rla/architecture

1815 Montreal Road

Urban Design Brief

Contents

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Project Description

Design Description

This Urban Design Brief presents the design strategy for a proposed 21-storey residential building at 1815 Montreal Road, Ottawa, thoughtfully responding to its context and surroundings. The development will feature 191 residential units in a range of configurations, along with three levels of parking, offering a total of 160 spaces, including three at-grade short term parking spaces for short-term pickup and drop-off. This design, by carefully considering the proportions, color palette, and overall style of the building, complements and enhances the urban fabric, fostering a cohesive and harmonious visual relationship with the surrounding buildings. It also addresses the demand for higher-density housing while respecting the character of the surrounding low-rise neighborhood

The site lies along Montreal Road, a major thoroughfare, surrounded by low-rise residential buildings to the north and east. The property was initially proposed for rezoning to allow taller buildings, with provisions for up to nine storeys and smaller setbacks, but this approach proved economically unfeasible. However, the current design adopts a different strategy by reducing the horizontal massing of the structure and opting for vertical growth. This strategy uses a slender tower to increase sunlight and visibility around the building and maximizes landscaping and creates greater distance between the building and neighboring low-rise properties, ensuring a smooth and respectful transition from the existing low-rise context to the 21-storey tower. By employing variations in height and massing, the design steps the building upward from the podium to the tower, positioning the taller elements away from adjacent low-rise buildings. The design also incorporates progressive setbacks at the 4th, 6th, and 17th storeys, as well as the mechanical penthouse, further diminishing the building's mass as it rises.

Figure 1: East Elevation

Figure 2: South Elevation

The podium, ranging from three to four storeys, creates a transition from the street front, softening the visual impact of the building. The T-shaped configuration of the podium's floor plan is designed to enhance the building's frontage and activate the Montreal Road streetscape. It creates a strong connection between the building and the street, contributing to the development of Montreal Road and helping to shape its urban character as the area evolves. The choice of materials includes dark grey brick on levels two through four, creating a contrast with the red brick of the ground floor. This material palette gives a nod to the elegant housing of Rothwell Heights, and is intended to both complement and respect the surrounding neighborhood while animating the streetscape at the pedestrian level. The dark-toned podium ensures the building remains engaging at street level while maintaining respect for its context.

The building’s ground floor is designed to encourage social interaction and community engagement, with a co-working area and lobby that animate the frontage along Montreal Road. These spaces aim to foster a sense of connection and vibrancy at the street level, enhancing the building’s relationship with its urban surroundings. A generous green area at the building’s frontage will serve as a welcoming buffer between the building and the street, improving the overall streetscape. This green space also has the potential to extend the social interactions within the building to the outdoors, strengthening the community feel and further animating the building’s frontage.

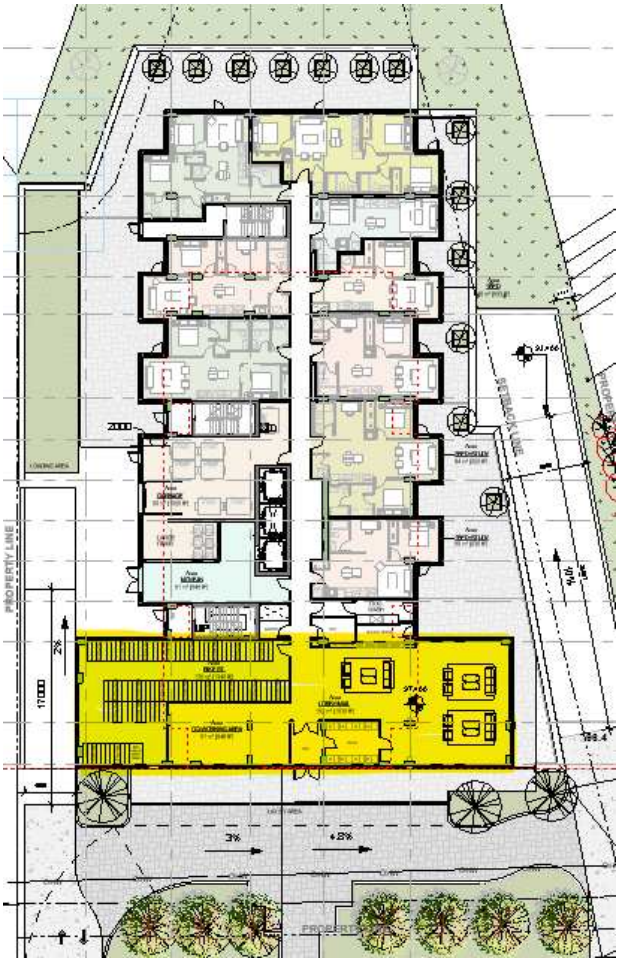


Figure 3: Ground Floor Plan

In addition to the co-working space and lobby, the building offers various amenity areas that enhance the residential experience. A fourth-floor outdoor terrace provides views of the rear green space, creating a visual and spatial link between the building and the neighboring low-rise community. At the rooftop, another outdoor terrace offers sweeping views of the Ottawa River, providing a valuable outdoor amenity for residents. Furthermore, the building will include a bike room on the ground floor, encouraging cycling as a sustainable mode of transport offering convenient access for residents.

Figure 4: Level 4 Floor Plan

Figure 5: Mechanical Penthouse Floor Plan

Above the podium, the tower features a combination of glass and lighter materials, offering a transparent, airy aesthetic that integrates with the sky and reduces the building's visual mass. The tower's floor plate is designed with three units on the north and south sides, and four in the center, optimizing natural light and views for the majority of the units. A key architectural feature of the tower is its corner glass elements, which facilitate dynamic visual interaction with passing cars and pedestrians, inviting engagement and enhancing the building's presence along Montreal Road.

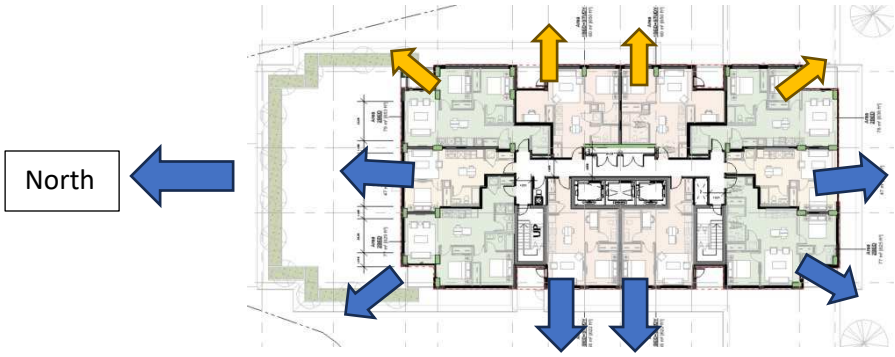


Figure 6: Tower Typical Floor Plan

The building offers a diverse range of unit types to accommodate various household sizes, with 191 units distributed as follows: 1.6% studios, 15% one-bedroom units, 40% one-bedroom plus den units, 31% two-bedroom units, 4% two-bedroom plus den units, and 8% three-bedroom units. This variety supports a broad demographic. The parking provision includes three levels of underground spaces, with a total of 160 parking spots, in addition to the three at-grade short term parking spaces located at the south of the site. A layby along Montreal Road will provide an area for short-term pickup and drop-off.

Project Statistic

Table 1:Proposed Statistic

GFA CONSTRUCTION AREA ABOVE GRADE	GFA CONSTRUCTION AREA BELOW GRADE	RESIDENTIAL LEASABLE AREA	INDOOR AMENITY	OUDOOR AMENITY	# OF LOCKERS	# OF PARKING SPACES	# OF BICYCLE SPACES	LOT COVERAGE	BUILDING HEIGHT
						RESIDENT: 141 VISITOR: 19			
173,013 SQ.FT.	**49,780 SQ.FT.**	138,408 SQ.FT.	3,850 SQ.FT.	5,384 SQ.FT.	76	160	191	52538 SQ.FT.	68 m

Table 2:Proposed unit breakdown

Studio Unit	1 Bedroom Unit	1 Bed+Den Unit	2 Bedroom Unit	2 Bed+Den Unit	3 Bedroom Unit	TOTAL Units	Total Enlarged Units
3	28	77	60	8	15	191	23
1.6%	14.7%	40.3%	31.4%	4.2%	7.9%	191	12%

Rendering of the Proposal

Figure 7: 3D view Looking from Montreal Rd Toward East

Figure 8: 3D View Looking from Montreal Toward West

Figure 9: 3D view Looking from the Back

Figure 10: 3D View Looking from the Back

Figure 11: 3D view Looking Toward the Main Entrance

Design Directives

Responses to Policy

Official Plan

The project aligns with the city's vision for increased density along major thoroughfares like Montreal Road, responding to housing demand while respecting the character of adjacent low-rise areas.

Urban Design Guidelines for High-Rise Buildings

The building integrates well with its surrounding neighborhood by incorporating a vertical massing that stays set back from the low-rise buildings, minimizing its visual impact. The design adopts a series of stepped setbacks from the podium to the tower, ensuring that the overall bulk of the building does not overwhelm the neighboring low-rise structures. There are already three low-rise structures on the east side, and the property adjacent to Montreal Road holds significant potential for future higher development. To minimize the impact on these structures, the podium height has been reduced from four to three levels on this side, and the tower has been positioned to maximize the distance from these buildings.

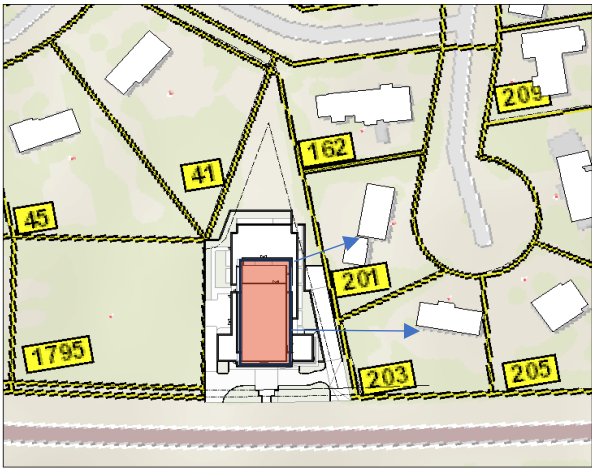


Figure 12: 1815 Montreal Rd context Plan

Additionally, the tower's floor plate is limited to 750 sqm, in accordance with the city's guidelines, ensuring appropriate scale.

The choice of building materials has been carefully selected to reflect and respect the character of the area. The building incorporates masonry, including red brick for the podium, which complements the materials of the surrounding low-rise buildings. The design also prioritizes the pedestrian experience, featuring ground-floor spaces like a lobby and co-working areas that foster communication and interaction. These spaces are designed to be open and engaging, promoting a sense of connection with the street. The building's frontage also incorporates green landscaping, extending the interaction between the building and the outdoor green space, which not only enhances the public realm but also helps mitigate the urban heat island effect. Pedestrian connectivity to the building is reinforced with a grand entrance from Montreal Road that includes seating on the sides of a wide pathway that directs pedestrian to the main lobby entrance.

Urban Design Guidelines for Development Along Arterial Mainstreet

The design supports the evolution of Montreal Road, enhancing its frontage with active ground-level spaces, such as the co-working area and green spaces.

Response to Urban Design Directions Provided During the Pre-Consultation

During the pre-consultation meeting, we were asked to reduce the building's distance to the property line and increase the green space in front of the building. It was also suggested that a T-shaped configuration be used for the building to animate the building's frontage as much as possible. In response, we redesigned the building to incorporate these recommendations, creating a dynamic and engaging interaction between the structure and its surroundings. Additionally, we brought the building forward as much as possible, while working within the limitations of the existing utility wires and future road widening, ensuring that we adhered to both the design goals and site constraints.

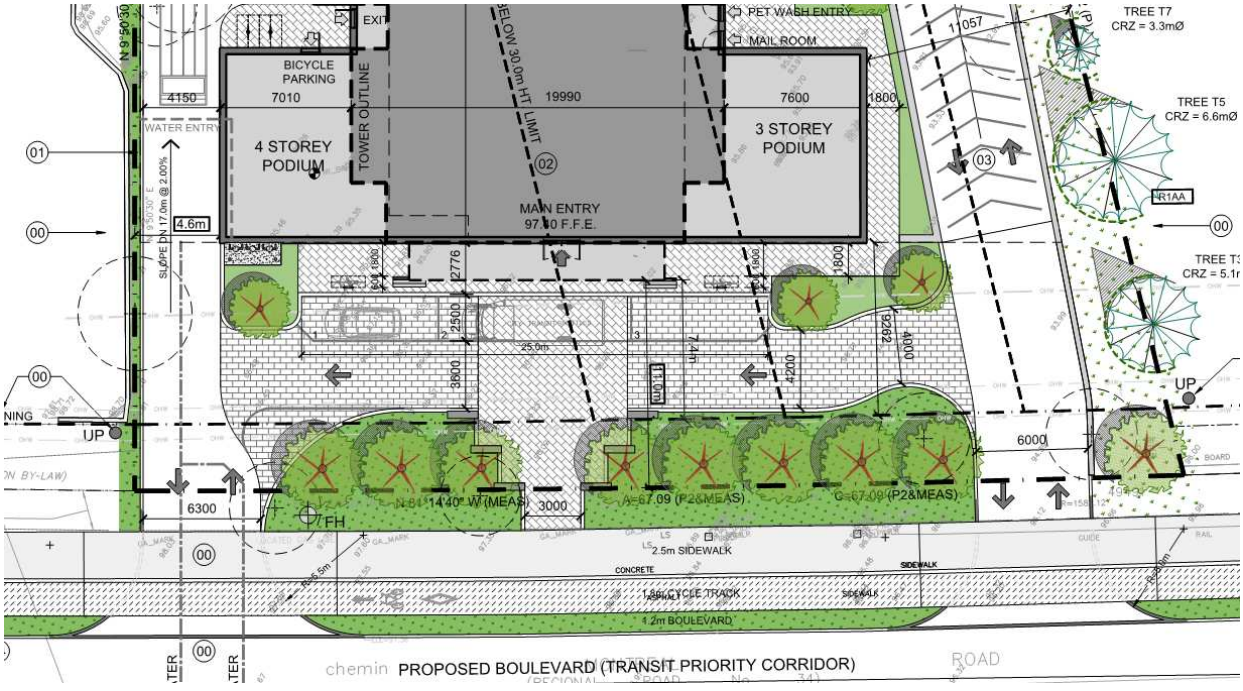


Figure 13: Site Plan

Site, Context, and Analysis

Perspective Images To and/or From the Site

Figure 14: Surrounding Context. Image provided by Fotenn

Microclimate Conditions of the Site

The building's design considers wind and shadow conditions to ensure the transition from the tower to adjacent low-rise buildings is respectful. The progressive setbacks and height variations reduce shadow impacts on neighboring properties and the street. The podium's massing engages Montreal Road to animate the street, while the tower's height and setbacks reduce its visual bulk and minimize shadowing of nearby properties.

In addition, we have prioritized ample green space throughout the site, incorporating it into key areas such as the ground floor entrance, deck, fourth-floor amenity terrace, and rear yard. These green spaces are strategically placed to not only enhance the aesthetic appeal and functionality of the site but also to help reduce the urban heat island effect. By increasing the amount of vegetation, we aim to mitigate heat buildup, improve air quality, and create more comfortable outdoor environments for occupants and the surrounding community. The landscaping for the project will be carefully designed by a landscape architect to prioritize both aesthetic appeal and environmental safety. Special attention will be given to selecting plant species and features that do not attract birds close to the building, helping to reduce the risk of bird collisions with the building.

Mobility Networks

The site is well-connected by Montreal Road, a major thoroughfare and Arterial Road. The building provides convenient access to public transport and cycling infrastructure, with a bike room available on the ground floor.

Public Transit

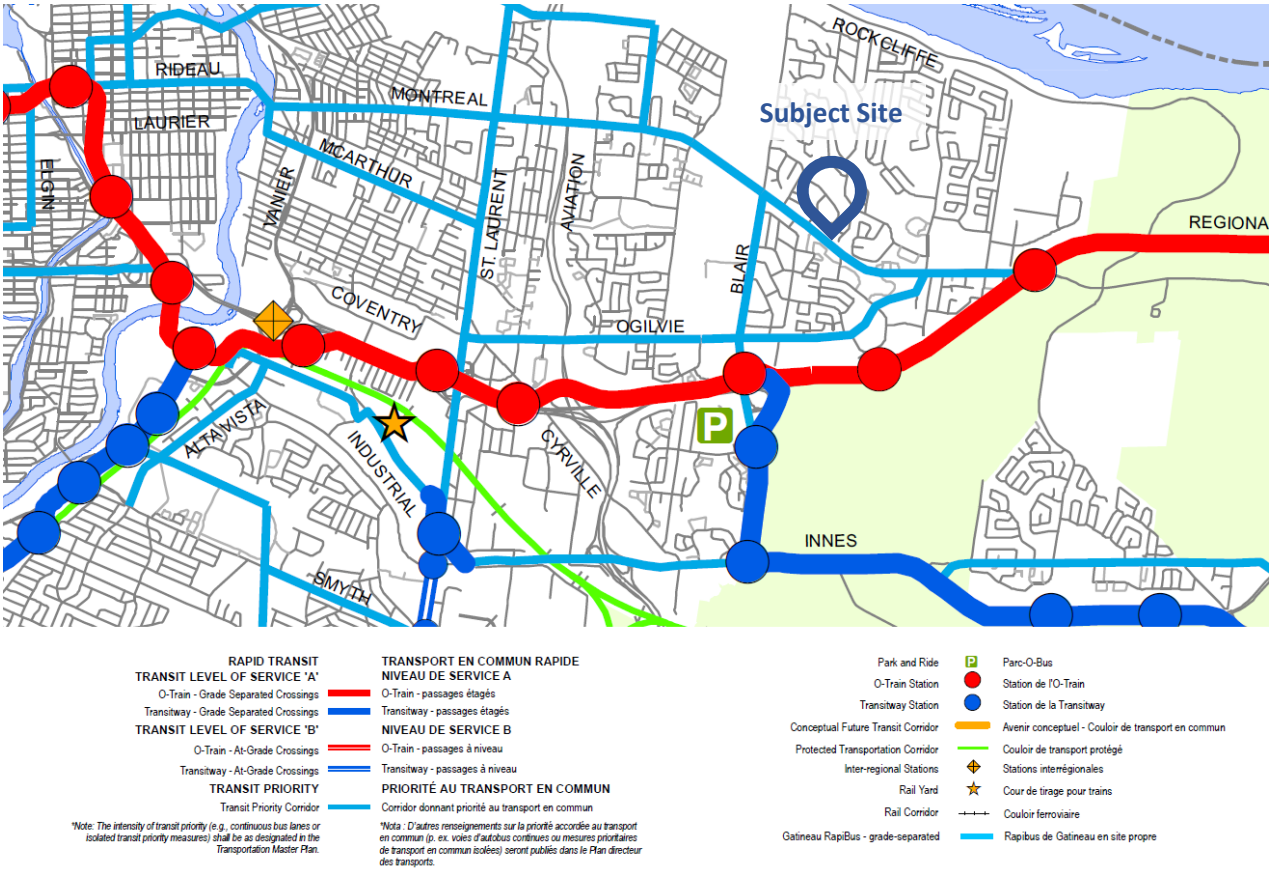


Figure 15: Schedule C2 – Transit Network Ultimate, City of Ottawa Official Plan (2022)

According to Schedule C2, Montreal Road is identified as a Transit Priority Corridor. The City of Ottawa has completed the Municipal Class Environmental Assessment (EA) Study in order to advance this vision.

Public transit service is presently provided by OC Transpo. The westbound bus stop is located approximately 73 metres from the western property line, about a 1-minute walk. The site will be served in the New Ways to Bus Network by Route 12, which will provide access to Blair Station and Rideau Station.

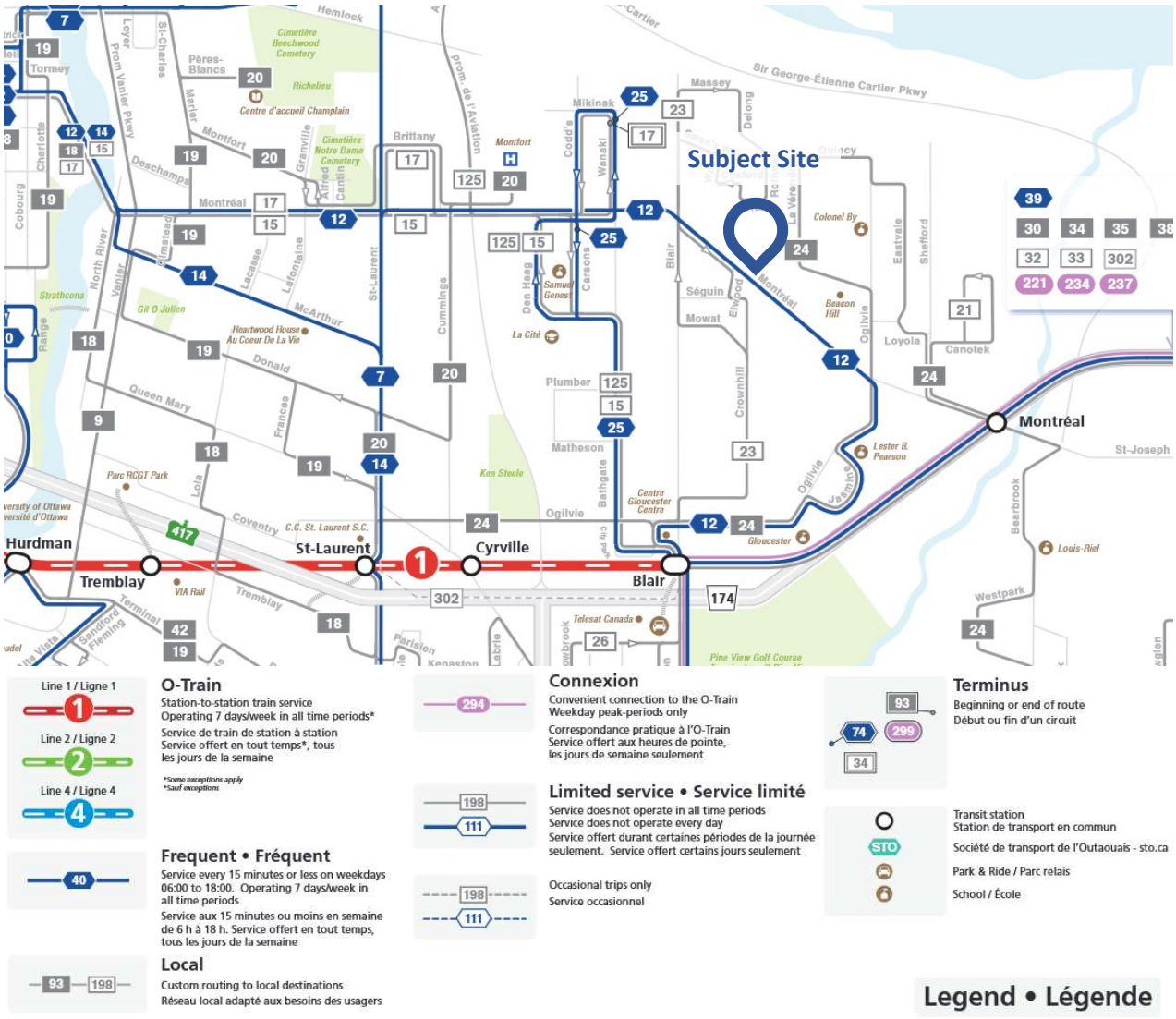


Figure 16: New Ways to Bus Network Map, provided by OC Transpo, dated August 19, 2024

Active Transportation

Figure 17: Schedule C3 – Active Transportation Network, Urban – Major Pathways, City of Ottawa Official Plan (2022)

Road Network

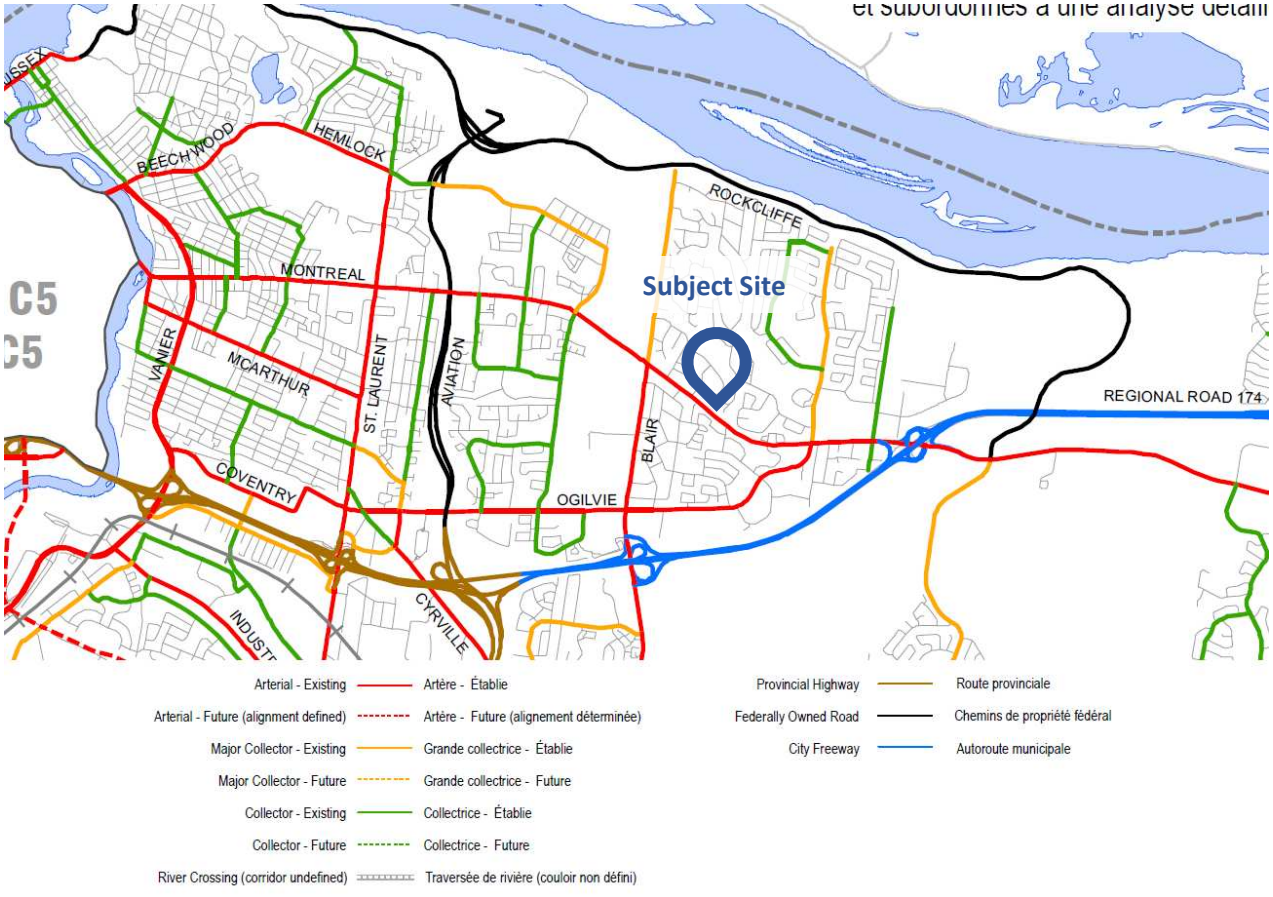


Figure 18: Schedule C4 – Urban Road Network, City of Ottawa Official Plan (2022)

Future and Current Development Proposals on Adjacent Properties

The land to the west remains vacant with no construction activity, but is part of a broader development plan for higher-density growth in the area. The project's height and massing were designed to be compatible with this evolving urban context.

The Planned Functions of the Adjacent Properties

The surrounding properties are primarily residential, with plans for mixed-use or higher-density developments as the area continues to evolve.

The lands immediately to the west are zoned Arterial Mainstreet, Urban Exception 2529, height limit 11 metres (AM[2529] H(11)). On the south side of Montreal Road to the west, lands are zoned Arterial Mainstreet, subzone 10, Urban Exception 2199[AM10[2199]), suggesting that there is potential for change and redevelopment over time.

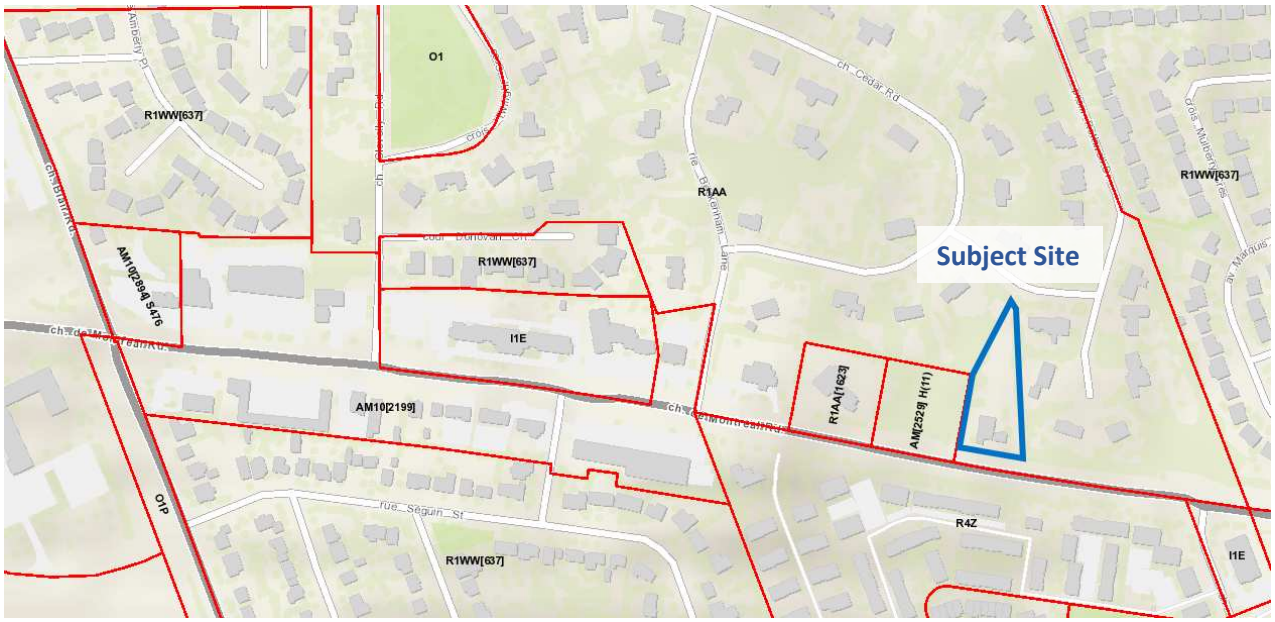


Figure 19: Zoning of nearby properties, subject site outlined in blue.

Design Research

Alternative Site Plan Options

The current site plan maximizes landscaping and open space, with a T-shaped podium that activates Montreal Road. Alternative site configurations were considered, but this approach was selected to balance the need for density with the desire to maintain a pedestrian-friendly environment.

Alternative Massing Options

The vertical massing strategy was chosen over a more horizontal approach, ensuring minimal visual disruption while allowing for greater distance between the tower and neighboring properties.

Massing of the Proposed Development in the Existing Context

The proposed development ensures a smooth transition in height and massing by gradually stepping down the buildings and setting them back from neighboring low-rise properties. As outlined in the policy, the development will generally adhere to the application of an angular plane, which is just one of several methods for assessing how a building aligns with the character of the surrounding neighborhood.

Images below illustrate how the building extends into the 45-degree angular plane when measured from the east and west property lines. From the adjacent property rear setback line, a section of the top four floors slightly protrudes into the angular plane.

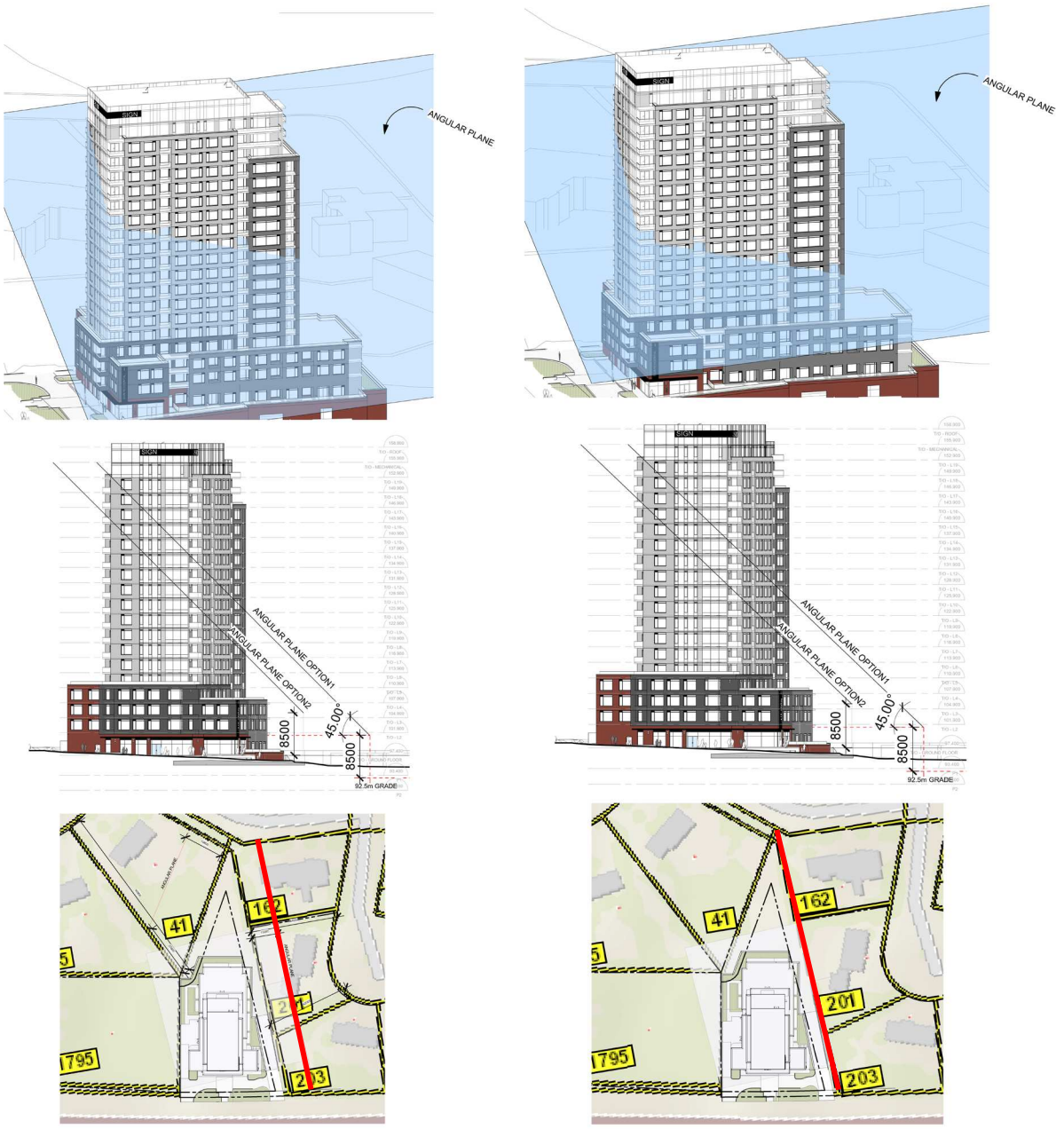


Figure 20: East side angular plane options 1 and 2: Option 1 is measured from the proposed development's east side property line, while Option 2 is measured from the rear setback line of the adjacent property on the east side

Figure 21: West side angular plane options 1 and 2: Option 1 is measured from the proposed development's west side property line, while Option 2 is measured from the rear setback line of the adjacent property on the west side.

Massing of the Proposed Development in the Planned Context

The design responds to anticipated future developments along Montreal Road, ensuring compatibility with the evolving urban fabric of the area.

Built Form Transition Between the Proposed Development and the Surrounding Area

The design employs a series of setbacks at key levels (4th, 6th, and 17th storeys), which minimizes the building's impact on neighboring properties, ensuring a smooth transition between the tower and the surrounding low-rise structures.

Response to Abutting Public Realm Conditions Beyond the Boundaries of the Site

The design incorporates a generous green area along Montreal Road that helps create a buffer between the building and the street, enhancing the public realm and providing outdoor space for residents and pedestrians.

Street Cross Sections

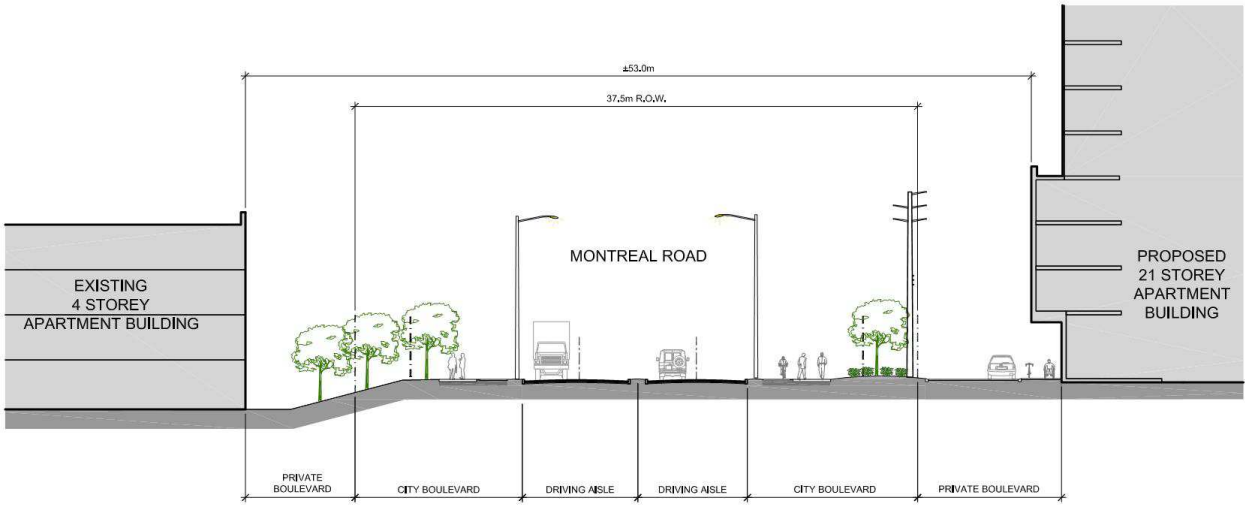


Figure 22: Street Section

Approach to Sustainable Design as it Relates to the City's High-Performance Development Standards or Any Other Accredited System Such as LEED

The proposed development focuses on sustainable site management to reduce heat islands and improve the built environment. By incorporating underground parking, the project maximizes landscape areas at ground level. It promotes cycling with one bicycle storage space per unit. A significant amount of green space is featured, alongside soft landscaping elements and amenity areas at street level to enhance the streetscape. The landscape design will include indigenous plants and large sidewalk trees to support local ecology.

Additionally, a landscaped roof deck will be provided on the ground floor, and stormwater management strategies will be integrated into the building design to control rainwater runoff.

In terms of community well-being, the development offers large residential units in a variety of types to cater to different needs. Environmentally friendly materials will be a key focus, with exterior wall assemblies selected for higher R-values to reduce heating and cooling demands. High-quality aluminum windows will be used to further enhance energy efficiency and provide better soundproofing.

Bird Safe Design

We have considered various measures to ensure adherence to Ottawa's bird-safe guidelines. To reduce the likelihood of bird collisions, we have incorporated medium-sized windows divided by mullions, which break up large reflective surfaces and make them more visible to birds. On the podium, where the risk of bird strikes is highest, we have recessed balconies and positioned some windows with setbacks from the building edge. This helps reduce the visibility of glass from a bird's perspective, thereby lowering the potential for collisions. Additionally, we will avoid using uplighting to reduce skyglow, which can attract birds. A differentiation of materials, including red brick and dark gray brick on the podium, has been applied to further disrupt reflective surfaces. To minimize interior reflections, we will also install interior blinds. These combined measures aim to create a safer environment for birds while respecting the overall design goals.

Conclusion

In conclusion, the proposed 21-storey residential building on Montreal Road is a carefully designed and well-considered development that responds sensitively to the surrounding urban environment. The building's vertical massing, thoughtful material choices, and focus on community-oriented amenities all contribute to its seamless integration into the neighborhood. By combining sustainable design principles with a commitment to reducing visual impact, this project promises to be a vibrant, functional, and attractive addition to Montreal Road, enriching the streetscape and providing much-needed housing in Ottawa.

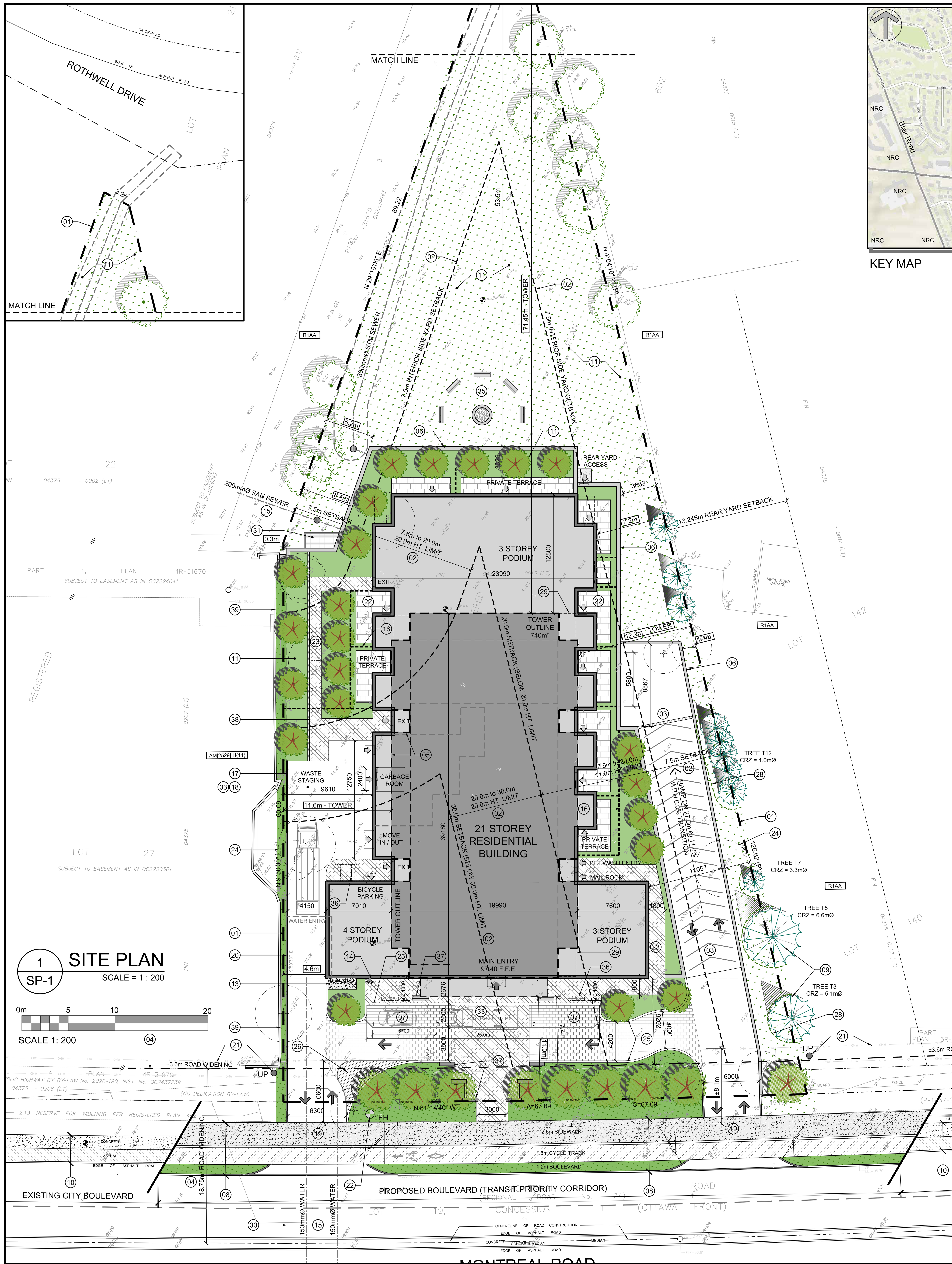
Sincerely,

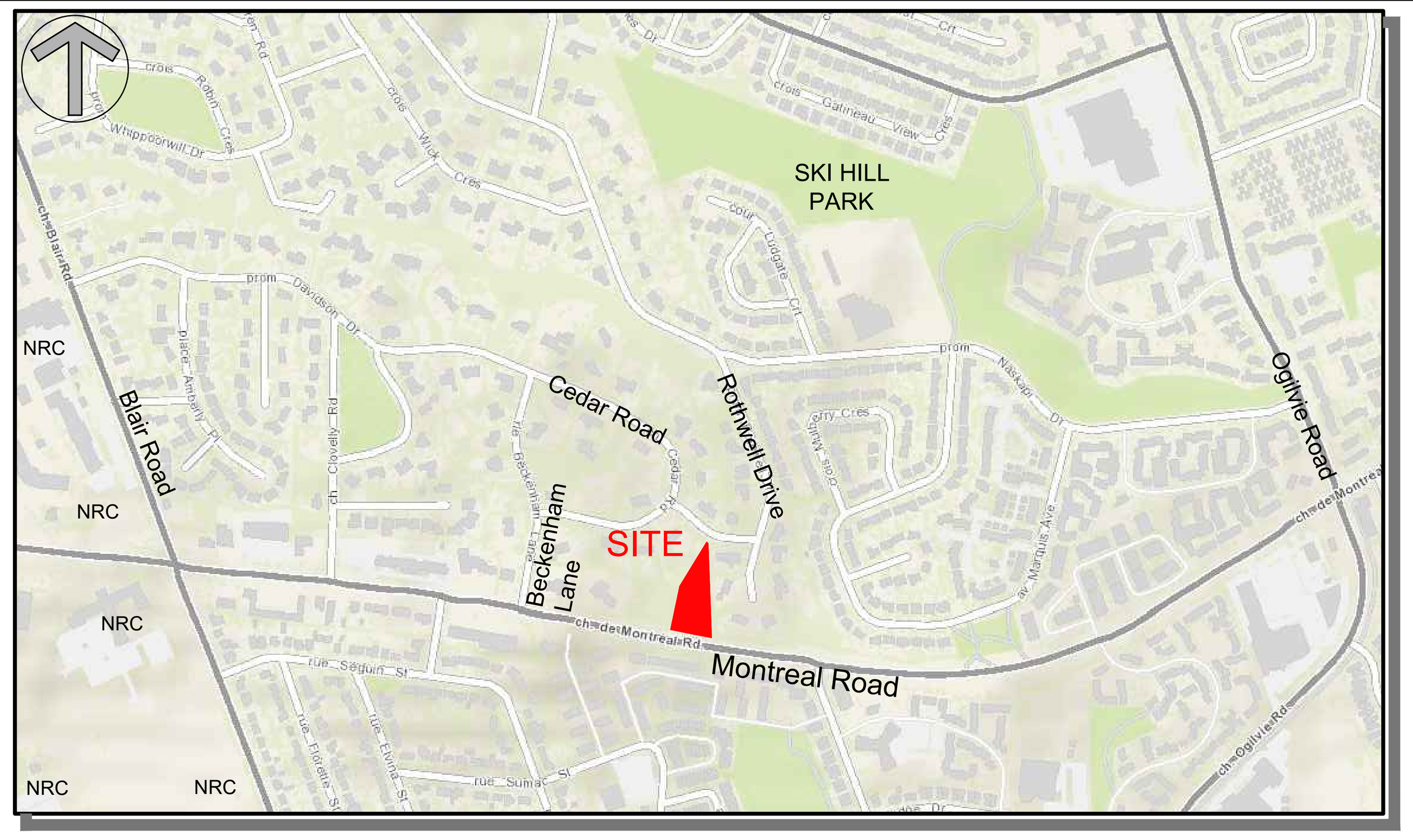
Samieh Sarjamee, OAA, M.Arch, M.Sc.

Architect

Appendix

Appendix A: Site Plan





KEY MAP

PROJECT INFORMATION

Zoning By-law 2008-250 Consolidation — R1AA — SITE AREA — 0.44 ha. — 4,361.3 sq. m / 46,945 sq. ft

ZONING	REQUIRED	PROVIDED
ZONE	AM	AM[____] S____
BUILDING HEIGHT - 0m TO 20m FROM "R1, R2 & R3" ZONE	11.0m	21 STOREY'S / 68.0m
BUILDING HEIGHT - 20m TO 30m FROM "R1 to R4" ZONE	20.0m	21 STOREY'S / 68.0m
BUILDING HEIGHT - AFTER 30m FROM "R1 to R4" ZONE	9 STOREY'S / 30.0m	21 STOREY'S / 68.0m
GRADE: TAKEN FROM EXPOSED PARKING GARAGE	94.40m ASL	94.40m ASL
DENSITY - GFA	n/a	2.75
FRONT YARD SETBACK	3.0m	11.0m
INTERIOR YARD SETBACK EAST (MAIN BUILDING) - ABUTTING "R" ZONE	7.5m	7.2m
INTERIOR YARD SETBACK EAST (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	1.4m
INTERIOR YARD SETBACK WEST (MAIN BUILDING) - ABUTTING "R" ZONE	7.5m	8.4m
INTERIOR YARD SETBACK WEST (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	5.2m
INTERIOR YARD SETBACK WEST (MAIN BUILDING) - ABUTTING "AM" ZONE	0.0m	4.6m
INTERIOR YARD SETBACK WEST (PARKING GARAGE) - ABUTTING "AM" ZONE	0.0m	0.3m
REAR YARD SETBACK (PARKING GARAGE) - ABUTTING "R" ZONE	7.5m	53.5m
AMENITY AREA - TOTAL 6.0m² PER UNIT	1,146.0m²	2,385.0m²
AMENITY AREA - 50% COMMUNAL PER UNIT	573.0m²	1,275.0m²
VEHICLE PARKING: RESIDENTIAL - 1.2 PER UNIT	229	141
VEHICLE PARKING: VISITOR - 0.2 PER UNIT	38	19
BICYCLE PARKING - RESIDENTIAL - 0.5 PER UNIT	96	156
AISLE & DRIVEWAY MINIMUM / MAXIMUM WIDTH	6.0m / 6.7m	6.0m

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

NOTATION SYMBOLS:

- (00) INDICATES DRAWING NOTES, LISTED ON EACH SHEET.
- ◇00 INDICATES ASSEMBLIE TYPE; REFER TO TYPICAL ASSEMBLIES SCHEDUAL.
- ⬡00 INDICATES WINDOW TYPE; REFER TO WINDOW ELEVATIONS AND DETAILS ON A900 SERIES.
- (000) INDICATES DOOR TYPE; REFER TO DOOR SCHEDULE AND DETAILS ON A900 SERIES.
- 00 TITLE / SCALE / A000 A000 — DETAIL NUMBER; DETAIL REFERENCE PAGE; DETAIL CROSS REFERENCE PAGE

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Cell: (613)
Email: gino@giala.com

LEGAL DESCRIPTION
SURVEYOR'S REAL PROPERTY REPORT
WITH TOPOGRAPHIC DETAILS
PART 1 - PLAN SHOWING

LOT 141
REGISTERED PLAN 652
CITY OF OTTAWA

J.D. BARNES LIMITED

SURVEYOR
J.D. Barnes Ltd.
62 STEACIE DRIVE, SUITE 103
KANATA, ON K2K 2A9
Tel.:(613) 731-7244
E-Mail: -----

SITE PLAN SYMBOLS:

- SOFT LANDSCAPE PLANTING
- ENTRANCE BOULEVARD / WALKWAYS
- PRIVATE PATIOS
- PAVERS @ TERRACE LEVEL
- PROPOSED CITY BOULEVARD: CONCRETE SIDEWALK & ASPHALT CYCLE TRACK
- BIKE RACK
- MAIN ENTRANCE DOOR
- SERVICE / EXIT DOOR
- VEHICULAR DIRECTION
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- PROPOSED TREE
- SIAMESE CONNECTION
- FH FIRE HYDRANT

DRAWING NOTES

1. PROPERTY LINE
2. AM ZONING BUILDING SETBACK LINES
3. HEATED RAMP TO U/G GARAGE WITH TRENCH DRAIN
4. PROPOSED 37.5m R.O.W.
5. OUTLINE OF TOWER ABOVE
6. OUTLINE OF PARKING GARAGE
7. SHORT TERM LAY-BY PARKING
8. FUTURE PROPOSED CITY SIDEWALK & CYCLE TRACK AS PER TRANSIT PRIORITY CORRIDOR DESIGN
9. EXISTING TREE TO REMAIN, PROTECT AS REQUIRED
10. EX. SIDEWALK & ASPHALT BOULEVARD TO REMAIN
11. SOFT LANDSCAPING, SEE LANDSCAPE PLAN
12. BELOW GRADE CISTERN IN PARKING GARAGE
13. 1.2 X 3.0 CONCRETE PAD FOR GAS EQUIPMENT WITH BOLLARDS AS REQUIRED (GAS BLOW OFF)
14. SIAMESE CONNECTION
15. PROPOSED UTILITIES, SEE CIVIL
16. PRIVACY SCREEN / GATE
17. 2.1m HT. SOLID WOOD PRIVACY FENCE
18. TEMPORARY SNOW STORAGE
19. CONCRETE SIDEWALK, CONTINUOUS & DEPRESSED THROUGH DRIVEWAY, SEE CITY DETAIL SC 7.1
20. 150mm HT CONCRETE BARRIER CURB
21. EXISTING HYDRO POLE & OVERHEAD WIRES
22. FIRE HYDRANT
23. UNIT PAVER WALK
24. EXISTING TREE TO BE REMOVED
25. FLUSH CURB AROUND ENTRY AREA
26. MOUNTABLE APRON
27. EXISTING UTILITY POLE
28. TREE / HEDGE PROTECTION ZONE
29. BALCONY ABOVE
30. 6.0m WIDE FIRE ROUTE
31. METAL GRATE - INTAKE / EXHAUST AIR SHAFT
32. PRIVATE TERRACES AT GROUND LEVEL
33. ACCESSIBLE PASSENGER LOADING AREA
34. GARBAGE BIN PICKUP AREA
35. FIRE PIT WITH SEATING
36. SURFACE MOUNTED BIKE RACK
37. BENCH: SEE LANDSCAPE
38. TRENCH DRAIN: SEE CIVIL
39. RETAINING WALL ON NEIGHBORING PROPERTY

BUILDING STATISTICS

GROSS BUILDING - AREA
(CITY OF OTTAWA'S DEFINITION)

PARKING LEVEL		0.0 sq. m. / 000 sq. ft.
GROUND FLOOR		574.5 sq. m. / 6,184 sq. ft.
2nd & 3rd FLOOR	2 x 1,096.6 sq. m. / 2 x 11,804 sq. ft.	2,193.3 sq. m. / 23,608 sq. ft.
4th FLOOR		539.8 sq. m. / 5,810 sq. ft.
5th FLOOR		600.5 sq. m. / 6,464 sq. ft.
6th - 16th FLOOR - TOWER	11 x 593.6 sq. m. / 11 x 6,389 sq. ft.	6,529.1 sq. m. / 70,279 sq. ft.
17th & 18th FLOOR	2 x 528.0 sq. m. / 2 x 5,683 sq. ft.	1,056.0 sq. m. / 11,366 sq. ft.
19th FLOOR		455.0 sq. m. / 4,897 sq. ft.
20th AMENITY / MECHANICAL PENTHOUSE		0.0 sq. m. / 000 sq. ft.
TOTAL AREA		11,948.1 sq. m. / 128,608 sq. ft.
TOWER FOOTPRINT AREA (NOT INCLUDING BALCONIES / PROJECTIONS)		738.7 sq. m. / 7,951 sq. ft.

UNIT STATISTICS

STUDIO UNIT	1.6%	3
1 BEDROOM UNIT	14.7%	28
1 BEDROOM + DEN UNIT	40.3%	77
2 BEDROOM UNIT	31.4%	60
2 BEDROOM + DEN UNIT	4.2%	8
3 BEDROOM	7.9%	15
TOTAL		191

CAR PARKING
AREA 'C' on SCHEDULE 1A

MINIMUM REQUIRED

RESIDENCE	- 1.2 PER DWELLING UNIT	229
VISITOR	- 0.2 PER DWELLING UNIT	38
TOTAL		267

PROVIDED

RESIDENCE	- 0.72 PER UNIT	141
VISITOR	- 0.1 PER UNIT	19
TOTAL		160

LOCATION

EXTERIOR - SHORT TERM	3
P3 LEVEL PARKING GARAGE	47
P2 LEVEL PARKING GARAGE	58
P1 LEVEL PARKING GARAGE	52

CAR PARKING
PARKING SPACE TYPE

STANDARD SPACE (2.60 x 5.20)	120
SMALL CAR SPACE (2.40 x 4.60)	33
PARALLEL SPACE - SHORT TERM (2.60 x 6.70)	3
BARRIER FREE SPACE TYPE A (3.40 x 5.20)	2
ELECTRIC VEHICLE SPACE (2.60 x 5.20)	2

BICYCLE PARKING

REQUIRED

RESIDENCE	- 0.5 PER UNIT (191 UNITS)	96

PROVIDED

EXTERIOR	6
GROUND FLOOR	130
PARKING GARAGE	20
TOTAL	156

AMENITY SPACE

REAR YARD - COMMUNAL =	600.0 sq. m.
AT GRADE TERRACE - PRIVATE =	290.0 sq. m.
4th FLOOR INTERIOR - COMMUNAL =	200.0 sq. m.
4th FLOOR TERRACE - COMMUNAL =	300.0 sq. m.
ROOF TOP AMENITY ROOM =	175.0 sq. m.
ROOF TOP AMENITY TERRACE =	100.0 sq. m.
PRIVATE TERRACE =	220.0 sq. m.
PRIVATE BALCONIES =	500.0 sq. m.
TOTAL =	2,385.0 sq. m.
TOTAL COMMUNAL =	1,275.0 sq. m.
REQUIRED - 6.0m² PER UNIT (191) =	1,146.0 sq. m.
REQUIRED COMMUNAL @ 50% =	573.0 sq. m.

WASTE REQUIREMENT
(191 UNITS)

GARBAGE	- 0.11 PER UNIT	21 YARDS
RECYCLING GMP	- 0.018 PER UNIT	4 YARDS
RECYCLING FIBER	- 0.038 PER UNIT	7 YARDS
COMPOST	- 240L PER 50 UNITS	4

LOT COVERAGE

PAVED SURFACE =	807.3 sq. m.	18.5%
BUILDING FOOTPRINT =	1,294.6 sq. m.	29.7%
LANDSCAPE OPEN SPACE =	2,259.4 sq. m.	51.8%
TOTAL =	4,361.3 sq. m.	100.0%

No.	DESCRIPTION	DATE
5	ISSUED FOR ZBLA APPLICATION	2024 12 13
4	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 12 03
3	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 10 25
2	ISSUED FOR OWNER / CONSULTANT REVIEW	2024 09 03
1	ISSUED FOR OPA / ZBLA PRE-CONSULT APP.	2024 08 20

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — KEVIN M. REID — LICENCE 8667
SEAL DATE: STAMP DATE

NORTH ARROW:

CLIENT: CREATIVE DEV VENTURES — Development with Purpose

ARCHITECT:
rla/architecture
roderick lahey architect inc.
56 beech street, ottawa, ontario K1S 3J6
t.613.724.9932 f.613.724.1209 rlaarchitecture.ca

PROJECT TITLE:
1815 MONTREAL ROAD
OTTAWA — ONTARIO

SHEET TITLE:
SITE PLAN

DRAWN: R.V. — CHECKED: S.S.
SCALE: 1:200 — SHEET No. SP-1
PROJECT No. 2405

D07-12-22-0

Appendix B: Landscape Plan

PROPOSED 19 STOREY MULTI UNIT RESIDENTIAL BUILDING

3 SMALL STREET TREES WITHIN 4.5 METRES OF OVERHEAD HYDRO. 75 SQ. M. WITHIN ROW X 1 M DEPTH ASSUMED = 75 CUBIC METRES TOTAL +-25 CUBIC METRES PER TREE.
TREE CANOPY CONTRIBUTION 55 SQ. M.

1 SMALL STREET TREE . 20 SQ. M. X .6 M DEPTH ASSUMED = 18 CUBIC METRES.
TREE CANOPY CONTRIBUTION 20 SQ. M.

TREE CANOPY CONTRIBUTION 1350 SQ. M.

5 SMALL STREET TREES WITHIN 4.5 METRES OF OVERHEAD HYDRO. 125 SQ. M. WITHIN ROW X 1 M DEPTH ASSUMED = 125 CUBIC METRES TOTAL +-25 CUBIC METRES PER TREE.
TREE CANOPY CONTRIBUTION 95 SQ. M.

4 SMALL STREET TREES. 70 SQ. M. X .6 M DEPTH ASSUMED = 40 CUBIC METRES. 10 CUBIC METRES PER TREE.
TREE CANOPY CONTRIBUTION 70 SQ. M.

2 SMALL STREET TREES. 20 SQ. M. X .6 M DEPTH ASSUMED = 18 CUBIC METRES. 9 CUBIC METRES PER TREE.
TREE CANOPY CONTRIBUTION 40 SQ. M.

1 SMALL STREET TREE WITHIN 4.5 METRES OF OVERHEAD HYDRO. 30 SQ. M. WITHIN ROW X 1 M DEPTH ASSUMED = 30 CUBIC METRES.
TREE CANOPY CONTRIBUTION 20 SQ. M.

EXISTING VEGETATION TREE CANOPY CONTRIBUTION 225 SQ. M..

TREE CANOPY CALCULATION AS PER EVOLVING CITY OF OTTAWA REQUIREMENTS:

TOTAL SITE AREA: 4 360 SQ. M.

CALCULATIONS FOR TREE CANOPY
Proposed Trees (Areas of Polygons Hatched in Green, Excluding Overlap.)
55+95+20+40+20+70+1350 = 1 650 SQ. M.

CANOPY COVER AS % OF SITE W/O EXISTING CANOPY 1 650/ 4 360 = 38%

+ ADD EXISTING VEGETATION TO REMAIN @ 1.5X 225 sq. m.= 335 sq. m.

CANOPY COVER AS % OF SITE INCLUDING EXISTING CANOPY
1 650 + 335 = 1985 1 985/ 4 360 = 45%

ASPHALT
CONCRETE
PAVER PATIO
TURF
AMENITY
VEGETATED SWALE
EXISTING VEGETATION PROTECTED
CONCRETE SIDEWALK
ASPHALT CYCLE LANE
ASPHALT / PAVER? STRIP
MONTREAL ROAD
ROTHWELL DRIVE
41 CEDAR ROAD
162 ROTHWELL DRIVE
201 ROTHWELL CIRCLE
203 ROTHWELL CIRCLE

0 1 2 5 10 25 Metres

CONSULTANT TEAM:
SURVEYOR: JD BARNES www.jdbarnes.com
FORESTRY: IFS ifsassociates.ca
PLANNER: FOTENN fotenn.com
ARCHITECT: RLA rlaarchitects.com
CIVIL: EGIS egis-group.com
LANDSCAPE ARCHITECT: GJA INC. GJAINC.CA
GEOTECHNICAL PATERSON GROUP
TRANSPORTATION: CGH cghtransportation.com

REFER TO TCR BY IFS
Existing Tree to Remain
Existing Tree to Remove
Protection for Existing Trees

LANDSCAPE LEGEND
Coniferous Tree
Deciduous Tree
Tree Canopy Cover
Planting Bed
Shrub Planting Bed
Turf
Concrete Seat Wall
Pavers
Privacy Fence
Swale
3:1 Slope
Parking Garage Below
Fire Hydrant
FD Siamese Connection
Light Standard
Hydro/Utility Pole

BELOW GRADE SERVICES REFER TO CIVIL/CUP
U/G Water Service
U/G Storm Service
U/G Sanitary Service
U/G Gas Service
U/G TelCo Service
U/G Hydro Service
O/H Hydro Service

TURF AREAS TO BE SOD C/W 150MM DEPTH TOPSOIL ON APPROVED SUBGRADE | SOD TO BE #1 GRADE TURFGRASS NURSERY SOD per NSGA - Fine Fescue/Kentucky Bluegrass Sod | PLANTING MIX TO BE APPROVED BY LANDSCAPE ARCHITECT | PLANT MATERIAL TO MEET CNLA STANDARDS/BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING | ALL MATERIALS & WORK TO BE MAINTAINED UNTIL FINAL ACCEPTANCE, (MOWING TURF, WEEDING BEDS, WATERING TURF & PLANTS) & INCLUDE 1 YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE | PROVIDE WATERING OF ALL PLANT MATERIAL AS REQUIRED FOR PROPER ESTABLISHMENT, UNTIL END OF WARRANTY PERIOD | REFER TO CIVIL ENGINEER'S DRAWING FOR ELEVATIONS / GRADING |

The Landscape Plan is to be read in conjunction with the grading, servicing, site and survey plan | Bare root material to be planted in season only | All plant material locations to be staked on site by the landscape contractor and checked by the landscape architect prior to planting | All trees to be preserved on or directly adjacent to the site will be protected | Plant material are to be installed a minimum of; 3.0m away from any part of any hydro transformer, 3.0m corridor between a fire hydrant and the curb, a 2.5m radius beside or behind a fire hydrant, 2.0m from any servicing/utility line or structure |

SHRUBS 1815 MONTREAL ROAD

Code	Qty.	Botanical Name	Common Name	Size	Condition	NATIVE
HK	150	Hypericum kalmianum	Kalm St. John's Wort	30cm Ht.	Pot	YES
HP	200	Hypericum prolificum	Shrubby St. John's Wort	40cm Ht.	Pot	YES
SA1	275	Symphoricarpos albus	Snowberry	50cm Ht.	Pot	YES
SA	150	Spiraea alba	Meadowsweet	50cm Ht.	Pot	YES
SB	100	Spiraea bumalda 'Dart's Red'	Dart's Red Spirea	40cm Ht.	Pot	

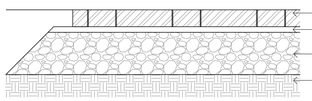
Additional Material not Quantified on L1 from above and all Items Below to be Located on Site by GJA INC.

Code	Qty.	Botanical Name	Common Name	Condition		
AU	75	Arctostaphylos Uva Ursi	Bearberry	30cm spr	Pot	YES
GM	125	Geranium macrorrhizum	Bigroot Geranium	9cm Pot		
GR	125	Geranium psilostemon 'Gerwat'	Rozanne Geranium	9cm Pot		
PM	35	Pinus mugo var. pumilio	Mugho Pine	30cm spr	Pot	
TCm	35	Taxus cuspidata 'Monloo'	Emerald Spreader Yew	30cm spr	Pot	
PV	95	Panicum virgatum	Switch Grass	10CM POT		YES

TREE SCHEDULE 1815 MONTREAL ROAD MULTI UNIT RESIDENTIAL

CODE	QUANTITY		BOTANICAL NAME	COMMON NAME	B&B SPECIMEN	NATIVE TO CANADA	FORECASTED SPREAD as per City of Ottawa Forestry		Canopy Cover Contribution/Tree in Square Metres
	PRIVATE	PUBLIC					DIAMETER	RADIUS	
AC	9	0	Amelanchier canadensis	Tree Serviceberry	50mm cal	YES	3.0m	1.5m	7.0 sq. m.
AR	5	0	Acer rubrum	Red Maple	60mm cal	YES	10.0m	5.0m	78.5 sq. m.
AS	1	0	Acer saccharum	Sugar Maple	60mm cal	YES	14.0m	7.0m	154.0 sq. m.
AG	5	0	Aesculus glabra	Ohio Buckeye	50mm cal	YES	10.0m	5.0m	78.5 sq. m.
BP	3	0	Betula papyrifera	Paper Birch	50mm cal	YES	10.0m	5.0m	78.5 sq. m.
CO	1	0	Celtis occidentalis	Common Hackberry	60mm cal	YES	14.0m	7.0m	154.0 sq. m.
GD	1	0	Gymnocladus dioicus	Kentucky Coffee Tree	50mm cal	YES	14.0m	7.0m	154.0 sq. m.
MA	1	0	Magnolia acuminata	Cucumber Magnolia	50mm cal	YES	14.0m	7.0m	154.0 sq. m.
MH	0	5	Malus 'Harvest Gold'	Harvest Gold Crabapple	50mm cal		3.0m	1.5m	7.0 sq. m.
MR	1	4	Malus 'Red Splendor'	Red Splendour Crabapple	50mm cal		5.0m	2.5m	20.0 sq. m.
MS	3		Malus 'Sutyzam'	Sugar Tyme Crabapple	50mm cal		3.0m	1.5m	7.0 sq. m.
QM	1	0	Quercus macrocarpa	Bur Oak	60mm cal	YES	14.0m	7.0m	154.0 sq. m.
QR	1	0	Quercus rubra	Red Oak	60mm cal	YES	14.0m	7.0m	154.0 sq. m.
TA	1	0	Tilia americana	Basswood	60mm cal	YES	14.0m	7.0m	154.0 sq. m.
VL	5		Viburnum lentago	Nannyberry	50mm cal	YES	3.0m	1.5m	
TOTALS	**29**	**9**							
AB	1	0	Abies balsamea	Balsam Fir	1.5m Ht.	YES	5.0m	2.5m	20.0 sq. m.
JV	1	0	Juniperus virginiana	Eastern Red Cedar	1.5m Ht.	YES	3.0m	1.5m	7.0 sq. m.
LL	1	0	Larix laricina	Eastern Larch / Tamarack	1.5m Ht.	YES	5.0m	2.5m	20.0 sq. m.
PS	1	0	Pinus strobus	White Pine	1.5m Ht.	YES	10.0m	5.0m	78.5 sq. m.

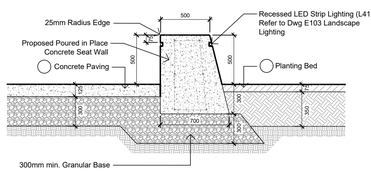
*****ADDITIONAL LANDSCAPE PLAN NOTES *****
LANDSCAPING ON CITY OF OTTAWA PROPERTY TO BE TO CITY OF OTTAWA DETAILS / STANDARDS. L1-L6, L17
TREES ON CITY OF OTTAWA PROPERTY TO CARRY A 2 YEAR WARRANTY.
REFER TO SITE PLAN FOR LOCATIONS AND DIMENSIONS OF BUILDING, ROADS, PARKING, CURBS, SETBACKS, EASEMENTS, LEGAL DESCRIPTION ...
EXISTING AND PROPOSED SITE SERVICING IS SHOWN ON THE LANDSCAPE PLAN TO PROVIDE AN AWARENESS TO REVIEWERS AND CONTRACTORS OF THEIR INTENDED LOCATION AND SEPARATION OF TREES/SERVICES/PROPOSED LANDSCAPING. DETERMINE AS BUILT LOCATIONS OF SERVICES PRIOR TO PLANTING AND ADJUST ACCORDINGLY TO RESPECT REQUIRED SETBACKS



c/w TECHNISEAL NEXTGEL POLYMERIC JOINTING SAND. Install as PER MANUFACTURERS DETAILS AND SPECIFICATIONS, GRADING PLAN

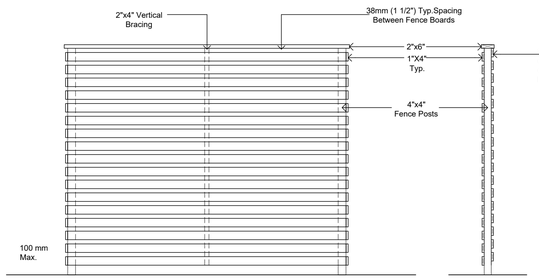
PRECAST CONCRETE SLABS / PAVERS NTS

Permacon Melville 60mm / Approved Equal. Colour To Be Verified Prior to Orderig By Sample To Site, RANGE SCANDINA GREY



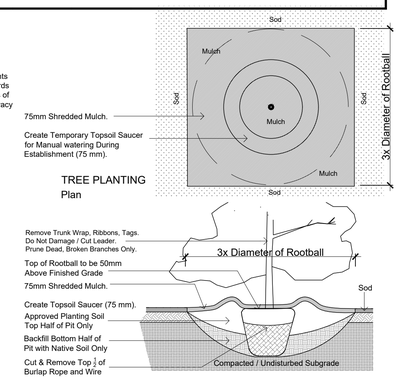
TYPICAL CONCRETE SEAT WALL AND PLANTING BED NTS

Concrete Seat Wall,Supply Shop Drawings for Concrete Reinforcing & Recessed Strip Lighting. Use New Form Ply - for Quality "Form Strip Finish"



SOLID WOOD FENCE 2.13m Ht. - Option #3 NTS

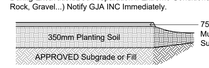
All Wood To Be Western Red Cedar - Stain Type and Colour T.B.D.



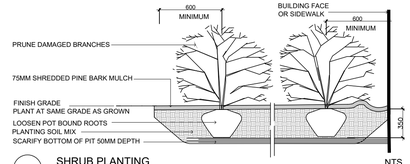
TREE PLANTING Plan

TREE PLANTING Section NTS

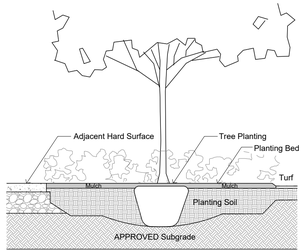
During Excavation/Bed Preparation if Extreme Conditions are Encountered (Water, Rock, Gravel...) Notify GJA INC Immediately.



TYPICAL PLANTING BED NTS



SHRUB PLANTING NTS



TREE PLANTING IN PLANTING BED NTS

#	Revision	Date
1	MUNICIPAL REVIEW	2024 12 16
0	REVIEW/COORDINATION	2024 11 00

PROPERTY OWNER
14193679 CANADA INC.
1815 MONTREAL ROAD DEVELOPMENTS LP
1606 Proulx Drive Ottwa K4A 1T5

GJA INC.
GINO J. AIELLO | LANDSCAPE ARCHITECT
GJALA.COM | 613 286 5130 | GINO@GJALA.COM
110 DIDSBURY ROAD UNIT # 9 | OTTAWA ONTARIO | K2T 0C2

19 Storey Multi Unit Residential

1815 Montreal Road Ottawa

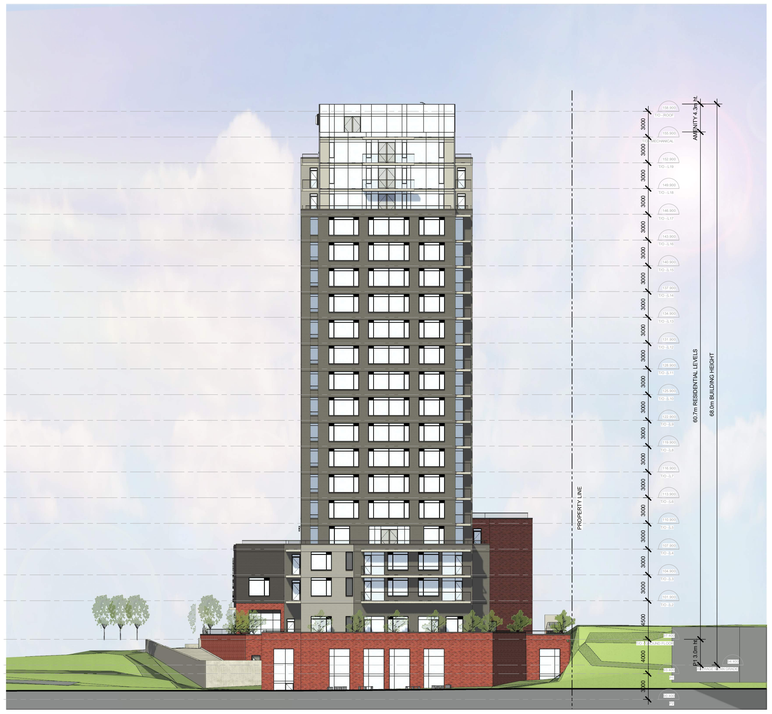
Landscape Plan

L1

Scale: 1:200

CITY PLANNING FILE #

Appendix C: Building Elevations



NORTH ELEVATION

SOUTH ELEVATION / MONTREAL ROAD ELEVATION

EAST ELEVATION

WEST ELEVATION

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL:

ONTARIO ASSOCIATION ARCHITECTS
RICHARD REID
LICENCE
8667

NORTH ARROW:

CLIENT:

CREATIVE DEV VENTURES
Development with Purpose
Owner

ARCHITECT:

rla/architecture
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:

1815 MONTREAL RD

OTTAWA ON

SHEET TILE:

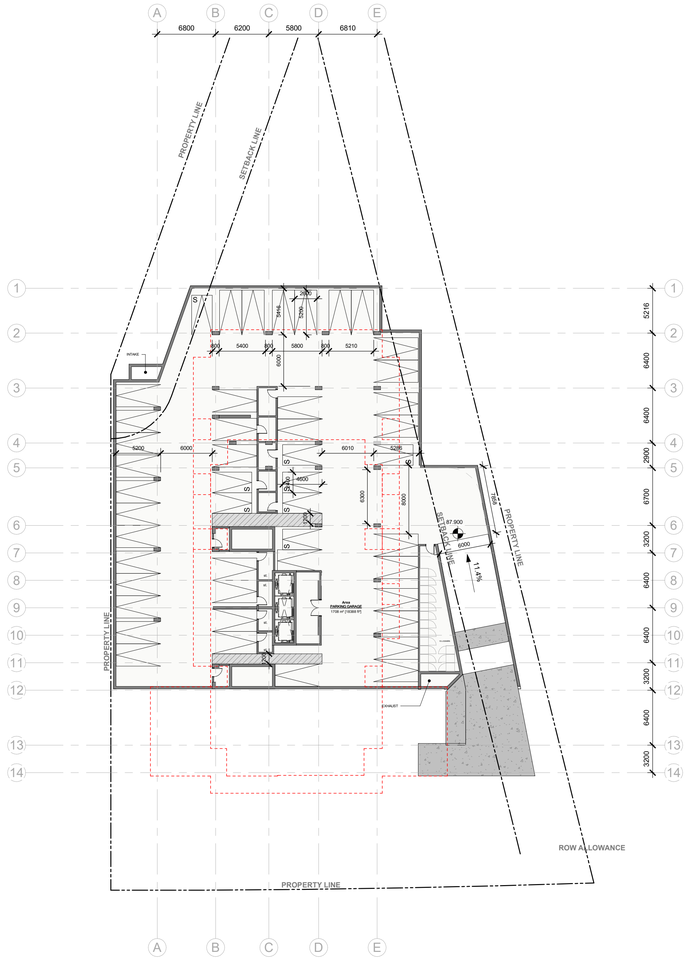
BUILDING ELEVATIONS

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 300	SHEET No: A-200
PROJECT No: 2405	

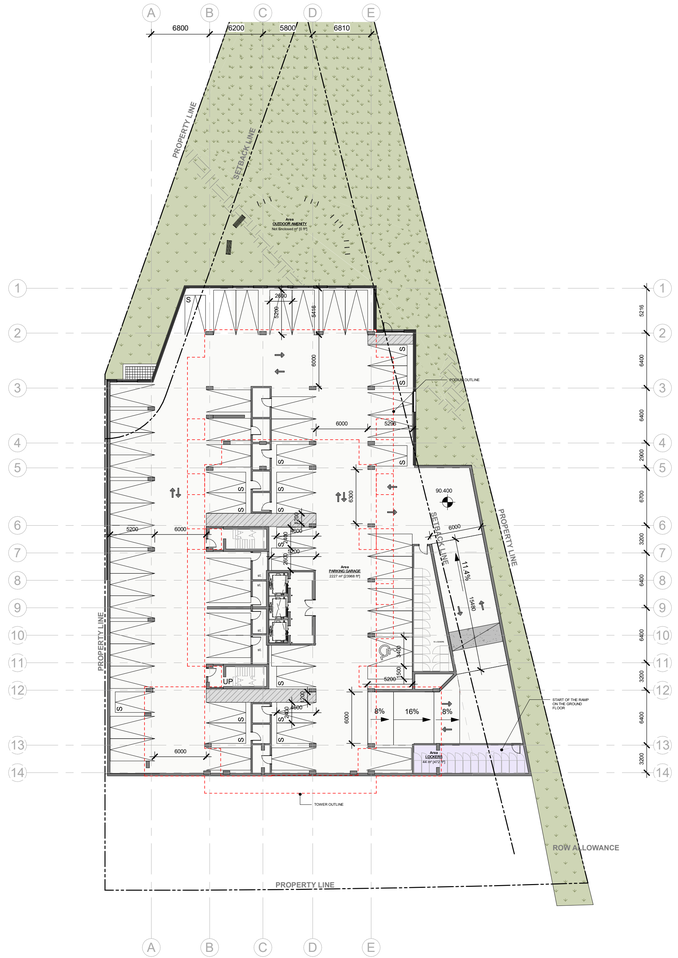
PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-17 5:01:23 PM

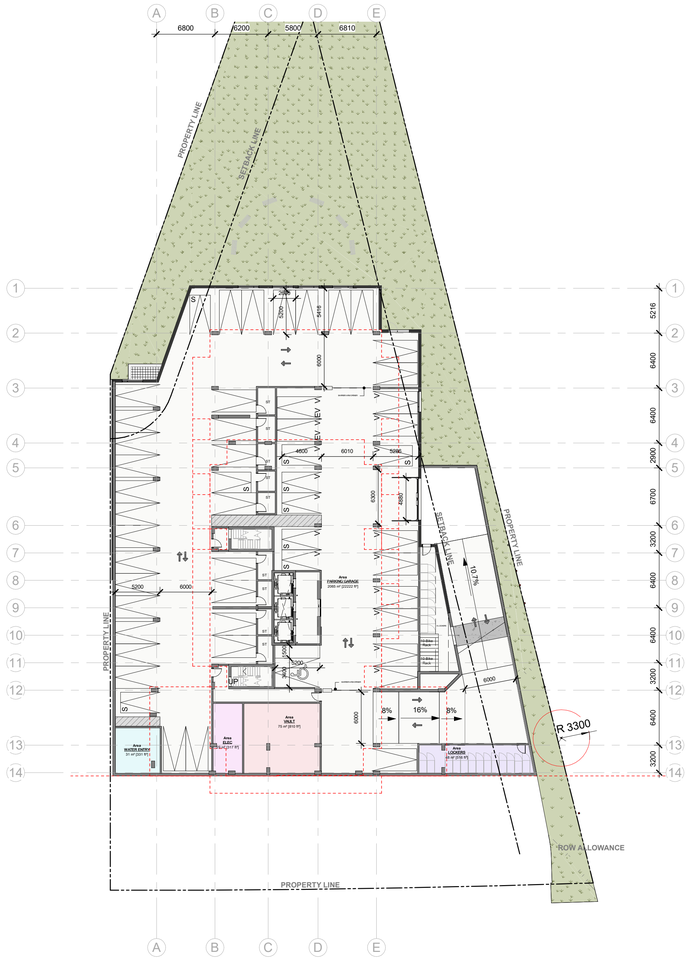
Appendix D: Floor Plans



P3 FLOOR PLAN



P2 FLOOR PLAN



P1 FLOOR PLAN

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL:

ONTARIO ASSOCIATION OF ARCHITECTS
KEVIN D. REID
LICENCE
8667

NORTH ARROW:

TRUE NORTH

CLIENT:

CREATIVE DEV VENTURES
Development with Purpose
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ARCHITECT:

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t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:

1815 MONTREAL RD

OTTAWA ON

SHEET TILE:

FLOOR PLANS

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 300	SHEET No: A-101
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

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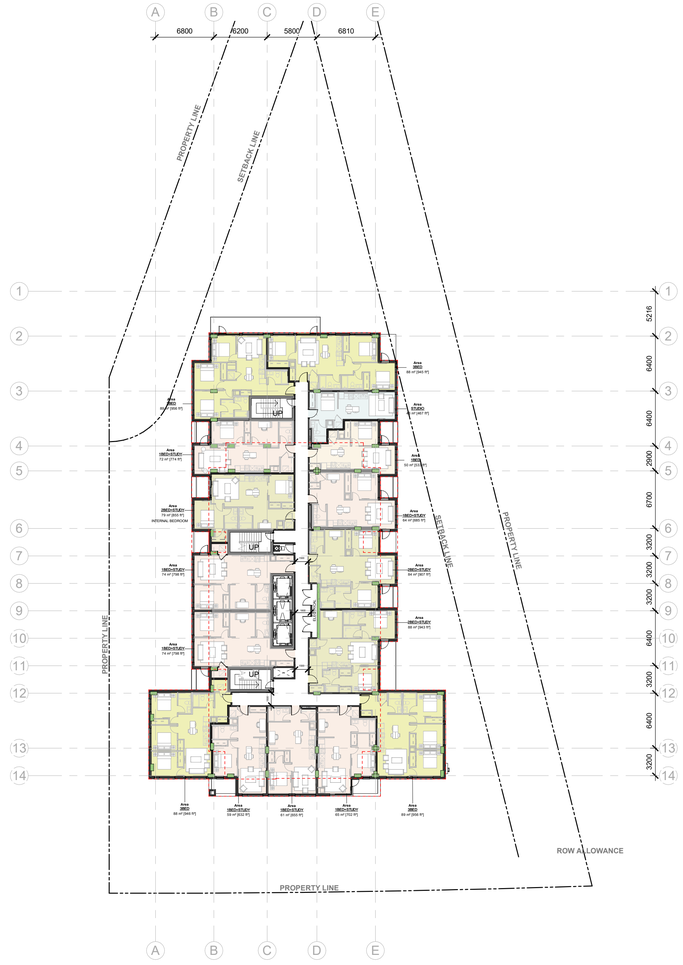
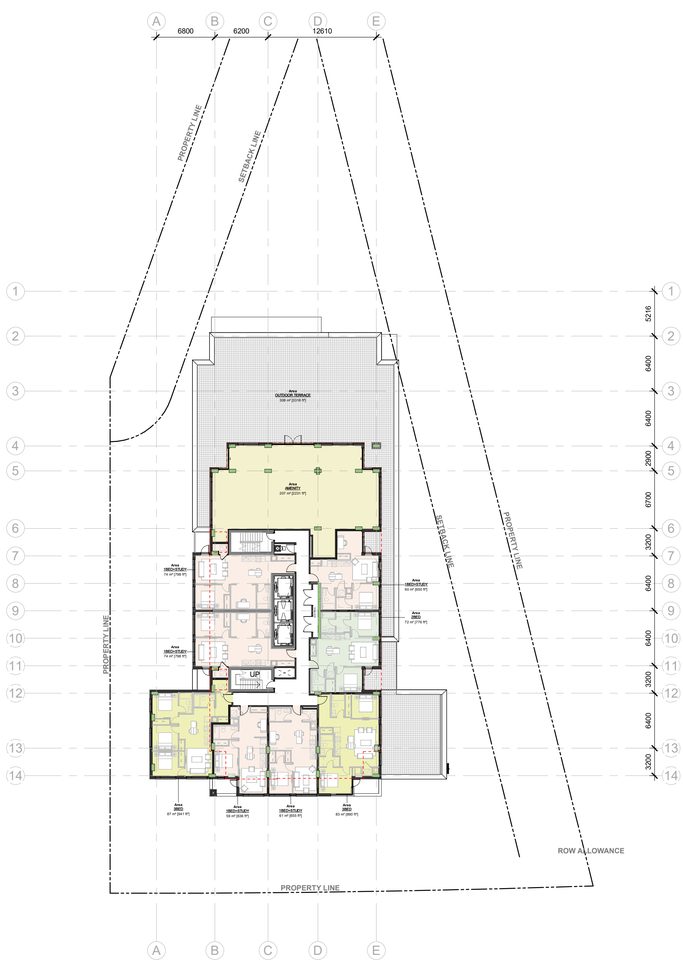
GROUND FLOOR PLAN



LEVEL 2-3 FLOOR PLAN



LEVEL 4 FLOOR PLAN

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS — KEVIN R. REID LICENCE 8667

NORTH ARROW: TRUE NORTH

CLIENT: CREATIVE DEV VENTURES Development with Purpose — Owner

ARCHITECT:

rla/architecture
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:

1815 MONTREAL RD

OTTAWA ON

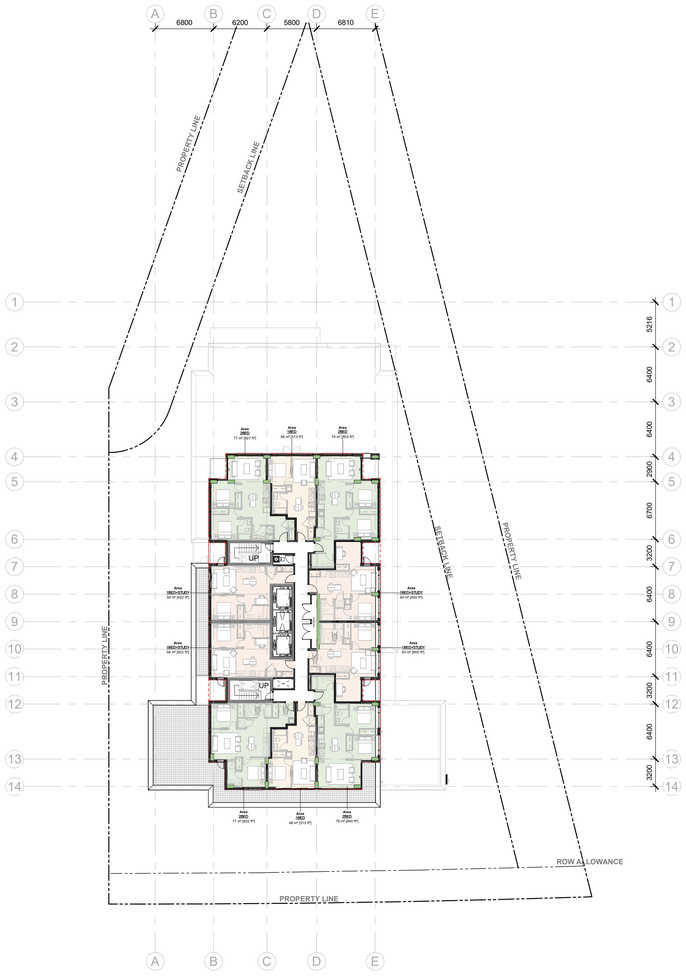
SHEET TILE:

FLOOR PLANS

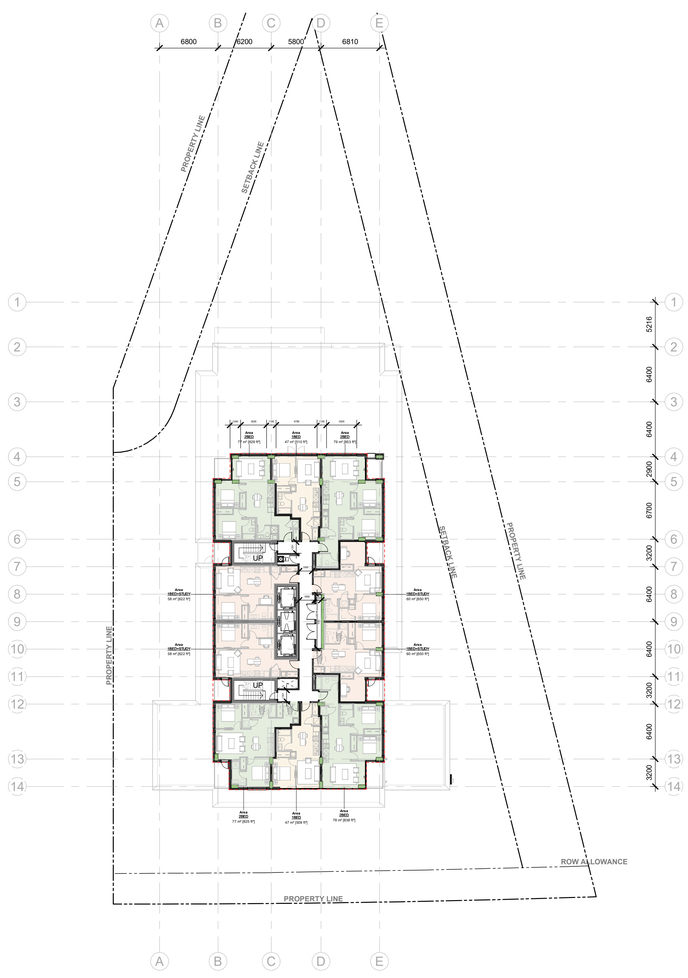
DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 300	SHEET No: A-102
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

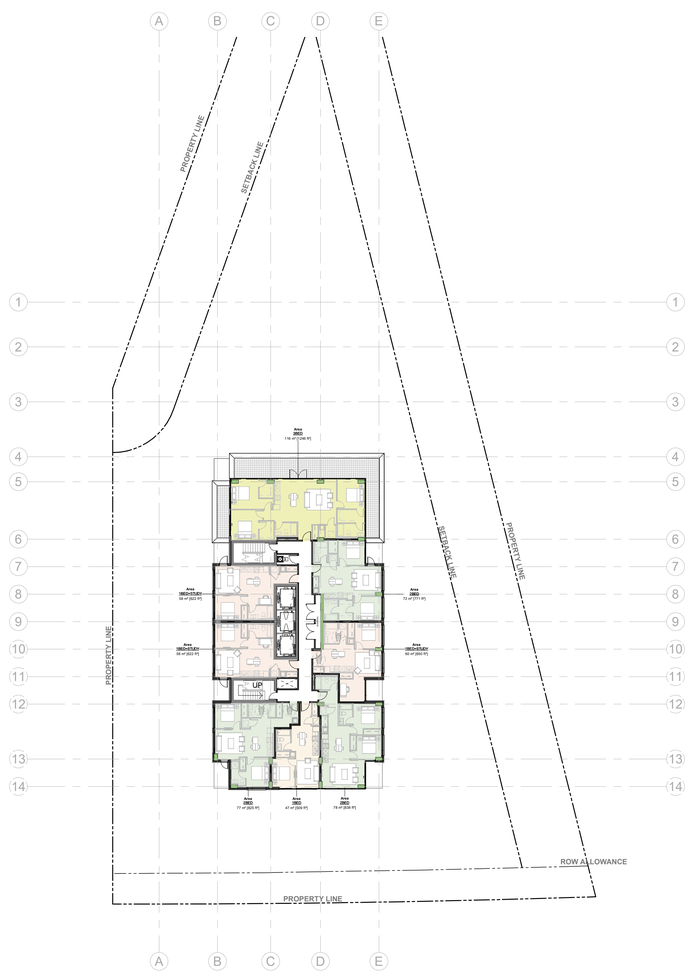
PLOT DATE: 2024-12-11 11:43:52 AM



LEVEL 5 FLOOR PLAN



LEVEL 6-16 FLOOR PLAN



LEVEL 17 FLOOR PLAN

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL:

ONTARIO ASSOCIATION ARCHITECTS
KEVIN J. REID
LICENCE
8667

NORTH ARROW:

TRUE NORTH

CLIENT:

CREATIVE DEV
VENTURES
Development with Purpose
Owner

ARCHITECT:

rla/architecture
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:

1815 MONTREAL RD

OTTAWA ON

SHEET TILE:

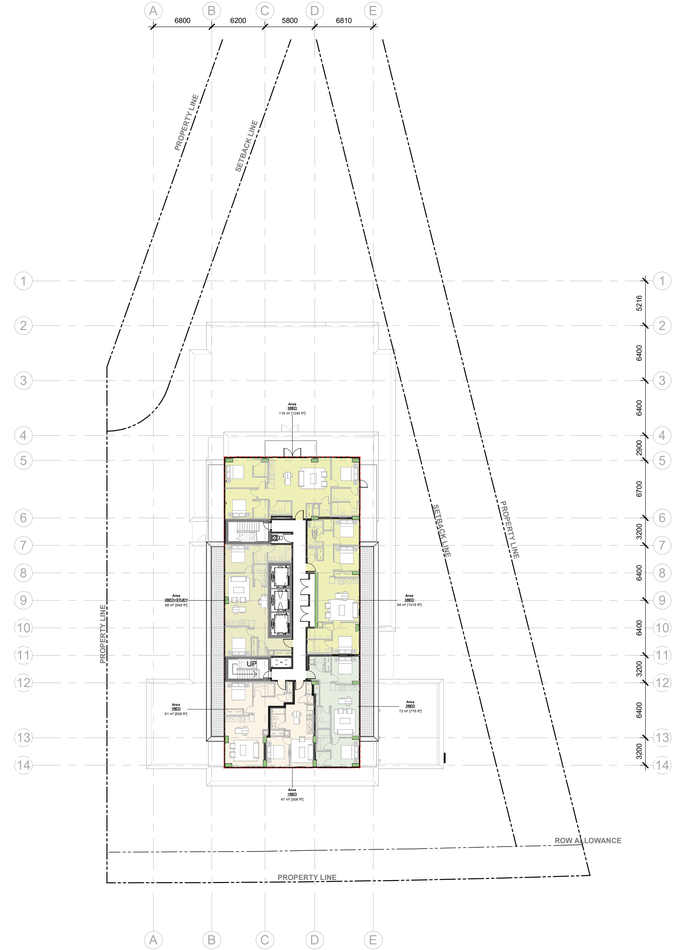
FLOOR PLANS

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 300	SHEET No: A-103
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-11 11:44:10 AM

LEVEL 18 FLOOR PLAN



LEVEL 19 FLOOR PLAN

AMENITY / MECHANICAL FLOOR PLAN

IT IS THE RESPONSIBILITY OF THE APPROPRIATE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

DO NOT SCALE DRAWINGS.

WITHOUT PREJUDICE

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1815 MONTREAL RD

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SHEET TILE:

FLOOR PLANS

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 300	SHEET No: A-104
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-11 11:44:33 AM

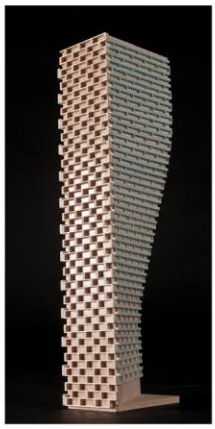
Appendix E: Wind Analysis

GRADIENTWIND
ENGINEERS & SCIENTISTS

PEDESTRIAN LEVEL WIND STUDY

1815 Montréal Road
Ottawa, Ontario

Report: 23-116-PLW-2024



December 18, 2024

PREPARED FOR
14193679 Canada Inc.
1606 Proulx Drive
Ottawa, ON K4A 1T5

PREPARED BY
Sunny Kang, B.A.S., Project Coordinator
Omar Rioseco, B.Eng., Junior Wind Scientist
David Huitema, M.Eng., P.Eng., CFD Lead Engineer

EXECUTIVE SUMMARY

This report describes a pedestrian level wind (PLW) study undertaken to satisfy Zoning By-Law Amendment and Site Plan Control application submission requirements for the proposed residential development located at 1815 Montréal Road in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). Our mandate within this study is to investigate pedestrian wind conditions within and surrounding the subject site, and to identify areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where required.

The study involves simulation of wind speeds for selected wind directions in a three-dimensional (3D) computer model using the computational fluid dynamics (CFD) technique, combined with meteorological data integration, to assess pedestrian wind comfort and safety within and surrounding the subject site according to City of Ottawa wind comfort and safety criteria. The results and recommendations derived from these considerations are detailed in the main body of the report (Section 5), illustrated in Figures 3A-5, and summarized as follows:

1) All grade-level areas within and surrounding the subject site are predicted to experience conditions that are considered acceptable for the intended pedestrian uses throughout the year. Specifically, conditions over surrounding sidewalks, transit stops, lay by, walkways, and in the vicinity of building access points, are considered acceptable.

2) During the typical use period (May to October, inclusive), conditions within the Level 4 common amenity terrace are predicted to be suitable for standing, or better, with an isolated region suitable for strolling at the northwest corner of the terrace, while conditions within the MPH Level common amenity terrace are predicted to be suitable for a mix of sitting and standing.

    a. It is recommended to implement 1.8-m-tall wind screens along the perimeters of the amenity terraces. Canopies extending from the tower façade and that wrap around the northwest and northeast corners of the tower above the Level 4 terrace are recommended to diffuse downwashing winds incident on the Level 4 terrace. Mitigation inboard of the perimeter for the Level 4 terrace could take the form of wind screens and/or other landscaping features, such as raised planters and high-back bench seating.

b. The extent of the mitigation measures is dependent on the programming of the noted spaces. An appropriate mitigation strategy may be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

3) The foregoing statements and conclusions apply to common weather systems, during which no dangerous wind conditions, as defined in Section 4.4, are expected anywhere over the subject site. During extreme weather events, (for example, thunderstorms, tornadoes, and downbursts), pedestrian safety is the main concern. However, these events are generally short-lived and infrequent and there is often sufficient warning for pedestrians to take appropriate cover.

TABLE OF CONTENTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by 14193679 Canada Inc. to undertake a pedestrian level wind (PLW) study to satisfy Zoning By-Law Amendment and Site Plan Control application submission requirements for the proposed residential development located at 1815 Montréal Road in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). A PLW study was completed in May 2023[1] for the previous design of the proposed development. Our mandate within the current study is to investigate pedestrian wind conditions within and surrounding the subject site, and to identify areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where required.

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 prepared by Roderick Lahey Architects Inc. in November 2024, surrounding street layouts and existing and approved future building massing information obtained from the City of Ottawa, as well as recent satellite imagery.

2. TERMS OF REFERENCE

The subject site is located at 1815 Montréal Road in Ottawa, situated approximately 220 metres (m) east of the intersection of Montréal Road and Beckenham Lane, on a parcel of land bounded by Montréal Road to the south, a future two-storey office building to the west, and low-rise residential dwellings to the north and east. The proposed development comprises a near-rectangular 21-storey residential building. The proposed development includes two and a half storeys of parking, with the uppermost level (P1) and the rooftop amenity space each considered a "storey" under the City of Ottawa Zoning By-Law. The rooftop includes a mechanical penthouse (MPH) and amenity spaces. Access to underground parking is provided by a ramp to the east.

[1] Gradient Wind Engineering Inc., '*Pedestrian Level Wind Study – 1815 Montréal Road*', [May 26, 2023]

The ground floor of the proposed development includes a lobby at the southeast corner with a main entrance to the south, a co-working area, bike storage, and a loading area at the southwest corner, shared building support spaces to the west, a central elevator core, and residential units throughout the remainder of the level. Private patios are located to the northwest and along the north and east elevations.

Levels 2, 3, and 5-19 are reserved for residential use while Level 4 includes an indoor amenity to the north and residential units throughout the remainder of the level. The building steps back from the north and east elevations at Level 4, accommodating a common amenity terrace. Private terraces are provided at the southeast corner at Level 4, to the south and southwest at Level 5, to the north at Level 17, and to the east and west at Level 19. The MPH Level includes a party room to the east and mechanical spaces to the south and west and is served by a common amenity terrace within a setback from the north elevation.

The near-field surroundings, defined as an area within 200 m of the subject site, include low-rise residential dwellings in all compass directions. Notably, a development comprising a two-storey office building and a one-storey multi-purpose accessory building is under construction at 1795 Montréal Road, to the immediate west of the subject site. The far-field surroundings, defined as an area beyond the near-field but within a 2-kilometre (km) radius of the subject site, are characterized by low-rise massing in all compass directions with isolated mid- and high-rise buildings to the west-northwest and from the southeast clockwise to the south. Green space and the Pine View golf course are situated from the east clockwise to the south-southeast.

A site plan for the proposed massing scenario is illustrated in Figure 1, while Figures 2A-2D illustrate the computational models used to conduct the study.

3. OBJECTIVES

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

4. METHODOLOGY

The approach followed to quantify pedestrian wind conditions over the site is based on CFD simulations of wind speeds across the subject site within a virtual environment, meteorological analysis of the Ottawa area wind climate, and synthesis of computational data with City of Ottawa wind comfort and safety criteria[2]. 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 from 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 subject 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 stronger wind speeds.

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 16 wind directions. The CFD simulation model was centered on the proposed development, complete with surrounding massing within a radius of 480 m.

[2] City of Ottawa Terms of References: Wind Analysis
https://documents.ottawa.ca/sites/documents/files/wind_analysis_tor_en.pdf

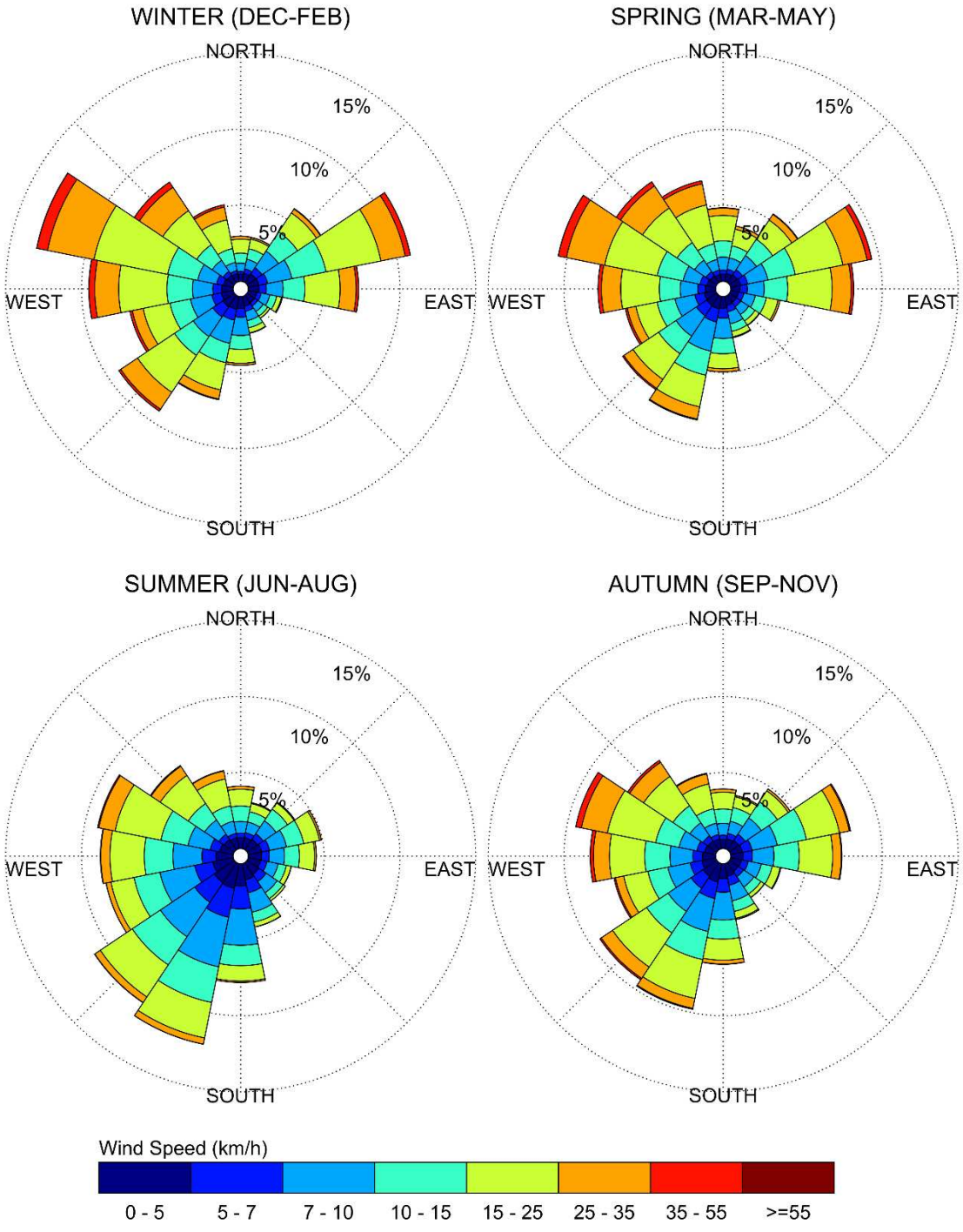
Mean and peak wind speed data obtained over the subject site for each wind direction were interpolated to 36 wind directions at 10° intervals, representing the full compass azimuth. Measured wind speeds approximately 1.5 m above local grade and the common amenity terraces serving the proposed development were referenced to the wind speed at gradient height to generate mean and peak velocity ratios, which were used to calculate full-scale values. Gradient height represents the theoretical depth of the boundary layer of the earth's atmosphere, above which the mean wind speed remains constant. Further details of the wind flow simulation technique are presented in Appendix A.

4.3 Historical Wind Speed and Direction Data

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 during the appropriate hours of pedestrian usage (that is, between 06:00 and 23:00) and divided into four distinct seasons, as stipulated in the wind criteria. Specifically, the spring season is defined as March through May, the summer season is defined as June through August, the autumn season is defined as September through November, and the winter season is defined as December through February, inclusive.

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 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 prominent 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 prominence and relative magnitude of wind speed changes somewhat from season to season.

SEASONAL DISTRIBUTION OF WIND
OTTAWA MACDONALD-CARTIER INTERNATIONAL AIRPORT



Notes:

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

4.4 Pedestrian Wind Comfort and Safety Criteria – City of Ottawa

Pedestrian wind comfort and safety criteria are based on the mechanical effects of wind without consideration of other meteorological conditions (that is, temperature and relative humidity). The comfort criteria assume that pedestrians are appropriately dressed for a specified outdoor activity during any given season. Five pedestrian comfort classes based on 20% non-exceedance mean wind speed ranges are used to assess pedestrian comfort: (1) Sitting; (2) Standing; (3) Strolling; (4) Walking; and (5) Uncomfortable. The gust speeds, and equivalent mean speeds, are selected based on the Beaufort scale, which describes the effects of forces produced by varying wind speed levels on objects. Wind conditions suitable for sitting are represented by the colour blue, standing by green, strolling by yellow, and walking by orange; uncomfortable conditions are represented by the colour magenta. Specifically, the comfort classes, associated wind speed ranges, and limiting criteria are summarized as follows:

PEDESTRIAN WIND COMFORT CLASS DEFINITIONS

Wind Comfort Class	Mean Speed (km/h)	Description
SITTING	≤ 10	Mean wind speeds no greater than 10 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 16 km/h.
STANDING	≤ 14	Mean wind speeds no greater than 14 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 22 km/h.
STROLLING	≤ 17	Mean wind speeds no greater than 17 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 27 km/h.
WALKING	≤ 20	Mean wind speeds no greater than 20 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 32 km/h.
UNCOMFORTABLE	> 20	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.

Regarding wind safety, 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. From calculations of stability, it can be shown that gust wind speeds of 90 km/h would be the approximate threshold wind speed that would cause an average elderly person in good health to fall. Notably, 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.

Experience and research on people's perception of mechanical wind effects has shown that if the wind speed levels are exceeded for more than 20% 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 (equivalent gust wind speed of approximately 16 km/h) were 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 (equivalent gust wind speed of approximately 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 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 throughout the subject site, the assessment of pedestrian comfort involves determining the suitability of the predicted wind conditions for discrete regions within and surrounding the subject site. This step involves comparing the predicted comfort classes to the target comfort classes, which are dictated by the location type for each region (that is, a sidewalk, building entrance, amenity space, or other). An overview of common pedestrian location types and their typical windiest target comfort classes are summarized on the following page. Depending on the programming of a space, the desired comfort class may differ from this table.

TARGET PEDESTRIAN WIND COMFORT CLASSES FOR VARIOUS LOCATION TYPES

Location Types	Target Comfort Classes
Primary Building Entrance	Standing
Secondary Building Access Point	Walking
Public Sidewalk / Bicycle Path	Walking
Outdoor Amenity Space	Sitting / Standing
Café / Patio / Bench / Garden	Sitting / Standing
Transit Stop (Without Shelter)	Standing
Transit Stop (With Shelter)	Walking
Public Park / Plaza	Sitting / Standing
Garage / Service Entrance	Walking
Parking Lot	Walking
Vehicular Drop-Off Zone	Walking

5. RESULTS AND DISCUSSION

The following discussion of the predicted pedestrian wind conditions for the subject site is accompanied by Figures 3A-D, which illustrate wind conditions at grade level for the proposed massing scenario, and by Figures 4A-D, illustrating wind conditions over the common amenity terraces serving the proposed development at Level 4 and at the MPH Level. Conditions are presented as continuous contours of wind comfort throughout the subject site and correspond to the comfort classes presented in Section 4.4.

Wind comfort conditions are also reported for the typical use period, which is defined as May to October, inclusive. Figure 5 illustrates wind comfort conditions within the noted common amenity terraces during this period, consistent with the comfort classes illustrated in Section 4.4.

The details of these conditions are summarized in the following pages for each area of interest. For a summary of the existing conditions over the subject site, refer to the previous PLW study from May 2023, as noted in Section 1.

5.1 Wind Comfort Conditions – Grade Level

Sidewalks and Nearby Transit Stop along Montréal Road: Following the introduction of the proposed development, wind comfort conditions over the nearby public sidewalks along Montréal Road are predicted to be suitable for strolling, or better, during the summer and autumn, becoming suitable for mostly standing and strolling during the spring and winter, with walking conditions to the south of the proposed development.

During the winter season, a limited and isolated region of conditions that may be considered uncomfortable for walking is located to the south of the proposed development. Where conditions may be considered uncomfortable for walking, they are predicted to be suitable for walking for approximately 79% of the time during the winter, representing an exceedance of 1% of the walking comfort criterion. These conditions are located within a limited region of the north sidewalk along Montréal Road and the noted exceedance may be considered marginal. As such, the noted conditions may be considered satisfactory.

Conditions in the vicinity of the transit stop along Montréal Road are predicted to be suitable for sitting during the summer and autumn, becoming suitable for standing during the spring and winter. The noted conditions are considered acceptable.

Lay By Serving the Subject Site: Conditions over the lay by serving the subject site are predicted to be suitable for a mix of standing and strolling during the summer and autumn, becoming suitable for a mix of standing, strolling, and walking during the spring and winter. The noted conditions are considered acceptable.

Walkways Serving the Subject Site: Conditions over the walkways serving the proposed development are predicted to be suitable for a mix of mostly sitting and standing throughout the year, with isolated regions suitable for strolling and walking. The noted conditions are considered acceptable.

Building Access Points: Owing to the protection of the building's façades, conditions in the vicinity of the primary and secondary access points serving the proposed development are predicted to be suitable for sitting during the summer, and standing, or better, throughout the remainder of the year, which is considered acceptable.

5.2 Wind Comfort Conditions – Common Amenity Terraces

Level 4 Common Amenity Terrace: During the typical use period, wind comfort conditions within the common amenity terrace serving the proposed development at Level 4 are predicted to be suitable for mostly standing, with sitting conditions predicted closer to the tower façade and an isolated region suitable for strolling at the northwest corner of the terrace, as illustrated in Figure 5.

Wind screens, typically glazed and preferably solid, are recommended to extend at least 1.8 m above the local walking surface along the perimeter of the Level 4 terrace. It is also recommended to implement canopies extending from the northeast and northwest corners of the tower above the terrace, wrapping around the northwest and northeast elevations to diffuse downwashing winds incident on the terrace. Targeted mitigation inboard of the perimeter could take the form of wind screens and/or other landscaping features.

The extent of the mitigation is dependent on the programming of the terrace. An appropriate mitigation strategy may be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

MPH Level Common Amenity Terrace: During the typical use period, wind conditions within the common amenity terrace serving the proposed development at the MPH Level are predicted to be suitable for sitting at the southeast corner and to the west and suitable for standing elsewhere throughout the terrace, as illustrated in Figure 5. The areas predicted to be suitable for standing are also predicted to be suitable for sitting at least 77% of the time during the same period, where the target is 80% to achieve the sitting comfort criterion. It is recommended to implement 1.8-m-tall wind screens along the perimeter of the MPH Level terrace to provide shielding against direct winds and extend sitting conditions over the terrace.

5.3 Wind Safety

Within the context of typical weather patterns, which exclude anomalous localized storm events such as tornadoes and downbursts, no pedestrian areas within or surrounding the subject site are expected to experience conditions that could be considered dangerous, as defined in Section 4.4.

5.4 Applicability of Results

Pedestrian wind comfort and safety have been quantified for the specific configuration of existing and foreseeable construction around the subject site. Future changes (that is, 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 subject site would alter the wind profile approaching the subject site; and (ii) development in proximity to the subject site would cause changes to local flow patterns.

6. CONCLUSIONS AND RECOMMENDATIONS

A complete summary of the predicted wind conditions is provided in Section 5 and illustrated in Figures 3A-5. 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 numerous similar developments, the study concludes the following:

1) All grade-level areas within and surrounding the subject site are predicted to experience conditions that are considered acceptable for the intended pedestrian uses throughout the year. Specifically, conditions over surrounding sidewalks, transit stops, lay by, walkways, and in the vicinity of building access points, are considered acceptable.

2) During the typical use period (May to October, inclusive), conditions within the Level 4 common amenity terrace are predicted to be suitable for standing, or better, with an isolated region suitable for strolling at the northwest corner of the terrace, while conditions within the MPH Level common amenity terrace are predicted to be suitable for a mix of sitting and standing.

    a. It is recommended to implement 1.8-m-tall wind screens along the perimeters of the amenity terraces. Canopies extending from the tower façade and that wrap around the northwest and northeast corners of the tower above the Level 4 terrace are recommended to diffuse downwashing winds incident on the Level 4 terrace. Mitigation inboard of the perimeter for the Level 4 terrace could take the form of wind screens and/or other landscaping features, such as raised planters and high-back bench seating.

b. The extent of the mitigation measures is dependent on the programming of the noted spaces. An appropriate mitigation strategy may be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

3) The foregoing statements and conclusions apply to common weather systems, during which no dangerous wind conditions, as defined in Section 4.4, are expected anywhere over the subject site. During extreme weather events, (for example, thunderstorms, tornadoes, and downbursts), pedestrian safety is the main concern. However, these events are generally short-lived and infrequent and there is often sufficient warning for pedestrians to take appropriate cover.

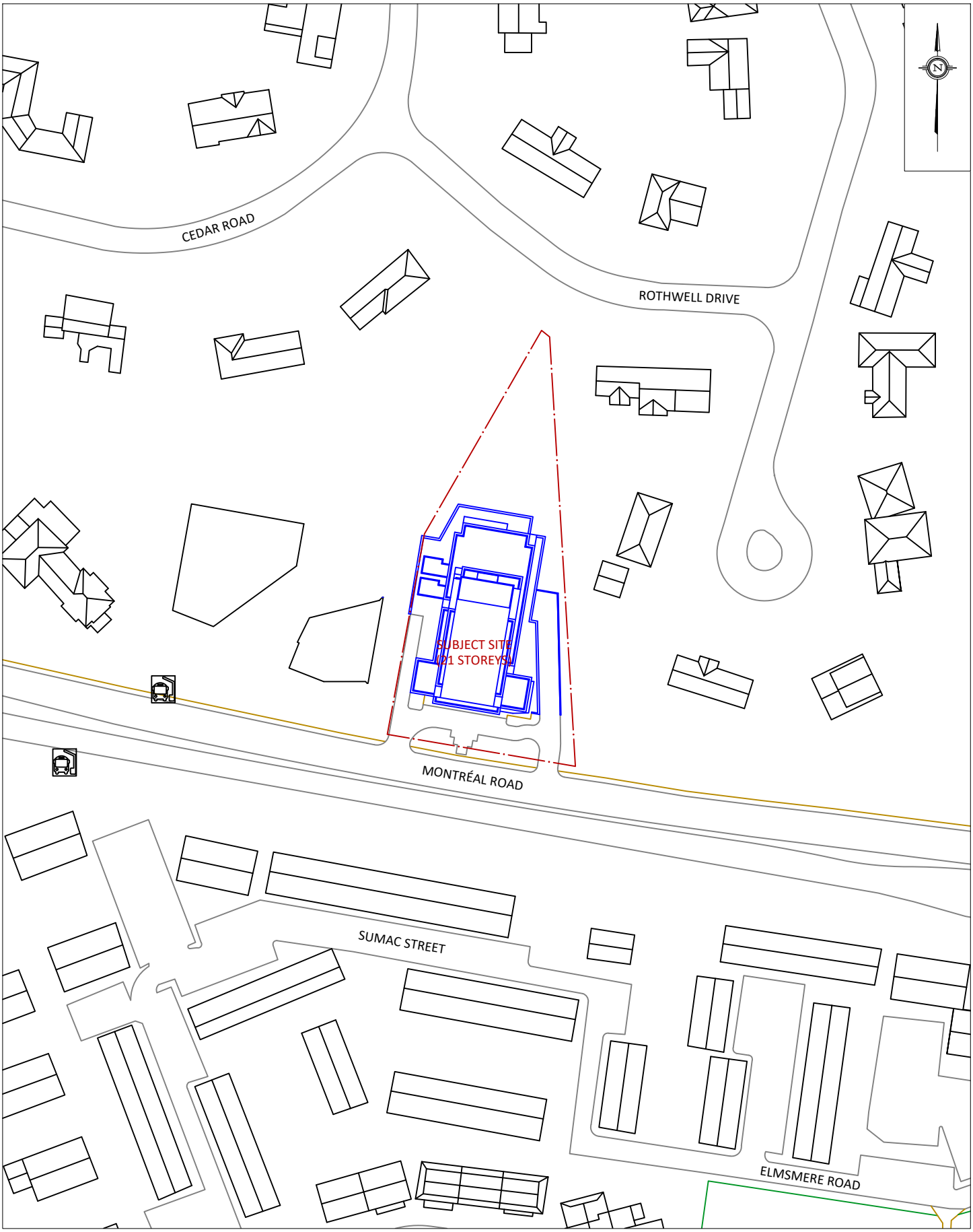
Sincerely,

Gradient Wind Engineering Inc.

Omar Rioseco, B.Eng.
Junior Wind Scientist

David Huitema, M.Eng., P.Eng.
CFD Lead Engineer

Sunny Kang, B.A.S.
Project Coordinator



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ENGINEERS & SCIENTISTS

127 WALGREEN ROAD, OTTAWA, ON
613 836 0934 • GRADIENTWIND.COM

PROJECT	1815 MONTRÉAL ROAD, OTTAWA PEDESTRIAN LEVEL WIND STUDY
SCALE	1:1500
DRAWING NO.	23-116-PLW-2024-1
DATE	DECEMBER 18, 2024
DRAWN BY	S.K.

DESCRIPTION

FIGURE 1:
PROPOSED SITE PLAN AND SURROUNDING CONTEXT

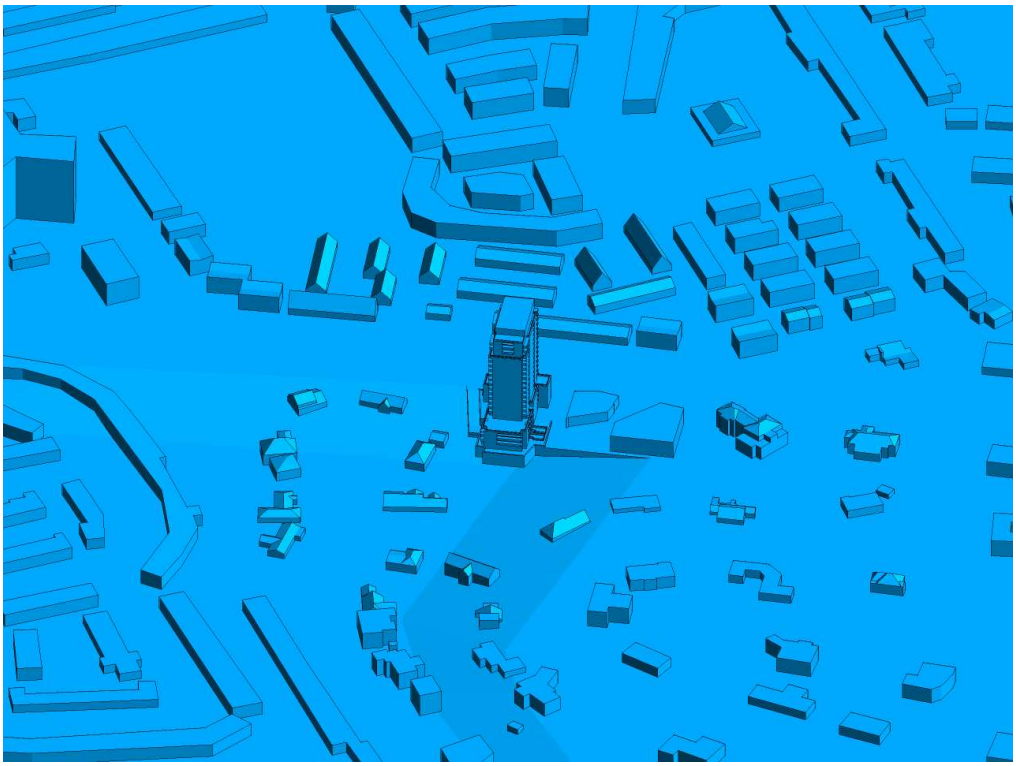

FIGURE 2A: COMPUTATIONAL MODEL, PROPOSED MASSING, NORTH PERSPECTIVE

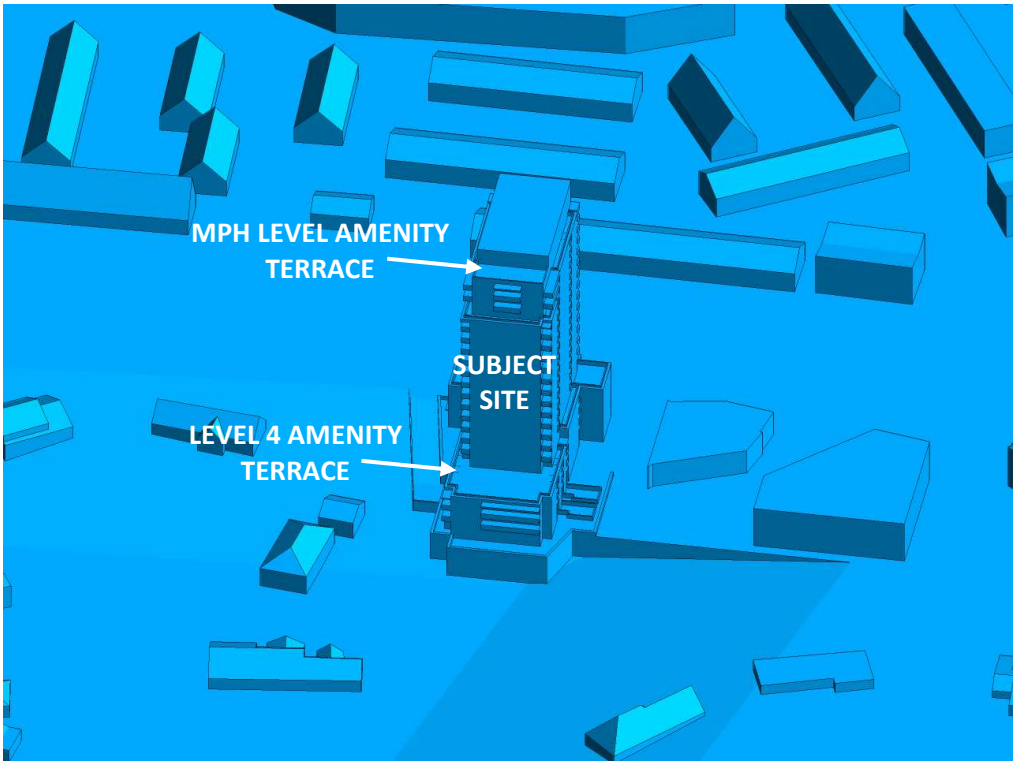

FIGURE 2B: CLOSE UP OF FIGURE 2A

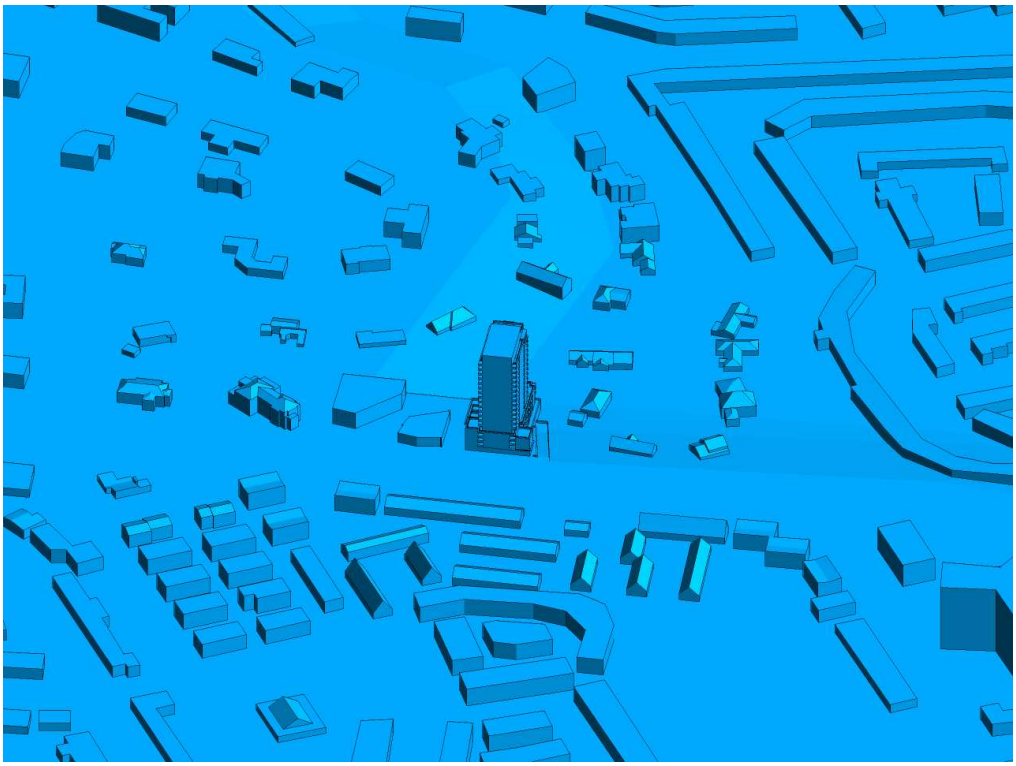

FIGURE 2C: COMPUTATIONAL MODEL, PROPOSED MASSING, SOUTH PERSPECTIVE

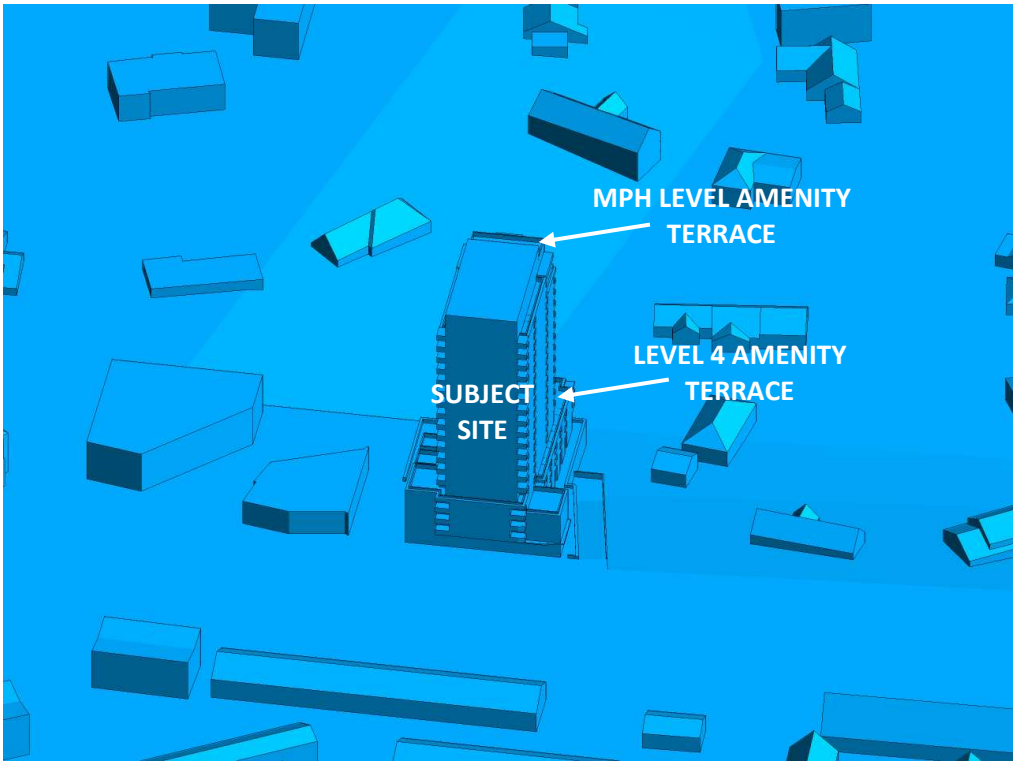

FIGURE 2D: CLOSE UP OF FIGURE 2C

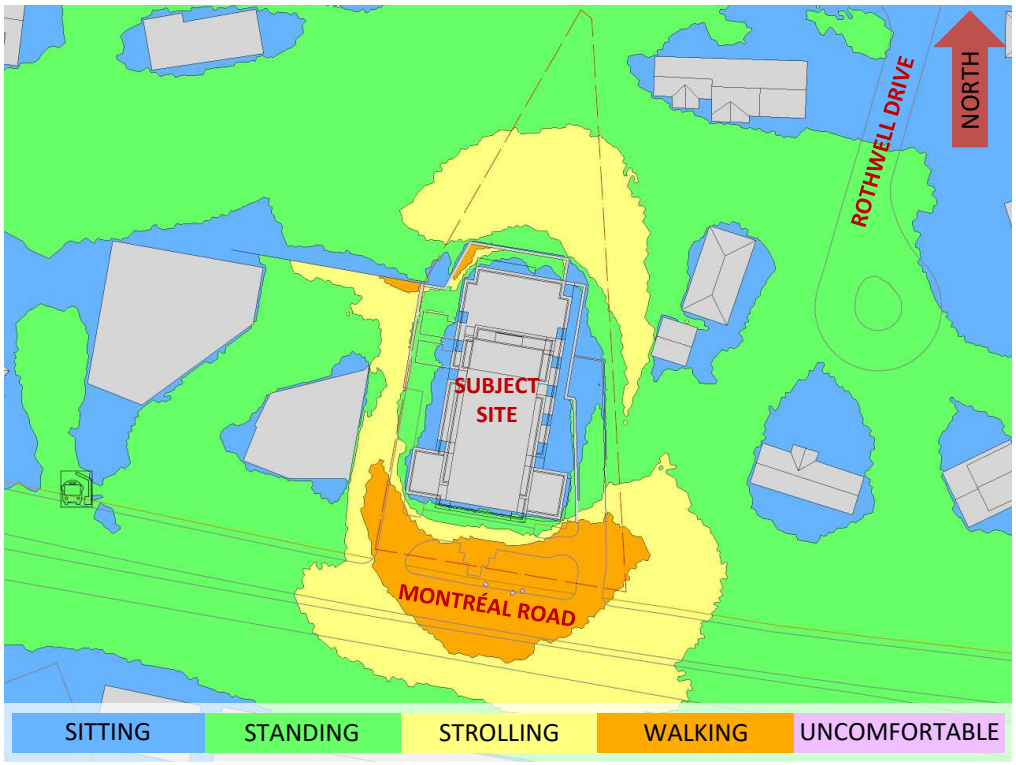

FIGURE 3A: SPRING – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

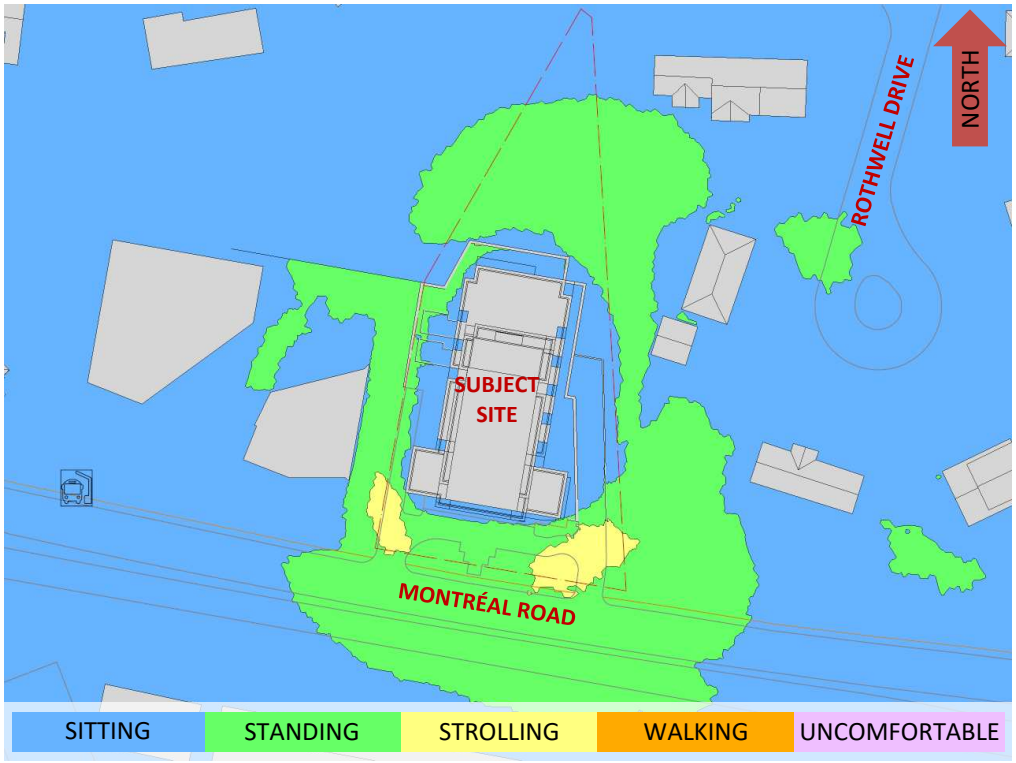

FIGURE 3B: SUMMER – WIND COMFORT, GRADE LEVEL– PROPOSED MASSING

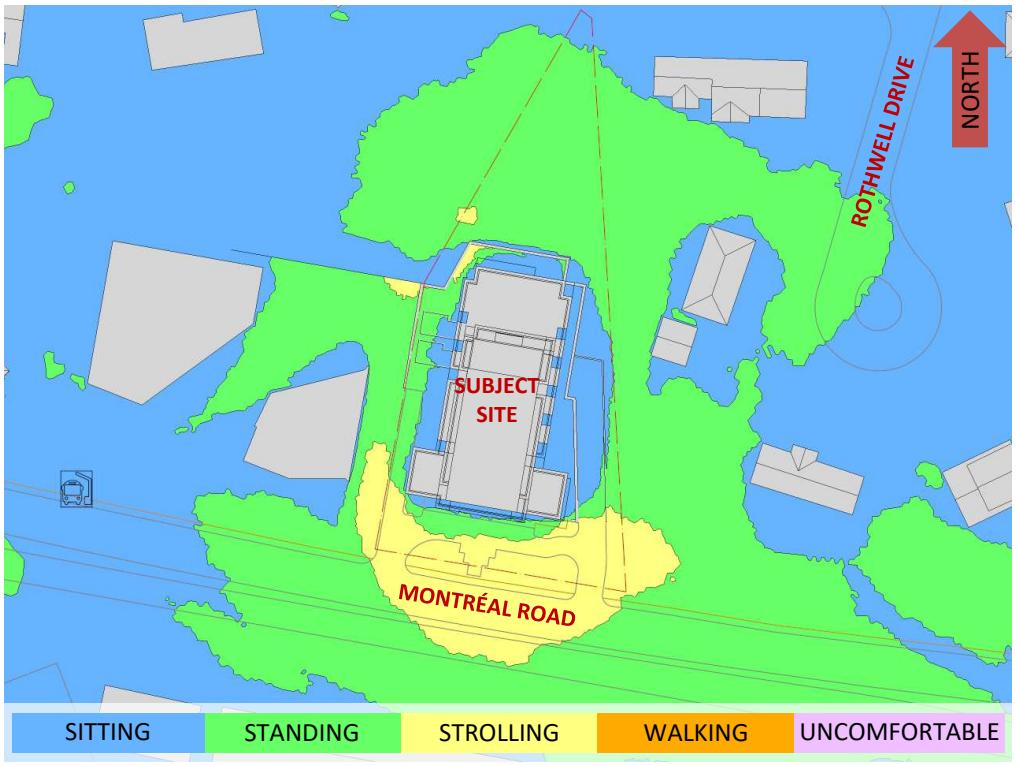

FIGURE 3C: AUTUMN – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

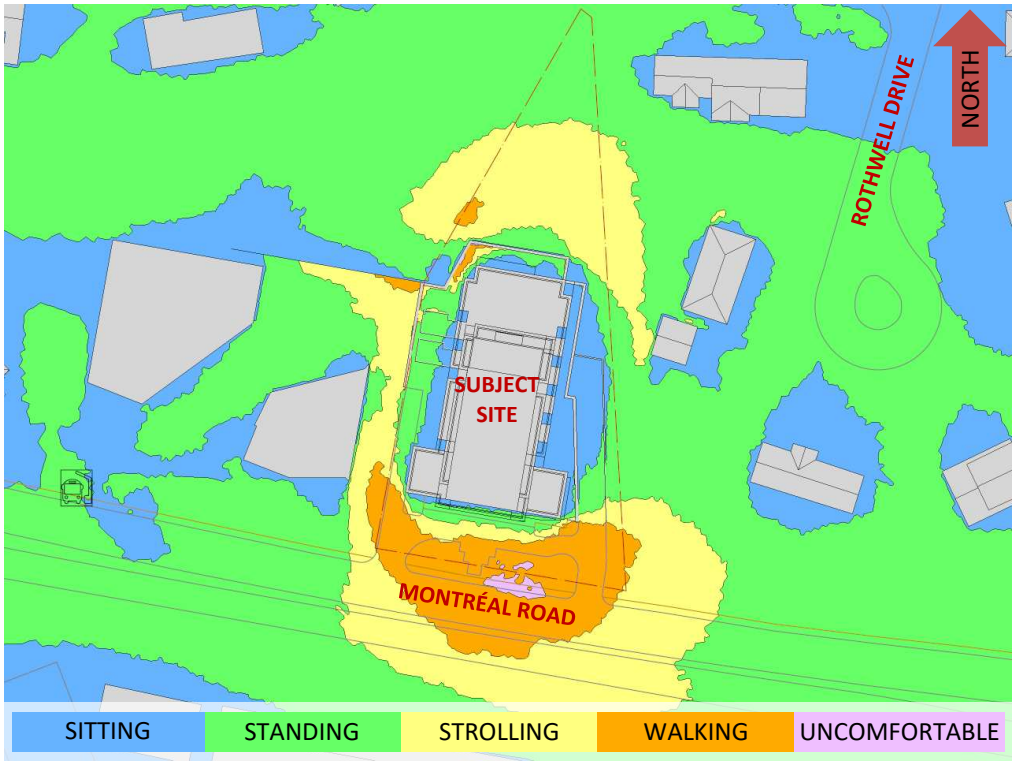

FIGURE 3D: WINTER – WIND COMFORT, GRADE LEVEL– PROPOSED MASSING

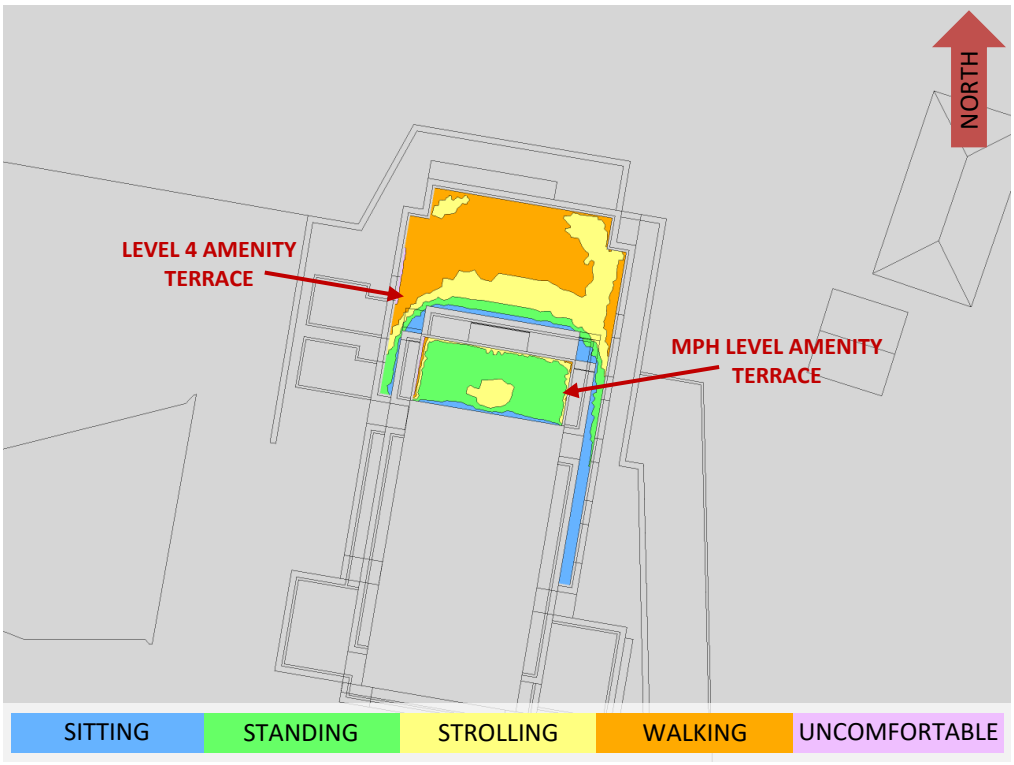

FIGURE 4A: SPRING – WIND COMFORT, COMMON AMENITY TERRACES

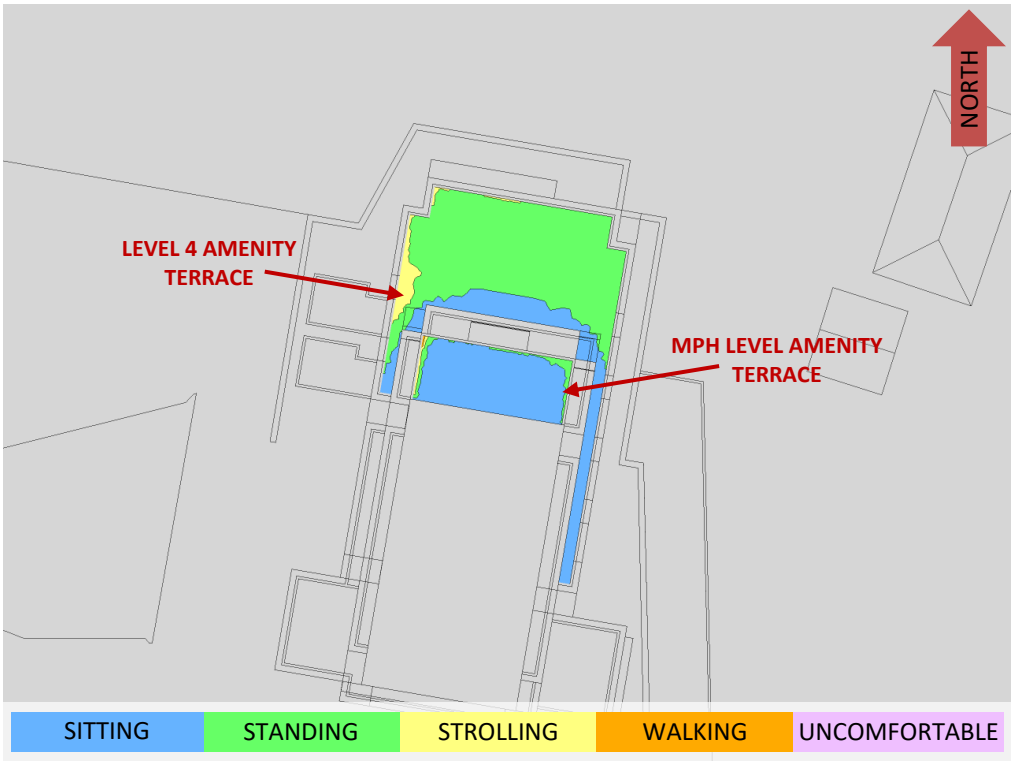

FIGURE 4B: SUMMER – WIND COMFORT, COMMON AMENITY TERRACES

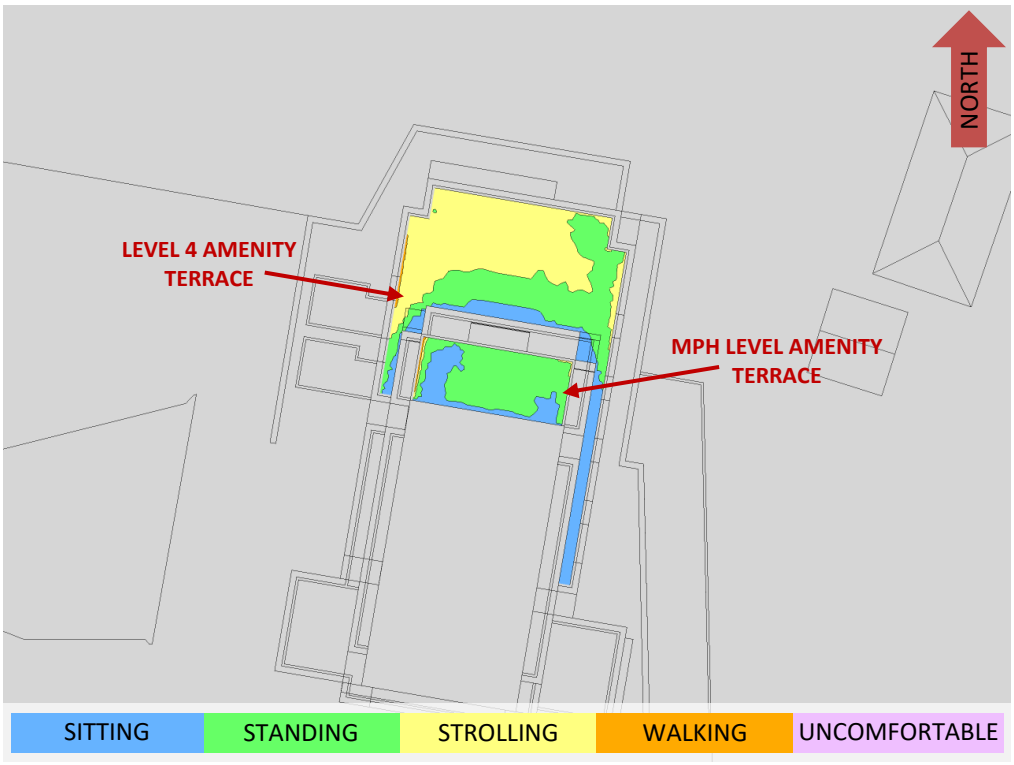

FIGURE 4C: AUTUMN – WIND COMFORT, COMMON AMENITY TERRACES

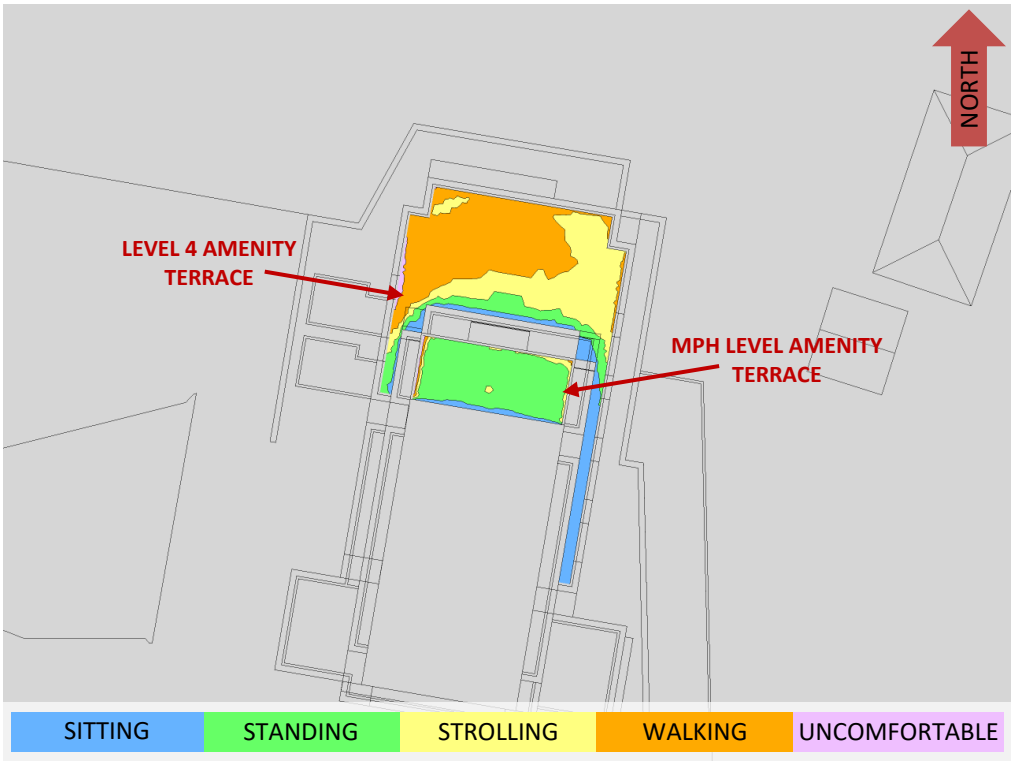

FIGURE 4D: WINTER – WIND COMFORT, COMMON AMENITY TERRACES

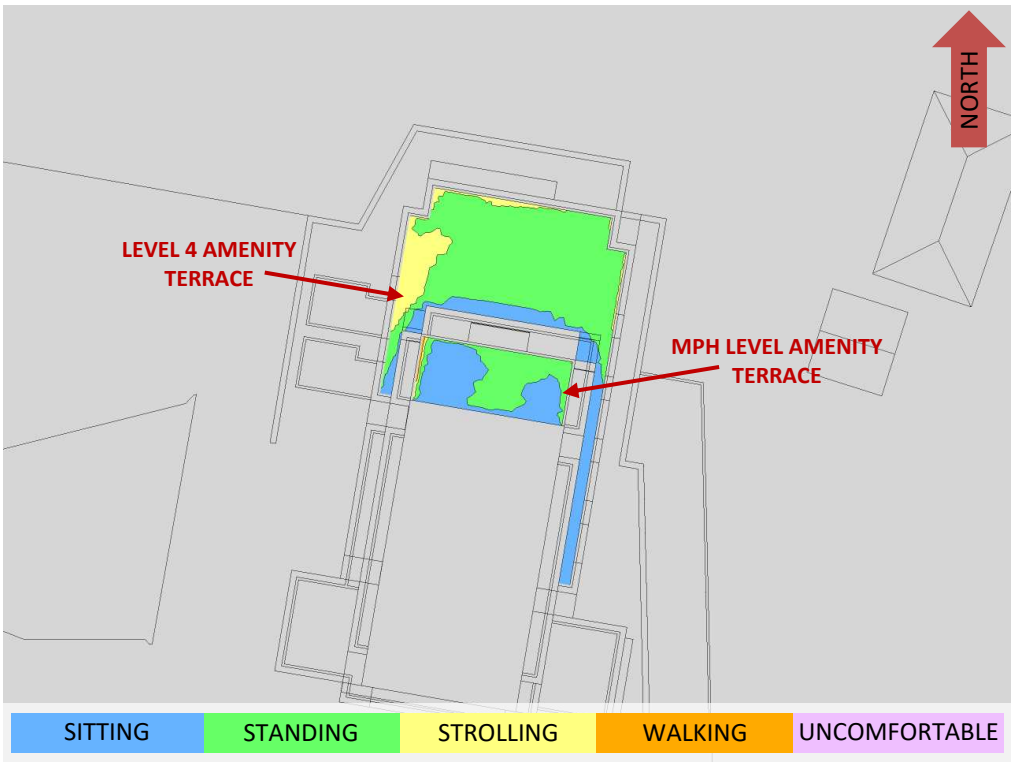

FIGURE 5: TYPICAL USE PERIOD – WIND COMFORT, COMMON AMENITY TERRACES

APPENDIX A

SIMULATION OF THE ATMOSPHERIC BOUNDARY LAYER

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SIMULATION OF THE ATMOSPHERIC BOUNDARY LAYER

The atmospheric boundary layer (ABL) is defined by the velocity and turbulence profiles according to industry standard practices. The mean wind profile can be represented, to a good approximation, by a power law relation, Equation (1), giving height above ground versus wind speed (1), (2).

$$U = U_g \left(\frac{Z}{Z_g}\right)^{\alpha} \qquad \text{Equation (1)}$$

where, $\boldsymbol{U}$ = mean wind speed, $\boldsymbol{U_g}$ = gradient wind speed, $\boldsymbol{Z}$ = height above ground, $\boldsymbol{Z_g}$ = depth of the boundary layer (gradient height), and α is the power law exponent.

For the model, U_g is set to 6.5 metres per second (m/s), which approximately corresponds to the 60% mean wind speed for Ottawa based on historical climate data and statistical analyses. When the results are normalized by this velocity, they are relatively insensitive to the selection of gradient wind speed.

Z_g is set to 540 m. The selection of gradient height is relatively unimportant, so long as it exceeds the building heights surrounding the subject site. The value has been selected to correspond to our physical wind tunnel reference value.

α is determined based on the upstream exposure of the far-field surroundings (that is, the area that it not captured within the simulation model).

Table 1 presents the values of α used in this study, while Table 2 presents several reference values of α. When the upstream exposure of the far-field surroundings is a mixture of multiple types of terrain, the α values are a weighted average with terrain that is closer to the subject site given greater weight.

TABLE 1: UPSTREAM EXPOSURE (ALPHA VALUE) VS TRUE WIND DIRECTION

Wind Direction (Degrees True)	Alpha Value (α)
0	0.23
22.5	0.23
45	0.23
67.5	0.23
90	0.22
112.5	0.23
135	0.22
157.5	0.22
180	0.24
202.5	0.24
225	0.24
247.5	0.24
270	0.25
292.5	0.24
315	0.23
337.5	0.23

TABLE 2: DEFINITION OF UPSTREAM EXPOSURE (ALPHA VALUE)

Upstream Exposure Type	Alpha Value (α)
Open Water	0.14-0.15
Open Field	0.16-0.19
Light Suburban	0.21-0.24
Heavy Suburban	0.24-0.27
Light Urban	0.28-0.30
Heavy Urban	0.31-0.33

The turbulence model in the computational fluid dynamics (CFD) simulations is a two-equation shear-stress transport (SST) model, and thus the ABL turbulence profile requires that two parameters be defined at the inlet of the domain. The turbulence profile is defined following the recommendations of the Architectural Institute of Japan for flat terrain (3).

$$I(Z) = \begin{cases} 0.1\left(\frac{Z}{Z_g}\right)^{-\alpha-0.05}, & Z > 10\ \text{m} \\ 0.1\left(\frac{10}{Z_g}\right)^{-\alpha-0.05}, & Z \leq 10\ \text{m} \end{cases} \qquad \text{Equation (2)}$$

$$L_t(Z) = \begin{cases} 100\ \text{m}\sqrt{\frac{Z}{30}}, & Z > 30\ \text{m} \\ 100\ \text{m}, & Z \leq 30\ \text{m} \end{cases} \qquad \text{Equation (3)}$$

where, I = turbulence intensity, L_t = turbulence length scale, Z = height above ground, and α is the power law exponent used for the velocity profile in Equation (1).

Boundary conditions on all other domain boundaries are defined as follows: the ground is a no-slip surface; the side walls of the domain have a symmetry boundary condition; the top of the domain has a specified shear, which maintains a constant wind speed at gradient height; and the outlet has a static pressure boundary condition.

REFERENCES

[1] P. Arya, "Chapter 10: Near-neutral Boundary Layers," in *Introduction to Micrometeorology*, San Diego, California, Academic Press, 2001.

[2] S. A. Hsu, E. A. Meindl and D. B. Gilhousen, "Determining the Power-Law Wind Profile Exponent under Near-neutral Stability Conditions at Sea," vol. 33, no. 6, 1994.

[3] Y. Tamura, H. Kawai, Y. Uematsu, K. Kondo and T. Okhuma, "Revision of AIJ Recommendations for Wind Loads on Buildings," in *The International Wind Engineering Symposium, IWES 2003*, Taiwan, 2003.

Appendix F: Shadow Analysis

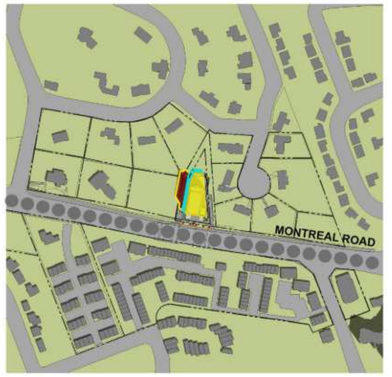
21 JUNE 2023 (DST)

1 A-301 JUNE-8AM
1 : 3500

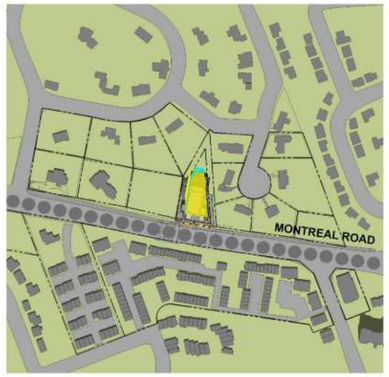
2 A-301 JUNE-9AM
1 : 3500

3 A-301 JUNE-10AM
1 : 3500

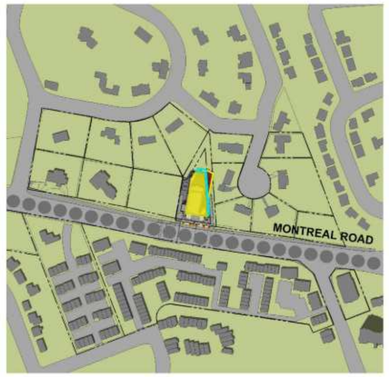
4 A-301 JUNE-11AM
1 : 3500



5 A-301 JUNE-12PM
1 : 3500



6 A-301 JUNE-1PM
1 : 3500



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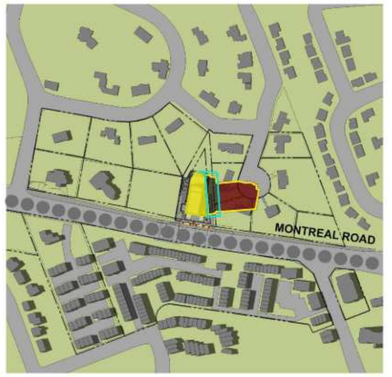
1 : 3500

8 A-301 JUNE-3PM
1 : 3500

9 A-301 JUNE-4PM
1 : 3500



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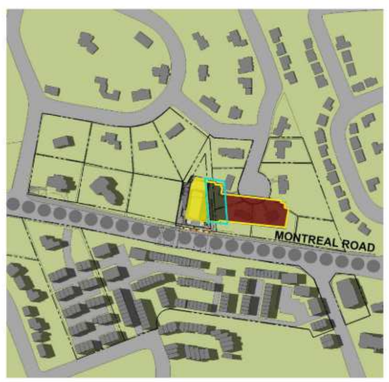
1 : 3500



11 A-301 JUNE-6PM
1 : 3500

12 A-301 JUNE-7PM
1 : 3500

13 A-301 JUNE-8PM
1 : 3500

PROPOSED SHADOW OUTLINE
AS OF RIGHT SHADOW OUTLINE
MAINSTREET CORRIDOR
PROPOSED DEVELOPMENT
NEW NET SHADOW

50000 0 62500 125000 250000mm

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL:
ONTARIO ASSOCIATION OF ARCHITECTS
RICHARD REID
LICENCE
8667

NORTH ARROW:

CLIENT:
CREATIVE DEV VENTURES
Development with Purpose
Owner

ARCHITECT:
rla/architecture
56 Beech Street, Ottawa, Ontario K1S 3J6
t.613.724.9932 f.613.724.1209 www.rodericklahey.ca

PROJECT TITLE:
1815 MONTREAL RD
OTTAWA ON

SHEET TILE:
SUNSHADE STUDY

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 1	SHEET No: A-301
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-12 4:49:30 PM

21 SEP 2023 (DST)

1 A-302 SEP-8AM 1 : 3500

2 A-302 SEP-9AM 1 : 3500

3 A-302 SEP-10AM 1 : 3500

4 A-302 SEP-11AM 1 : 3500

5 A-302 SEP-12PM 1 : 3500

6 A-302 SEP-1PM 1 : 3500

7 A-302 SEP-2PM 1 : 3500

8 A-302 SEP-3PM 1 : 3500

9 A-302 SEP-4PM 1 : 3500

10 A-302 SEP-5PM 1 : 3500

11 A-302 SEP-6PM 1 : 3500

50000 0 62500 125000 250000mm

PROPOSED SHADOW OUTLINE

AS OF RIGHT SHADOW OUTLINE

MAINSTREET CORRIDOR

PROPOSED DEVELOPMENT

NEW NET SHADOW

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL: ONTARIO ASSOCIATION OF ARCHITECTS KEVAN REID LICENCE 9667

NORTH ARROW:

CLIENT: CREATIVE DEV VENTURES Development with Purpose Owner

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PROJECT TITLE:
1815 MONTREAL RD
OTTAWA ON

SHEET TILE:
SUNSHADE STUDY

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 1	SHEET No: A-302
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-12 4:49:30 PM

21 DECEMBER 2023

1 A-303 DEC-9AM
1 : 3500

2 A-303 DEC-10AM
1 : 3500

3 A-303 DEC-11AM
1 : 3500

4 A-303 DEC-12PM
1 : 3500

5 A-303 DEC-1PM
1 : 3500

6 A-303 DEC-2PM
1 : 3500

7 A-303 DEC-3PM
1 : 3500

PROPOSED SHADOW OUTLINE

AS OF RIGHT SHADOW OUTLINE

MAINSTREET CORRIDOR

PROPOSED DEVELOPMENT

NEW NET SHADOW

50000 0 62500 125000 250000mm

WITHOUT PREJUDICE

No.	DESCRIPTION	YYYY-MM-DD
SPC 01	ISSUED FOR ZBLA APPLICATION	2024 12 13

REVISIONS:

ARCHITECT SEAL:
ONTARIO ASSOCIATION OF ARCHITECTS
KEVIN J. REID
LICENCE
8667

NORTH ARROW:

CLIENT:
CREATIVE DEV
VENTURES
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56 Beech Street, Ottawa, Ontario K1S 3J6
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PROJECT TITLE:
1815 MONTREAL RD
OTTAWA ON

SHEET TILE:
SUNSHADE STUDY

DRAWN:	CHECKED:
Author	Checker
SCALE: 1 : 1	SHEET No: A-303
PROJECT No: 2405	

PAPER SIZE: ISO Full Bleed B1 (707.00 x 1000.00mm)

PLOT DATE: 2024-12-12 4:49:31 PM