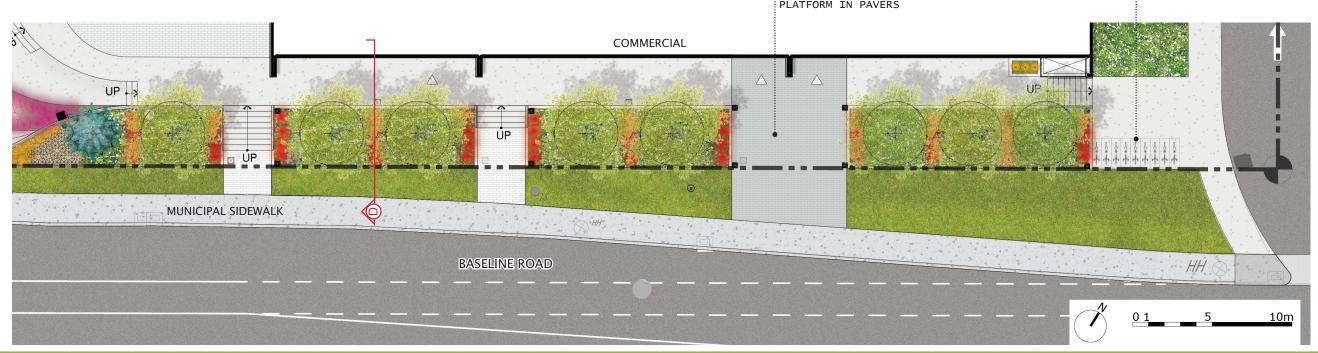
ANNEX I : LANDSCAPING

COMMERCIAL ACCESS PLATFORM



PERSPECTIVE

COMMERCIAL ACCESS PLATFORM IN PAVERS



1357 BASELINE ROAD

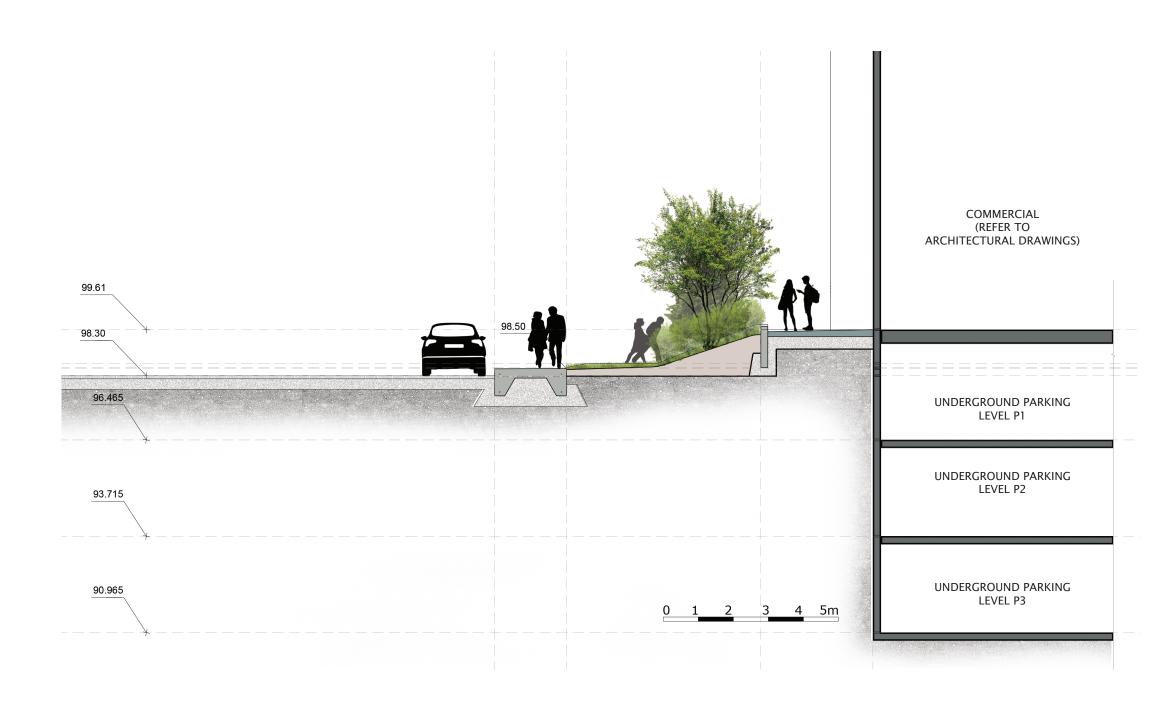
1357 BASELINE ROAD, OTTAWA

VERSION PAYSAGE SMARTCENTRES Sélection ACCOFF LLOYD PHILLIPS & ASSOCIATES LTD.

LANDSCAPE PRESENTATION

BICYCLE PARKING SPACES

COMMERCIAL ACCESS PLATFORM - SECTION D





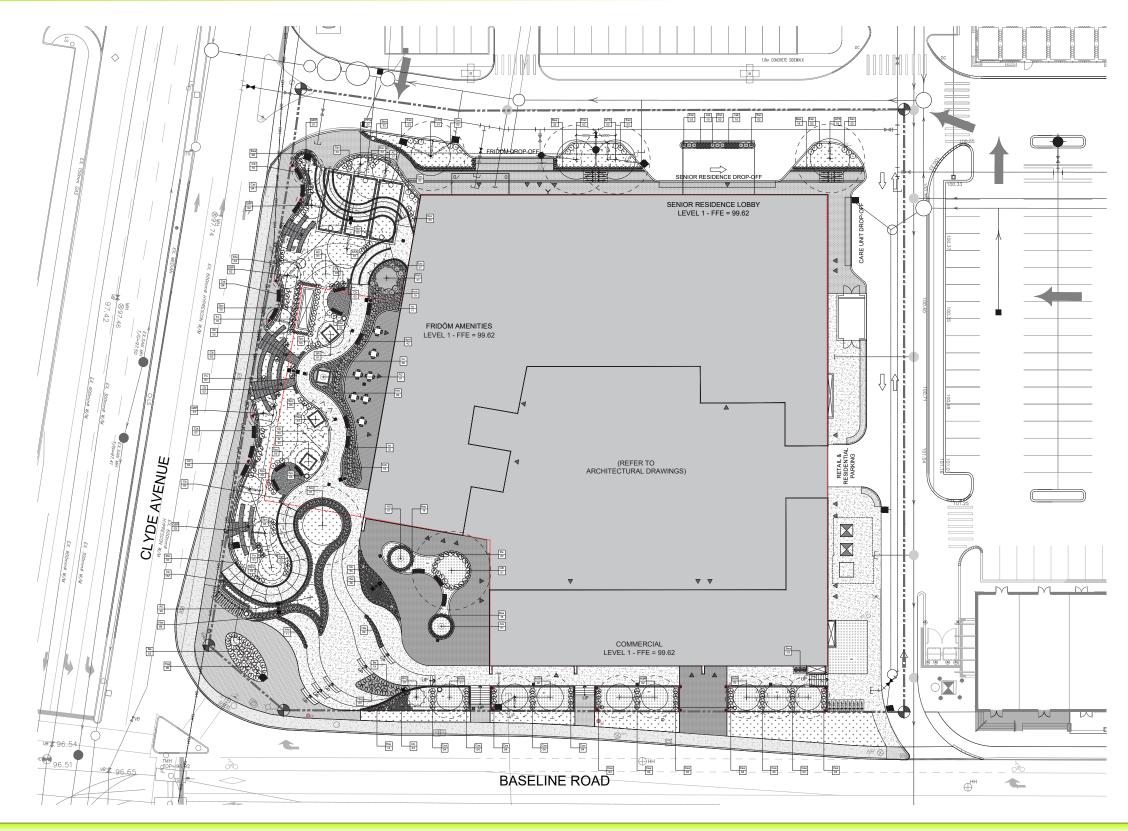
1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

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PLANTATION PLAN (LEVEL 1)



VP VERSION PAYSAGE STATISTICENTRES. SGIECTION ACCORT

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

ID		BOTANICAL NAME	COMMON NAME	PURCHASE SIZE		E METHOD OF PLANTING
				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
		Synngu reticulata Wory Sink	supurese free Ende Wory Sink	Height	ctc	builed & buildpped
PN	2	Pinus nigra 'A ustriaca'	Austrian Pine	2000mm	variable	pot
PPG	2	Picea pungens glauca	Colorado Blue Spruce	2000mm	variable	balled & burlapped
DECIDUOUS				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 W	/hite 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
ORNAMENT	AL GRASSES			Pot size	ctc	
cak	20	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass 'Karl Foerster'	31	450mm	pot
cb	276	Calamagrostis brachytricha	Reed Grass	31	450mm	pot
PERENNIALS	5			Pot size	C/C	
hob	40	Hosta 'Big daddy'	Plantain Lily 'Big daddy'	31	500mm	pot
hs	168	Hosta 'Autumn Frost'	Plantain Lily 'Autumn Frost'	31	350mm	pot
ROUNDCO	VER	M2		Pot size		
av	296	Arenaria verna 'Aurea'	Sandwort	31	300mm	pot

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

VERSION PAYSAGE SMARTCENTERS. SGROUPE ACCOUNT AND A CODE ACCOUNT AND A CONSULTANTS

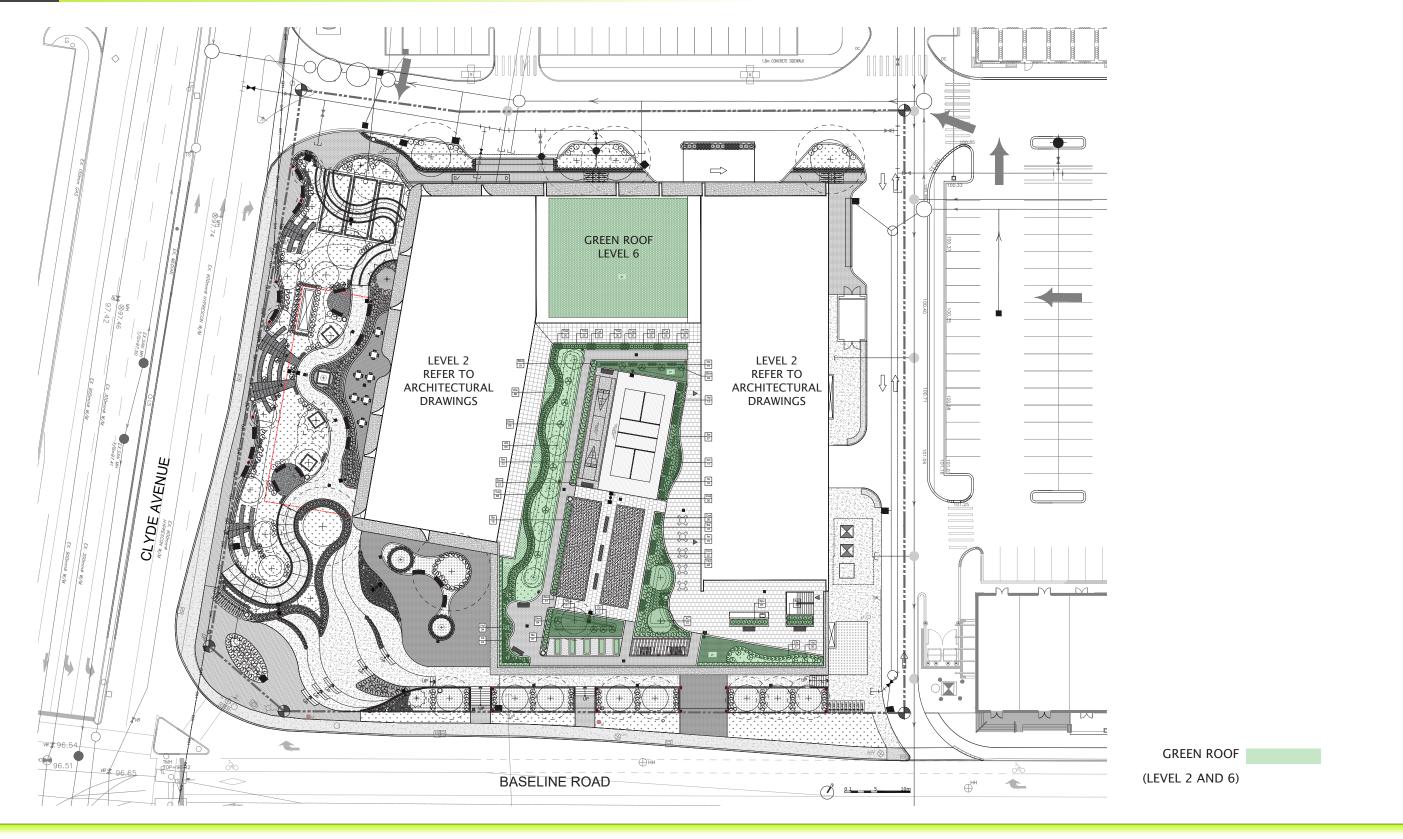
1357 BASELINE ROAD, OTTAWA

1357 BASELINE ROAD

ANNEX I : LANDSCAPING

PLANT LIST (LEVEL 1)

PLANTATION PLAN (LEVEL 2)



VERSION PAYSAGE SMARTCENTRES Sélection ACDF LLOYD PHILLIPS & ASSOCIATES LTD.

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1357 BASELINE ROAD, OTTAWA

1357 BASELINE ROAD

ANNEX I : LANDSCAPING

PLANT SCH	EDULE (LEVEL	2)				
ID	QUANTITY	BOTANICAL NAME	COMMON NAME	PURCHASE SIZE	CTC DISTANCE	e met
DECIDUOUS	S TREES			Caliper		
AC	2	Amelanchier canadensis	Shadblow Serviceberry	50mm	variable	balle
AG	5	Acer ginnala 'Flame' (tige)	Amur Maple	multi-stem	variable	balle
SR	1	Syringa reticulata 'Ivory Silk'	Japanese Tree Lilac 'Ivory Silk'	50mm	variable	balle
DECIDUOUS	S 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
CONIFEROL	JS SHRUBS			Height	ctc	
Tob	90	Thuya occidentalis 'Boisbriand'	Boisbriand Arborvitae	1200mm	900mm	balle
ORNAMEN [®]	TAL GRASSES			Pot size	ctc	
cak	96	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass 'Karl Foerster'	31	450mm	pot
cb	56	Calamagrostis brachytricha	Reed Grass	31	450mm	pot
PERENNIAL	.S			Pot size	C/C	
hm	33	Hakonechloa macra 'All Gold'	Japanese Forest Grass	31	450mm	pot
hs	109	Hosta 'Autumn Frost'	Plantain Lily 'Autumn Frost'	31	350mm	pot
GROUNDCO	OVER	M2		Pot size		
cm	30	Convallaria majalis	Lily of the valley	31	250mm	pot
pr	475	Phlox subulata 'Red Wings'	Moss Phlox	31	400mm	pot

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



1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

PLANT LIST (LEVEL 2)

ГН	DC	O OF PLANTING
ed	&	burlapped
ed	&	burlapped
ed	&	burlapped
ed	&	burlapped

20

PROPOSED PLANTS (LEVEL 1)



AC - Amelanchier canadensis Shadblow Serviceberry



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



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



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



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



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



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

VERSION PAYSAGE SMARTCENTRES Selection ACDF LLOYD PHILLIPS & ASSOCIATES LTD.



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



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



GB - Ginkgo biloba Maidenhair Tree



PPG - Picea pungens glauca Colorado Blue Spruce



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

1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING



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



PN - *Pinus nigra* 'Austriaca' Austrian Pine



Eac - Euonymus alatus 'Compactus' Dwarf Burning Bush



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



Spv - *Spiraea x Van Houtteii* Bridal Wreath Spirea



VP VERSION PAYSAGE SMARTCENTES: Selection ACDF HILLIPS & ASSOCIATES LTD.

av - Arenaria verna 'Aurea' Sandwort



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



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



Hiw - Hydrangea anborescens 'Invincibelle wee White' Smooth Hydrangea



cb - Calamagrostis brachytrica Reed Grass



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



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

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.

1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING

PROPOSED PLANTS (LEVEL 1)





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



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

PROPOSED PLANTS (LEVEL 2)



AC - Amelanchier canadensis Shadblow Serviceberry



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



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



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



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



cb - Calamagrostis brachytrica Reed Grass



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



Smk - Syringa vulgaris 'Krasavitsa Mosky' Common Lilac



hm - Hakonechloa macra 'All Gold' Japanese Forest Grass



Tob - Thuya occidentalis 'Boisbriand' Boisbriand Arborvitae



- Spiraea x Van Houtteii Spv Bridal Wreath Spirea



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



1357 BASELINE ROAD

1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING







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



cm - Convallaria majalis Lily of the valley



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)

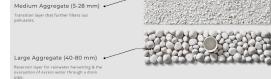


PERMEABLE CONCRETE PAVEMENT FOR WALKWAYS (POPS SIDEWALK LEVEL)

Color variation chart



1.1.3.1.7.1.1.4.1.9.1. ble Pavers 5mall Aggregate (2.5-10 mm







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)







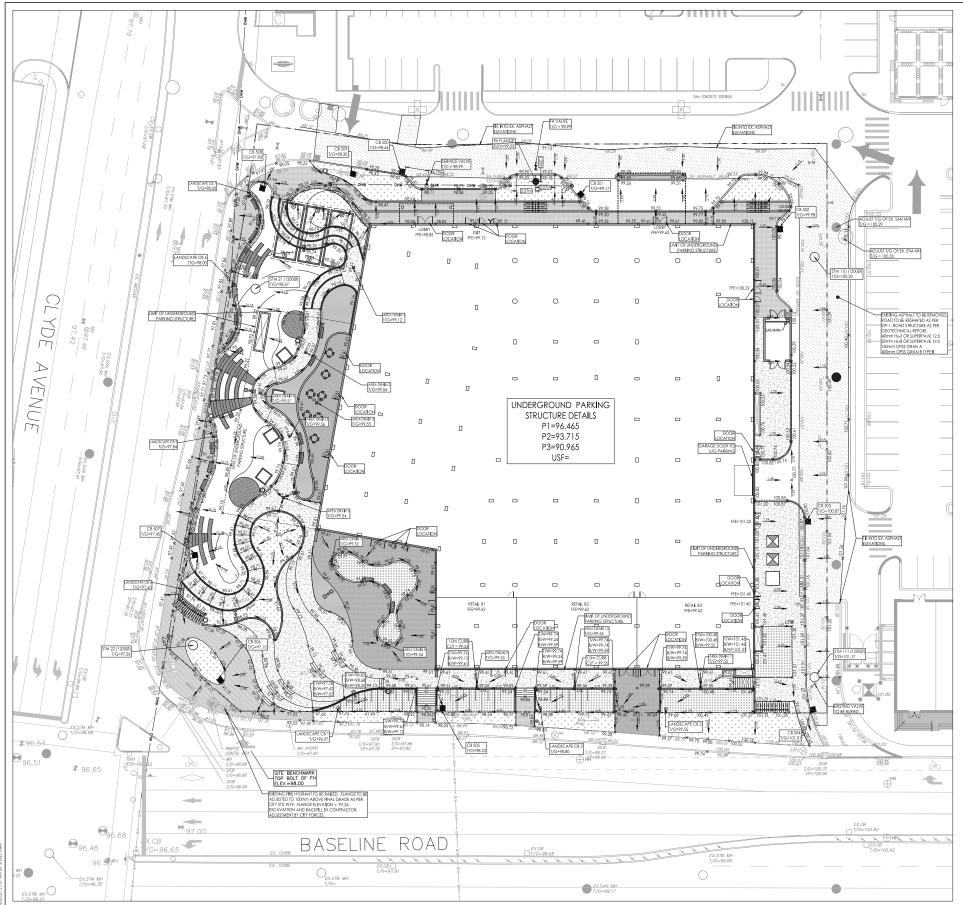
1357 BASELINE ROAD, OTTAWA

ANNEX I : LANDSCAPING





ANNEX II : SERVICING AND GRADING STUDY



1357 BASELINE ROAD, OTTAWA

ANNEX II : GRADING PLAN



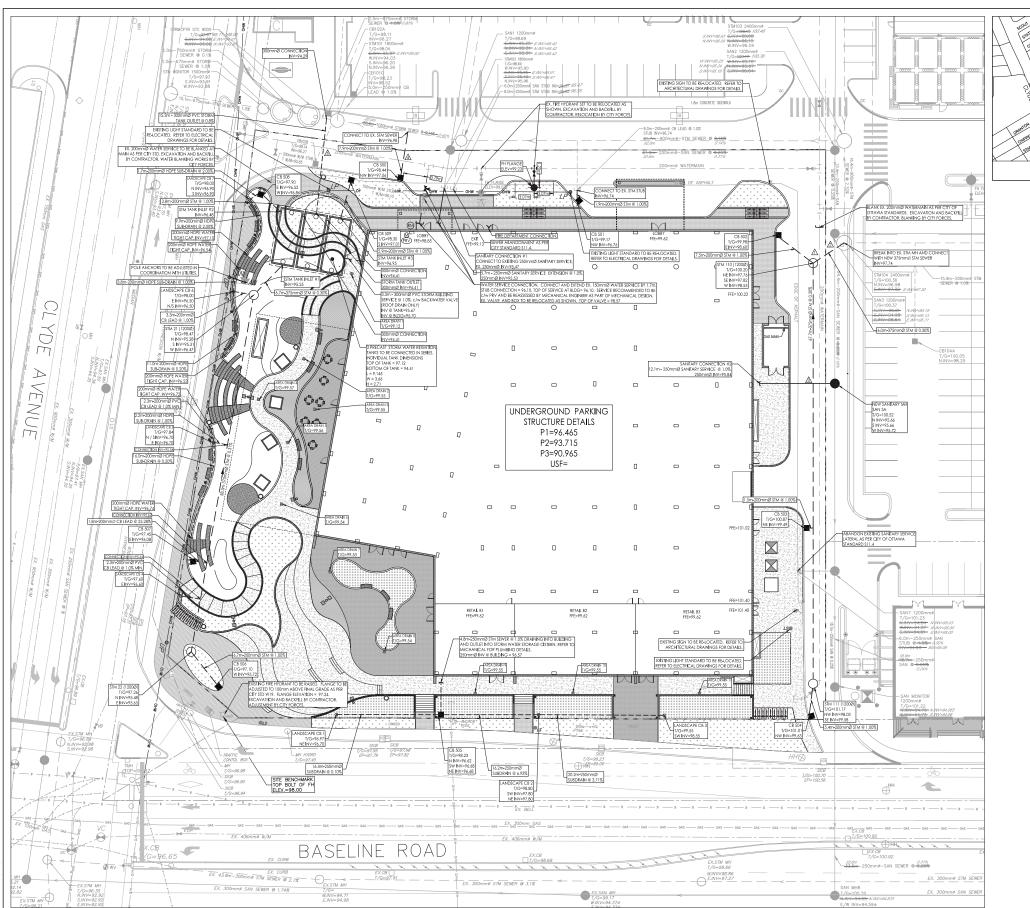


Stantec Consulting Ltd. 400 - 1331 Clyde Avenue Ottawa ON Tel. 613.722.4420 www.stantec.com

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authorized by Stante	
Legend	_
99,99	ORIGINAL GROUND ELEVATION PROPOSED ELEVATION
×99.99 × ^{99.99}	PROPOSED LEVATION PROPOSED LOT CORNER ELEVATION EXISTING ELEVATION AT LOT CORNER
2.0%	FLOW DIRECTION AND GRADE
FF=99.99 TF=99.84	FINISHED FIRST FLOOR ELEVATION TOP OF FOUNDATION WALL ELEVATION
USF=97.14 3R	UNDERSIDE OF FOOTING ELEVATION NUMBER OF RISERS
3:1	TERRACING 3:1 SLOPE MAXIMUM (UNLESS OTHERWISE SHOWN)
	PROPOSED SWALE
\rightarrow	DIRECTION OF OVERLAND FLOW
N R	PROPOSED VALVE BOX PROPOSED VALVE CHAMBER
- - -	PROPOSED FIRE HYDRANT
<u> </u>	PROPOSED SANITARY SEWER MANHOLE
ŏ	PROPOSED STORM SEWER MANHOLE
ŏ	PROPOSED CATCHBASIN MANHOLE
	PROPOSED CONCRETE CATCHBASINS
0	PROPOSED SUB DRAIN CATCH BASIN AS PER CITY OF OTTAWA STANDARD DETAIL DRAWINGS \$29.
	PROPOSED AREA DRAINS TO BE CONNECTED TO INTERNAL PLUMBING OUTLETING 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)
D.C	(REPER TO MECHANICAL FLAN FOR DETAILS) PROPOSED DEPRESSED CURB LOCATION
	PROPOSED HEAVY DUTY ASPHALT RE-INSTATEMENT AREA
	_
Notes	
1. RISER HEIGHT = 0.15m	
GEOTECHNICAL INVESTIG.	PER PATERSON GEOTECH REPORT IIILED 'SUPPLEMENTAL ATION' PROPOSED HERISE DEVELOPMENT, CLYDE AVENUE AT
BASELINE ROAD, OTTAWA DATED APRIL 3, 2019. REF	- ON
LIGHT DUTY 50mm HL-3 OR SUPERPAV	
150mm HL-3 OR SUPERPAV 150mm OPSS GRAN A 300mm OPSS GRAN 8 TYP	E 12.5
HEAVY DUTY	
40mm HL-3 OR SUPERPAV	
50mm HL-8 OR SUPERPAV	E 12.5 E 19.0
40mm HL-3 OR SUPERPAV 50mm HL-8 OR SUPERPAV 150mm OPSS GRAN A 400mm OPSS GRAN B TYP	E 12.5 E 19.0 E II
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Somm HLB OR SUPERAV 150mm OPSS GRAN A 400mm OPSS GRAN B TYP	E125 E180 E11
50mm HL-8 OR SUBERPAV 150mm OPSS GRAN & 400mm OPSS GRAN B TYP	E 12.5 E 19 J E 11 J E 11 J E 11 J E 11 J E 12 J E
50mm HL-8 OR SUPERPAV 150mm OPSS GRAN & 400mm OPSS GRAN 8 TYP	EN
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400mm OPSS GRAN B TYP	COMMENTS MAS OT 20.05.15 PA By Appd. TY MALDD
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400mm OPS GRAVE TYP	EI COMMENTS MAS DT 20.05.15 PA MIS DT 20.01.07 By Appd. YT.MM.DD 3 M.S KS MAS Dgm. YT.MM.DD 4 D.C. THEFAULT 1001086107 15/05/2020 0
40mm OPS GRAVE TYP	EI COMMENTS MJS DT 20.05.15 PA MJS DT 20.01.07 Appd. T7.MM.DD 3 MJS KS MJS 19(92) Don. Crkd. Dgn. T7.MM.DD
40mm OPS GRAVE TYP	EI COMMENTS MAS OT 2005.15 PA MAS OT 2001.07 Appd TY.MM.DD 3 MS S MS 19.9722 Dur. Cried Dugr. TY.MM.DD
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40mm OPS GRAVE TYP	COMMENTS PA COMMENTS PA MAS DT 20.05.15 DT 20.01.07 Appd. YT.MMADD S MAS DWR. Crited. MAS Digr. YT.MMADD S DWR. Crited. MAS Digr. YT.MMADD Crited. Digr. YT.M
40mm ORS GRAVE TYP	COMMENTS PA COMMENTS PA MAS DT 20.05.15 DT 20.01.07 Appd. YT.MMADD S MAS DWR. Crited. MAS Digr. YT.MMADD S DWR. Crited. MAS Digr. YT.MMADD Crited. Digr. YT.M
40mm ORS GRAVE TYP	EI COMMENTS MUS OT 200515 MUS OT 200507 OT 20
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1357 BASELINE ROAD, OTTAWA



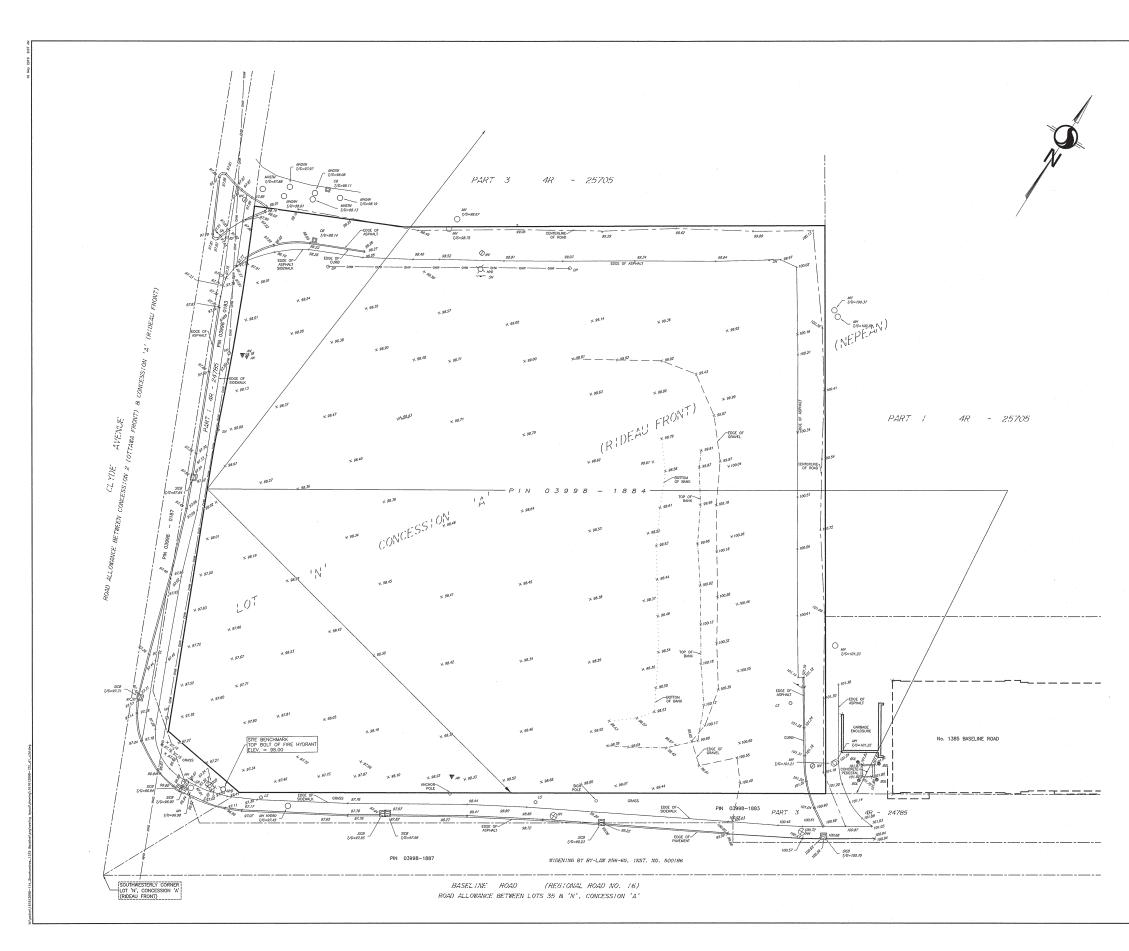
ANNEX II : SITE SERVICING PLAN

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ANNEX III : SURVEYOR'S CERTIFICATE



1357 BASELINE ROAD, OTTAWA

ANNEX III : SURVEYOR'S CERTIFICATE

SCALE: WITHOUT



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

CITY OF OTTAWA

Scale 1:250

Stantec Geomatics Ltd.

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, CM73*00W) DATUM: NAD 83 (ORIGINAL)

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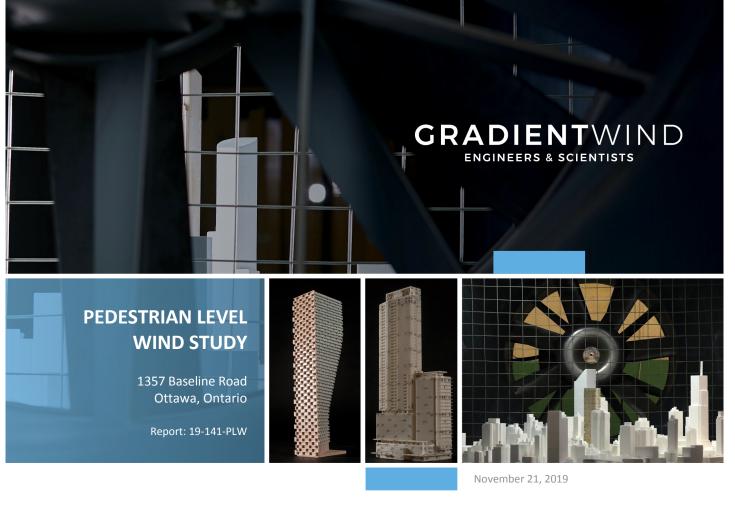
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PREPARED FOR

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 KOA 1L0 | 613 836 0934 GRADIENTWIND.COM

GRADIENTWIND

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
- found to experience conditions that are classified as uncomfortable or dangerous.

Selection Group International Inc. 1357 BASELINE ROAD, OTTAWA: PEDESTRIAN LEVEL WIND STUDY

1357 BASELINE ROAD, OTTAWA

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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

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INTRODUCTION 1.

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.

TERMS OF REFERENCE 2.

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.

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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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METHODOLOGY 4.

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 criteria¹. 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

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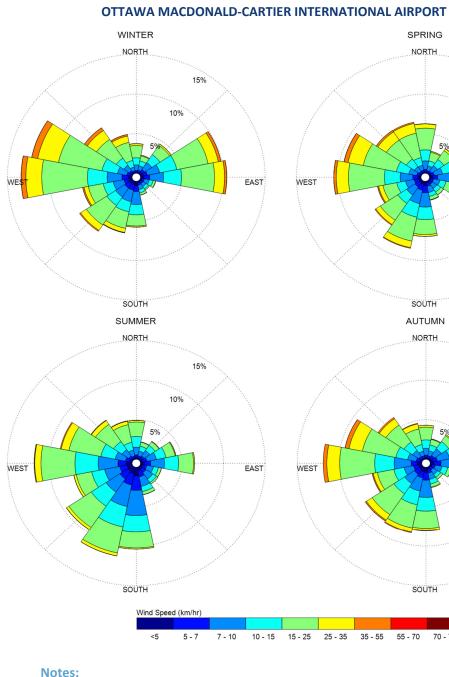
Mean and peak wind speed data obtained over the study site for each wind direction were interpolated to 36 wind directions at 10° intervals, representing the full compass azimuth. Measured wind speeds approximately 1.5 m above local grade, and 1.5 m above the various amenity terraces, were referenced 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.

Meteorological Data Analysis 4.3

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.





- 1. Radial distances indicate percentage of time of wind events.

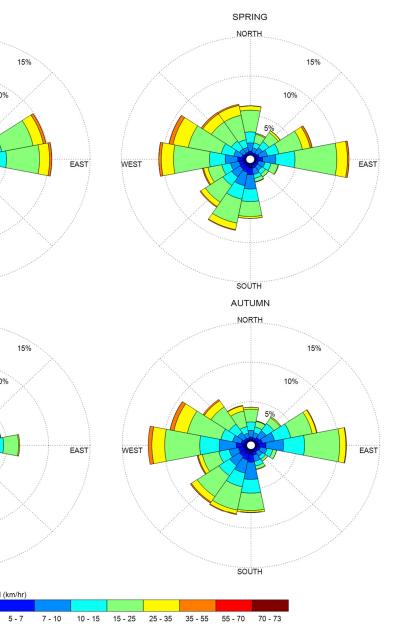
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SEASONAL DISTRIBUTION OF WINDS FOR VARIOUS DIRECTIONS



2. Wind speeds are mean hourly in km/h, measured at 10 m above the ground.



Pedestrian Comfort and Safety Criteria – City of Ottawa 4.4

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.

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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

RESULTS AND DISCUSSION 5.

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
		standing around mos
		predicted to be suital
-	Summer Season	Wind conditions are p
		while conditions to
		suitable for standing
-	Autumn Season	Conditions are simila
		somewhat calmer (Fi
-	Winter Season	Conditions are simila
		moderately windier (

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.

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ANNEX IV : WIND STUDIES

predicted to be suitable for a mix of sitting and st of the site. Conditions to the north of the site are able for a mix of standing and strolling (Figure 3A).

- predicted to be suitable for sitting over most areas, the north of the site are predicted to be mostly (Figure 4A).
- ar to those predicted during the spring season, but igure 5A).
- ar to those predicted during the spring season, but (Figure 6A).

Wind Comfort Conditions – Southwest Grade Level Amenity Terrace 5.3

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.
- Conditions are predicted to be suitable for sitting (Figure 4B). Summer Season
- 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: Summer Season Autumn Season Winter Season

-

-

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.

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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.

Conditions are predicted to be suitable for sitting (Figure 4B).

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.

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.



Wind Comfort Conditions – Surrounding Area Beyond the Subject Site 5.5

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.

SUMMARY 6.

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



Sacha Ruzzante, MASc. Junior Wind Scientist

Gradient Wind File #19-141

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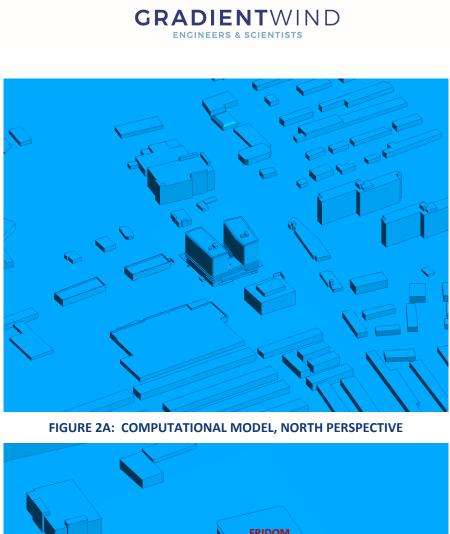


Justin Ferraro, P.Eng. Principal









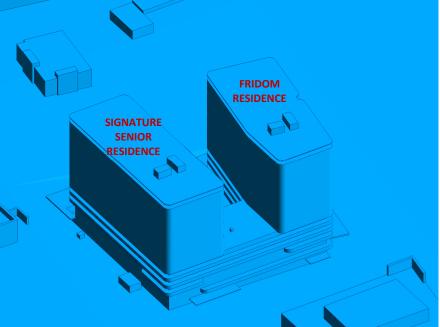


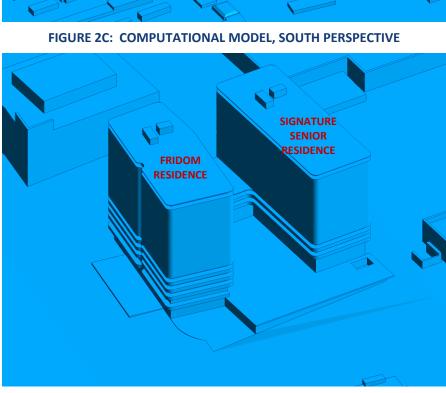
FIGURE 2B: CLOSE UP OF FIGURE 2A

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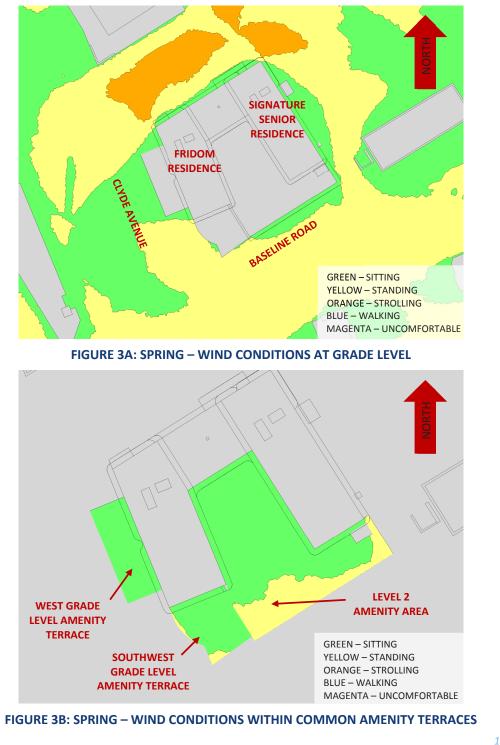






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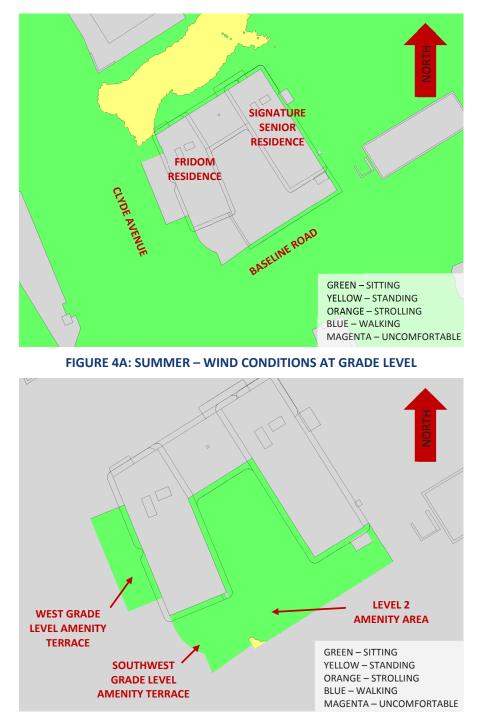
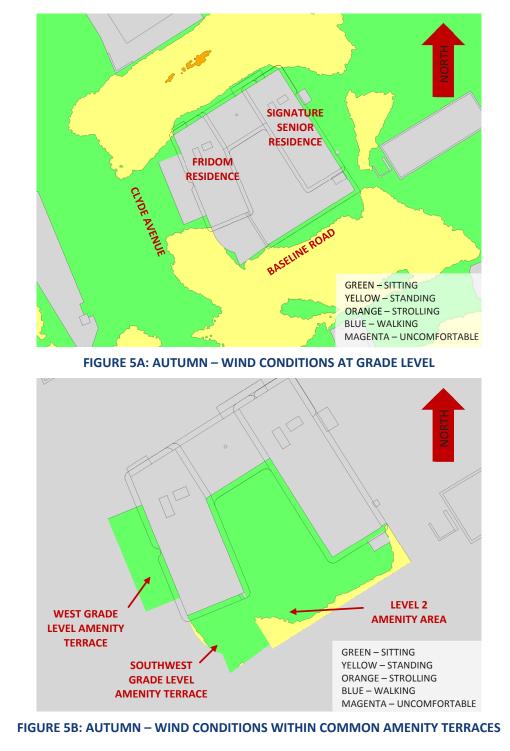


FIGURE 4B: SUMMER – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES



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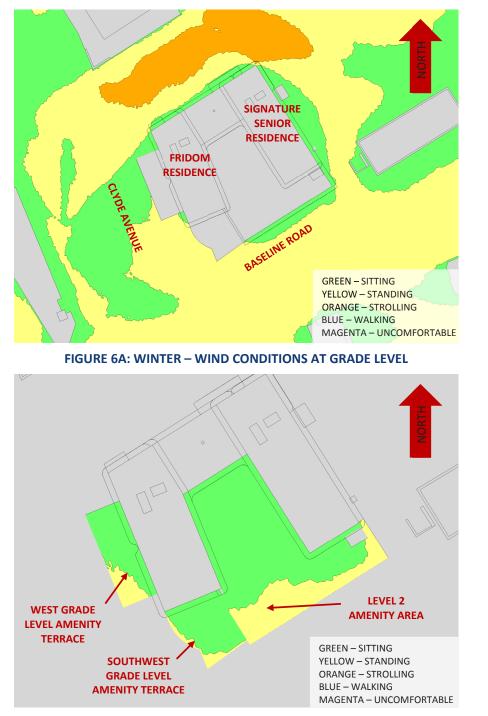
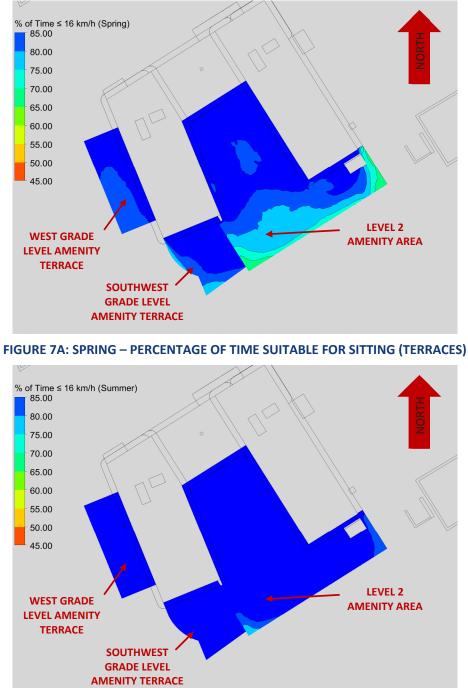


FIGURE 6B: WINTER – WIND CONDITIONS WITHIN COMMON AMENITY TERRACES



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





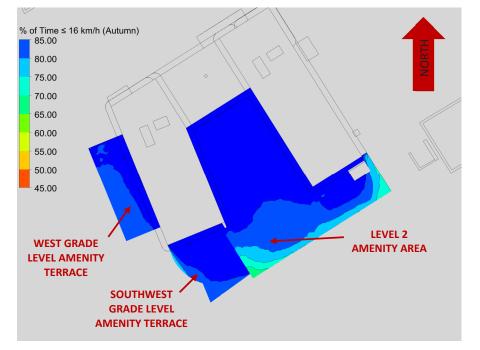


FIGURE 7C: AUTUMN – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)

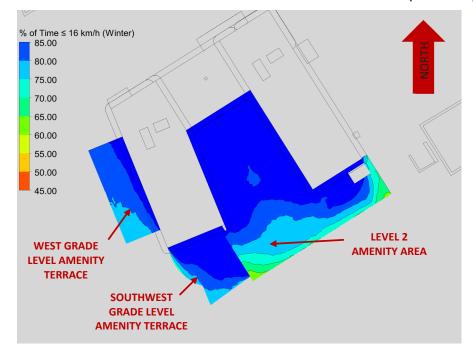


FIGURE 7D: WINTER – PERCENTAGE OF TIME SUITABLE FOR SITTING (TERRACES)



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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APPENDIX A

SIMULATION OF THE NATURAL WIND

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 guoted, 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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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:

 $f \times S(f) = ---$

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.

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Where; U = mean wind speed, $U_q =$ gradient wind speed, Z = height above ground, $Z_q =$ depth of the

$$\frac{4(Lf)^2}{U_{10}^2} + \frac{4(Lf)^2}{U_{10}^2} \bigg]^{\frac{4}{3}}$$



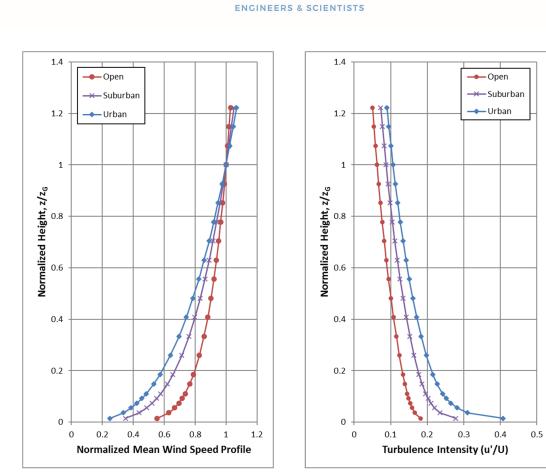


FIGURE A1 (LEFT): MEAN WIND SPEED PROFILES; FIGURE A2 (RIGHT): TURBULENCE INTENSITY PROFILES

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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:

 $P\left(>U_g\right) = A_{\theta} \bullet e$

Where,

 $P (> U_q)$ is the probability, fraction of time, that the gradient wind speed U_q 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:

 $P_{N} (> 20) = \Sigma$

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

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$$\exp\left[\left(-\frac{Ug}{C\theta}\right)^{K\theta}\right]$$

$$_{\theta}P\left[\frac{(>20)}{\left(\frac{U_{N}}{U_{g}}\right)}\right]$$

$P_N(>20) = \Sigma_{\theta} P\{>20/(U_N/Uq)\}$



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.

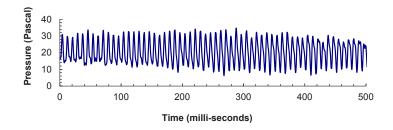


FIGURE B1: TIME VERSUS VELOCITY TRACE FOR A TYPICAL WIND SENSOR

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