URBAN DESIGN REVIEW PANEL REPORT

Project:	2514 – 441 Echo Drive	**Date:**	07 May 2026
Hearing Date:	06 March 2026, 10:30am	**Pages:**	126
Comments Received:	17 March 2026		
File No.	PC2025-0290		

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ONTARIO ASSOCIATION OF ARCHITECTS
RYAN M. KOOLWINE
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Ryan Koolwine | Principal
M. Arch, OAA

RESPONSE TO UDRP RECOMMENDATIONS

Project:	2514 – 441 Echo Drive	Date:	07 May 2026
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Key Recommendations

- *The Panel acknowledges that this is a very handsome building. However, further refinement is suggested, particularly from a massing perspective.*
  We understand this comment to be in relation to the size of the upper levels of the building. We have made adjustments to the massing of the roof level which includes moving the enclosure further away from the interior side yards and a lowering of the overall height of the rooftop enclosure. We feel that these changes will improve the massing of the project and transition into the neighborhood. appreciate the Panel's support of the project.

- *The Panel expresses concern relates to the side yard setbacks, particularly along the north side and south sides above the 5th floor. The Panel recommends introducing greater setbacks on the top floors along the side of the building to reduce the perceived mass and address the proximity to adjacent buildings.*
  It is not feasible for the project to step in along the interior side yard at Level 06, however we have provided a significant step back of the building at Level 07 which is visible in the revised rendering package. We feel that this change is a fair balance between reducing the impact of the built form and maintaining the performance requirements of the project.

- *The Panel recommends further study of the upper levels, particularly the projecting canopy element from seventh storey of the building. Additional analysis and visual studies are encouraged to better understand its impact.*
  We have reduced the height and the extent of the projection of the canopy on Level 07, please refer to the revised renderings.

- *The Panel encourages further exploration of the street rhythm and façade articulation along Echo Drive. Suggestions included strengthening the vertical rhythm and considering a tripartite division of the façade.*
  We have introduced a tripartite expression to the lower levels of the building, as suggested, please refer to the revised renderings.

- *The Panel encourages simplification of the upper portions of the building so that the top levels recede visually and blend more with the sky, helping to reduce the overall perception of height and mass.*
  The articulation of the upper levels of the building has been simplified as suggested, please refer to the revised renderings.

- *The Panel also emphasizes the importance of integrating development with the existing canal landscape and heritage setting.*
  - *Protecting existing mature trees should be a priority wherever possible.*
  - *Where trees cannot be preserved, the Panel recommends ensuring that replacement trees are planted in conditions that allow for healthy long-term growth, rather than on top of structural slabs that restrict root development.*

  We understand the comments concerning the trees, efforts are being made to ensure sufficient soil volume to allow newly planted trees to thrive.

Site Design & Public Realm

- *The Panel notes that mature trees and canopy cover are defining characteristics of the Canal corridor and the surrounding neighborhood. As such, preserving existing trees on the site should be a primary consideration.*
  The final condition of the development will ensure that there are trees abutting Echo Drive. That said, it is important to note that the majority of the mature tree canopy cover in the area is from the existing trees in the median between Echo Drive and Colonel By Drive, which is not on the subject site.

- *The Panel suggests reviewing the site design to ensure that proposed trees have access to adequate soil volumes. Where possible, trees should not be planted on structural slabs, as this can limit their long-term health and growth.*
  Noted.

- *The Panel also noted opportunities to refine the landscape programming within the site. The rear yard currently appears largely planted, and the Panel encourages introducing small, shared amenity spaces for residents, such as seating areas, gathering spaces, or community gardening plots.*
  This comment is noted, however with the required grading for the site providing barrier-free access to this area is challenging. That said, we will continue to explore opportunities to program this area but this may be more as private amenity space instead of a communal amenity area.

- *The Panel encourages exploring options to minimize the underground parking, given the site's proximity to the river and the potentially high cost of constructing the basement. Reducing the number of units could be one approach to consider.*
  The development team has a clear understanding of the cost involved with building an underground parking structure as sees parking as a requirement given the nature of this development. Reducing the number of units will not be entertained.

Sustainability

- *The Panel appreciates the sustainability ambitions presented and encourages the project team to explore additional opportunities at the rooftop level.*
  - *Given the prominence and visibility of the roof from surrounding viewpoints, including the nearby bridge, the Panel suggests exploring strategies beyond a conventional white roof.*
  - *Opportunities may include planted roofs, climbing vegetation, or other landscape elements that contribute to heat island reduction and improve environmental performance.*

  Rooftop planting will be explored, but we will not make a commitment to move forward in this direction.

Built Form & Architecture

- *The Panel acknowledges that the building presents a strong architectural expression but notes that the site is located within a mature and sensitive neighborhood context.*
  Noted.

- *The Panel notes that the proposal exceeds the prevailing height of surrounding buildings and emphasizes the importance of refining the building mass to mitigate its perceived scale. Introducing step-backs above the third storey, particularly along the north side, is strongly encouraged.*
  With respect to mitigating the scale of the building in the pedestrian realm, the building offers step backs on Level 04, Level 06 and Level 07 (Roof Level) on the west elevation. We disagree that there is a need to step the building back from the interior side yards as this transition would have relatively little impact on the street. We also question why stepping back on the north side is of more importance than the south side. There are plenty of zones in the city that permit 6 stories, and the step back requirements for these buildings are only on the front yard side, not the interior side yards.

- *The Panel suggests recessing the upper floors by approximately 5.5 metre from the side yard setback, including the darker upper volume, which could create greater separation between the brick podium and the upper levels. This would help sculpt the overall massing of the building and reduce the sense of blockiness of the building.*
  We respectfully disagree and would offer that a 5.5m step back from an interior side yard on a mid-rise building is excessive. Making this adjustment would drastically impact the functionality of the building and the reduction in area would compromise the viability of the project.

- *The Panel recommends further articulation of the front façade to better reflect the rhythm of the surrounding house-form buildings. The current division of the façade could be strengthened by introducing additional vertical elements, potentially revealing the recessed balconies and creating a tripartite composition along the street frontage.*
  We have introduced a tripartite expression to the lower levels of the building, as suggested, please refer to the revised renderings.

- *The Panel also encourages simplification of architectural treatment at the top of the building.*
  - *Reducing the visual emphasis of the roof-level elements and avoiding strong projecting forms may help diminish the apparent height and mass of the building, particularly when viewed from the bridge and along the Canal corridor.*

  The articulation of the upper levels of the building has been simplified as suggested, please refer to the revised renderings.

- *The Panel encourages careful attention to the design of the ground floor, including exploring opportunities to introduce subtle breaks or variations in the façade to reflect the scale and rhythm of adjacent residential buildings.*
  We are somewhat puzzled by this comment as we have placed a great deal of care in the design and articulation of the lower levels of the building. We are providing units that can be accessed directly from the street, vertical brick articulations that project from the building face, and recessed balconies that have been positioned to achieve the aforementioned 'tripartite' effect. All things considered, we feel strongly that the proposed design already reflects the scale and rhythm of adjacent residential buildings.

Sincerely,



Ryan Koolwine | Principal
M. Arch, OAA

APPENDIX 1 – SUBMISSION MATERIAL

Project:	2514 – 441 Echo Drive
File No.	PC2025-0290



URBAN DESIGN BRIEF

441 ECHO DRIVE

25 FEBRUARY 2026

ONTARIO ASSOCIATION OF ARCHITECTS
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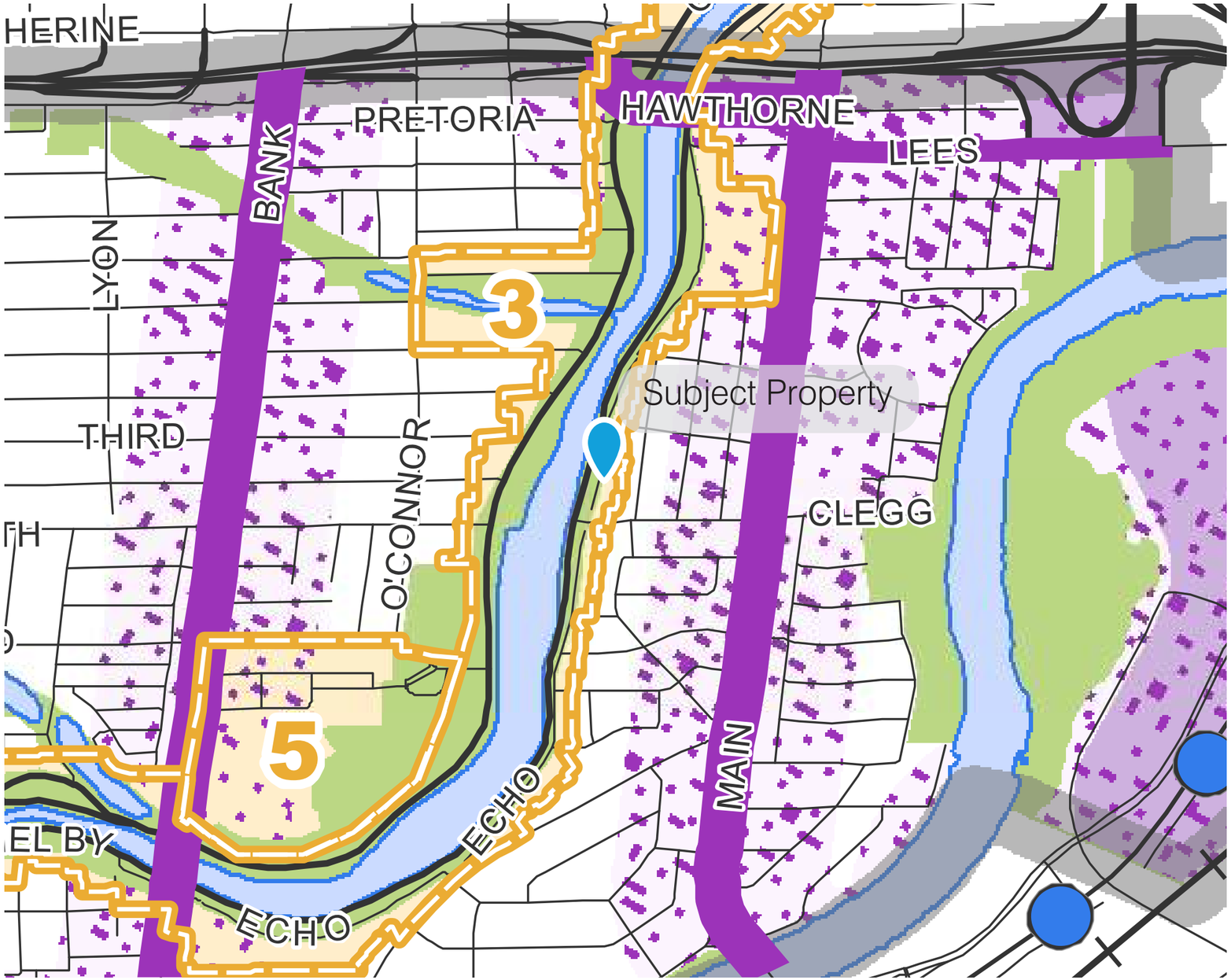
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POLICY AND REGULATORY FRAMEWORK



Schedule B2 — Inner Urban Transect, City of Ottawa Official Plan.

OTTAWA OFFICIAL PLAN (2022) - INNER URBAN TRANSECT

The site is located in the Inner Urban Transect and is designated Rideau Canal Special Policy Area.

The Inner Urban Transect has an urban pattern of built form and is generally intended for mid- to high-rise density development.

Lands redeveloping in the Special Policy Area shall have regard to section 4.5, Cultural Heritage and Archaeology, and section 4.6, Urban Design. Per section 4.5, "Development adjacent to [the Rideau Canal] shall have regard for [its] cultural heritage value [...] and the City may require demonstration that development does not adversely impact these resources." The proposed development responds to the cultural heritage of the surrounding area and is discussed in the Heritage Impact Assessment (HIA), included as an Appendix. Units face the Rideau Canal and many of the units will have views of the Canal. It is also worth noting that the building is partially blocked by the Flora Footbridge, will be approximately 45 metres from the Rideau Canal, and will be separated from the edge of the Canal by a multi-use path and road. Therefore, impacts to the Rideau Canal are substantially mitigated.

Special Policy Areas do not themselves identify maximum permitted heights. Instead, the permitted building height is per the existing zoning in place. Under the zoning by-law, the maximum permitted height is 14.5 metres, whereas 20.5 metres is proposed.

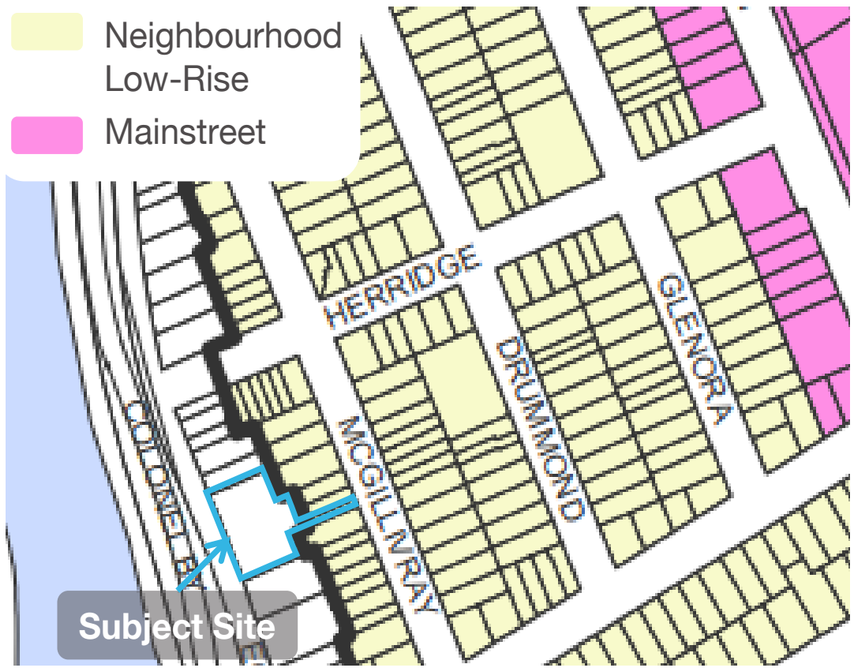
Urban Design policies speak to how "Transitions between Mid-rise buildings, and adjacent properties designated as Neighbourhood […] will be achieved by providing a gradual change in height and massing, through the stepping down of buildings, and setbacks from the Low-rise properties, generally guided by the application of an angular plane as may be set in the Zoning By-law or by other means in accordance with Council-approved Plans and design guideline." The proposed development utilizes changes in materiality, stepbacks, and different glazing treatments to provide a gradual change in height and massing. [TN1.1]

The site is also located on a Scenic Capital Entry Route.

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POLICY AND REGULATORY FRAMEWORK



Secondary Plan, Volume 2 | Schedule A - Designation Plan

OLD OTTAWA EAST SECONDARY PLAN (2022)

The majority of the site is not located within the Secondary Plan Area; however, the drive aisle to McGillivray Street is located in Secondary Plan Area, where it is designated "Neighbourhood Low-Rise." This designation has a maximum permitted height of 4 storeys.

The Secondary Plan directs properties inside the Secondary Plan Area to "intensify at the edge." The proposed 6-storey building provides an edge condition, which provides a backdrop of height to buildings in the Secondary Plan Area.

CITY OF OTTAWA COMPREHENSIVE ZONING BY-LAW (2008-250)

The subject site is zoned "Residential Fourth Density, subzone UD" (R4UD) under City of Ottawa Comprehensive Zoning By-law 2008-250.

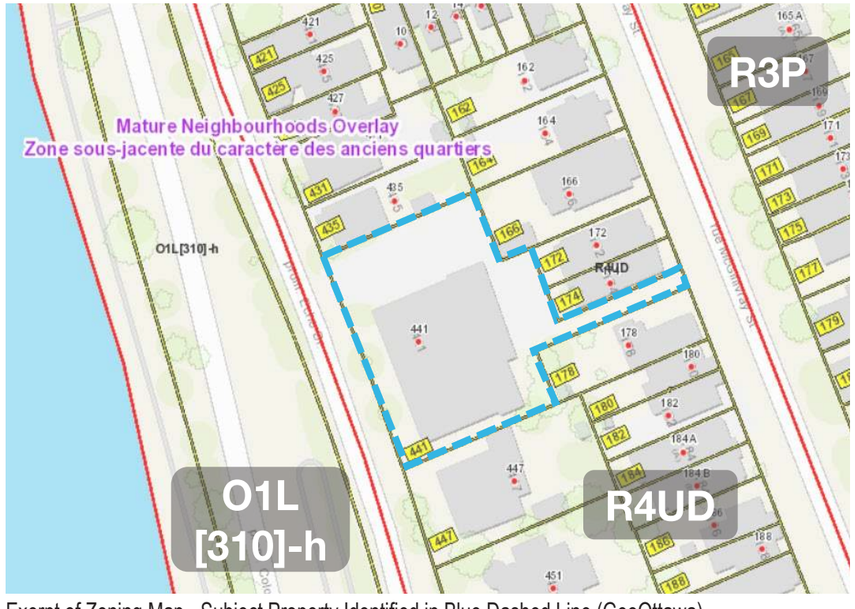
CITY OF OTTAWA ZONING BY-LAW (2026-50)

The subject site is zoned "Neighbourhood Fourth Density, subzone B" (N4B) under the approved but not yet in full force and effect City of Ottawa Comprehensive Zoning By-law 2026-50.

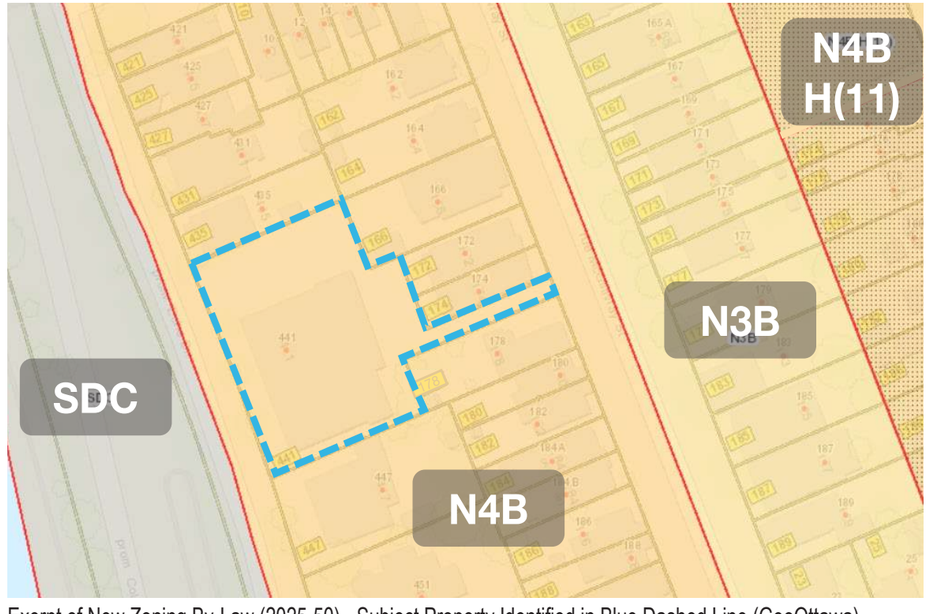
PROPOSED OPA AND ZBLA

Concurrent Official Plan Amendment (OPA), Zoning By-law Amendment (ZBLA), and Site Plan Control (SPC) applications will be submitted to permit the redevelopment. An OPA would seek to permit the 20.5-metre building through a site-specific policy similar to existing section s.6.6.2.2(k). Proposed text would read: "The maximum permitted building height is mid-rise, up 20.5 metres, on the lands municipally known as 441 Echo Drive." Relief from section 6.6.2.2(4)(a) will also be sought, as the proposed development will be in a different height category from the surrounding neighbourhood: mid-rise compared to the existing low-rise.

A ZBLA will be submitted to rezone the property from "Neighbourhood Fourth Density, subzone B" to "Neighbourhood Fifth Density, subzone B, height limit 20.5 metres" N5B H(20.5). As the application progresses, additional areas of relief will be identified as needed.



Exerpt of Zoning Map - Subject Property Identified in Blue Dashed Line (GeoOttawa)



Exerpt of New Zoning By-Law (2025-50) - Subject Property Identified in Blue Dashed Line (GeoOttawa)

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View of West Facade from Echo Drive



View of West Facade from Flora Foot Bridge

DESIGN INTENT

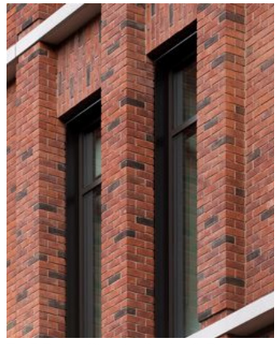
The design of this project is deeply mindful of existing context and a changing urban environment as it is the first in what will likely be several developments in the area. We are mindful of the existing urban fabric and the public realm and have designed a project that is sympathetic to the scale of Echo Drive, but we are also aware that this is a central location that will have increasing density over time. Possibly the greatest attribute of the site is its proximity to the Rideau Canal, and this weighed on our approach to the design of the building as we are aware that this will create a backdrop for a significant public asset that is hugely important to the city as a whole.

There are plenty of examples of nearby buildings that have heights well in excess of what has been proposed. That said, we do understand that the height will be a deviation from the existing built typology, so a key factor in the design was to find ways to mitigate the impact of the additional height. This has been achieved through a series of projections and step-backs in the building face. On the lower levels, a brick framework projects out from the face of the building. This creates articulation and coupled with the recessed balconies creates a highly varied building elevation that will offer contrasting shadowing over the course of the day. As the building continues up, it is set back on Level 04 and then again on Level 06. In combination with frame projection on the lower levels, these step-backs offer significant relief from the street edge and soften the overall impact of the building on the street. The highly sculptural approach to the front elevation allows the building to respond and transition from the current surrounding context, while also allowing it to be well integrated with potential future development.

We also understand that this building has a prominent location with its proximity to the canal. For this reason, we felt that the project needed to be understated and also timeless from a design perspective. We are employing the use of masonry over the majority of the project, a cladding material typical to the residential buildings in the area. We are also making use a simple but sophisticated details, making this a well-articulated background building. While it will read as more prominent in the short term, as more properties develop, it will become more integrated with its surroundings. The project is well screened by existing trees as well as the foot of the pedestrian bridge, so there will not be a significant visual impact on the canal. That said, I do think we should recognize the canal for what it is, a waterway that passed through the center of a city. It is a natural feature in an urban environment. This being the case, doesn't the presence of buildings (even tall buildings) enhance this experience?

We believe that this project responds well to the demands of its surroundings. It is a timeless expression of modern architecture that isn't looking for attention and plays a respectful role in the continued evolution of our city.

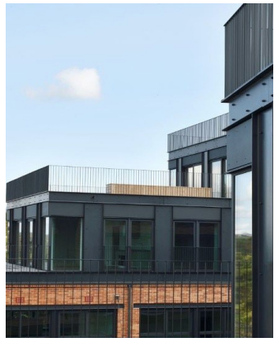
PRECEDENT IMAGES



7-15 Baker Street - Squire & Partners



Turnmill - Piercy & Company



First Tech Federal Credit Union - Hacker

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SITE STATISTICS

Current Zoning Designation:	R4UD
Lot Width:	40.2m
Total Lot Area:	1,394.32m²
Average Existing Grade:	65.49m

Proposed Development - 6 Storey Mid-Rise Apartment Building

No. of units 52 Units

Zoning Mechanism	Required	Provided
Minimum Lot Width *Table 162(a)*	15.0m	40.2m
Minimum Lot Area *Table 162(a)*	450m²	1,394.32m²
Min. Front Yard Setback *Table 162(a)*	4.5m	4.6m
Min. Interior Side Yard Setback *Table 162(a)*	1.5m	1.5m
Min. Rear Yard Setback *Table 144(a)(iii)*	18.3m	35.1m
Maximum Building Height *Table 162(a)*	14.5m	18.9m
Parking Space Rates (Residents) *101 (Sch. 1A - Area X)*	18 Spaces *0 spaces for the first 12 units - Section 101(3)* *0.5 spaces / unit for 40 units - Table 101(R15)* *Minus 10% - Section 101(6)*	54 Spaces
Minimum Visitor Parking Rates *101 (Sch. 1A - Area X)*	4 Spaces *0 spaces for first 12 units - Section 102(2)* *0.1 spaces / unit for XX units - Table 102*	4 Spaces
Bicycle Parking Rates (Residents) *Table 111A (Sch. 1 - Area X)*	26 Spaces *0.5 spaces / unit for 52 units [111A(b)(i)]*	54 Spaces
Total Amenity Area *Table 137(4)(II)*	312m² *6m² / unit for 52 units*	624.34m²
Communal Amenity Area *Table 137(4)(III)*	156m² *Min. 50% of Total Amenity Area*	305.07m²

UNIT COUNT

NAME	LVL 01	LVL 02	LVL 03	LVL 04	LVL 05	LVL 06	TOTAL COUNT	PERCENTAGE
1-BED	2	4	4	4	4	0	18	35%
1-BED + DEN	2	2	2	2	2	1	11	21%
2-BED	3	4	4	4	4	1	20	38%
2-BED + DEN	0	0	0	0	0	1	1	2%
3-BED	0	0	0	0	0	2	2	4%
TOTAL	7	10	10	10	10	5	52	100%

GROSS BUILDING AREA

LEVEL	AREA	AREA (SF)
LEVEL 1	647.97 m²	6,975 SF
LEVEL 2	724.46 m²	7,798 SF
LEVEL 3	722.19 m²	7,774 SF
LEVEL 4	712.53 m²	7,670 SF
LEVEL 5	712.53 m²	7,670 SF
LEVEL 6	616.33 m²	6,634 SF
ROOF	239.12 m²	2,574 SF
TOTAL	4,375.13 m²	47,093 SF

LEVEL P1	1,177.43 m²	12,674 SF
LEVEL P2	1,177.43 m²	12,674 SF
LEVEL P3	593.47 m²	6,388 SF
TOTAL	2,948.33 m²	31,736 SF

TOTAL	**7,323.5 m²**	**78,829 SF**

LEASABLE AREA (RESIDENTIAL)

LEVEL	AREA	AREA (SF)
LEVEL 1	480.80 m²	5175 SF
LEVEL 2	645.35 m²	6946 SF
LEVEL 3	643.69 m²	6929 SF
LEVEL 4	631.73 m²	6800 SF
LEVEL 5	710.24 m²	7645 SF
LEVEL 6	539.39 m²	5806 SF
TOTAL	3,651.20 m²	39301 SF

PARKING SCH. (VEHICLE)

LEVEL	TYPE	COUNT
LEVEL P1	RESIDENTIAL	17
LEVEL P1	VISITOR	4
LEVEL P2	RESIDENTIAL	24
LEVEL P3	RESIDENTIAL	13
TOTAL		58

COMMUNAL AMENITY

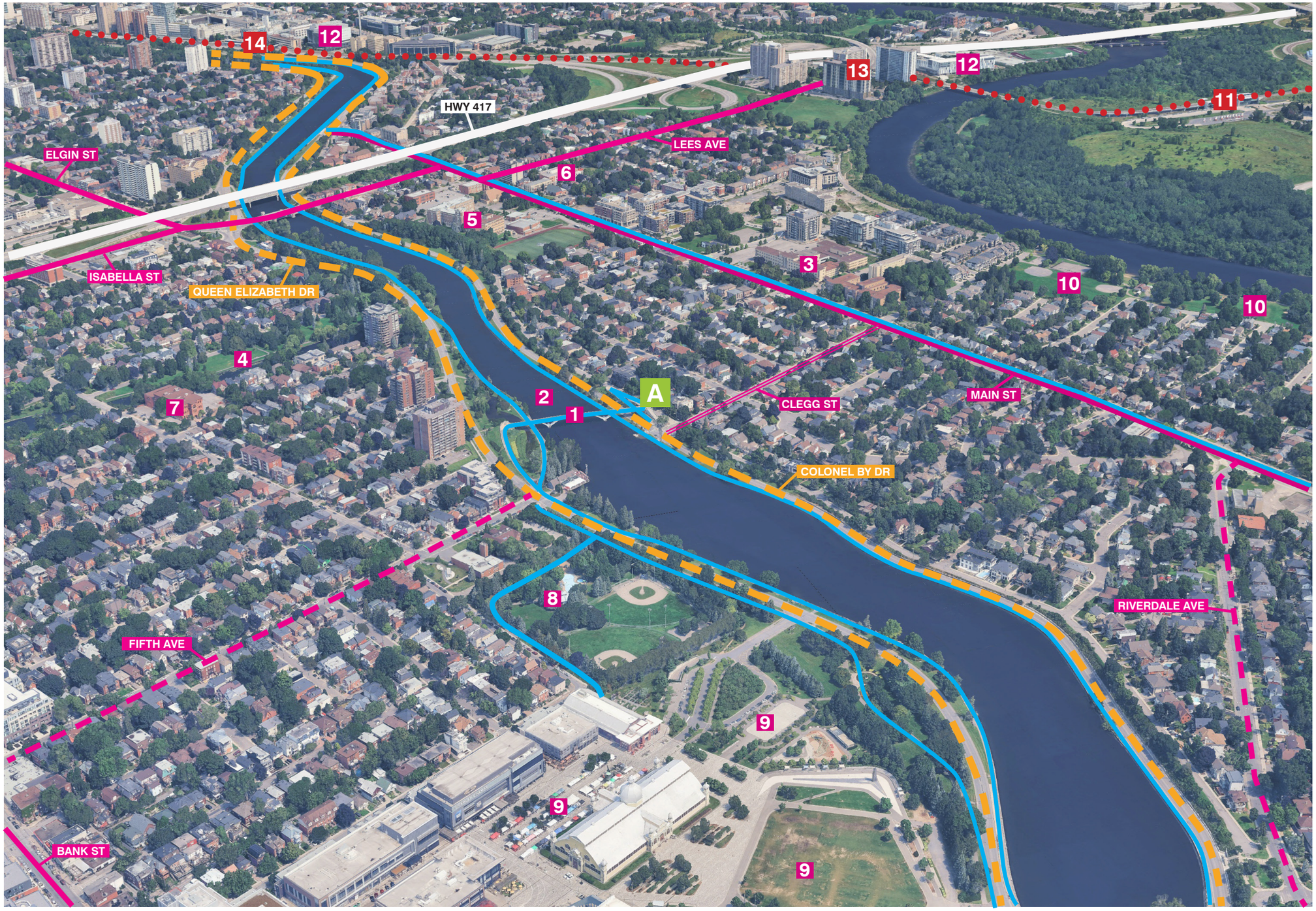
LEVEL	NAME	AREA	AREA (SF)
ROOF	AMENITY LOUNGE	114.12 m²	1,228 SF
ROOF	AMENITY TERRACE	190.95 m²	2,055 SF
TOTAL		305.07 m²	3,284 SF

PRIVATE AMENITY

LEVEL	AREA	AREA (SF)
LEVEL 1	120.15 m²	1,293 SF
LEVEL 2	21.64 m²	233 SF
LEVEL 3	25.41 m²	274 SF
LEVEL 4	25.97 m²	280 SF
LEVEL 5	26.52 m²	285 SF
LEVEL 6	99.57 m²	1,072 SF
TOTAL	319.27 m²	3,437 SF

PARKING SCH. (BICYCLE)

LEVEL	TYPE	COUNT
LEVEL P1	STACKED	27
TOTAL		27



View Looking North East

POINTS OF INTEREST LEGEND

A	Site - 441 Echo Drive
1	Flora Foot Bridge
2	Rideau Canal
3	St. Paul University
4	Patterson Creek Park
5	Immaculata High School
6	Lady Evelyn Alternative School
7	First Avenue Public School
8	Sylvia Holden Park
9	Lansdowne Park
10	Brantwood Park
11	Hurdman LRT Station
12	uOttawa Campus
13	Lees LRT Station
14	uOttawa LRT Station

NETWORK LEGEND

- Multi-Use Pathway
- Arterial Road
- Federally Owned Road
- Collector Road
- Local Road
- Provincial Highway
- Line 1 O-Train

441 ECHO DRIVE SURROUNDING CONTEXT

| 2514 | SCALE: N.T.S.

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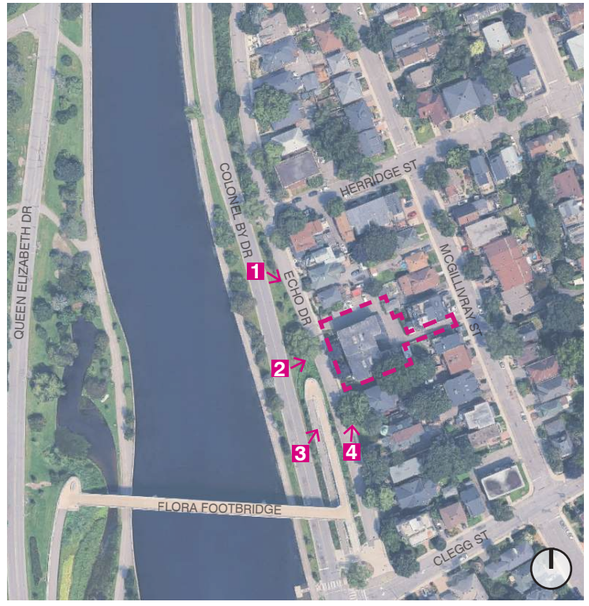
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1. Looking South along Colonel By Drive



2. Looking East along Colonel By Drive



Key Plan



3. Looking North along Colonel By Drive



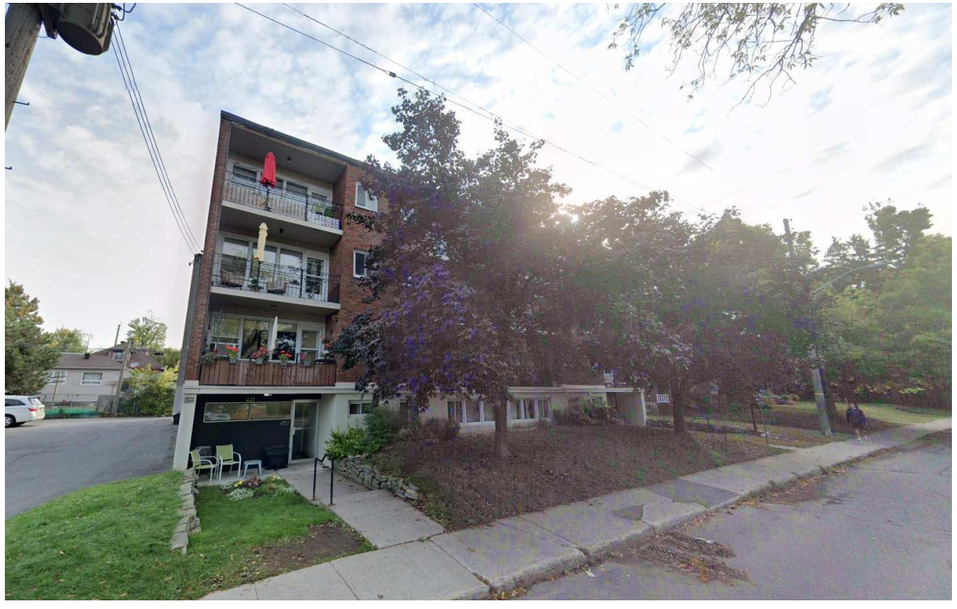
4. Looking North along Echo Drive

441 ECHO DRIVE SITE PHOTOGRAPHS

| 2514 | SCALE: N.T.S.

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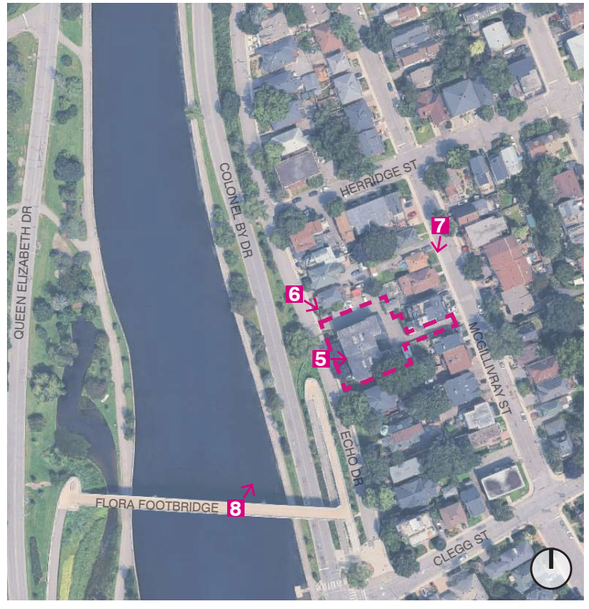
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5. Looking East along Echo Drive



6. Looking West along Isabella Street



Key Plan



7. Looking South along McGillivray Street



8. Looking North-East from Flora Footbridge



View Looking South

CHARACTERISTICS OF THE ADJACENT STREETS AND PUBLIC REALM

411 Echo is in an enviable location fronting the Rideau Canal and Colonel By Drive; a scenic parkway linking the downtown core to landmarks like Dow's lake and Carleton University. Immediately East of Echo Drive, streets are comprised of a mix of residential buildings and low-rise infill. Slightly further east, past Main Street, is Saint Paul University. To the west, past Colonel By, the site faces the Rideau Canal and the Flora Footbridge, providing a direct pedestrian connection to Sylvia Holden Park and the Lansdowne Park entertainment district. Just south of 411 Echo, Clegg Street links Colonel By to Main Street, two important north-south arteries.

411 Echo is therefore both visually prominent, due to its waterfront location, and strategically positioned near key pedestrian, cycling, and vehicular corridors. Though backed nestled at the edge of an established residential neighborhood, it is more so a feature of Colonel By Drive, which distinguishes itself via pockets of larger, high-end residential architecture. 411 will serve as a template for future mid-rise development along Colonel By, as well as a pedestrian and cycling anchor, connecting key programmes and corridors on the east and west sides of the Rideau Canal.

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View Looking North

MICROCLIMATE CONDITIONS OF THE SITE

The microclimate conditions of the site have been carefully analyzed to ensure the proposed development harmonizes with the local environment, supports pedestrian comfort at grade, and provides a high standard of interior comfort.

Wind Patterns
Given the site's proximity to the water, where stronger, more channelized winds can occur, most balconies facing the water have been subsitituted for loggias, or are otherwise partially inset within the facade.

Solar Exposure and Temperature Regulation
The south-facing façade balances views and thermal performance thanks to recessed balconies, columns framed fenestration and high-performance glazing, supported by efficient HVAC systems and heat recovery unit, and a well-insulated envelope for year-round comfort.

Precipitation and Drainage
Sustainable stormwater management includes permeable paving where practical and a stormwater cistern, reducing runoff and preventing flooding.

Vegetation and Landscaping
Native, drought-tolerant planting is used for resilience and low maintenance, while landscaping at grade and on terraces provides shade, improves comfort, and enhances the streetscape.

Noise Levels
All walls are detailed to suprass DB level requirements prescribed by code.

Air Quality
Good indoor air quality will be supported through low-emission building materials and a ventilation system that provides fresh air to all units, ensuring a healthy living environment.



View Looking East

441 ECHO DRIVE PROJECT MASSING IN EXISTING CONTEXT

| 2514 | SCALE: N.T.S.

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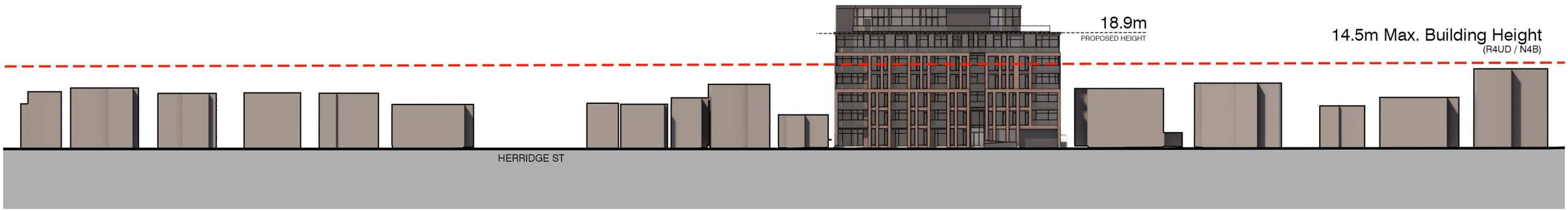
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Aerial View of Site Looking North; Massing as per R4UD Zoning (14.5m building height)



Aerial View of Site Looking East; Massing as per R4UD Zoning (14.5m building height)



East Elevation Showing Heights of Surrounding Buildings and Maximum Heights Allowed by Zoning By-Law

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Massing as per R4UD Zoning (14.5m building height)



Massing as per R4UD Zoning (14.5m building height)

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View From Echo Drive Looking North



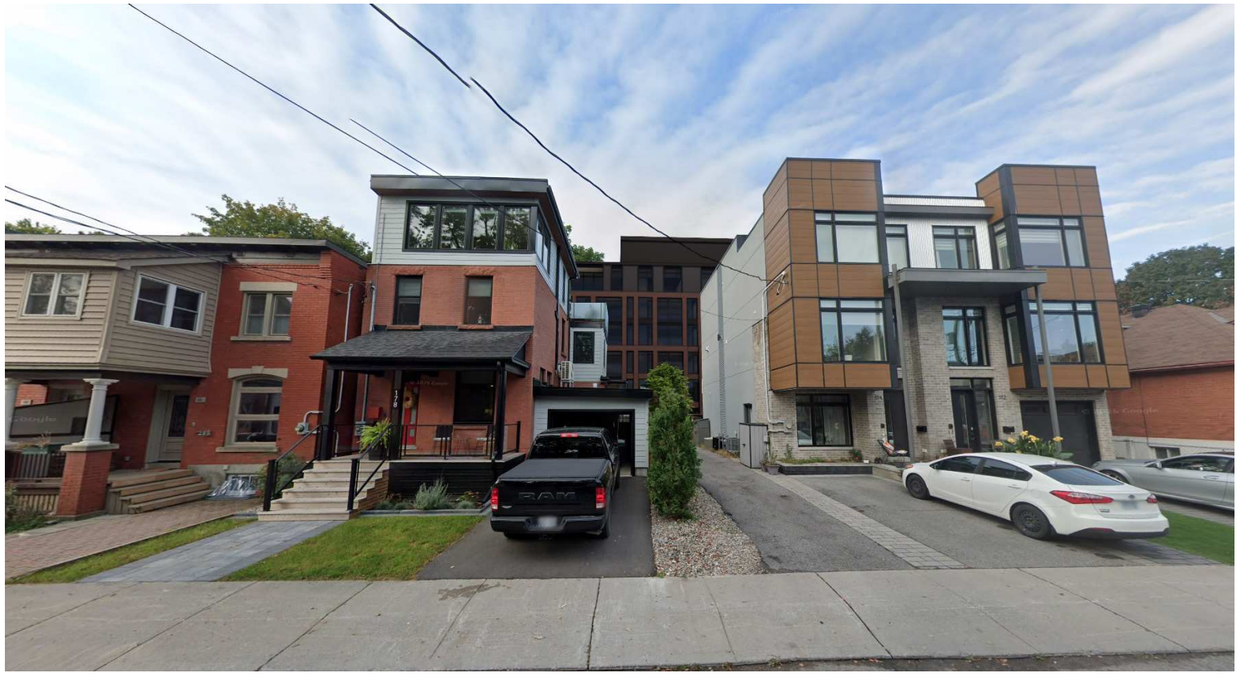
View From Colonel By Drive Looking South-East

441 ECHO DRIVE STREETVIEW OF PROJECT IN EXISTING CONTEXT

| 2514 | SCALE: N.T.S.

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View From Echo Drive Looking North



View From Colonel By Drive Looking South-East

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View from Echo Drive Looking South

URBAN DESIGN

33. Urban design appreciates the unique lot conditions and the context, the opportunity to improve conditions of the public realm along Echo Drive through activation and ground floor uses, and the elegance of the architecture.
Noted.

34. Overall, the development can benefit from further contextualization as required by the Official Plan particularly those related the Rideau Canal Special District 6.6.2.2. More specifically, from urban design perspective:
a. Development will respect the existing patterns of building footprints, height, massing, scale, setback and landscape character within the associated streetscape.
While the footprint of the proposed project is larger than the abutting buildings, this is a result of the project being located on a much larger lot than is typical for the area. The building is employing the use of various architectural techniques and articulations to reduce the scale of the project and to bring it more in line with the existing urban fabric.

b. Provide carefully consider the visual relationship between the site and the canal, including the adjacent or nearby federal parkways.
The design of the front of the building has been carefully considered and is mindful of its location relative to parkways and heritage assets.

c. Preserve mature trees by ensuring the continuity of the existing landscape patterns, orientation of buildings and preserving views to and from the canal.
Trees along the site will be preserved where possible. Where they are being removed they will be replaced with new trees.

35. Site orientation
a. Ensure that the trees on the site are protected.
Noted.

b. Provide landscaping in the rear yard and interior side yard to the extent possible.
The rear yard is entirely landscaped and is primarily soft landscaping with trees proposed to assist with privacy and transition.

c. Study rear yard conditions and the relationship between the proposed development and the abutting properties along McGillivray. The proposed building may be too close to the rear property lines of the abutting properties. Additional setbacks should be considered.
We have considered the rear yard setbacks and feel that they are sufficient. The project is at approximately 5m from 166 McGillivray, which is under the same ownership. The building is over 10m from the two adjacent properties, which is sufficient separation.

d. Explore pedestrian connections throughout the site.
The circulation around the site has been revised so that residents can move from within the building to the rear yard, and potentially to the street behind. That said, we will ensure that there are measures in place to ensure resident safety and to ensure that this site does not become a pedestrian 'pass through'.

36. Built form
a. Height and massing of the overall building should ensure sensitive integration with the abutting low-rise context and should respect the character and views of Rideau Canal and streetscape.
Again, we feel that the articulation provided with the design of the building, along with the stepping back of the building face as the building climbs, provides a respectful integration to the surrounding context.

b. The ground plane should be set to respond to the pattern shown on adjacent buildings. The current proposal appears to be a little bit too high for its context.
The ground floor has been brought closer to grade, and is more in keeping with the abutting buildings.

c. The height and rhythm of the base should be responsive to the existing buildings along Echo Drive. The massing of the abutting buildings should be further studied and accurately represented in future renderings. It appears that the current three storey base may be too high. A datum line at the second storey may be more sensitive to the context.
With the shift to bring the ground floor of the building closer to grade, the datum line has also been brought down and is more in keeping with a 2-storey volume, as suggested.

d. The base may be broken up vertically to mimic the architectural rhythm of Echo Drive.
We believe that the base of the podium achieves this.

e. The glazing to wall ratio appears to be quite high. Given the context, increased solidity particularly at the base may be appropriate. Feel free to contact Sahara Shrestha, Planner II, Urban Design, for follow-up questions.
Respectfully, we disagree with this comment. Zoning requirements that we are aware of speak to minimum glazing requirements and to the benefits of daylight into suites and on the transparency towards the public realm. We see the amount of glazing proposed as an asset of this design, and given the views towards the canal, and all the other benefits of ample daylight, have no intention of reducing the percentage of glazing.

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View of West Facade

BIRD-SAFE DESIGN APPROACH

Our bird-safe design strategy does not rely on the application of bird-safe glass. Instead, we have implemented a variety of alternative methods.

Guideline 1:
a) We take into account that the porject is located on a waterfront property.

Guideline 2:
a) We comply with this guideline since the building uses primarily 'punched glazing'.
b) We comply with this guideline as the building utilizes solid masses, such as brick columns to break up the glass, which fragment reflections and avoid large monolithic fenestration.

Guideline 3:
a) We comply with this guideline since the building has no 'fly-through' or 'mirror maze' areas.

Guideline 4:
a) There is no provision or expectation for exterior antennas or towers on this project.
b) There will be no guy-wires on the project.
c) There will be no up-lighting on the project.
d) Grates on the project, when they are positioned, will meet the opening requirements of these guidelines.
e) All vertical pipes and flues will be capped.

Guideline 5:
a) The plantings around the building should not result in significant reflections on the building.
b) There are no linear landscape elements leading to glass facades or doors.
c) There are no plants with significant fruit or seed crops specified on the project.
d) There are no adjacent buildings of a scale where the rooftop of this building would be reflected.
e) There is no indoor vegetation planned for the project.
f) There are no ornamental or other water features designed on this project.

Guideline 6:
a) There is no up lighting on the project.
b) All light fixtures will be full cut-off.
c) Non-Essential exterior lighting will be on motion sensors.
d) We will target only enough light intensity to meet OBC requirements.
e) Perimeter lighting will be discrete.
f) There will be no flood lights.

Guideline 7:
a) Windows will be equipped with roller blinds.
b) With the exception of the lobby and amenity rooms, there will be no public spaces in the building that will be visible from the exterior.
c) Each unit in the building will have independent light control and has less than 15' of frontage along the exterior of the building. This will have the effect of creating small zones of lighting.

SUSTAINABILITY STATEMENT

JBPA is committed to reducing the environmental impact of the buildings we own and operate. Our long-standing commitment to collaboratively pursue green initiatives has delivered measurable, meaningful results for over a decade.

Echo integrates a range of strategies that support improved environmental performance and long-term resilience. These include the use of native and climate-appropriate plant species, on-site stormwater retention measures, and the selection of locally sourced materials where feasible. Interior water efficiency will be enhanced through low-flow fixtures, while in-suite heat recovery systems will contribute to reduced energy demand. The project also incorporates ample bicycle parking, comprehensive construction waste diversion, high-efficiency LED lighting in corridors and amenity spaces, and exterior lighting designed to minimize light pollution.441 Finally, Echo's envelope will surpass applicable code requirements for both thermal insulation and glazing performance, supporting reduced heating and cooling loads.



View Looking East

RESPONSE TO THE ABUTTING PUBLIC REALM CONDITIONS BEYOND THE SITE

Echo aims to be respectful of its site and surroundings, all the while setting an elevated architectural precedent for subsequent buildings along the Rideau Canal. It is a contextual piece of city-building, that demonstrates how density can emerge thoughtfully along the Rideau Canal. Echo's materials, massing, and façade draw directly from its surroundings. A carefully selected red brick acts as a continuity and a celebration of neighbouring materiality. Echo's large third-storey setback, combined with its brick columns and lintels, reduces the building's perceived mass to a human scale. Columns and loggias establish rhythmic patterns and shadows, giving the façade depth and legibility and imparting the building with a sense of permanence. This articulated massing, along with the street-level ground floor, and the underground parking, all aim to respect and enrich the existing architectural character, and the pedestrian experience.

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Original Design - West Facade



Current Design - West Facade



Original Design - East Facade



Current Design - East Facade



DESIGN EVOLUTION

441 Echo has evolved to improve the pedestrian experience, ease resident access into the building and reduce the overall impact of the building's mass.

411 Echo was initially a 6 ½ storey building with its ground floor units requiring a flight of stairs to bridge the 1.5m vertical from grade. Lower-level units have been eliminated in the current design, allowing ground floor units .3m off grade. This has strengthened the identity of the building at street level and created a frontage that is much more respectful of pedestrians and residents. It has also allowed for a pedestrian ramp at the building's main entrance, improving accessibility.

411 Echo initially had half a storey of its underground parking garage exposed in the rear yard. The current design has removed this exposed parking structure, allowing for terraces at the ground floor entrances of rear units and additional landscaped areas overall. Beyond providing outdoor private spaces for residents, removing this monolithic half-wall has also created a more inviting façade.

411 Echo initially had large light-grey panels and a somewhat eclectic set of volumes defining its top storey. The current design has quietened the contrast of these panels and reduced their size. It has also simplified the massing of the top storey and reduced the overall building height by 1.2m. The result is a less imposing top storey that recesses into the background, reducing the overall impact of the building mass. The current design also features a larger indoor rooftop amenity area.

Several other improvements have been made through successive iterations, resulting in a more coherent, approachable, and aesthetically refined design.

Original Design - Site Plan

Current Design - Site Plan

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441 ECHO DRIVE VIEW OF WEST FACADE

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441 ECHO DRIVE VIEW LOOKING NORTH FROM ECHO DRIVE

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441 ECHO DRIVE VIEW OF MAIN ENTRANCE

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441 ECHO DRIVE VIEW OF WEST FACADE FROM ECHO DRIVE

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441 ECHO DRIVE VIEW OF WEST FACADE FROM ECHO DRIVE

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441 ECHO DRIVE VIEW OF ROOFTOP AMENITY LEVEL

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441 ECHO DRIVE VIEW OF EAST FACADE

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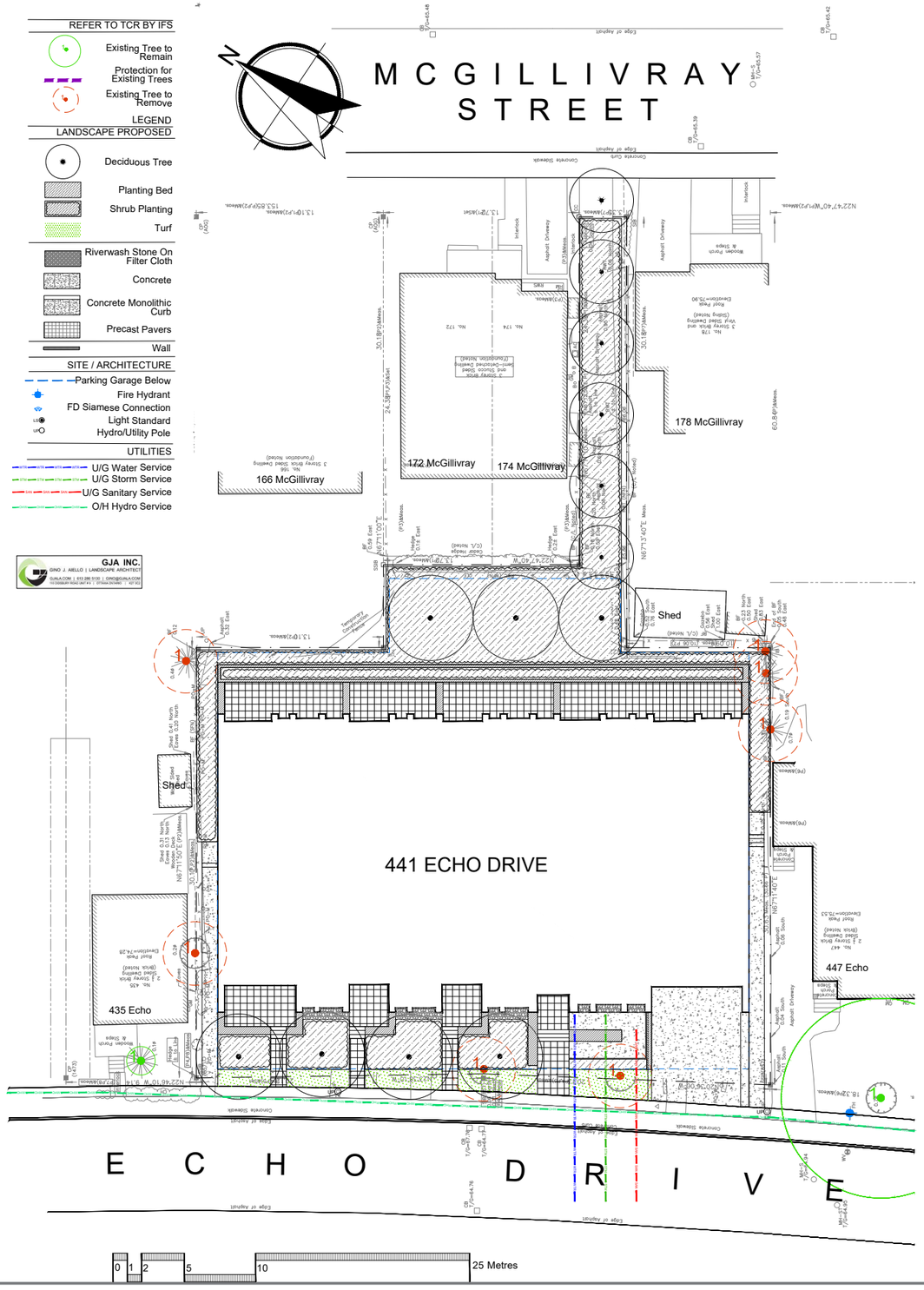


441 ECHO DRIVE VIEW REAR YARD AND EAST FACADE

| 2514 | SCALE: N.T.S.

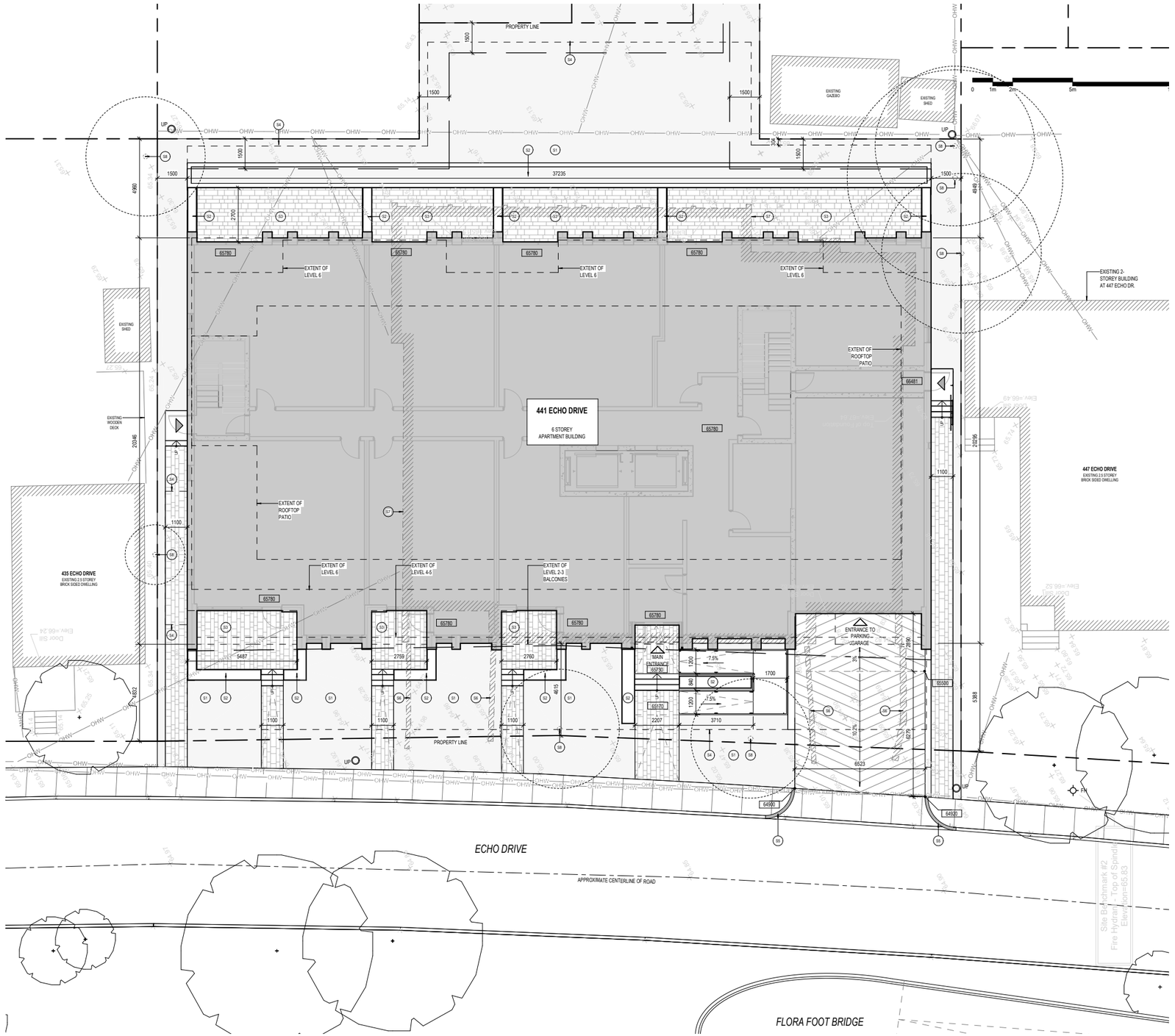
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441 ECHO DRIVE LANDSCAPE CONCEPT PLAN

| 2514 | SCALE: N.T.S.

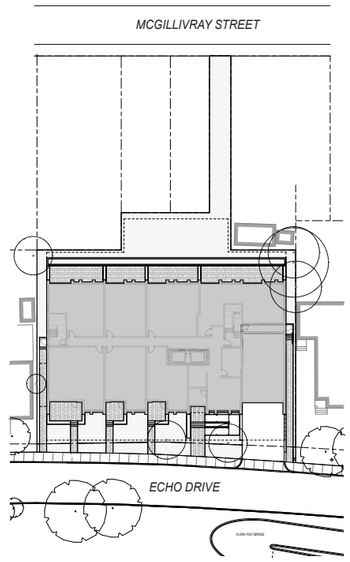


SITE PLAN SYMBOLS LEGEND

- BUILDING ENTRANCE
- BUILDING EXIT
- INTERLOCKING STONE PAVERS
- UP — UTILITY POLE
- FH — FIRE HYDRANT
- OVERHEAD WIRE (OHW)
- PROPERTY LINE
- SETBACK LINE

SITE PLAN NOTES

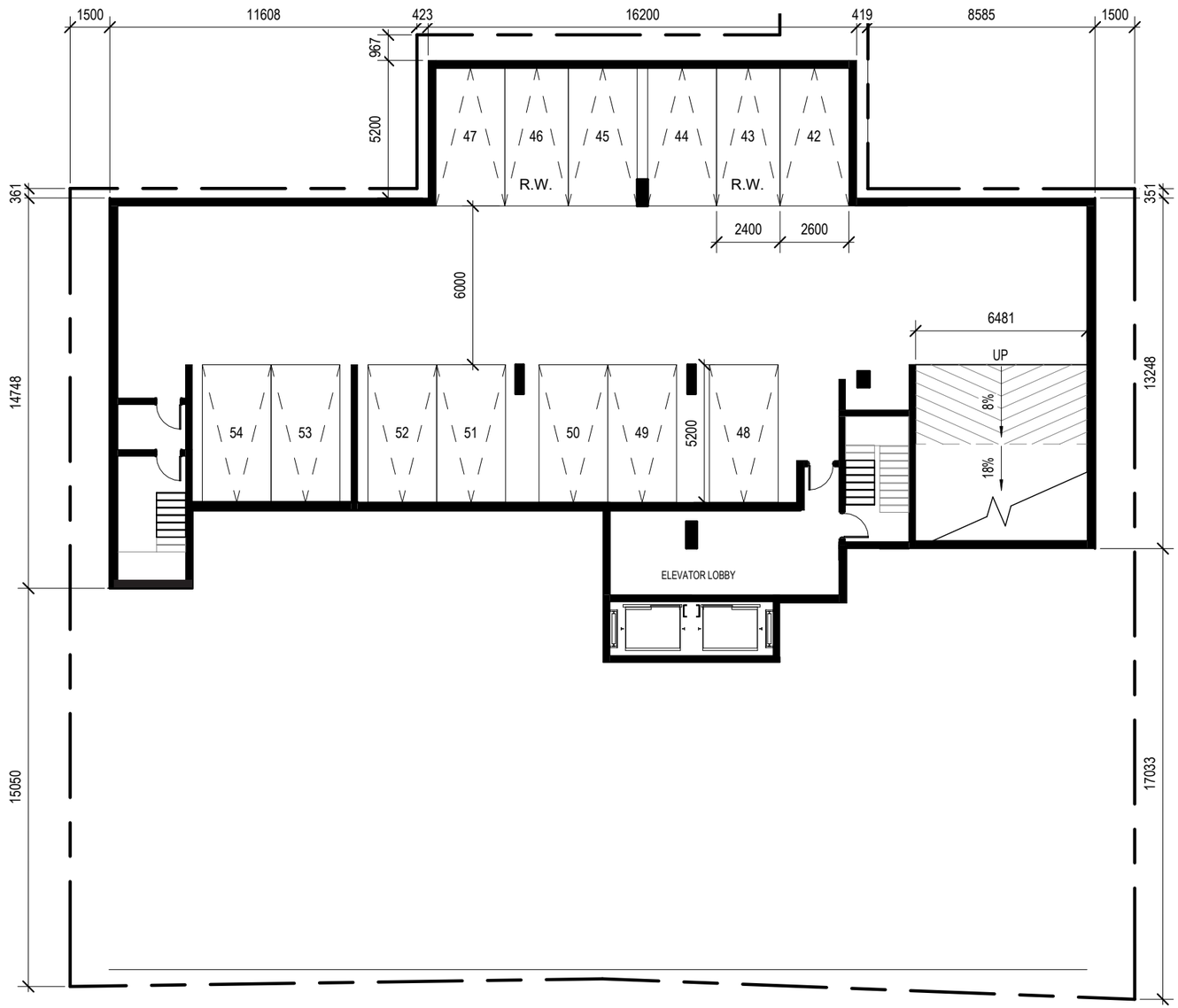
S1	SOFT LANDSCAPING
S2	RAISED PLANTER
S3	PRIVATE RESIDENTIAL TERRACE
S4	LINE DENOTES EXTENT OF PARKING GARAGE BELOW
S5	DEPRESSED CURB
S6	EXISTING STONE RETAINING WALL TO BE DEMOLISHED
S7	EXTENT OF EXISTING 3 STOREY APARTMENT BUILDING TO BE DEMOLISHED
S8	EXISTING TREE TO BE REMOVED



Key Plan Showing Full Extents of Site

441 ECHO DRIVE SITE PLAN

| 2514 | SCALE: 1 : 300

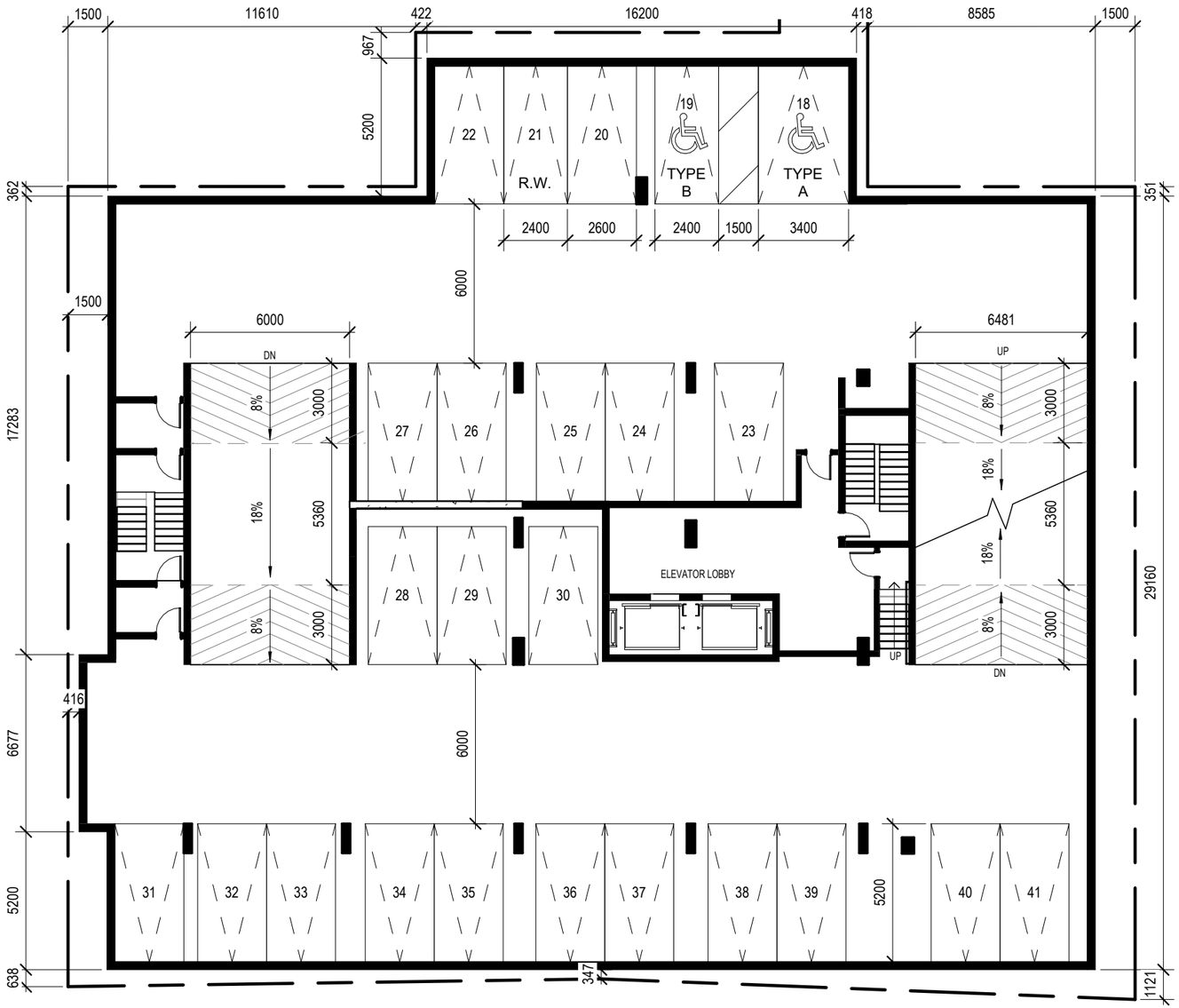


441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P3

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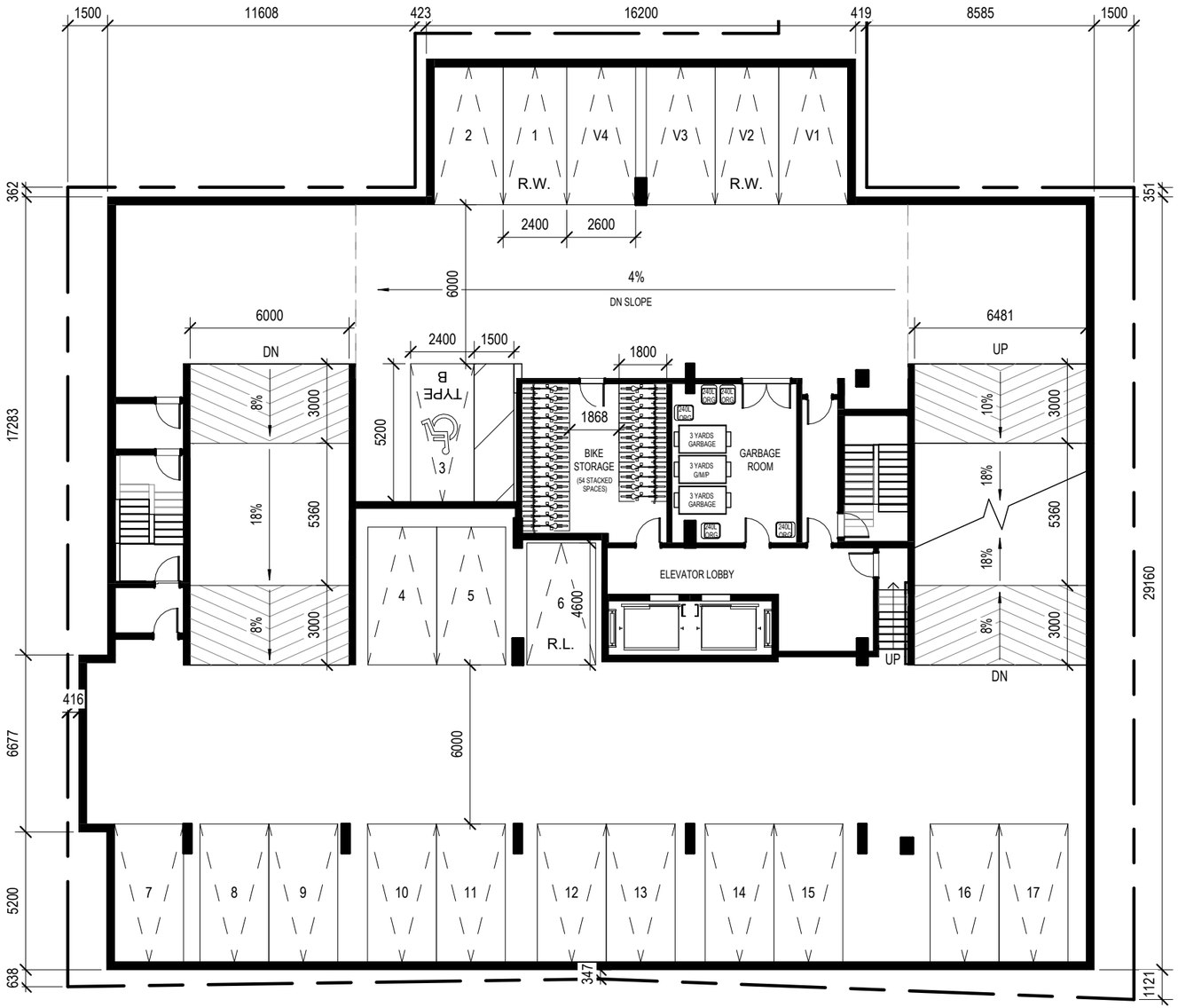
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441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P2

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P1

| 2514 | SCALE: 1 : 200

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441 ECHO DRIVE FLOOR PLAN - GROUND FLOOR

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - LEVEL 2

| 2514 | SCALE: 1 : 200



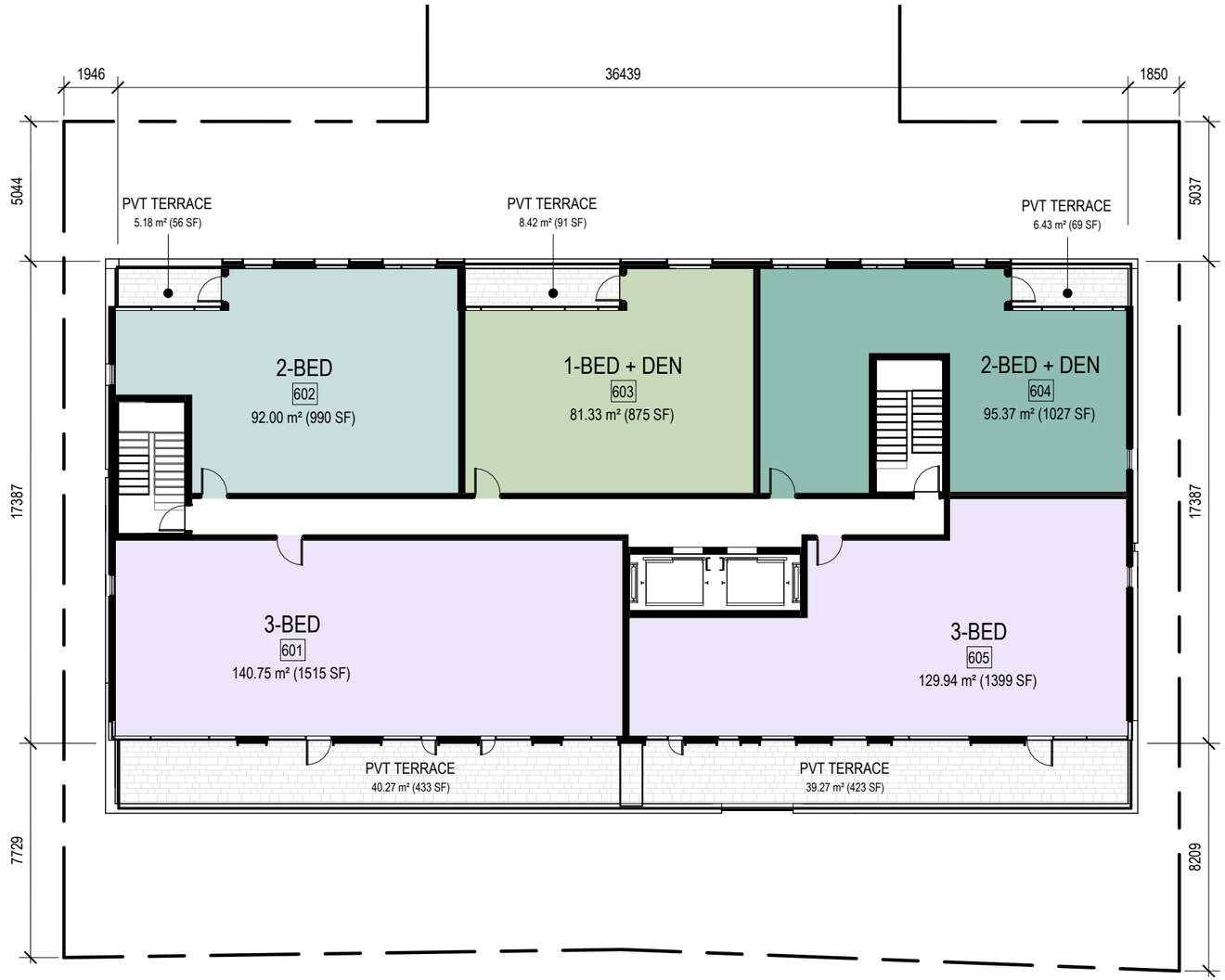
441 ECHO DRIVE FLOOR PLAN - LEVEL 3

| 2514 | SCALE: 1 : 200



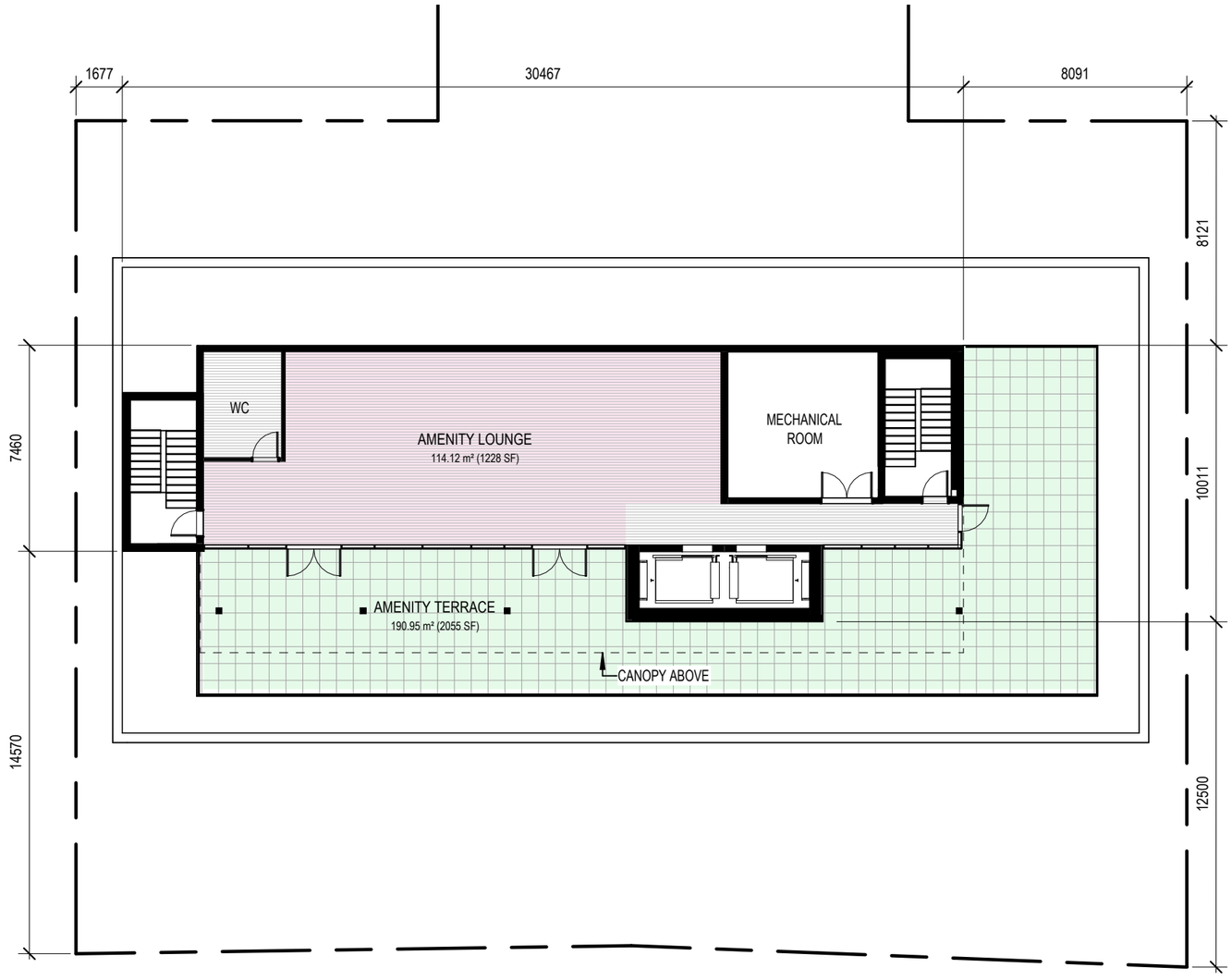
441 ECHO DRIVE FLOOR PLAN - LEVELS 4-5

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - LEVEL 6

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - ROOFTOP AMENITY LEVEL

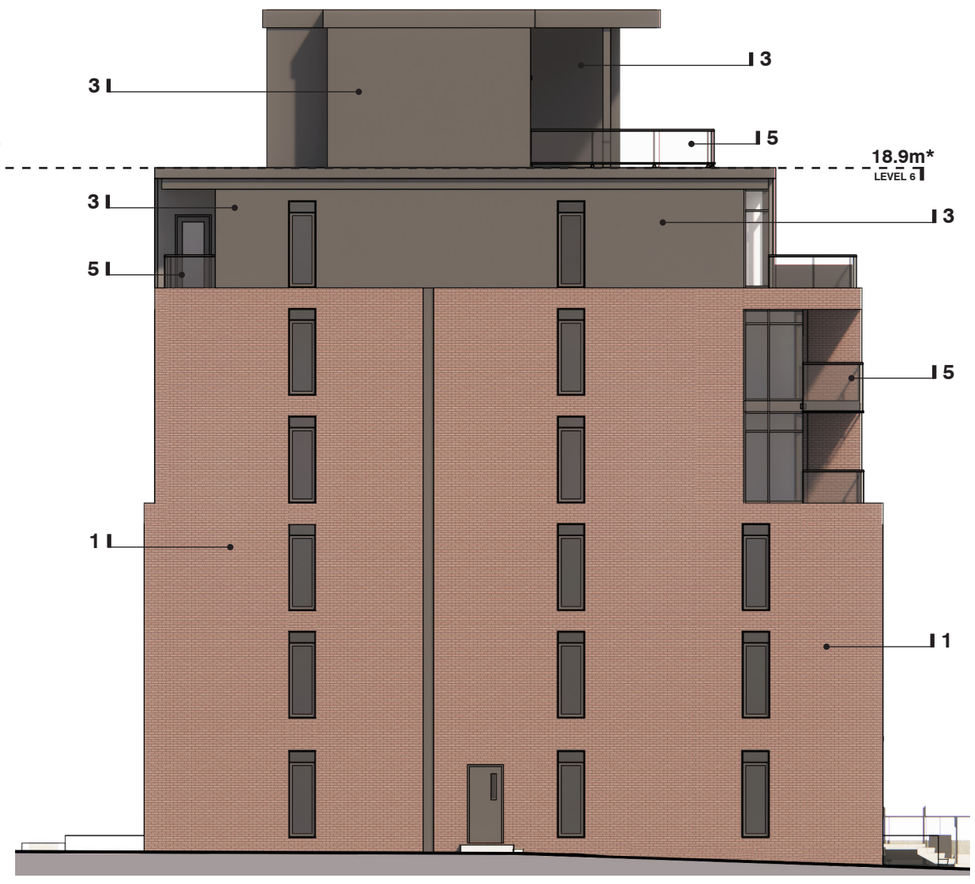
| 2514 | SCALE: 1 : 200

LEGEND

1 Brick Masonry (Red)
2 Window Wall (Clear Glazing)
3 Aluminum Composite Panel (Dark Grey)
4 Aluminum Composite Panel (Grey)
5 Aluminum and Glass Railing



West Elevation



North Elevation

*above grade

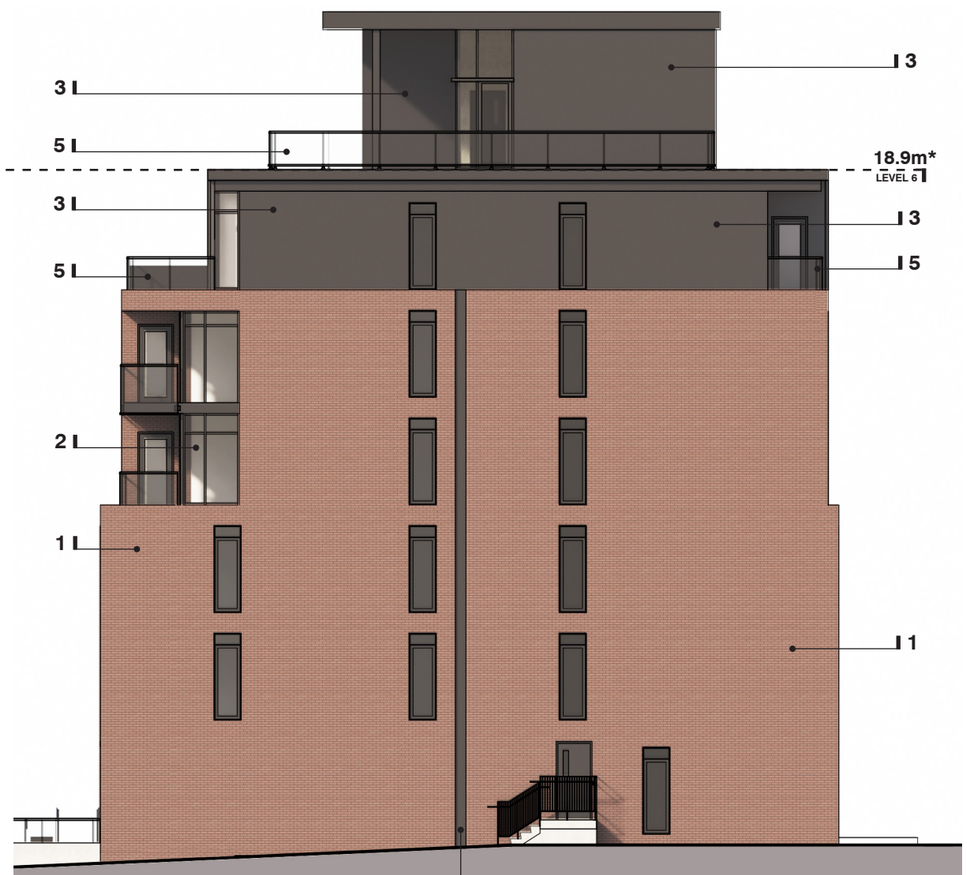
441 ECHO DRIVE BUILDING DESIGN - WEST & NORTH ELEVATION
| 2514 | SCALE: N.T.S.

LEGEND

1 Brick Masonry (Red)
2 Window Wall (Clear Glazing)
3 Aluminum Composite Panel (Dark Grey)
4 Aluminum Composite Panel (Grey)
5 Aluminum and Glass Railing



East Elevation



South Elevation

*above grade

441 ECHO DRIVE BUILDING DESIGN - EAST & SOUTH ELEVATION
| 2514 | SCALE: N.T.S.

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DEC 21 - 9:00 AM



DEC 21 - 10:00 AM



DEC 21 - 11:00 AM



DEC 21 - 12:00 PM



DEC 21 - 1:00 PM



DEC 21 - 2:00 PM



DEC 21 - 3:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

N

441 ECHO DRIVE SHADOW ANALYSIS - DECEMBER 21

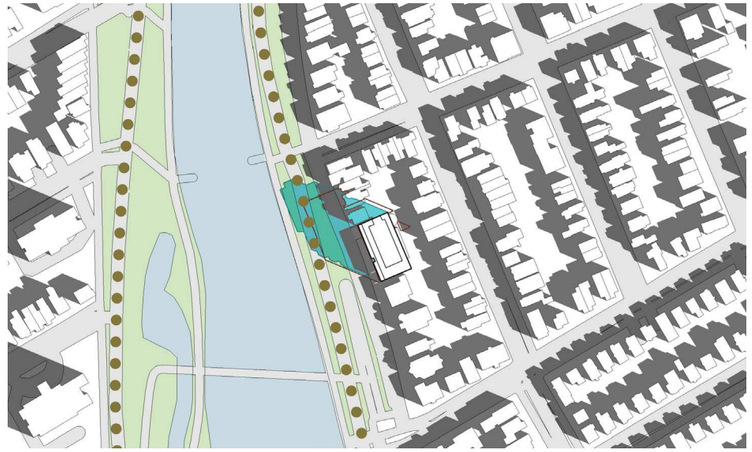
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SEPT 21 - 8:00 AM



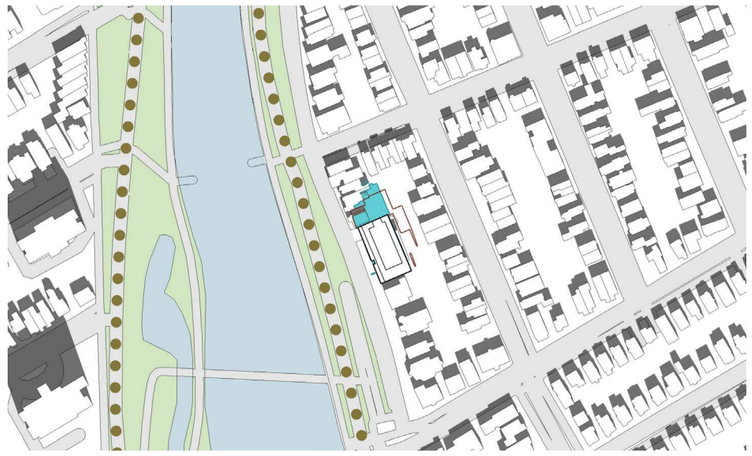
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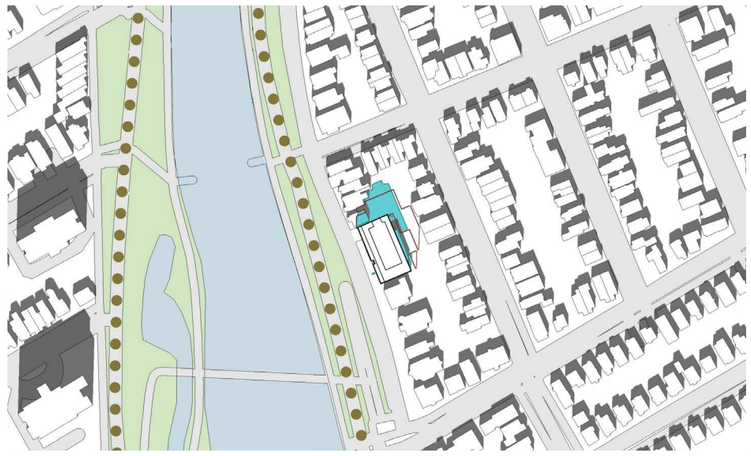
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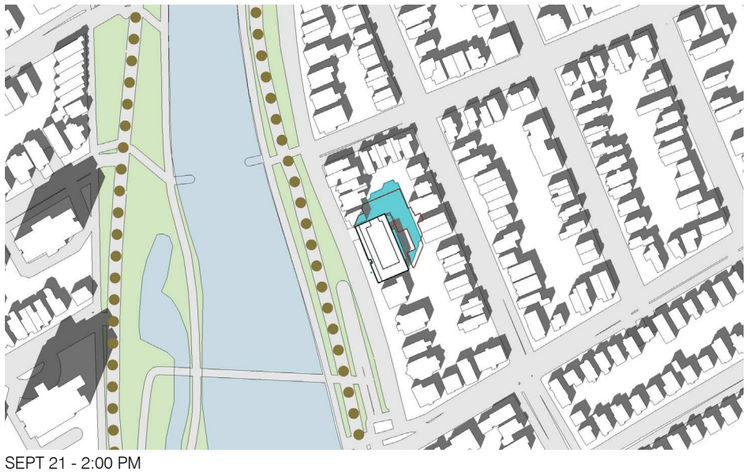
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SEPT 21 - 1:00 PM



SEPT 21 - 2:00 PM



SEPT 21 - 3:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

N

441 ECHO DRIVE SHADOW ANALYSIS - SEPTEMBER 21

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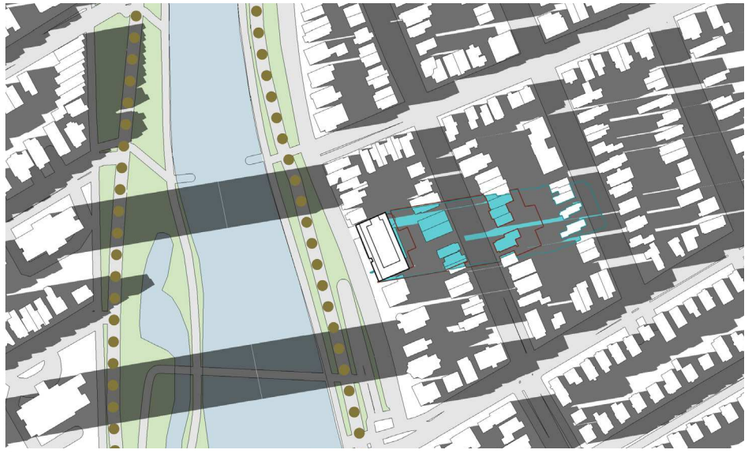
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SEPT 21 - 6:00 PM



JUNE 21 - 8:00 AM



JUNE 21 - 9:00 AM



JUNE 21 - 10:00 AM



JUNE 21 - 11:00 AM



JUNE 21 - 12:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
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- Provincial Highway

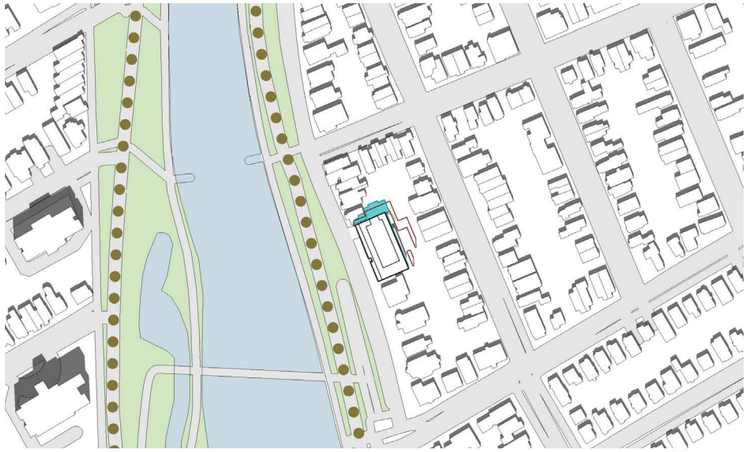
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441 ECHO DRIVE SHADOW ANALYSIS - SEPTEMBER 21 / JUNE 21

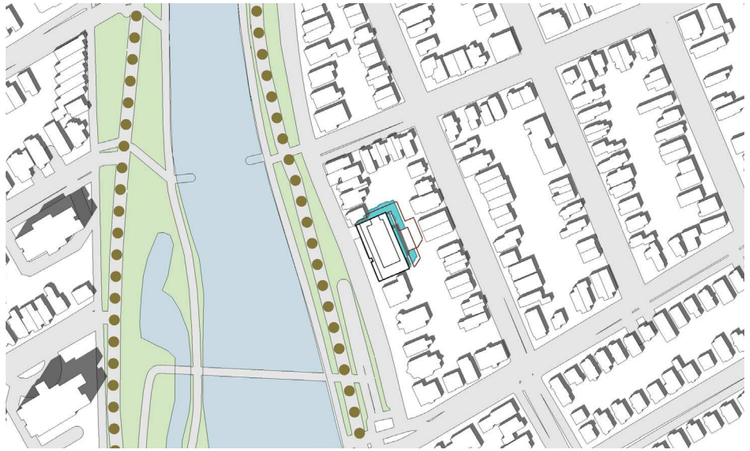
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JUNE 21 - 1:00 PM



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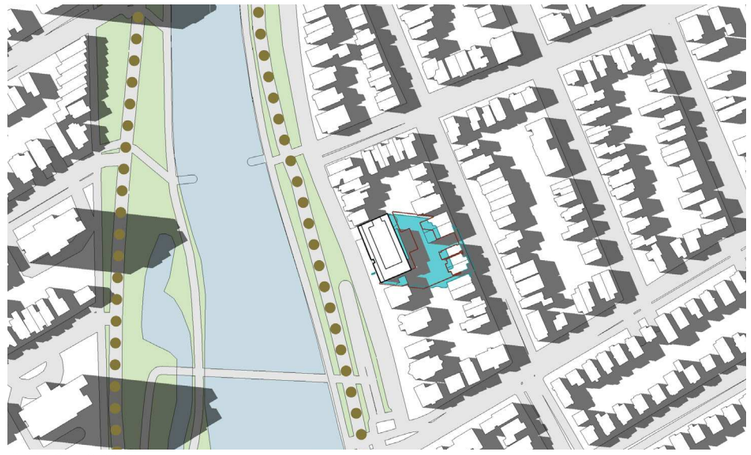
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JUNE 21 - 4:00 PM



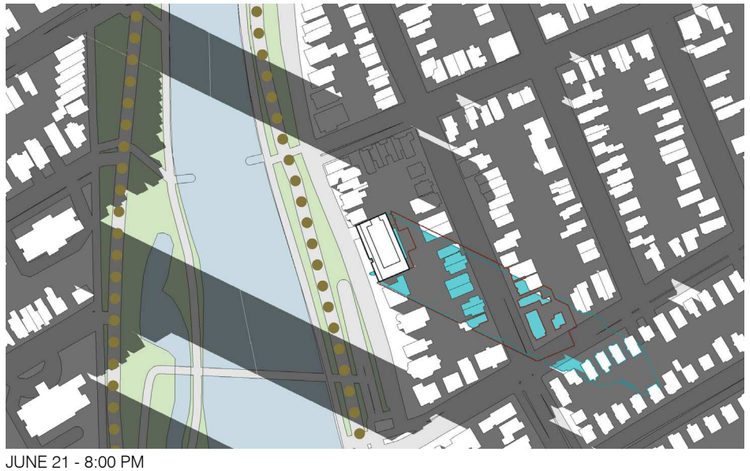
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JUNE 21 - 6:00 PM



JUNE 21 - 7:00 PM



JUNE 21 - 8:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

N

441 ECHO DRIVE SHADOW ANALYSIS - JUNE 21

| 2514 | SCALE: N.T.S.

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1. INTRODUCTION

1.1. REASON FOR THE HIA

Juxta Architects Inc. was retained in December 2025 by JBPA Developments Inc. to prepare a Heritage Impact Assessment (HIA) in support of a proposed development at 441 Echo Drive, Ottawa.

The proposed development consists of a 6-storey residential building, which is located across the street and within 30 metres of the Rideau Canal - a site designated as a National Historic Site of Canada, a UNESCO World Heritage Site, and a Canadian Heritage River.

In accordance with Section 4.5.2, Policy 2 of the City of Ottawa Official Plan, an HIA is required where development is proposed on, adjacent to, across the street from, or within 30 metres of a protected heritage property, where there is potential to adversely impact the heritage resource. The HIA must be completed in accordance with the Council-approved guidelines for HIAs, as amended from time to time.

1.2. SCOPE OF WORK

This Heritage Impact Assessment (HIA) examines the proposed development at 441 Echo Drive in relation to the Rideau Canal National Historic Site of Canada, a site recognized under the Historic Sites and Monuments Act. It documents existing conditions, reviews the history and cultural heritage value of the Rideau Canal within the “Ottawa Urban Section,” assesses potential impacts of the development, and recommends mitigation strategies to ensure the proposal respects the Rideau Canal’s heritage attributes.

1.3. BACKGROUND DOCUMENTS

In addition to a visit to the site and surrounding areas, the following documents were consulted during the preparation of this report:

- The City of Ottawa Heritage Impact Assessment guidelines.
- The City of Ottawa *Official Plan* and zoning by-law.
- Standards & Guidelines for the Conservation of Historic Places in Canada, Parks Canada.
- Rideau Canal: World Heritage Site Management Plan, Parks Canada, 2005
- Rideau Canal and Merrickville Blockhouse National Historic Sites of Canada Management Plan, 2023-2024 Implementation Report, Parks Canada.
- Rideau Corridor Landscape Strategy, Parks Canada and Dillon Consulting, 2013.
- 441 Echo Drive Revised Design Package by Project1 Studio, December 2, 2025
- 441 Echo Drive Progress set, Project1 Studio, February 5, 2026

2. DEVELOPMENT SITE & ADJACENT PROPERTY

2.1. ADDRESS AND OWNER CONTACT INFORMATION

Site Address: 441 Echo Drive,
Ottawa, Ontario K1S 1N6

Owner/Contact: JBPA Developments
107 Pretoria Ave,
Ottawa, Ontario, K1S 1W8
613-695-6767

2.2. LOCATION AND CURRENT CONDITIONS



Figure 1: Location of the development site at 441 Echo Drive and the adjacent Rideau Canal (Source: geoOttawa).

The subject property at 441 Echo Drive is adjacent to the Rideau Canal, near the Flora Footbridge. The site is visible from the Rideau Canal, and is partially screened behind the mature trees planted alongside the mixed-use pathway within the established 30 metre buffer zone.

The property features approximately 130 feet of frontage along Echo Drive, providing visibility and accessibility. Situated in the cultural landscape of the Rideau Canal, the City of Ottawa, the National Capital Commission and Parks Canada are currently studying the surrounding environment of the canal for its heritage

values and character-defining elements. Per this ongoing report, Echo Drive is considered to have significant influence on the canal and its cultural landscape.

The City of Ottawa Comprehensive Zoning By-law (2008-250) designates the area of the subject property as R4UD within the Mature Neighbourhoods Overlay and as N4B within the forthcoming New Zoning By-law. The UD subzone allows for a variety of residential configurations while regulating development to be compatible with existing land use patterns and maintaining the residential character of the neighbourhood.



Figure 2: View of the property, as seen from across the Rideau Canal, with the adjacent Flora Footbridge ramp on the right side. (Source: Juxta Architects).



Figure 3: Map of the Rideau Canal Cultural Landscape study area (Source: City of Ottawa)

3. BACKGROUND RESEARCH AND ANALYSIS

3.1. SITE HISTORY

The Rideau Canal was constructed between 1826 and 1832 by Lieutenant-Colonel John By for the British government. The canal is 202 kilometres long and extends from Ottawa to Kingston, connecting Canada's current capital to the former 1800s capital of the United Province of Canada.

The Rideau Canal is currently managed by Parks Canada and has been a National Historic Site of Canada since 1925. In 2000, the canal was designated a Canadian Heritage River and in 2007 it was designated a UNESCO World Heritage Site.

The Rideau Canal was constructed during a pivotal moment in Canada's history, following the war of 1812, when Great Britain and the United States were in conflict for control of the northern portion of the North American continent. Great Britain ascertained the key to the defence of Canada was in the transportation route between Montreal and Kingston, necessitating the creation of a course more secure and defensible than the St. Lawrence River. Built concurrently with a series of military fortifications, the canal enabled the British military to retain the colony of Canada from American forces. The success of the Rideau Canal and the British military defence strategy was instrumental to the growth of colonial Canada and its development as an independent nation. Ultimately, leading to the development of two distinct political and cultural identities across North America.

4. STATEMENT OF SIGNIFICANCE – THE RIDEAU CANAL NATIONAL HISTORIC SITE

4.1. CULTURAL HERITAGE VALUE

Apart from it's defensive and military history, the Rideau canal is also recognized as an innovative and creative feat of human ingenuity with respect to its design and engineering. Parks Canada Statement of Outstanding Universal Value indicates:

"*The Rideau Canal is the most outstanding surviving example of an early-19th century slackwater canal system in the world and one of the first canals designed specifically for steam-powered vessels. It is an exceptional example of the transfer of European transportation technology and its ingenious advancement in the North American environment*."

The canal system connects the existing watersheds of the Rideau and the Cataraqui with engineered channels, a distance and scale previously unattempted in North America or Europe. This allowed boats to bypass the falls, rapids, swamps and rocky shallows between Kingston and Ottawa through a series of canal locks and dams. Not only did the canal allow for unprecedented movement across North America, but it was also one of the first canals in the world to be designed specifically for steam-powered vessels, recognizing a critical change in human values and technology.

4.2. LANDSCAPE HERITAGE VALUE

Landscape character is defined by Parks Canada as the "*distinctive and recognizable pattern of elements in a landscape that give a locality its sense of place*."

The Rideau Canal landscape is unique due to its combination of cultural, natural and recreational values. The canal corridor not only reflects early 19th century forms, materials and technologies but dynamic human and ecological relationships throughout its length.

Due to the diversity of landscape and environmental context along the canal's path, it is divided into multiple sections. The section of the canal hosting the subject property is known as *Ottawa to Hartwell Locks* and is 6.4 kilometres in length. The longest stretch of excavated channel throughout the canal, this section is delineated on both sides by masonry or concrete walls with railings. Along this section, the canal weaves through modern and historic portions of Ottawa and extensive parkland. Cultural and civic structures reside in this section, such as Dows Lake, Carleton University and the Experimental Farm.

4.3. HERITAGE ATTRIBUTES

Contextual Elements

- The completeness of the cultural landscape as a longstanding system of transportations facilities, including: the waterways, locks, blockhouses, dams, weirs and lock stations, associated shore lands and communities, and extensive wetlands and lakes.
- Historic, ecological, and visual associations with shore lands and communities along the canal's route, such as the pathways, view sheds from the locks and the channel, and the fortifications.
- Views to the Parliament buildings and the Chateau Laurier.
- Views from the bridges to the canal.

Architectural Elements

- The remnants of historic engineering design, including the canal route, walls, locks, weirs and bridges.
- The manual operation technologies to work the locks.
- The canal bed's excavated channel and construction.
- The original built resource's form, craftmanship and materials, such as the ensemble of early blockhouses, lockmasters' houses and canal walls.

These elements collectively show how the Rideau Canal embodies a cultural landscape of dynamic ecological and human relations, rooted in a pivotal moment in the history of North America and the colonial development of Canada.

5. DESCRIPTION OF THE PROPOSED DEVELOPMENT

5.1. 441 ECHO DRIVE

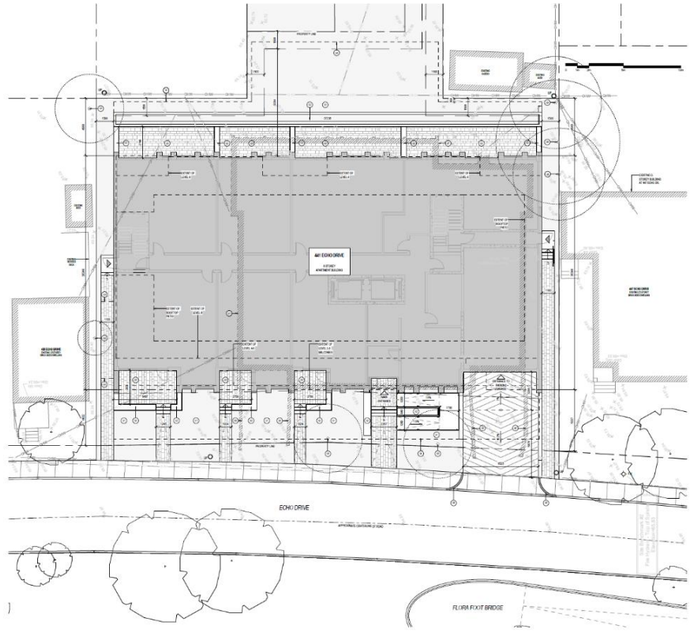


Figure 4: Site plan of 441 Echo Drive (Source: Project1 Studio)

The proposed development consists of a 6-storey residential building, located on Echo Drive adjacent to the Rideau Canal. The proposed development will reach 22.8 metres in height and has a footprint of approximately 755 square metres.

The project provides a total of 52 residential units. The unit mix includes 18 one-bedroom units, 10 one-bedroom plus den units, 21 two-bedroom units, 1 two-bedroom plus den unit, and 2 three-bedroom units.



Figure 5: 3D rendering of the proposed building in context of the Rideau Canal (Source: Project1 Studio).

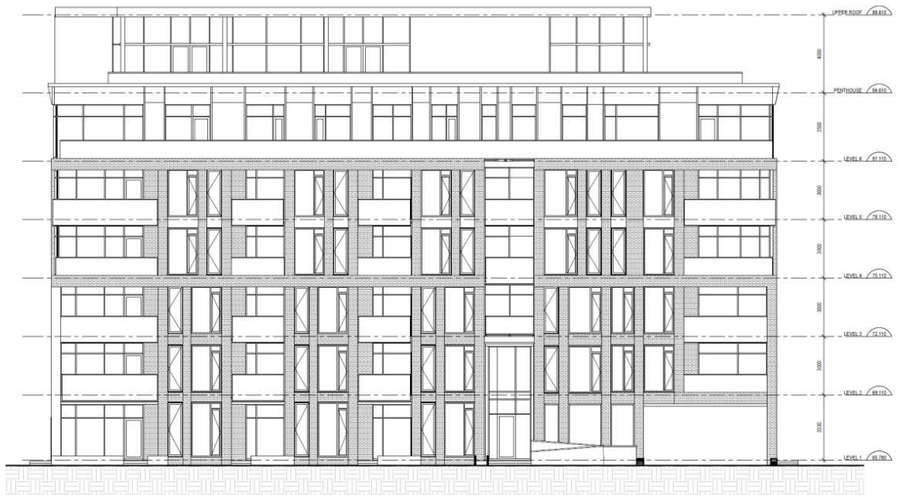


Figure 6: West elevation of proposed residential building (Source: Project1 Studio).

6. IMPACT OF PROPOSED DEVELOPMENT

6.1. SIGHTLINE ANALYSIS

Juxta Architects visited 441 Echo Drive to conduct a sightline analysis of the existing conditions of the property. Views were considered from a wide range of vantage points, including: the multi-use pathway, atop the Flora Footbridge and across the canal. The analysis was documented in February, offering the annual minimum of foliage and the most visual exposure.

- **Flora Footbridge**
  The site is located at the base of the Flora Footbridge, with the building being highly obscured by the ramp and stairs when facing north along the multi-use pathway and across the canal (fig.8). Given the additional 2-storeys of the proposed development, the building is expected to still be primarily obstructed in view.

- **Across the Canal**
  View of the existing conditions are largely obstructed by the mature trees along the canal corridor (fig.9). These trees are planted along the multi-use path and will not be impacted by the proposed development, continuing their role in maintaining the ecological values of the corridor and buffering the canal from adjacent infrastructure.



Figure 7: Views of the existing property in relation to the Rideau Canal (Source: Juxta Architects).



Figure 8: Views of the existing property obscured by the Flora Footbridge, photographed from the East side of the Canal (Source: Juxta Architects)



Figure 9: Views of the existing property obscured by the Flora Footbridge, photographed from the West side of the Canal (Source: Juxta Architects).



Figure 10: Views of the existing property obscured by the Canal's trees, with foliage at annual minimum (Source: Juxta Architects).



Figure 11: Residential building located on the opposing side of the Flora Footbridge, featuring similar materiality and adjacencies to the canal (Source: Juxta Architects).

6.2. POTENTIAL ADVERSE IMPACTS

The proposed development has the potential to adversely affect the cultural heritage value of the Rideau Canal and landscape. Key concerns include:

- The building's scale and contemporary materials, particularly on the west façade facing the Rideau Canal, may contrast sharply with the existing neighbouring buildings, reducing contextual integration.
- The increased building footprint may diminish the subject property's existing landscaping, reducing contextual integration and contrasting the mature trees and vegetation within the canal's 30 metre buffer zone.
- At 6-storeys, the height of the building is large for the low-rise community, creating visual intrusion and potentially casting shadows on neighbouring buildings and pathways.

6.3. POTENTIAL POSITIVE IMPACTS

The development also presents opportunities to benefit the local community:

- Eliminating the existing parking lot on site in favour of underground parking will increase visual density and make more efficient use of the property, creating a more pleasant pedestrian experience.

- While not in the scope of the Heritage Impact Assessment, the development will increase the density and availability of rental housing in central Ottawa, potentially contributing positively to the housing shortage across the city.

Through careful design and collaboration, these positive outcomes could be maximized, allowing the development to integrate sensitively with the heritage landscape of the Rideau Canal while supporting community needs and enhancing the overall character of the canal corridor.

7. MITIGATION STRATEGIES

7.1. RECOMMENDED MITIGATION STRATEGIES

To minimize potential adverse impacts on the Rideau Canal corridor, the following mitigation measures should be considered:

- **Preserving Trees and Vegetation**
  Maintaining the mature trees on the site or planting new vegetation will help integrate the proposed development with the surrounding neighbourhood and preserve the ecological relationship between the canal and the multi-use pathway within the corridor. This strategy has already been implemented, since the public lands in front of the development will retain their mature trees and additional trees are to be planted on the site, as per the referenced site plan.

- **Contextual Architectural Design**
  Using materials, colours and forms sympathetic to the surrounding neighbourhood character can help blend the development's additional height within its surroundings. This context driven design logic has already been implemented through the selection of brick as the façade material, as this is a common material along the corridor. The addition of the balconies also maintains the existing condition of the building and further activates the nearby pathway. The upper level being setback will help to reduce overshadowing.

The designer has consulted with Juxta Architects during the design phase of the project, and has, in our opinion, already met the recommended mitigation strategies.

8. CONCLUSION & OPINION

The Rideau Canal Corridor is an important cultural heritage resource, notable for its engineering design, dynamic approach to human and ecological relationships, and historic role in the colonial development of Canada. Juxta Architects, in our role as conservation specialists, believe the proposed development at 441 Echo Drive is compatible with the historic place in its present form, as it balances opportunities and challenges in relation to these heritage values.

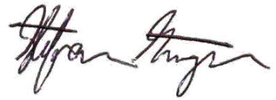
While the development will add height to the existing site, the building typology (apartment building), and materiality (predominantly brick) minimizes the change to the site. Our opinion is supported by the sightline analysis, the placement of the adjacent Flora Footbridge, the vegetation screening the building from view and the contextual architectural design of the proposal.

Many potentially adverse impacts have been mitigated through contextual architectural design and the existing site features; the new building will be largely screened from view by the footbridge and the mature trees along the corridor. The material selection speaks to the character of the neighbouring buildings while the balconies maintain the existing conditions while further activating the pathway.

The increased density and additional units of the proposed development represent a significant positive impact. These benefits contribute to the need for additional housing across Ottawa and should be considered alongside heritage protections as part of a balanced evaluation of the project's overall value.

In the opinion of the consultant, the change to the historic place can be integrated with minimal negative impacts into the Rideau Canal's views and cultural landscape.

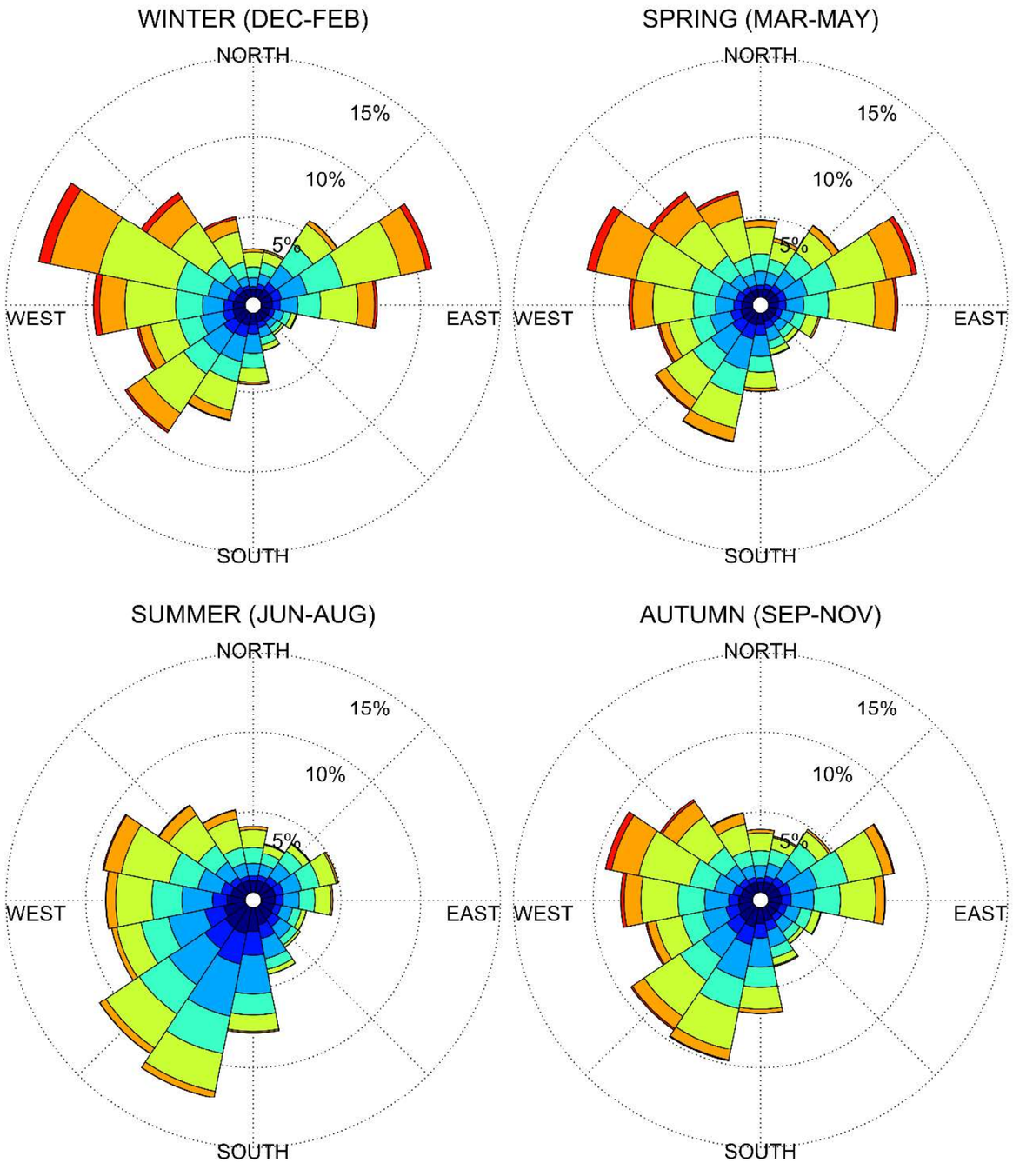
Sincerely,



juxta

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SEASONAL DISTRIBUTION OF WIND
OTTAWA MACDONALD-CARTIER INTERNATIONAL AIRPORT



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.



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.

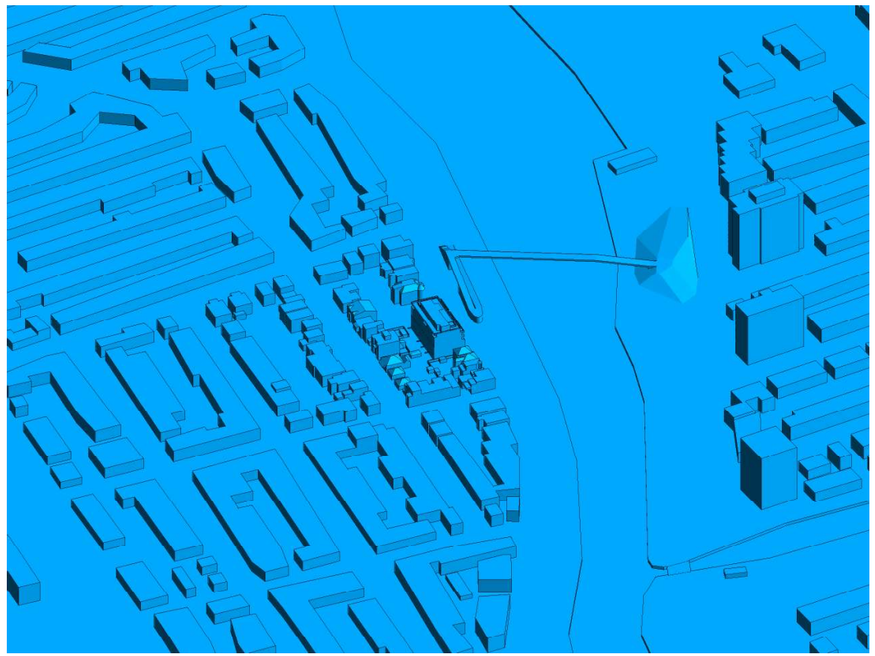


FIGURE 2A: COMPUTATIONAL MODEL, PROPOSED MASSING, NORTH PERSPECTIVE

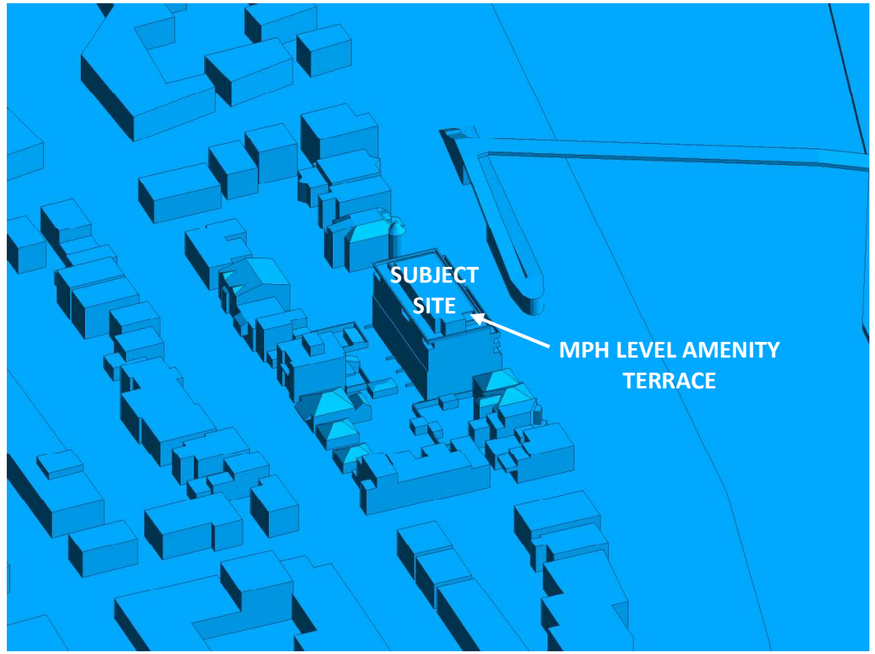


FIGURE 2B: CLOSE UP OF FIGURE 2A

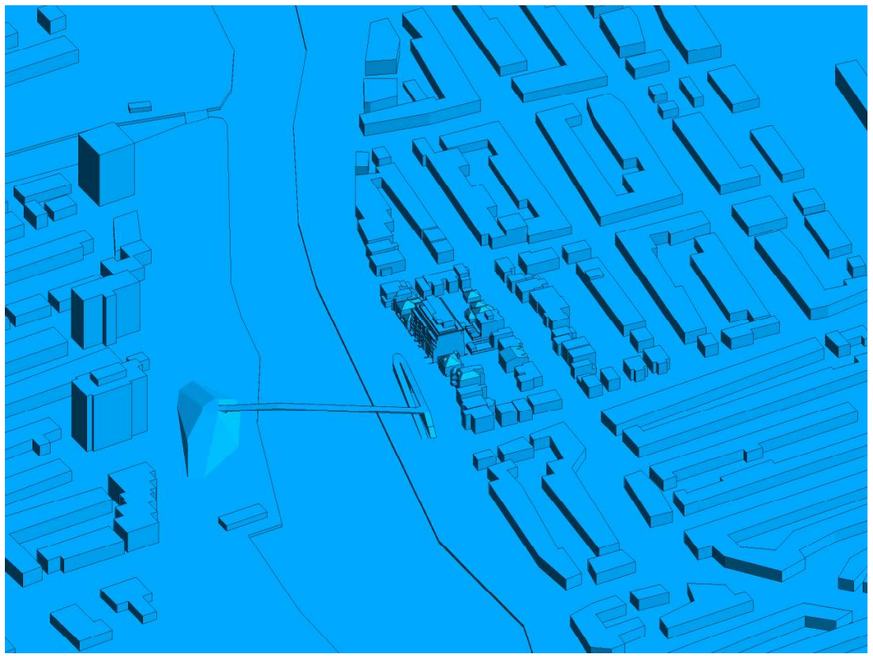


FIGURE 2E: COMPUTATIONAL MODEL, PROPOSED MASSING, SOUTH PERSPECTIVE

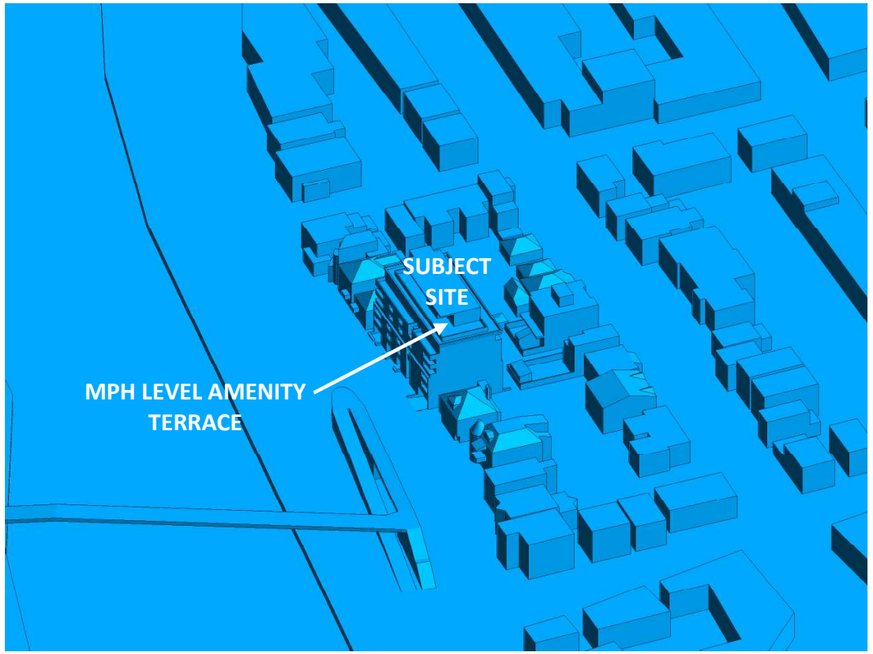


FIGURE 2F: CLOSE UP OF FIGURE 2E

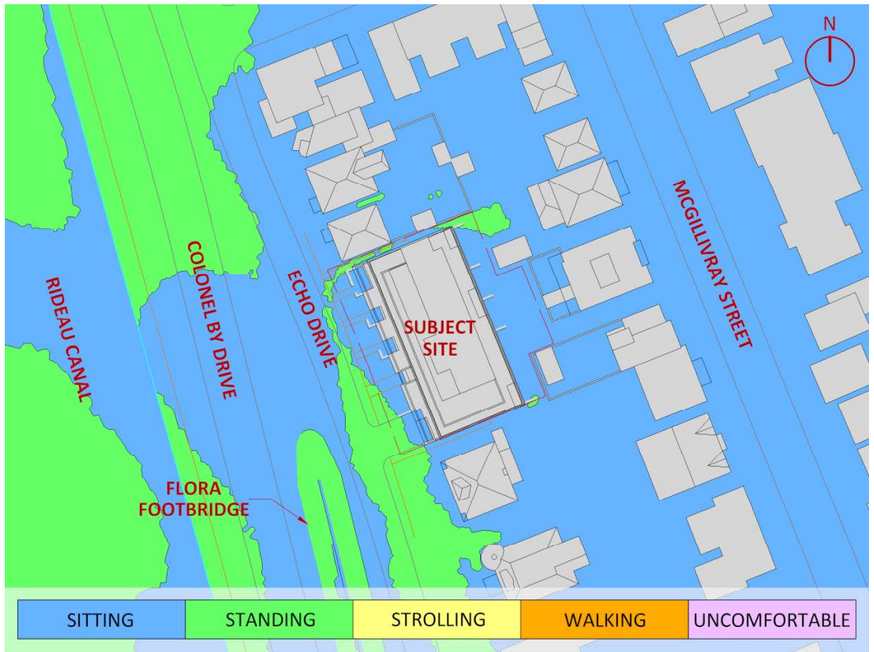


FIGURE 3A: SPRING – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

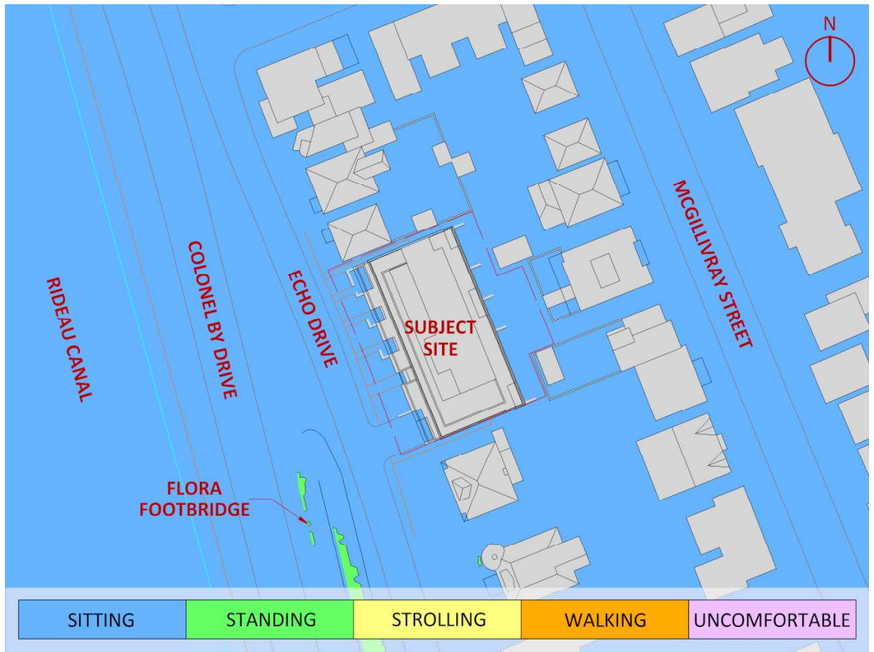


FIGURE 4A: SUMMER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

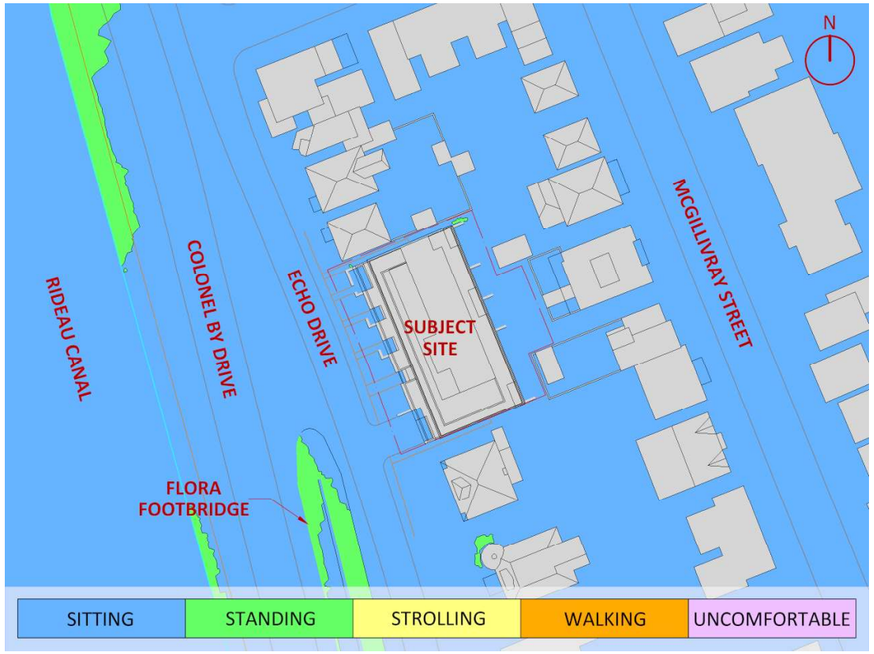


FIGURE 5A: AUTUMN – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

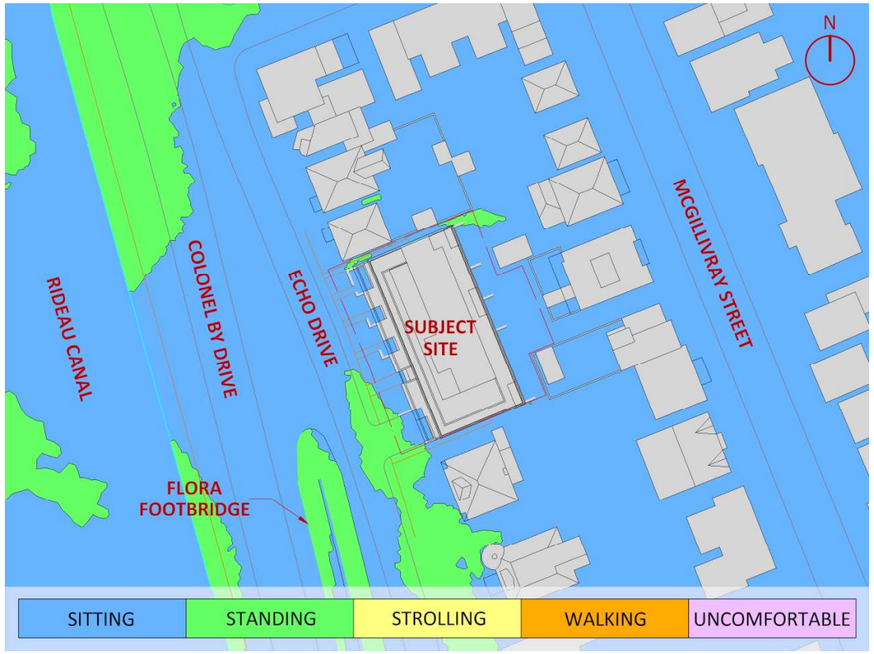


FIGURE 6A: WINTER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING



FIGURE 8A: SPRING – WIND COMFORT, AMENITY TERRACE

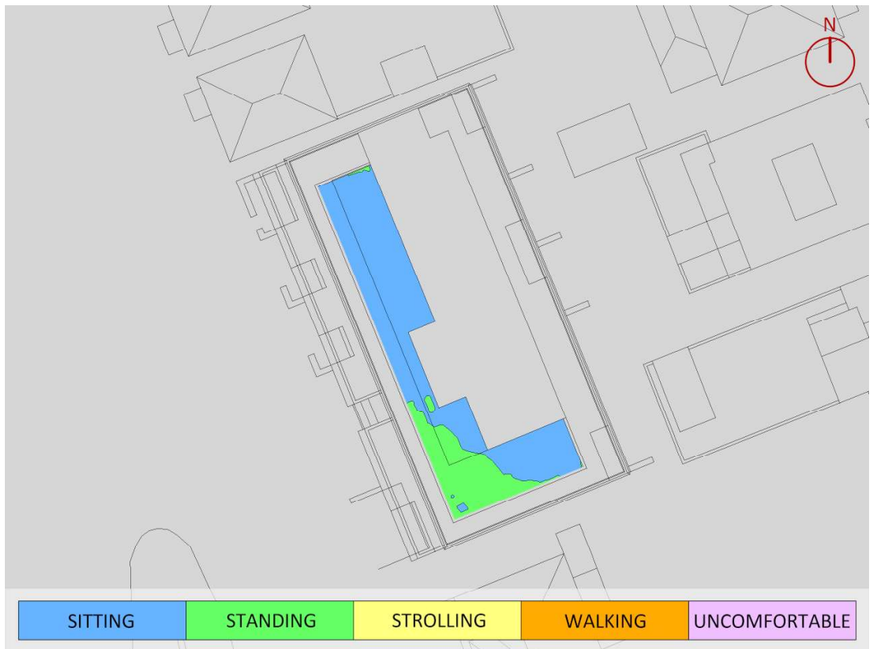


FIGURE 8C: AUTUMN – WIND COMFORT, AMENITY TERRACE

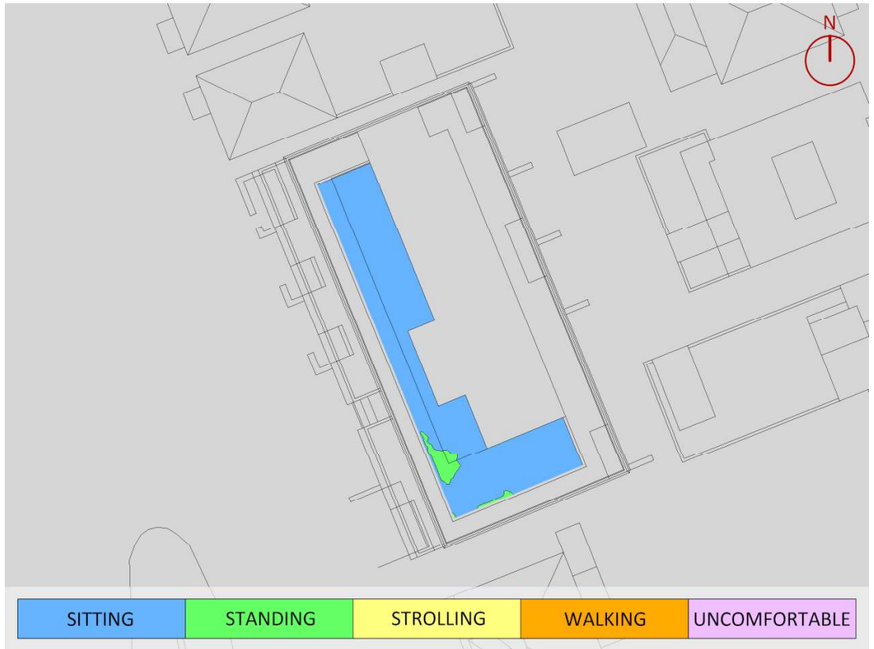


FIGURE 8B: SUMMER – WIND COMFORT, AMENITY TERRACE



FIGURE 8D: WINTER – WIND COMFORT, AMENITY TERRACE

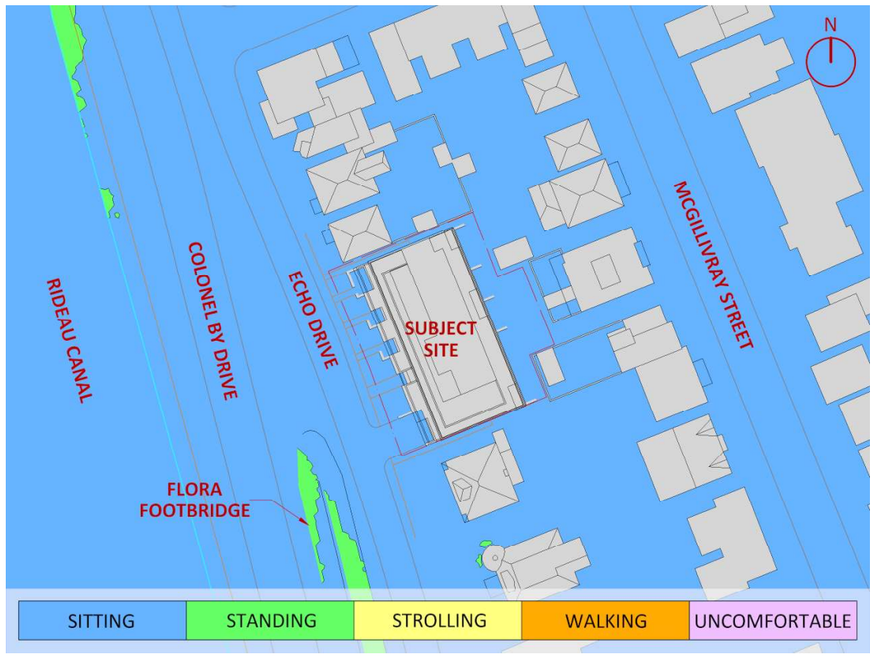


FIGURE 7: TYPICAL USE PERIOD – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING



FIGURE 9: TYPICAL USE PERIOD – WIND COMFORT, AMENITY TERRACE

5.1 WIND COMFORT CONDITIONS GRADE LEVEL

SIDEWALKS ALONG ECHO DRIVE AND MCGILLIVRAY STREET
Following the introduction of the proposed development, wind comfort conditions over the public sidewalks along Echo Drive are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. Conditions over the sidewalks along Echo Drive under the existing massing are predicted to be suitable for sitting throughout the year with an area to the northwest corner being suitable for standing in the winter and spring. Prior to and following the introduction of the proposed development, wind conditions along McGillivray Street are predicted to be suitable for sitting throughout the year. While the introduction of the proposed development produces slightly windier conditions in comparison to existing conditions along Echo Drive, wind comfort conditions with the proposed development are nevertheless considered acceptable for the noted public sidewalks.

WALKING/BICYCLE PATH AND GREEN SPACE ALONG THE RIDEAU CANAL:
Prior to and following the introduction of the proposed development, wind conditions over the nearby walking and bicycle path and green space along the Rideau Canal are predicted to be suitable for sitting in the summer, becoming suitable for a mix of sitting and standing for the remainder of the year. The noted conditions are considered acceptable.

FLORA FOOTBRIDGE:
Prior to and following the introduction of the proposed development, wind conditions over the ramp for the Flora Footbridge are predicted to be suitable for standing, or better, throughout the year. The noted conditions are considered acceptable.

PROPOSED PARKING RAMP:
Conditions over the proposed underground parking entrance ramp are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. The noted conditions are considered acceptable.

PROPOSED BUILDING ACCESS POINTS:
Owing to the protection of the building façade, wind conditions in the vicinity of the main entrance, situated at the west elevation of the proposed development, are predicted to be suitable for sitting throughout the year. Conditions at the secondary building entrances, situated at the north and south elevations, as well as the private unit entrances, are predicted to be suitable for sitting throughout the year. Conditions at the walkways within the subject site are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. The noted conditions are considered acceptable.

5.2 WIND COMFORT CONDITIONS COMMON AMENITY TERRACE

During the typical use period, wind comfort conditions within the common amenity terrace serving the proposed development at the Penthouse Level are predicted to be suitable for mostly sitting, with an isolated region suitable for standing in the southwest corner of the terrace. Depending on the programming of this space, the noted conditions may be considered acceptable. Specifically, if the noted windier area suitable for standing during the typical use period will not accommodate seating or more sedentary activities, the noted wind conditions would be considered acceptable. If required by programming, sitting conditions within the terrace may be extended to the full terrace area
by implementing a tall wind screen, typically glazed, extending 1.8 m above the walking surface along the perimeter of the terrace, in place of standard height guards.

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-9. 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 and public walkways, bicycle paths, green spaces, parking entrances, building access points, and walkways are considered acceptable.

2) During the typical use period (May to October, inclusive), wind comfort conditions over the rooftop amenity terrace serving the proposed development at the Penthouse Level are predicted to be suitable for mostly sitting, with an isolated area of standing conditions to the southwest.

a. Depending on the programming of the exterior area, the noted conditions may be considered acceptable. Specifically, if the southwest of the terrace will not accommodate seating or more sedentary activities, the noted wind conditions would be considered acceptable.

b. If required by programming, sitting conditions may be extended over the full terrace area by implementing a 1.8-m-tall wind perimeter wind screen as noted in Section 5.2.

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

APPENDIX 2 – UDRP RECOMMENDATIONS

Project:	2514 – 441 Echo Drive
File No.	PC2025-0290

URBAN DESIGN REVIEW PANEL RECOMMENDATIONS
March 06th, 2026

441 Echo Drive| Informal Pre-Consultation Review | Official Plan Amendment & Zoning By-law Amendment & Site Plan Control Application| Project 1 Studio Incorporated, Fotenn Planning + Design |

Panel Members in Attendance: David Leinster | James Parakh | Emmanuelle van Rutten| Colin Berman | Nigel Tai | Philip Evans |



Key Recommendations

- The Panel acknowledges that this is a very handsome building. However, further refinement is suggested, particularly from a massing perspective.
- The Panel expresses concern relates to the side yard setbacks, particularly along the north side and south sides above the 5th floor. The Panel recommends introducing greater setbacks on the top floors along the side of the building to reduce the perceived mass and address the proximity to adjacent buildings.
- The Panel recommends further study of the upper levels, particularly the projecting canopy element from seventh storey of the building. Additional analysis and visual studies are encouraged to better understand its impact.
- The Panel encourages further exploration of the street rhythm and façade articulation along Echo Drive. Suggestions included strengthening the vertical rhythm and considering a tripartite division of the façade.
- The Panel encourages simplification of the upper portions of the building so that the top levels recede visually and blend more with the sky, helping to reduce the overall perception of height and mass.

- The Panel also emphasizes the importance of integrating development with the existing canal landscape and heritage setting.
    - Protecting existing mature trees should be a priority wherever possible.
    - Where trees cannot be preserved, the Panel recommends ensuring that replacement trees are planted in conditions that allow for healthy long-term growth, rather than on top of structural slabs that restrict root development.

Site Design & Public Realm

- The Panel notes that mature trees and canopy cover are defining characteristics of the Canal corridor and the surrounding neighborhood. As such, preserving existing trees on the site should be a primary consideration.
- The Panel suggests reviewing the site design to ensure that proposed trees have access to adequate soil volumes. Where possible, trees should not be planted on structural slabs, as this can limit their long-term health and growth.
- The Panel also noted opportunities to refine the landscape programming within the site. The rear yard currently appears largely planted, and the Panel encourages introducing small, shared amenity spaces for residents, such as seating areas, gathering spaces, or community gardening plots.
- The Panel encourages exploring options to minimize the underground parking, given the site's proximity to the river and the potentially high cost of constructing the basement. Reducing the number of units could be one approach to consider.

Sustainability

- The Panel appreciates the sustainability ambitions presented and encourages the project team to explore additional opportunities at the rooftop level.
    - Given the prominence and visibility of the roof from surrounding viewpoints, including the nearby bridge, the Panel suggests exploring strategies beyond a conventional white roof.
    - Opportunities may include planted roofs, climbing vegetation, or other landscape elements that contribute to heat island reduction and improve environmental performance.

Built Form & Architecture

- The Panel acknowledges that the building presents a strong architectural expression but notes that the site is located within a mature and sensitive neighborhood context.
- The Panel notes that the proposal exceeds the prevailing height of surrounding buildings and emphasizes the importance of refining the building mass to mitigate its perceived scale. Introducing step-backs above the third storey, particularly along the north side, is strongly encouraged.
- The Panel suggests recessing the upper floors by approximately 5.5 metre from the side yard setback, including the darker upper volume, which could create greater separation between the brick podium and the upper levels. This would help sculpt the overall massing of the building and reduce the sense of blockiness of the building.
- The Panel recommends further articulation of the front façade to better reflect the rhythm of the surrounding house-form buildings. The current division of the façade could be strengthened by introducing additional vertical elements, potentially revealing the recessed balconies and creating a tripartite composition along the street frontage.
- The Panel also encourages simplification of architectural treatment at the top of the building.
    - Reducing the visual emphasis of the roof-level elements and avoiding strong projecting forms may help diminish the apparent height and mass of the building, particularly when viewed from the bridge and along the Canal corridor.
- The Panel encourages careful attention to the design of the ground floor, including exploring opportunities to introduce subtle breaks or variations in the façade to reflect the scale and rhythm of adjacent residential buildings.

APPENDIX 3 – REVISED SUBMISSION MATERIAL

Project:	2514 – 441 Echo Drive
File No.	PC2025-0290



URBAN DESIGN BRIEF

441 ECHO DRIVE

7 MAY 2026

ONTARIO ASSOCIATION OF ARCHITECTS
RYAN M. KOOLWINE
LICENCE
7370

project11 studio

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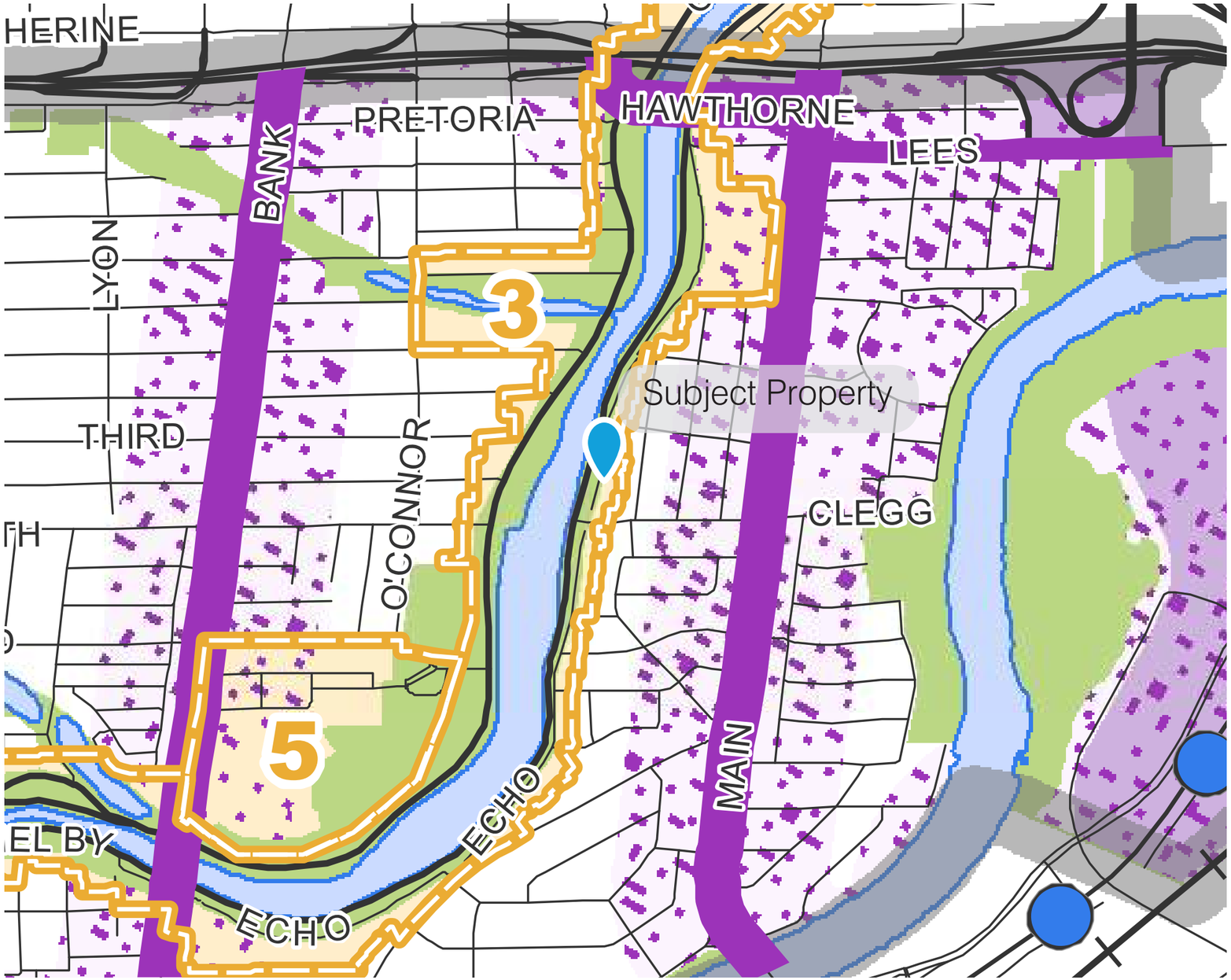
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POLICY AND REGULATORY FRAMEWORK



Schedule B2 — Inner Urban Transect, City of Ottawa Official Plan.

OTTAWA OFFICIAL PLAN (2022) - INNER URBAN TRANSECT

The site is located in the Inner Urban Transect and is designated Rideau Canal Special Policy Area.

The Inner Urban Transect has an urban pattern of built form and is generally intended for mid- to high-rise density development.

Lands redeveloping in the Special Policy Area shall have regard to section 4.5, Cultural Heritage and Archaeology, and section 4.6, Urban Design. Per section 4.5, "Development adjacent to [the Rideau Canal] shall have regard for [its] cultural heritage value [...] and the City may require demonstration that development does not adversely impact these resources." The proposed development responds to the cultural heritage of the surrounding area and is discussed in the Heritage Impact Assessment (HIA), included as an Appendix. Units face the Rideau Canal and many of the units will have views of the Canal. It is also worth noting that the building is partially blocked by the Flora Footbridge, will be approximately 45 metres from the Rideau Canal, and will be separated from the edge of the Canal by a multi-use path and road. Therefore, impacts to the Rideau Canal are substantially mitigated.

Special Policy Areas do not themselves identify maximum permitted heights. Instead, the permitted building height is per the existing zoning in place. Under the zoning by-law, the maximum permitted height is 14.5 metres, whereas 20.5 metres is proposed.

Urban Design policies speak to how "Transitions between Mid-rise buildings, and adjacent properties designated as Neighbourhood […] will be achieved by providing a gradual change in height and massing, through the stepping down of buildings, and setbacks from the Low-rise properties, generally guided by the application of an angular plane as may be set in the Zoning By-law or by other means in accordance with Council-approved Plans and design guideline." The proposed development utilizes changes in materiality, stepbacks, and different glazing treatments to provide a gradual change in height and massing. [TN1.1]

The site is also located on a Scenic Capital Entry Route.

DESIGNATIONS / DÉSIGNATIONS
- Hub / Carrefour
- Corridor - Mainstreet / Couloir - Rue principale
- Corridor - Minor / Couloir - Rue principale mineure
- Mixed Industrial / Industrie Mixte
- Greenspace / Espace vert
- Neighbourhood / Quartier

SPECIAL DISTRICTS / DISTRICTS PARTICULIERS
- 3 Rideau Canal / Canal Rideau

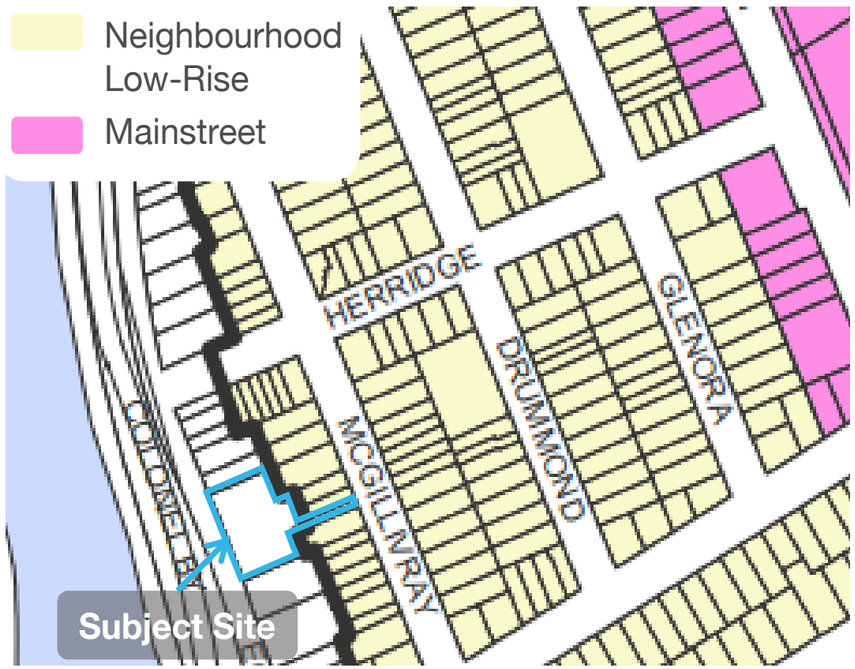
TRANSECT POLICY AREA / SECTEUR STRATÉGIQUE DU TRANSECT
- Inner Urban / Urbain intérieur

OVERLAYS / AFFECTATION SUPPLÉMENTAIRE
- Evolving Neighbourhood / Quartier en évolution

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POLICY AND REGULATORY FRAMEWORK



Secondary Plan, Volume 2 | Schedule A - Designation Plan

OLD OTTAWA EAST SECONDARY PLAN (2022)

The majority of the site is not located within the Secondary Plan Area; however, the drive aisle to McGillivray Street is located in Secondary Plan Area, where it is designated "Neighbourhood Low-Rise." This designation has a maximum permitted height of 4 storeys.

The Secondary Plan directs properties inside the Secondary Plan Area to "intensify at the edge." The proposed 6-storey building provides an edge condition, which provides a backdrop of height to buildings in the Secondary Plan Area.

CITY OF OTTAWA COMPREHENSIVE ZONING BY-LAW (2008-250)

The subject site is zoned "Residential Fourth Density, subzone UD" (R4UD) under City of Ottawa Comprehensive Zoning By-law 2008-250.

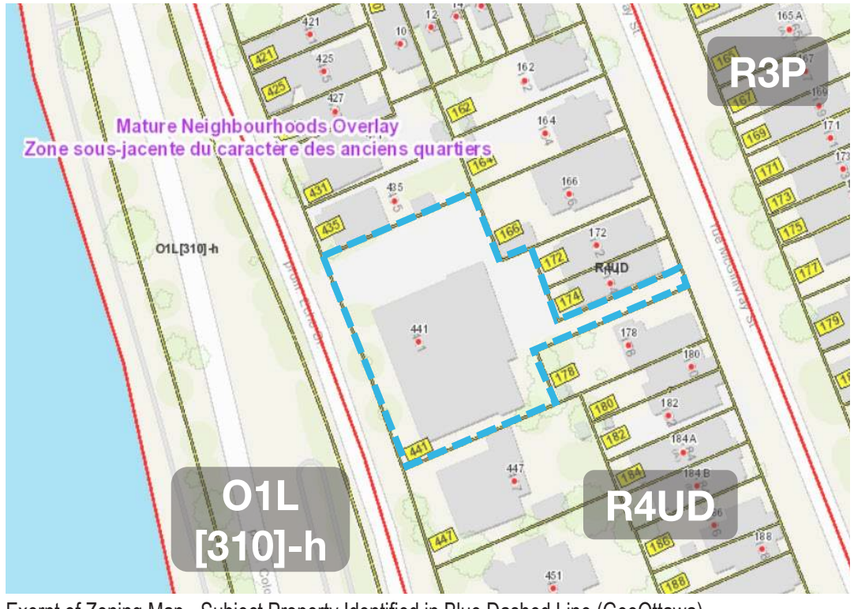
CITY OF OTTAWA ZONING BY-LAW (2026-50)

The subject site is zoned "Neighbourhood Fourth Density, subzone B" (N4B) under the approved but not yet in full force and effect City of Ottawa Comprehensive Zoning By-law 2026-50.

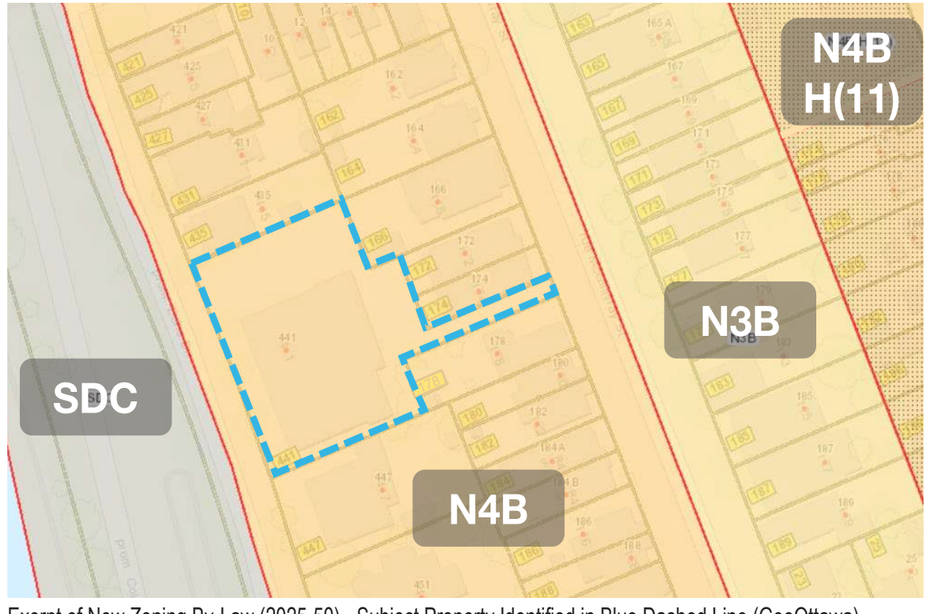
PROPOSED OPA AND ZBLA

Concurrent Official Plan Amendment (OPA), Zoning By-law Amendment (ZBLA), and Site Plan Control (SPC) applications will be submitted to permit the redevelopment. An OPA would seek to permit the 20.5-metre building through a site-specific policy similar to existing section s.6.6.2.2(k). Proposed text would read: "The maximum permitted building height is mid-rise, up 20.5 metres, on the lands municipally known as 441 Echo Drive." Relief from section 6.6.2.2(4)(a) will also be sought, as the proposed development will be in a different height category from the surrounding neighbourhood: mid-rise compared to the existing low-rise.

A ZBLA will be submitted to rezone the property from "Neighbourhood Fourth Density, subzone B" to "Neighbourhood Fifth Density, subzone B, height limit 20.5 metres" N5B H(20.5). As the application progresses, additional areas of relief will be identified as needed.



Exerpt of Zoning Map - Subject Property Identified in Blue Dashed Line (GeoOttawa)



Exerpt of New Zoning By-Law (2025-50) - Subject Property Identified in Blue Dashed Line (GeoOttawa)

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View of West Facade from Echo Drive



View of West Facade from Flora Foot Bridge

DESIGN INTENT

The design of this project is deeply mindful of existing context and a changing urban environment as it is the first in what will likely be several developments in the area. We are mindful of the existing urban fabric and the public realm and have designed a project that is sympathetic to the scale of Echo Drive, but we are also aware that this is a central location that will have increasing density over time. Possibly the greatest attribute of the site is its proximity to the Rideau Canal, and this weighed on our approach to the design of the building as we are aware that this will create a backdrop for a significant public asset that is hugely important to the city as a whole.

There are plenty of examples of nearby buildings that have heights well in excess of what has been proposed. That said, we do understand that the height will be a deviation from the existing built typology, so a key factor in the design was to find ways to mitigate the impact of the additional height. This has been achieved through a series of projections and step-backs in the building face. On the lower levels, a brick framework projects out from the face of the building. This creates articulation and coupled with the recessed balconies creates a highly varied building elevation that will offer contrasting shadowing over the course of the day. As the building continues up, it is set back on Level 04 and then again on Level 06. In combination with frame projection on the lower levels, these step-backs offer significant relief from the street edge and soften the overall impact of the building on the street. The highly sculptural approach to the front elevation allows the building to respond and transition from the current surrounding context, while also allowing it to be well integrated with potential future development.

We also understand that this building has a prominent location with its proximity to the canal. For this reason, we felt that the project needed to be understated and also timeless from a design perspective. We are employing the use of masonry over the majority of the project, a cladding material typical to the residential buildings in the area. We are also making use a simple but sophisticated details, making this a well-articulated background building. While it will read as more prominent in the short term, as more properties develop, it will become more integrated with its surroundings. The project is well screened by existing trees as well as the foot of the pedestrian bridge, so there will not be a significant visual impact on the canal. That said, I do think we should recognize the canal for what it is, a waterway that passed through the center of a city. It is a natural feature in an urban environment. This being the case, doesn't the presence of buildings (even tall buildings) enhance this experience?

We believe that this project responds well to the demands of its surroundings. It is a timeless expression of modern architecture that isn't looking for attention and plays a respectful role in the continued evolution of our city.

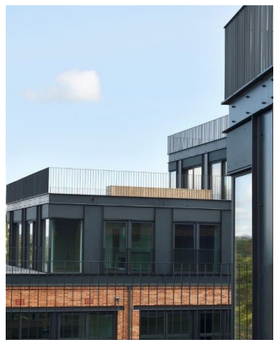
PRECEDENT IMAGES



7-15 Baker Street - Squire & Partners



Turnmill - Piercy & Company



First Tech Federal Credit Union - Hacker

SITE STATISTICS

Current Zoning Designation:	R4UD
Lot Width:	40.2m
Total Lot Area:	1,394.32m²
Average Existing Grade:	65.49m

Proposed Development - 6 Storey Mid-Rise Apartment Building

No. of units 52 Units

Zoning Mechanism	Required	Provided
Minimum Lot Width *Table 162(a)*	15.0m	40.2m
Minimum Lot Area *Table 162(a)*	450m²	1,394.32m²
Min. Front Yard Setback *Table 162(a)*	4.5m	4.6m
Min. Interior Side Yard Setback *Table 162(a)*	1.5m	1.5m
Min. Rear Yard Setback *Table 144(a)(iii)*	18.3m	35.1m
Maximum Building Height *Table 162(a)*	14.5m	19.5m
Parking Space Rates (Residents) *101 (Sch. 1A - Area X)*	18 Spaces *0 spaces for the first 12 units - Section 101(3)* *0.5 spaces / unit for 40 units - Table 101(R15)* *Minus 10% - Section 101(6)*	50 Spaces
Minimum Visitor Parking Rates *101 (Sch. 1A - Area X)*	4 Spaces *0 spaces for first 12 units - Section 102(2)* *0.1 spaces / unit for 40 units - Table 102*	4 Spaces
Minimum Spaces Capable of Level 2 EV Charging	13 Spaces *25% spaces / unit for 52 units*	13 Spaces
Bicycle Parking Rates (Residents) *Table 111A (Sch. 1 - Area X)*	26 Spaces *0.5 spaces / unit for 52 units [111A(b)(i)]*	56 Spaces
Total Amenity Area *Table 137(4)(II)*	312m² *6m² / unit for 52 units*	549.49m²
Communal Amenity Area *Table 137(4)(III)*	156m² *Min. 50% of Total Amenity Area*	230.22m²

UNIT COUNT

NAME	LVL 01	LVL 02	LVL 03	LVL 04	LVL 05	LVL 06	TOTAL COUNT	PERCENTAGE
1-BED	2	5	5	5	5	0	22	42%
1-BED + DEN	3	1	1	1	1	1	8	15%
2-BED	2	4	4	4	4	1	19	37%
2-BED + DEN	0	0	0	0	0	1	1	2%
3-BED	0	0	0	0	0	2	2	4%
TOTAL	7	10	10	10	10	5	52	100%

GROSS BUILDING AREA

LEVEL	AREA	AREA (SF)
LEVEL 1	722.24 m²	7,774 SF
LEVEL 2	724.46 m²	7,798 SF
LEVEL 3	722.19 m²	7,774 SF
LEVEL 4	712.53 m²	7,670 SF
LEVEL 5	712.53 m²	7,670 SF
LEVEL 6	616.33 m²	6,634 SF
ROOF	217.55 m²	2,342 SF
TOTAL	4,427.82 m²	47,661 SF

LEVEL P1	1,170.54 m²	12,600 SF
LEVEL P2	1,170.54 m²	12,600 SF
LEVEL P3	566.86 m²	6,102 SF
TOTAL	2,907.93 m²	31,301 SF

TOTAL	**7,335.75 m²**	**78,962 SF**

LEASABLE AREA (RESIDENTIAL)

LEVEL	AREA	AREA (SF)
LEVEL 1	481.08 m²	5178 SF
LEVEL 2	646.81 m²	6962 SF
LEVEL 3	645.09 m²	6944 SF
LEVEL 4	633.83 m²	6822 SF
LEVEL 5	633.83 m²	6822 SF
LEVEL 6	539.76 m²	5810 SF
TOTAL	3,580.39 m²	38539 SF

PARKING SCH. (BICYCLE)

LEVEL	TYPE	COUNT
LEVEL P1	STACKED	56
TOTAL		56

COMMUNAL AMENITY

LEVEL	NAME	AREA	AREA (SF)
ROOF	AMENITY LOUNGE	91.23 m²	982 SF
ROOF	AMENITY TERRACE	138.99 m²	1,496 SF
TOTAL		230.22 m²	2,478 SF

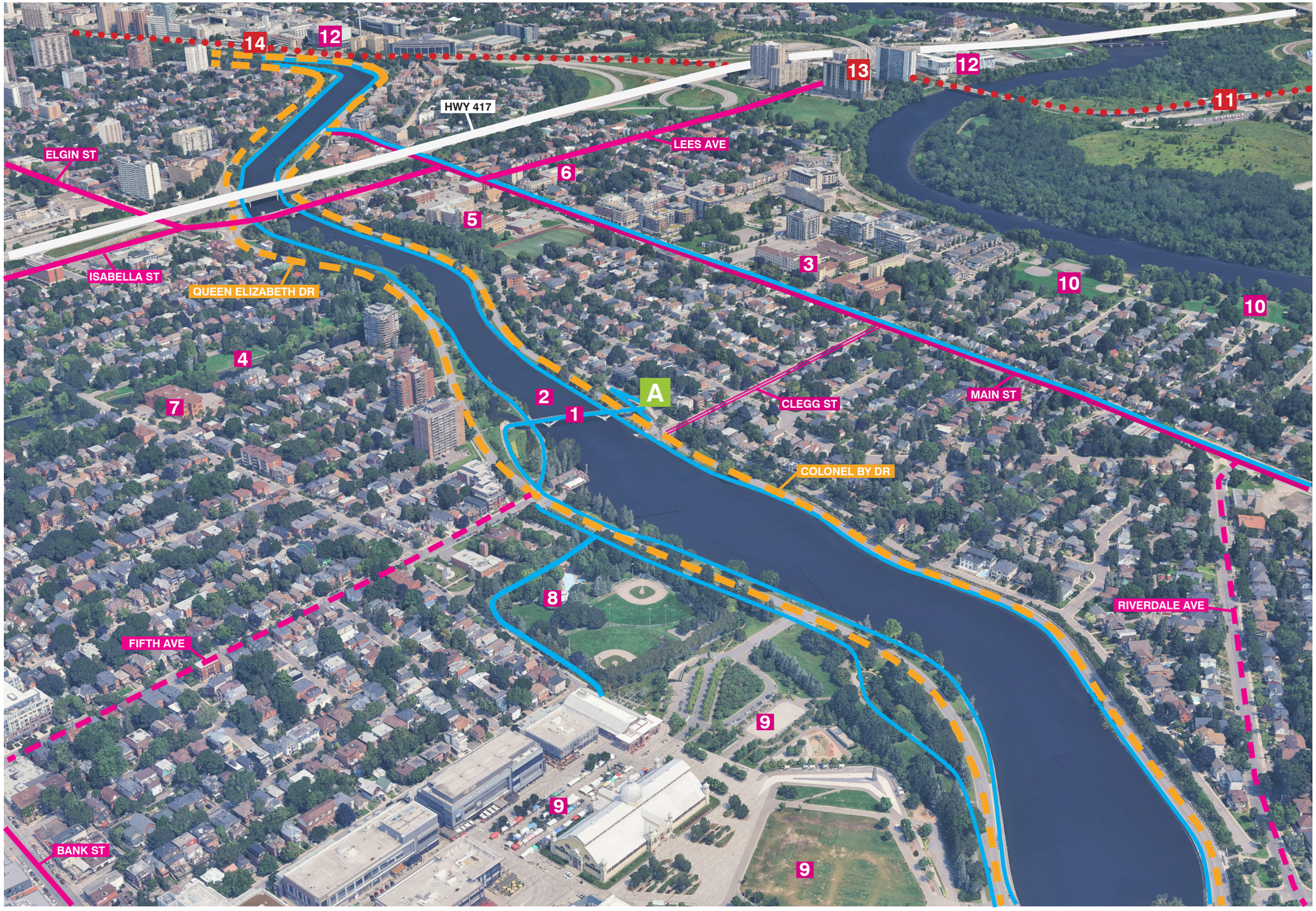
PRIVATE AMENITY

LEVEL	AREA	AREA (SF)
LEVEL 1	120.15 m²	1,293 SF
LEVEL 2	21.64 m²	233 SF
LEVEL 3	25.41 m²	274 SF
LEVEL 4	25.97 m²	280 SF
LEVEL 5	26.52 m²	285 SF
LEVEL 6	99.57 m²	1,072 SF
TOTAL	319.27 m²	3,437 SF

PARKING SCH. (VEHICLE)

LEVEL	TYPE	COUNT
LEVEL P1	VISITOR	4
LEVEL P1	RESIDENT	16
LEVEL P2	RESIDENT - EV	13
LEVEL P2	RESIDENT	9
LEVEL P3	RESIDENT	12
TOTAL		54

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View Looking North East

POINTS OF INTEREST LEGEND

A	Site - 441 Echo Drive
1	Flora Foot Bridge
2	Rideau Canal
3	St. Paul University
4	Patterson Creek Park
5	Immaculata High School
6	Lady Evelyn Alternative School
7	First Avenue Public School
8	Sylvia Holden Park
9	Lansdowne Park
10	Brantwood Park
11	Hurdman LRT Station
12	uOttawa Campus
13	Lees LRT Station
14	uOttawa LRT Station

NETWORK LEGEND

- Multi-Use Pathway
- Arterial Road
- Federally Owned Road
- Collector Road
- Local Road
- Provincial Highway
- Line 1 O-Train

441 ECHO DRIVE SURROUNDING CONTEXT

| 2514 | SCALE: N.T.S.

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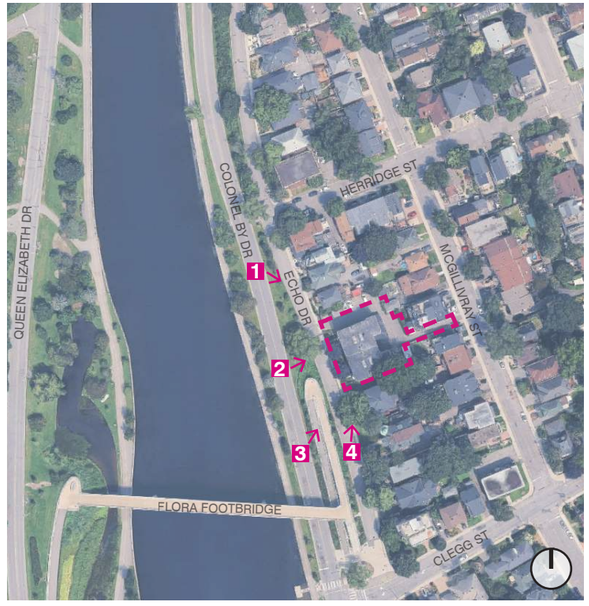
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1. Looking South along Colonel By Drive



2. Looking East along Colonel By Drive



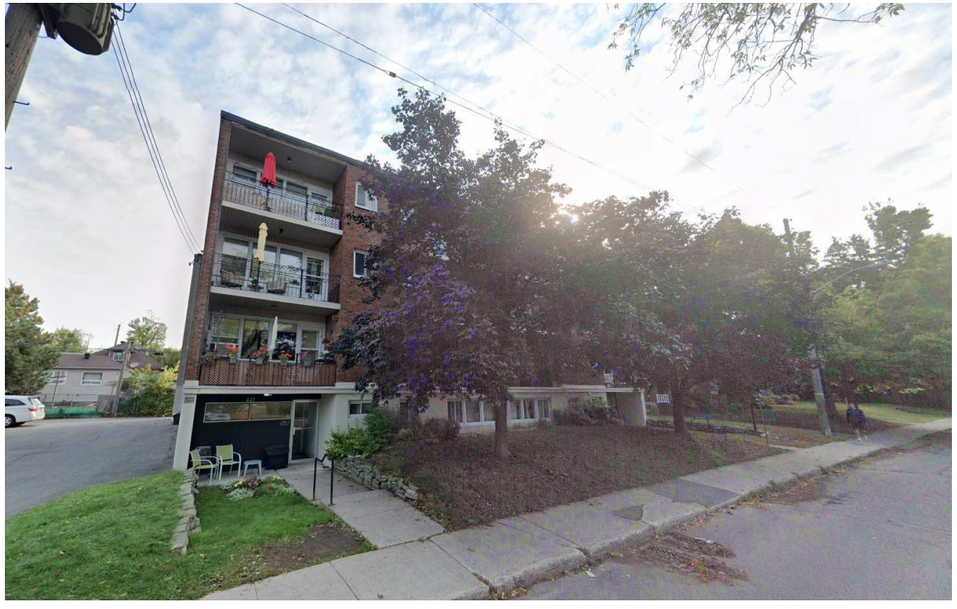
Key Plan



3. Looking North along Colonel By Drive



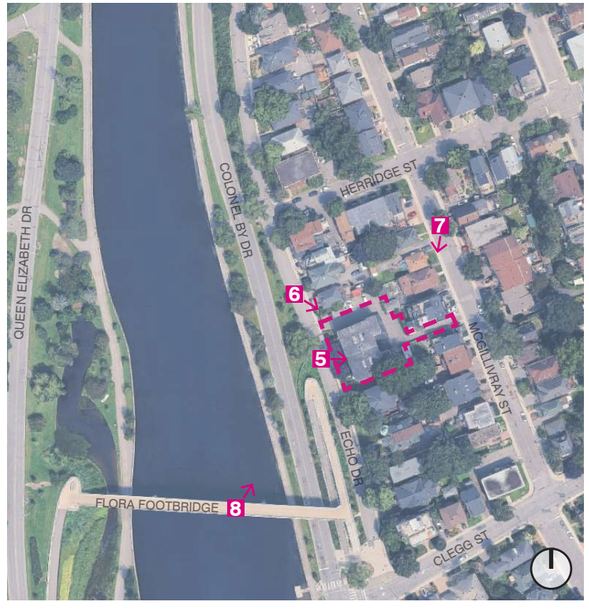
4. Looking North along Echo Drive



5. Looking East along Echo Drive



6. Looking West along Isabella Street



Key Plan



7. Looking South along McGillivray Street



8. Looking North-East from Flora Footbridge



View Looking South

CHARACTERISTICS OF THE ADJACENT STREETS AND PUBLIC REALM

441 Echo is in an enviable location fronting the Rideau Canal and Colonel By Drive; a scenic parkway linking the downtown core to landmarks like Dow's lake and Carleton University. Immediately East of Echo Drive, streets are comprised of a mix of residential buildings and low-rise infill. Slightly further east, past Main Street, is Saint Paul University. To the west, past Colonel By, the site faces the Rideau Canal and the Flora Footbridge, providing a direct pedestrian connection to Sylvia Holden Park and the Lansdowne Park entertainment district. Just south of 441 Echo, Clegg Street links Colonel By to Main Street, two important north-south arteries.

441 Echo is therefore both visually prominent, due to its waterfront location, and strategically positioned near key pedestrian, cycling, and vehicular corridors. Though backed nestled at the edge of an established residential neighborhood, it is more so a feature of Colonel By Drive, which distinguishes itself via pockets of larger, high-end residential architecture. 441 will serve as a template for future mid-rise development along Colonel By, as well as a pedestrian and cycling anchor, connecting key programmes and corridors on the east and west sides of the Rideau Canal.

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View Looking North

MICROCLIMATE CONDITIONS OF THE SITE

The microclimate conditions of the site have been carefully analyzed to ensure the proposed development harmonizes with the local environment, supports pedestrian comfort at grade, and provides a high standard of interior comfort.

Wind Patterns
Given the site's proximity to the water, where stronger, more channelized winds can occur, most balconies facing the water have been subsitituted for loggias, or are otherwise partially inset within the facade.

Solar Exposure and Temperature Regulation
The south-facing façade balances views and thermal performance thanks to recessed balconies, columns framed fenestration and high-performance glazing, supported by efficient HVAC systems and heat recovery unit, and a well-insulated envelope for year-round comfort.

Precipitation and Drainage
Sustainable stormwater management includes permeable paving where practical and a stormwater cistern, reducing runoff and preventing flooding.

Vegetation and Landscaping
Native, drought-tolerant planting is used for resilience and low maintenance, while landscaping at grade and on terraces provides shade, improves comfort, and enhances the streetscape.

Noise Levels
All walls are detailed to suprass DB level requirements prescribed by code.

Air Quality
Good indoor air quality will be supported through low-emission building materials and a ventilation system that provides fresh air to all units, ensuring a healthy living environment.



View Looking East

441 ECHO DRIVE PROJECT MASSING IN EXISTING CONTEXT

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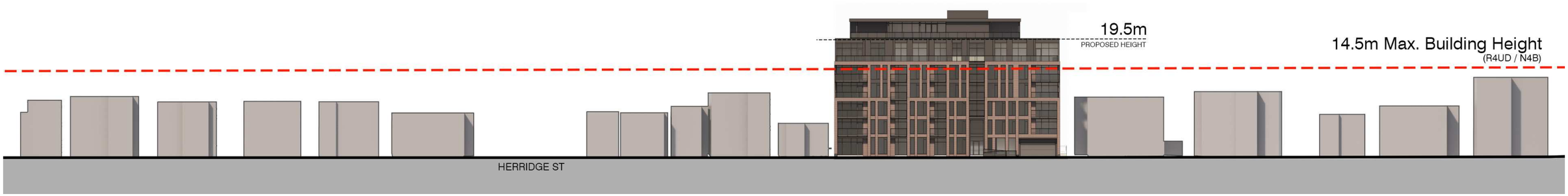
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Aerial View of Site Looking North; Massing as per R4UD Zoning (14.5m building height)



Aerial View of Site Looking East; Massing as per R4UD Zoning (14.5m building height)



East Elevation Showing Heights of Surrounding Buildings and Maximum Heights Allowed by Zoning By-Law

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Massing as per R4UD Zoning (14.5m building height)



Massing as per R4UD Zoning (14.5m building height)

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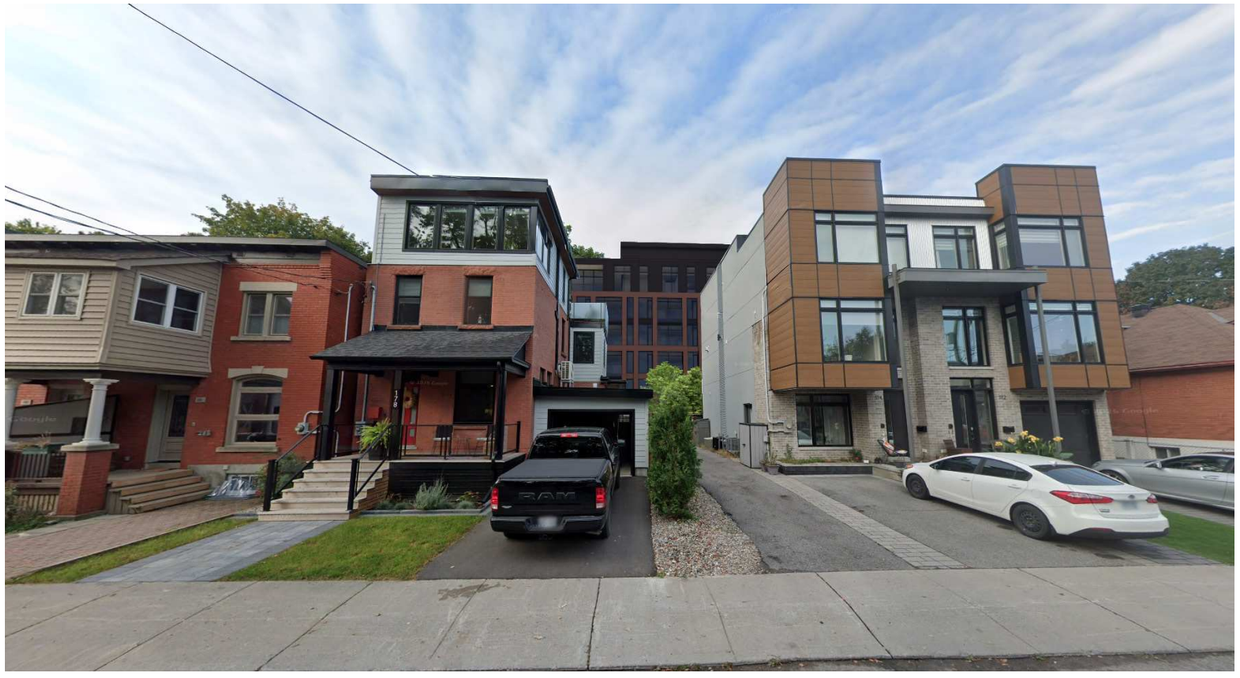
View From Echo Drive Looking North



View From Colonel By Drive Looking South-East

441 ECHO DRIVE STREETVIEW OF PROJECT IN EXISTING CONTEXT

| 2514 | SCALE: N.T.S.



View From McGillivray St Looking West



View From McGillivray St Looking West

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441 ECHO DRIVE STREETVIEW OF PROJECT IN EXISTING CONTEXT

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View from Echo Drive Looking South

KEY RECOMMENDATIONS

The Panel acknowledges that this is a very handsome building. However, further refinement is suggested, particularly from a massing perspective.

We understand this comment to be in relation to the size of the upper levels of the building. We have made adjustments to the massing of the roof level which includes moving the enclosure further away from the interior side yards and a lowering of the overall height of the rooftop enclosure. We feel that these changes will improve the massing of the project and transition into the neighborhood.

The Panel expresses concern relates to the side yard setbacks, particularly along the north side and south sides above the 5th floor. The Panel recommends introducing greater setbacks on the top floors along the side of the building to reduce the perceived mass and address the proximity to adjacent buildings.

It is not feasible for the project to step in along the interior side yard at Level 06, however we have provided a significant step back of the building at Level 07 which is visible in the revised rendering package. We feel that this change is a fair balance between reducing the impact of the built form and maintaining the performance requirements of the project.

The Panel recommends further study of the upper levels, particularly the projecting canopy element from seventh storey of the building. Additional analysis and visual studies are encouraged to better understand its impact.

We have reduced the height and the extent of the projection of the canopy on Level 07, please refer to the revised renderings.

The Panel encourages further exploration of the street rhythm and façade articulation along Echo Drive. Suggestions included strengthening the vertical rhythm and considering a tripartite division of the façade.

We have introduced a tripartite expression to the lower levels of the building, as suggested, please refer to the revised renderings.

The Panel encourages simplification of the upper portions of the building so that the top levels recede visually and blend more with the sky, helping to reduce the overall perception of height and mass.

The articulation of the upper levels of the building has been simplified as suggested, please refer to the revised renderings.

The Panel also emphasizes the importance of integrating development with the existing canal landscape and heritage setting.

- *Protecting existing mature trees should be a priority wherever possible.*
- *Where trees cannot be preserved, the Panel recommends ensuring that replacement trees are planted in conditions that allow for healthy long-term growth, rather than on top of structural slabs that restrict root development.*

We understand the comments concerning the trees, efforts are being made to ensure sufficient soil volume to allow newly planted trees to thrive.

SITE DESIGN & PUBLIC REALM

The Panel notes that mature trees and canopy cover are defining characteristics of the Canal corridor and the surrounding neighborhood. As such, preserving existing trees on the site should be a primary consideration.

The final condition of the development will ensure that there are trees abutting Echo Drive. That said, it is important to note that the majority of the mature tree canopy cover in the area is from the existing trees in the median between Echo Drive and Colonel By Drive, which is not on the subject site.

The Panel suggests reviewing the site design to ensure that proposed trees have access to adequate soil volumes. Where possible, trees should not be planted on structural slabs, as this can limit their long-term health and growth.

Noted.

The Panel also noted opportunities to refine the landscape programming within the site. The rear yard currently appears largely planted, and the Panel encourages introducing small, shared amenity spaces for residents, such as seating areas, gathering spaces, or community gardening plots.

This comment is noted, however with the required grading for the site providing barrier-free access to this area is challenging. That said, we will continue to explore opportunities to program this area but this may be more as private amenity space instead of a communal amenity area.

The Panel encourages exploring options to minimize the underground parking, given the site's proximity to the river and the potentially high cost of constructing the basement. Reducing the number of units could be one approach to consider.

The development team has a clear understanding of the cost involved with building an underground parking structure as sees parking as a requirement given the nature of this development. Reducing the number of units will not be entertained.

SUSTAINABILITY

The Panel appreciates the sustainability ambitions presented and encourages the project team to explore additional opportunities at the rooftop level.

- *Given the prominence and visibility of the roof from surrounding viewpoints, including the nearby bridge, the Panel suggests exploring strategies beyond a conventional white roof.*
- *Opportunities may include planted roofs, climbing vegetation, or other landscape elements that contribute to heat island reduction and improve environmental performance.*

Rooftop planting will be explored, but we will not make a commitment to move forward in this direction.

BUILT FORM & ARCHITECTURE

The Panel acknowledges that the building presents a strong architectural expression but notes that the site is located within a mature and sensitive neighborhood context.

Noted.

The Panel notes that the proposal exceeds the prevailing height of surrounding buildings and emphasizes the importance of refining the building mass to mitigate its perceived scale. Introducing step-backs above the third storey, particularly along the north side, is strongly encouraged.

With respect to mitigating the scale of the building in the pedestrian realm, the building offers step backs on Level 04, Level 06 and Level 07 (Roof Level) on the west elevation. We disagree that there is a need to step the building back from the interior side yards as this transition would have relatively little impact on the street. We also question why stepping back on the north side is of more importance than the south side. There are plenty of zones in the city that permit 6 stories, and the step back requirements for these buildings are only on the front yard side, not the interior side yards.

The Panel suggests recessing the upper floors by approximately 5.5 metre from the side yard setback, including the darker upper volume, which could create greater separation between the brick podium and the upper levels. This would help sculpt the overall massing of the building and reduce the sense of blockiness of the building.

We respectfully disagree and would offer that a 5.5m step back from an interior side yard on a mid-rise building is excessive. Making this adjustment would drastically impact the functionality of the building and the reduction in area would compromise the viability of the project.

The Panel recommends further articulation of the front façade to better reflect the rhythm of the surrounding house-form buildings. The current division of the façade could be strengthened by introducing additional vertical elements, potentially revealing the recessed balconies and creating a tripartite composition along the street frontage.

We have introduced a tripartite expression to the lower levels of the building, as suggested, please refer to the revised renderings.

The Panel also encourages simplification of architectural treatment at the top of the building.

- *Reducing the visual emphasis of the roof-level elements and avoiding strong projecting forms may help diminish the apparent height and mass of the building, particularly when viewed from the bridge and along the Canal corridor.*

The articulation of the upper levels of the building has been simplified as suggested, please refer to the revised renderings.

The Panel encourages careful attention to the design of the ground floor, including exploring opportunities to introduce subtle breaks or variations in the façade to reflect the scale and rhythm of adjacent residential buildings.

We are somewhat puzzled by this comment as we have placed a great deal of care in the design and articulation of the lower levels of the building. We are providing units that can be accessed directly from the street, vertical brick articulations that project from the building face, and recessed balconies that have been positioned to achieve the aforementioned 'tripartite' effect. All things considered, we feel strongly that the proposed design already reflects the scale and rhythm of adjacent residential buildings.

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View of West Facade

BIRD-SAFE DESIGN APPROACH

Our bird-safe design strategy does not rely on the application of bird-safe glass. Instead, we have implemented a variety of alternative methods.

Guideline 1:
a) We take into account that the porject is located on a waterfront property.

Guideline 2:
a) We comply with this guideline since the building uses primarily 'punched glazing'.
b) We comply with this guideline as the building utilizes solid masses, such as brick columns to break up the glass, which fragment reflections and avoid large monolithic fenestration.

Guideline 3:
a) We comply with this guideline since the building has no 'fly-through' or 'mirror maze' areas.

Guideline 4:
a) There is no provision or expectation for exterior antennas or towers on this project.
b) There will be no guy-wires on the project.
c) There will be no up-lighting on the project.
d) Grates on the project, when they are positioned, will meet the opening requirements of these guidelines.
e) All vertical pipes and flues will be capped.

Guideline 5:
a) The plantings around the building should not result in significant reflections on the building.
b) There are no linear landscape elements leading to glass facades or doors.
c) There are no plants with significant fruit or seed crops specified on the project.
d) There are no adjacent buildings of a scale where the rooftop of this building would be reflected.
e) There is no indoor vegetation planned for the project.
f) There are no ornamental or other water features designed on this project.

Guideline 6:
a) There is no up lighting on the project.
b) All light fixtures will be full cut-off.
c) Non-Essential exterior lighting will be on motion sensors.
d) We will target only enough light intensity to meet OBC requirements.
e) Perimeter lighting will be discrete.
f) There will be no flood lights.

Guideline 7:
a) Windows will be equipped with roller blinds.
b) With the exception of the lobby and amenity rooms, there will be no public spaces in the building that will be visible from the exterior.
c) Each unit in the building will have independent light control and has less than 15' of frontage along the exterior of the building. This will have the effect of creating small zones of lighting.

SUSTAINABILITY STATEMENT

JB Holdings is committed to reducing the environmental impact of the buildings we own and operate. Our long-standing commitment to collaboratively pursue green initiatives has delivered measurable, meaningful results for over a decade.

Echo integrates a range of strategies that support improved environmental performance and long-term resilience. These include the use of native and climate-appropriate plant species, on-site stormwater retention measures, and the selection of locally sourced materials where feasible. Interior water efficiency will be enhanced through low-flow fixtures, while in-suite heat recovery systems will contribute to reduced energy demand. The project also incorporates ample bicycle parking, comprehensive construction waste diversion, high-efficiency LED lighting in corridors and amenity spaces, and exterior lighting designed to minimize light pollution.441 Finally, Echo's envelope will surpass applicable code requirements for both thermal insulation and glazing performance, supporting reduced heating and cooling loads.



View Looking East

RESPONSE TO THE ABUTTING PUBLIC REALM CONDITIONS BEYOND THE SITE

Echo aims to be respectful of its site and surroundings, all the while setting an elevated architectural precedent for subsequent buildings along the Rideau Canal. It is a contextual piece of city-building, that demonstrates how density can emerge thoughtfully along the Rideau Canal. Echo's materials, massing, and façade draw directly from its surroundings. A carefully selected red brick acts as a continuity and a celebration of neighbouring materiality. Echo's large third-storey setback, combined with its brick columns and lintels, reduces the building's perceived mass to a human scale. Columns and loggias establish rhythmic patterns and shadows, giving the façade depth and legibility and imparting the building with a sense of permanence. This articulated massing, along with the street-level ground floor, and the underground parking, all aim to respect and enrich the existing architectural character, and the pedestrian experience.

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DESIGN EVOLUTION

441 Echo has evolved to improve the pedestrian experience, ease resident access into the building and reduce the overall impact of the building's mass.

441 Echo was initially a 6 ½ storey building with its ground floor units requiring a flight of stairs to bridge the 1.5m vertical from grade. Lower-level units have been eliminated in the current design, allowing ground floor units .3m off grade. This has strengthened the identity of the building at street level and created a frontage that is much more respectful of pedestrians and residents. It has also allowed for a pedestrian ramp at the building's main entrance, improving accessibility.

441 Echo initially had half a storey of its underground parking garage exposed in the rear yard. The current design has removed this exposed parking structure, allowing for terraces at the ground floor entrances of rear units and additional landscaped areas overall. Beyond providing outdoor private spaces for residents, removing this monolithic half-wall has also created a more inviting façade.

441 Echo initially had large light-grey panels and a somewhat eclectic set of volumes defining its top storey. The current design has quietened the contrast of these panels and reduced their size. It has also simplified the massing of the top storey and reduced the overall building height by 1.2m. The result is a less imposing top storey that recesses into the background, reducing the overall impact of the building mass. The current design also features a larger indoor rooftop amenity area.

Several other improvements have been made through successive iterations, resulting in a more coherent, approachable, and aesthetically refined design.

Original Design - West Facade



Current Design - West Facade



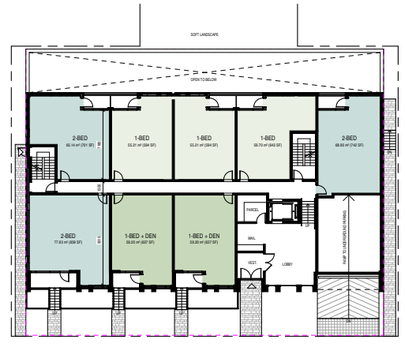
Original Design - East Facade



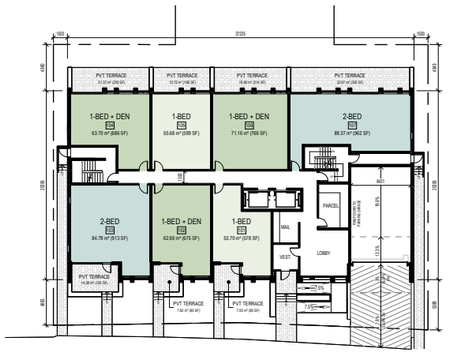
Current Design - East Facade



Original Design - Site Plan



Current Design - Site Plan


3725
1000
1000
4180
3725
400
PVT TERRACE
PVT TERRACE
PVT TERRACE
PVT TERRACE
1-BED + DEN
1-BED
1-BED + DEN
2-BED
2-BED
1-BED + DEN
1-BED
PARCEL
MAIL
LOBBY
PVT TERRACE
PVT TERRACE
PVT TERRACE
BACK OF SIDEWALK
BACK OF SIDEWALK
BACK OF SIDEWALK



441 ECHO DRIVE VIEW OF WEST FACADE

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441 ECHO DRIVE VIEW LOOKING NORTH FROM ECHO DRIVE

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441 ECHO DRIVE VIEW OF MAIN ENTRANCE

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441 ECHO DRIVE VIEW OF WEST FACADE FROM ECHO DRIVE

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441 ECHO DRIVE VIEW OF WEST FACADE FROM ECHO DRIVE

| 2514 | SCALE: N.T.S.

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441 ECHO DRIVE VIEW OF ROOFTOP AMENITY LEVEL

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441 ECHO DRIVE VIEW OF EAST FACADE

| 2514 | SCALE: N.T.S.

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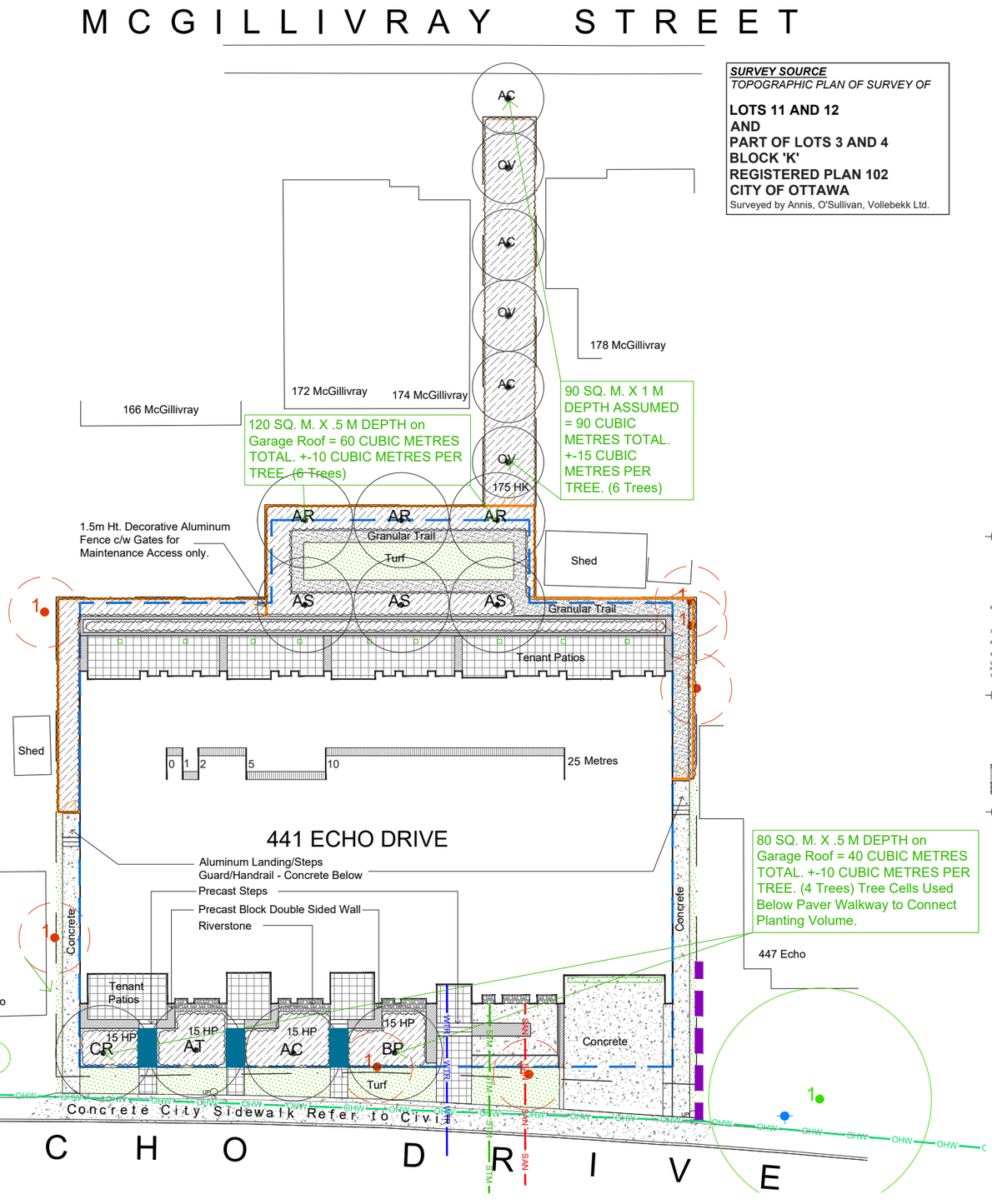


441 ECHO DRIVE VIEW REAR YARD AND EAST FACADE

| 2514 | SCALE: N.T.S.

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SURVEY SOURCE
TOPOGRAPHIC PLAN OF SURVEY OF

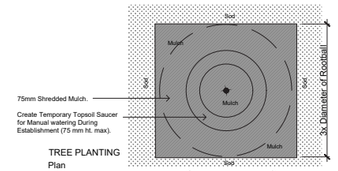
LOTS 11 AND 12
AND
PART OF LOTS 3 AND 4
BLOCK 'K'
REGISTERED PLAN 102
CITY OF OTTAWA
Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

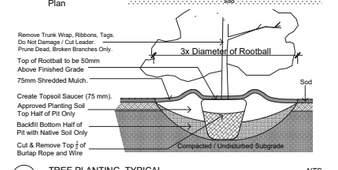
TREE SCHEDULE - JB HOLDINGS 441 ECHO DRIVE MULTI UNIT RESIDENTIAL

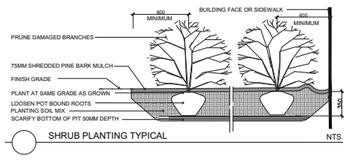
CODE	QTY	BOTANICAL NAME	COMMON NAME	B&B SPECIMEN	NATIVE to CANADA	FORECASTED SPREAD as per City of Ottawa Forestry DIAMETER	FORECASTED SPREAD as per City of Ottawa Forestry RADIUS	Canopy Cover Contribution/Tree in Square Metres	Total Canopy Cover
AC	4	Amelanchier canadensis	Tree Serviceberry	50mm cal	YES	5.0M	2.5M	20	80
AR	3	Acer rubrum	Red Maple	50mm cal	YES	10.0M	5.0M	78.5	235.5
AS	3	Acer saccharum	Sugar Maple	50mm cal	YES	14.0M	7.0M	154	462
AT	1	Asimina triloba	Paw Paw	50mm cal	YES	5.0M	2.5M	20	20
BP	1	Betula papyrifera	Paper Birch	50mm cal	YES	10.0M	5.0M	78.5	78.5
CR	1	Cornus racemosa	Grey Dogwood	50mm cal	YES	5.0M	2.5M	20	20
OV	3	Ostrya virginiana	Ironwood	50mm cal	YES	5.0M	2.5M	20	60
TOTAL DT	12	TOTAL DECIDUOUS COVER							876
TOTAL FORECASTED CANOPY COVER IN SQUARE METRES									876
MINUS OVERLAP WITH BUILDINGS, TREES, PROPERTY LINE, IN SQUARE METRES									450
CANOPY COVER IN SQUARE METRES									426
SITE AREA IN SQUARE METRES									1392
TOTAL FORECASTED CANOPY COVER as Percentage of Site Area									30.68%

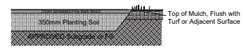
SHRUB PLANTING

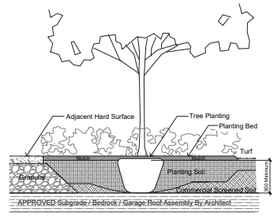
Code	Qty.	Botanical Name	Common Name	Size	Condition	NATIVE
HK	175	Hypericum kalmianum	Kalm St. John's Wort	30cm	Pot	YES
HP	75	Hypericum prolificum	Shrubby St. John's Wort	40cm	Pot	YES
AU	75	Arctostaphylos uva ursi	Bearberry	30cm spr	Pot	YES
PV	75	Panicum virgatum	Switch Grass	9 cm Pot		YES

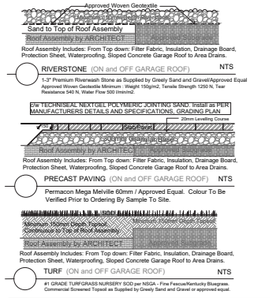




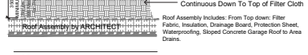


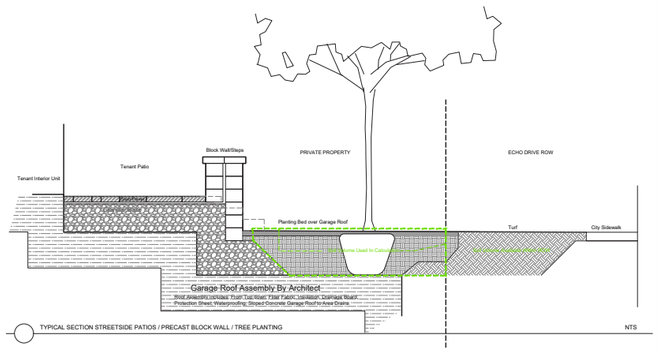






Ensure Filter Fabric is in Place over Insulation, with 500mm Overlap at Seams, and Continuous up and over any Upstands, Drains etc. Notify GJA INC. when Fabric Placement Is Ready For Inspection Prior To ANY Soil Placement.







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| 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. INCLUDE 1 YEAR WARRANTY FROM DATE OF FINAL ACCEPTANCE | 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. 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 |

REFER TO TCR BY IFS

Existing Tree to Remain
Protection for Existing Trees
Existing Tree to Remove

LEGEND

LANDSCAPE PROPOSED

Deciduous Tree
Soil Cell Planting Bed
Shrub Planting
Turf
Riverwash Stone On Filter Cloth
Stone Dust
Concrete
Precast Pavers
Precast Block Wall
Fence
Rack for 2 Bikes Anchor to Concrete

SITE / ARCHITECTURE

Parking Garage Below
Fire Hydrant
FD Siamese Connection
Light Standard
Hydro/Utility Pole

BELOW GRADE SERVICES REFER TO CIVIL/CUP

WTR U/G Water Service
STM U/G Storm Service
SAN U/G Sanitary Service
GAS U/G Gas Service
BC U/G TelCo Service
H U/G Hydro Service
OHW O/H Hydro Service

#	Revision	Date
1	SPC SUBMISSION 1	2026 04 30
0	REVIEW/COORDINATION	2026 01 15

PROPERTY OWNER
JB HOLDINGS INC.
107 PRETORIA AVENUE OTTAWA

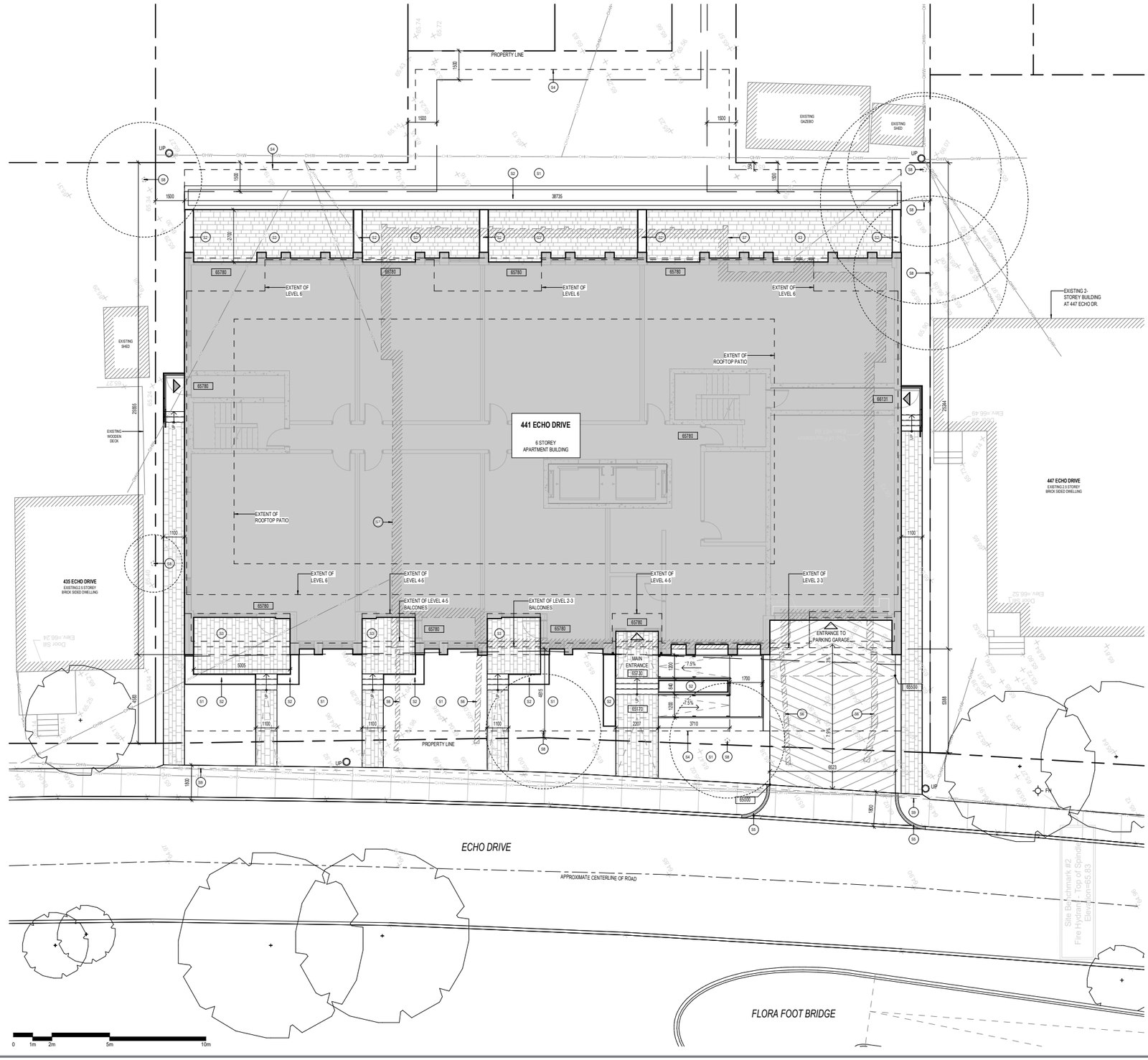
GJA INC.
GINO J. AIELLO | LANDSCAPE ARCHITECT
GJALA.COM | 613 286 5130 | GINO@GJALA.COM
110 DOSSBURY ROAD UNIT # 9 | OTTAWA ONTARIO | K2T 0C7

MULTI UNIT RESIDENTTIAL APARTMENT BUILDING
441 ECHO DRIVE OTTAWA

PLAN NO ##### D 0# ## ## #####

Landscape Plan
L1
Scale: 1:125

441 ECHO DRIVE LANDSCAPE PLAN
| 2514 | SCALE: N.T.S.

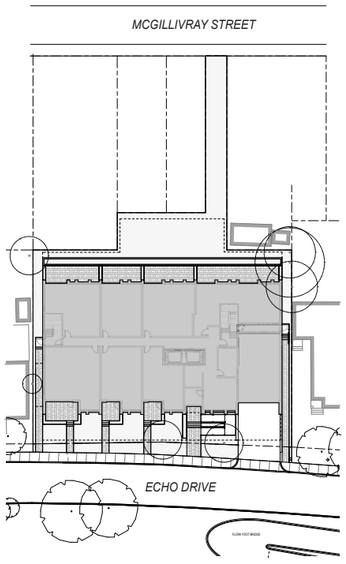


SITE PLAN SYMBOLS LEGEND

- BUILDING ENTRANCE
- BUILDING EXIT
- INTERLOCKING STONE PAVERS
- UP — UTILITY POLE
- FH — FIRE HYDRANT
- OVERHEAD WIRE
- PROPERTY LINE
- SETBACK LINE

SITE PLAN NOTES

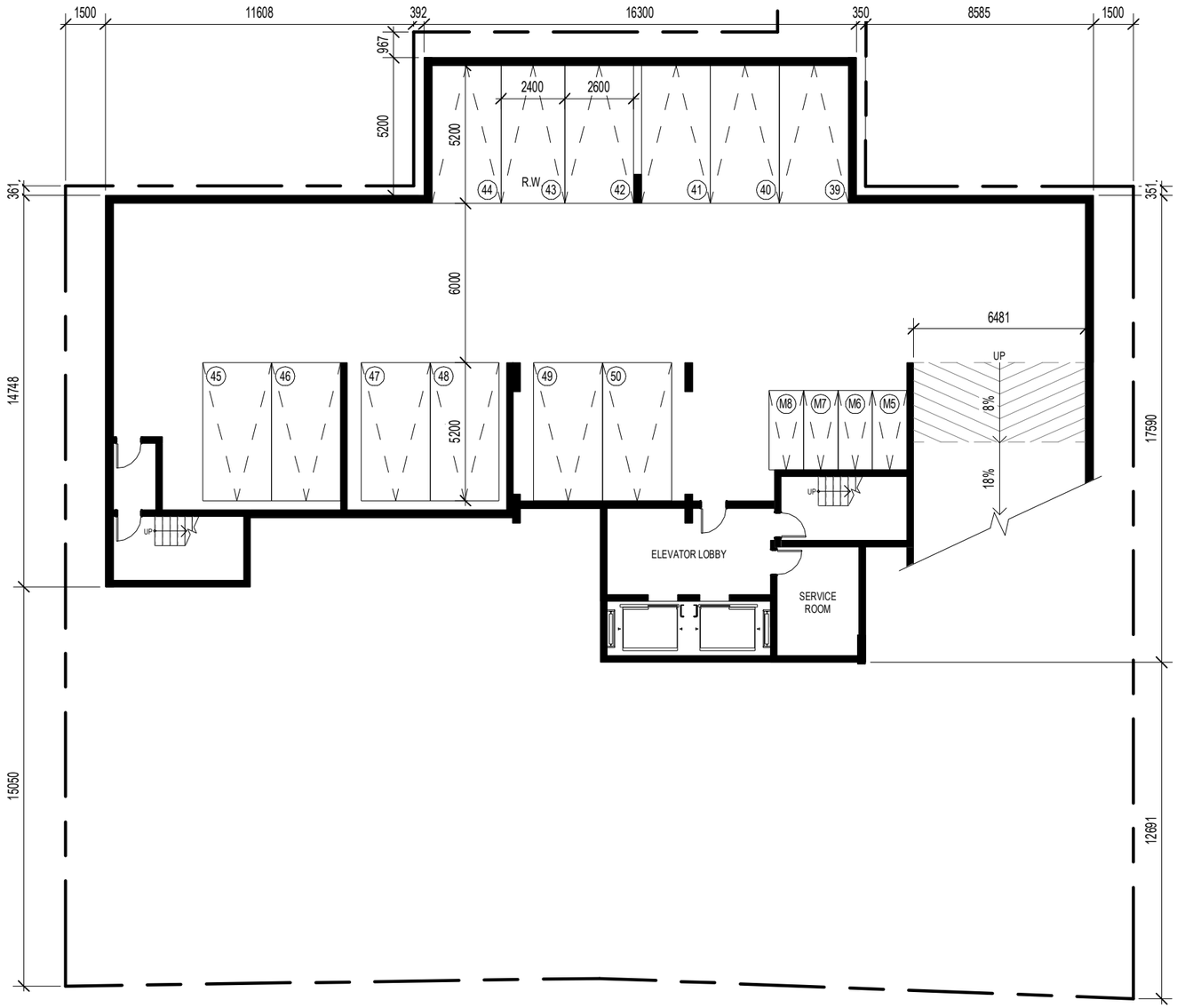
- S1 SOFT LANDSCAPING
- S2 RAISED PLANTER
- S3 PRIVATE RESIDENTIAL TERRACE
- S4 LINE DENOTES EXTENT OF PARKING GARAGE BELOW
- S5 DEPRESSED CURB
- S6 EXISTING STONE RETAINING WALL TO BE DEMOLISHED
- S7 EXTENT OF EXISTING 3 STOREY APARTMENT BUILDING TO BE DEMOLISHED
- S8 EXISTING TREE TO BE REMOVED
- S9 EXTENT OF EXISTING SIDEWALK



Key Plan Showing Full Extents of Site

441 ECHO DRIVE SITE PLAN

| 2514 | SCALE: 1 : 250

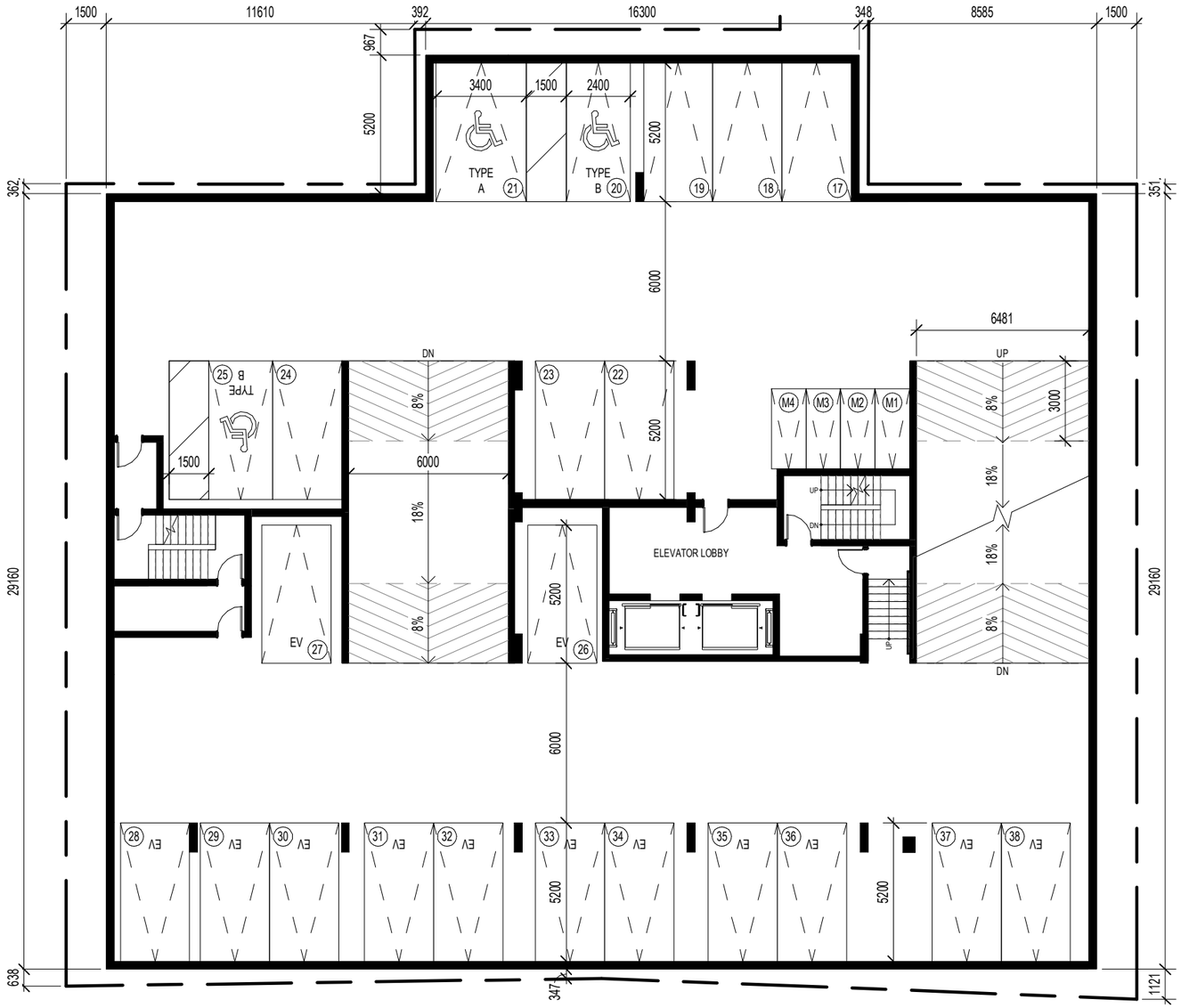


441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P3

| 2514 | SCALE: 1 : 200

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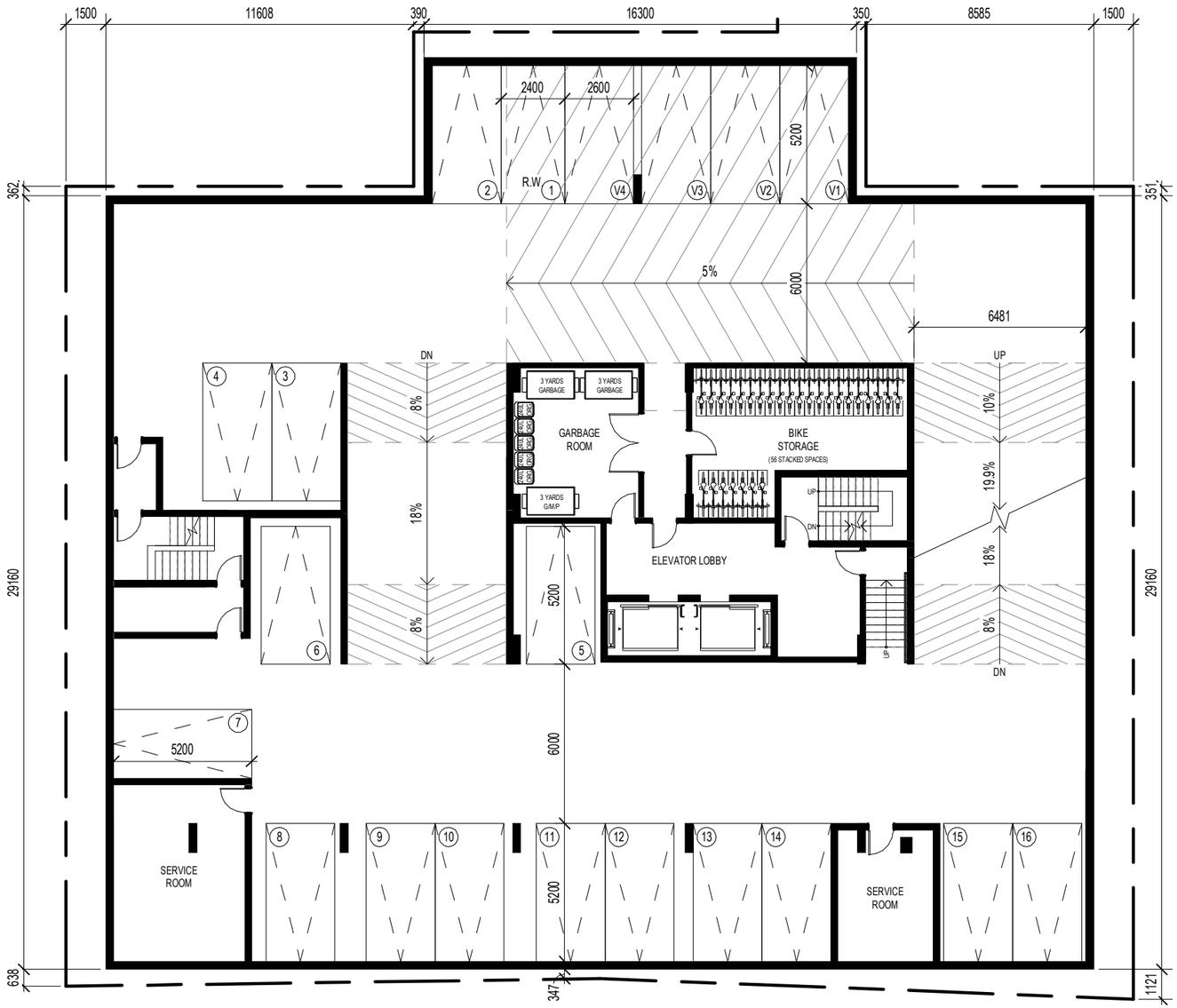


441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P2

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441 ECHO DRIVE FLOOR PLAN - PARKING LEVEL P1

| 2514 | SCALE: 1 : 200

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441 ECHO DRIVE FLOOR PLAN - GROUND FLOOR

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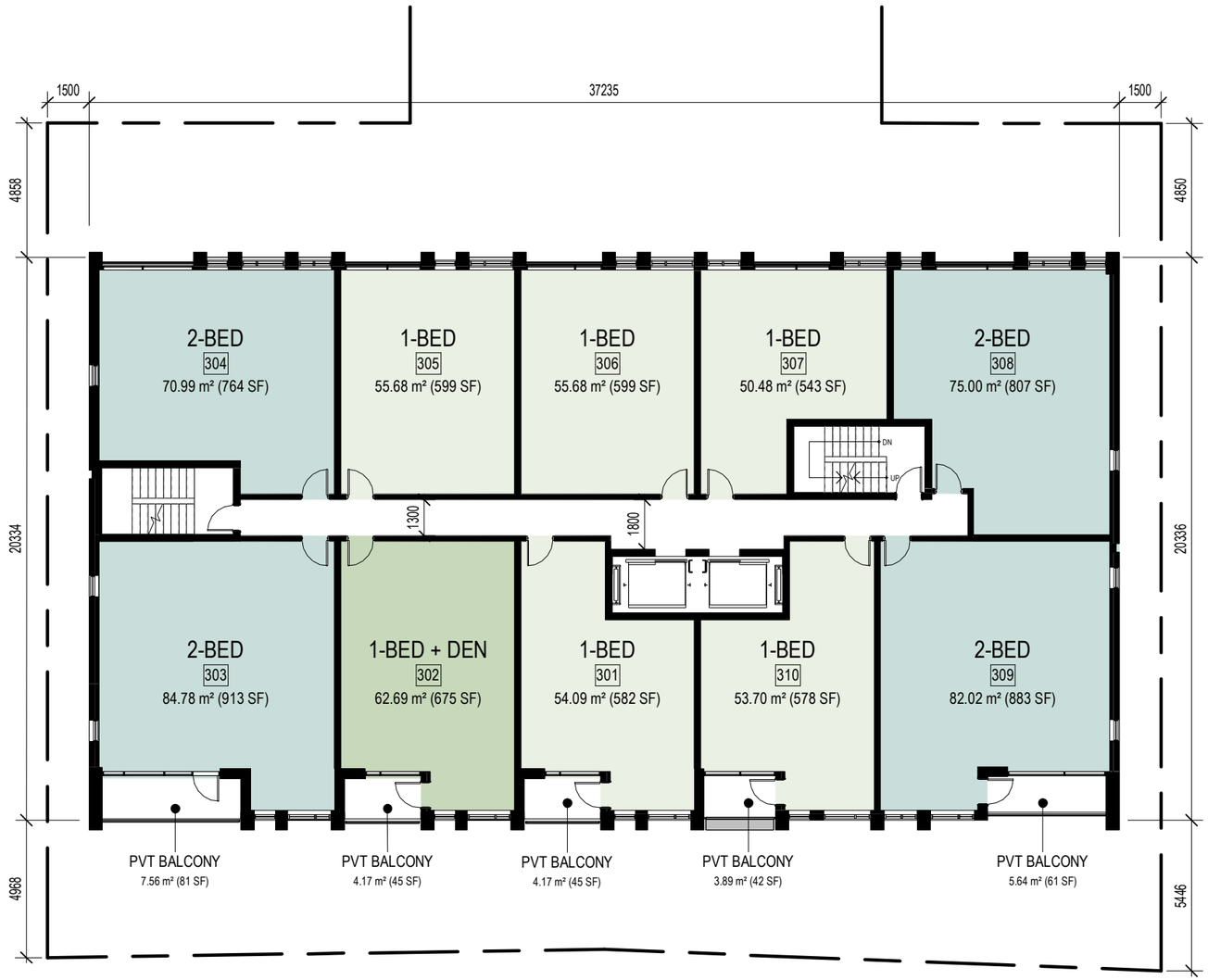
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441 ECHO DRIVE FLOOR PLAN - LEVEL 02

| 2514 | SCALE: 1 : 200



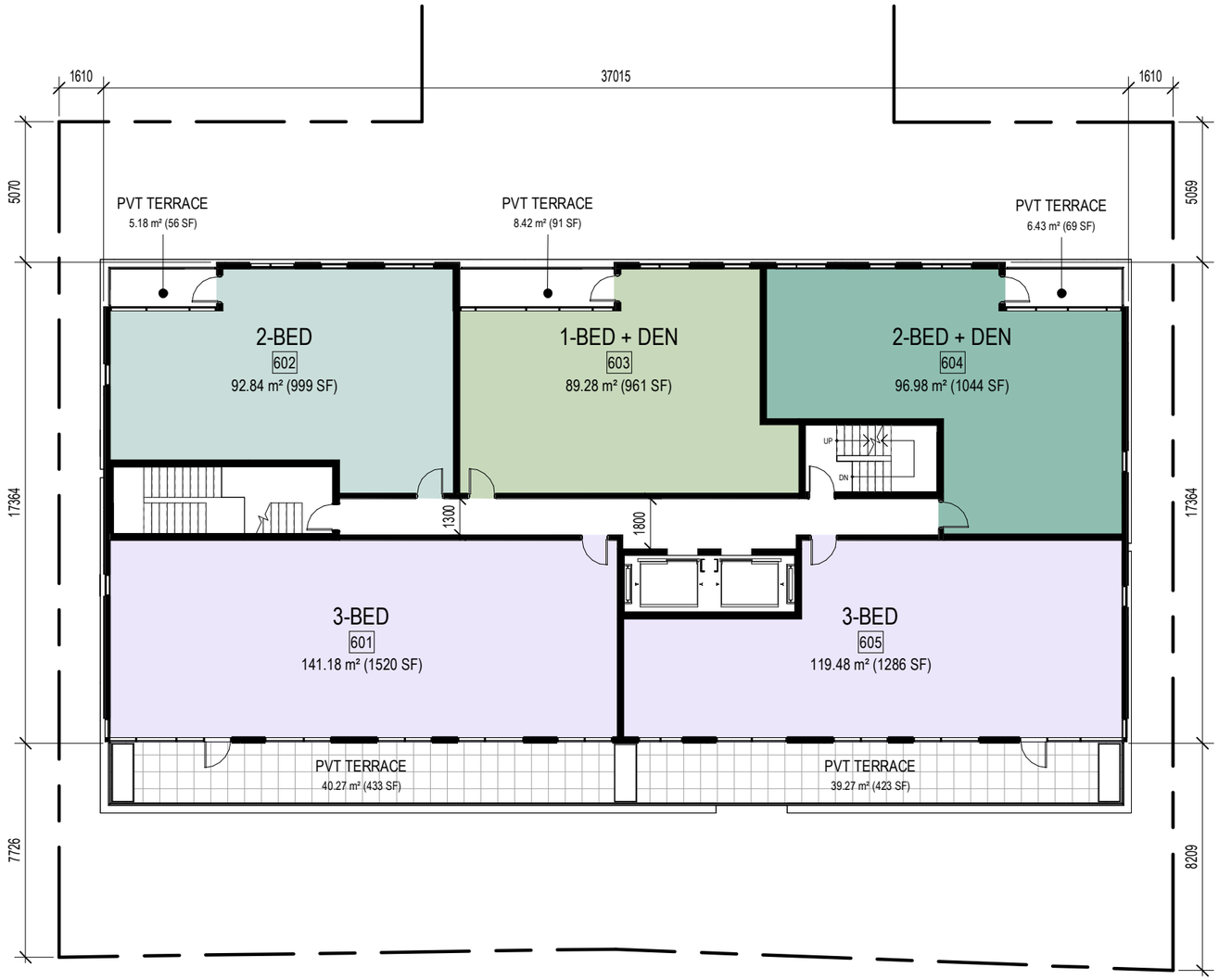
441 ECHO DRIVE FLOOR PLAN - LEVEL 03

| 2514 | SCALE: 1 : 200



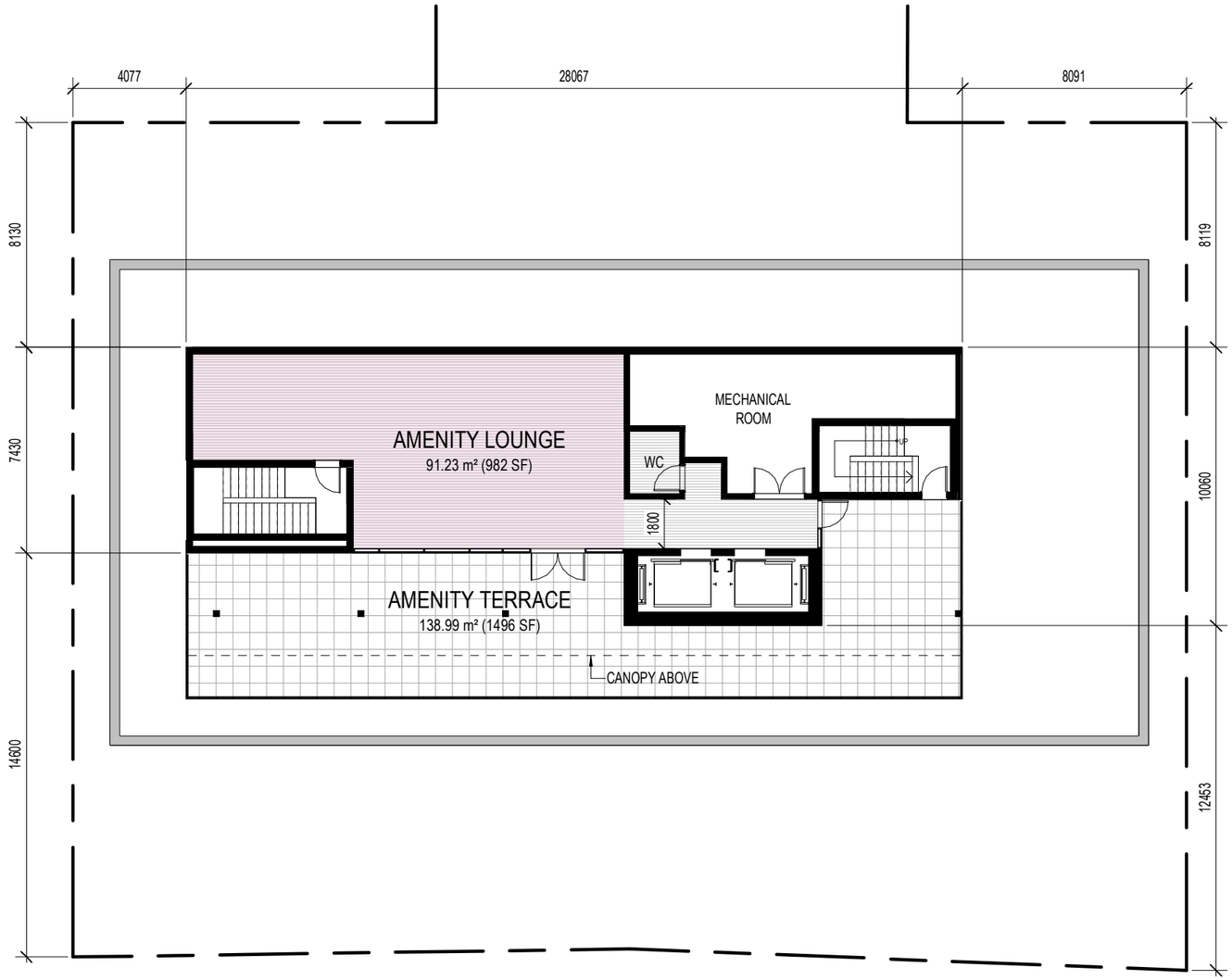
441 ECHO DRIVE FLOOR PLAN - LEVELS 04-05

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - LEVEL 06

| 2514 | SCALE: 1 : 200



441 ECHO DRIVE FLOOR PLAN - ROOFTOP AMENITY LEVEL

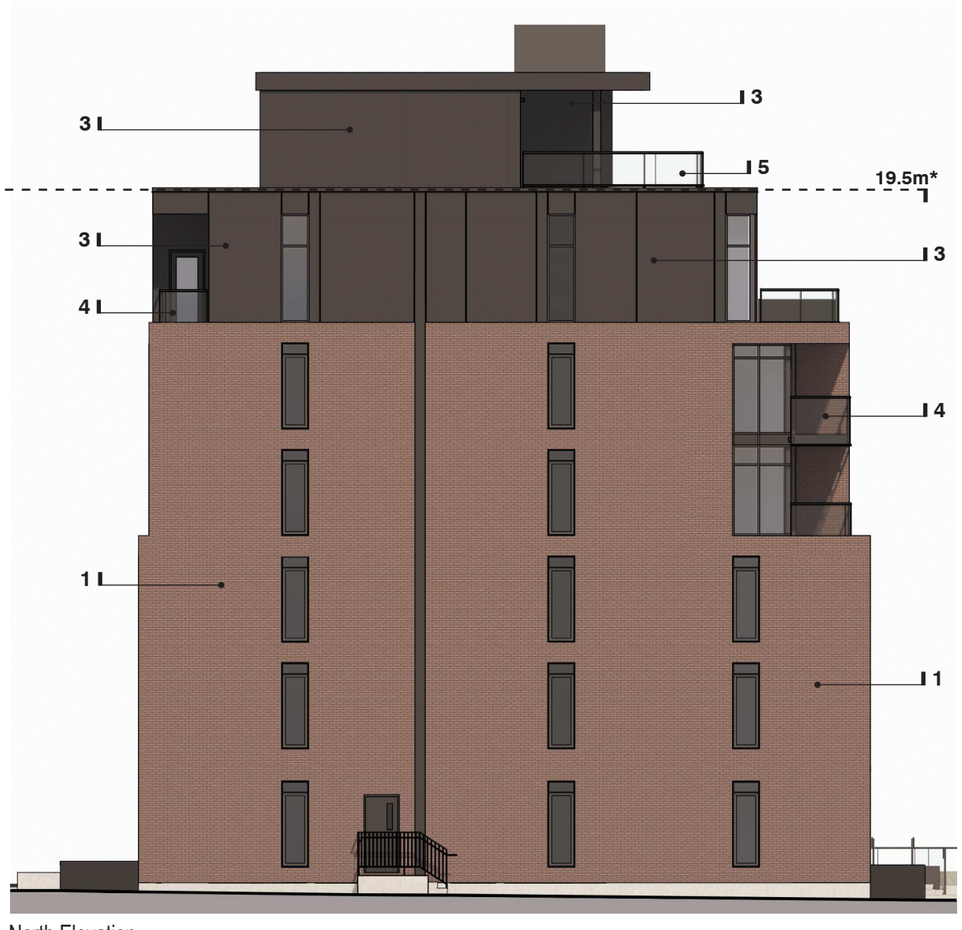
| 2514 | SCALE: 1 : 200

LEGEND

1 Brick Masonry (Red)
2 Window Wall (Clear Glazing)
3 Aluminum Composite Panel (Dark Grey)
4 Aluminum and Glass Railing



West Elevation



North Elevation

*above grade

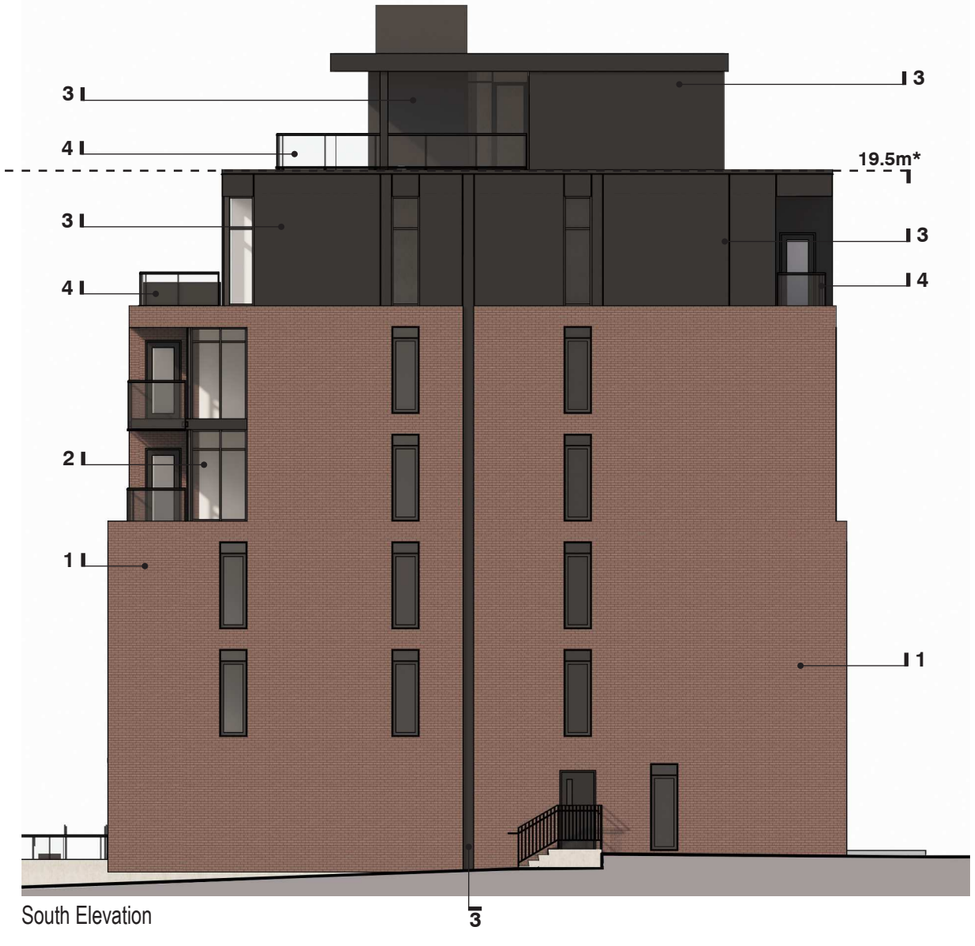
441 ECHO DRIVE BUILDING DESIGN - WEST & NORTH ELEVATION
| 2514 | SCALE: N.T.S.

LEGEND

1 Brick Masonry (Red)
2 Window Wall (Clear Glazing)
3 Aluminum Composite Panel (Dark Grey)
4 Aluminum and Glass Railing



East Elevation



South Elevation

*above grade

441 ECHO DRIVE BUILDING DESIGN - EAST & SOUTH ELEVATION
| 2514 | SCALE: N.T.S.

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DEC 21 - 9:00 AM



DEC 21 - 10:00 AM



DEC 21 - 11:00 AM



DEC 21 - 12:00 PM



DEC 21 - 1:00 PM



DEC 21 - 2:00 PM



DEC 21 - 3:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

N

441 ECHO DRIVE SHADOW ANALYSIS - DECEMBER 21

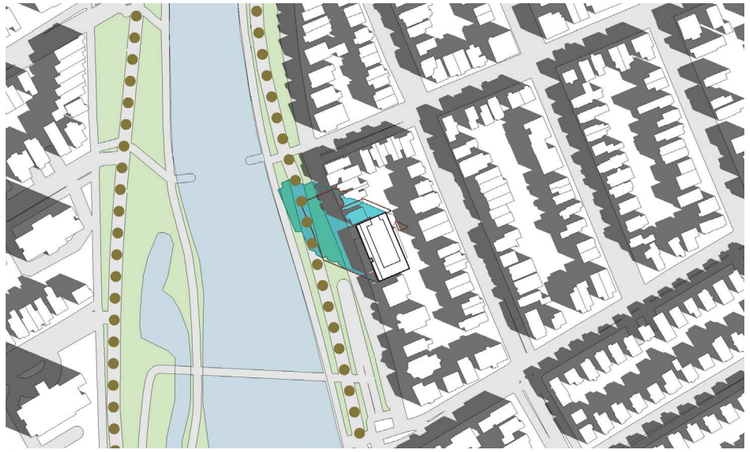
| 2514 | SCALE: N.T.S.

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SEPT 21 - 8:00 AM



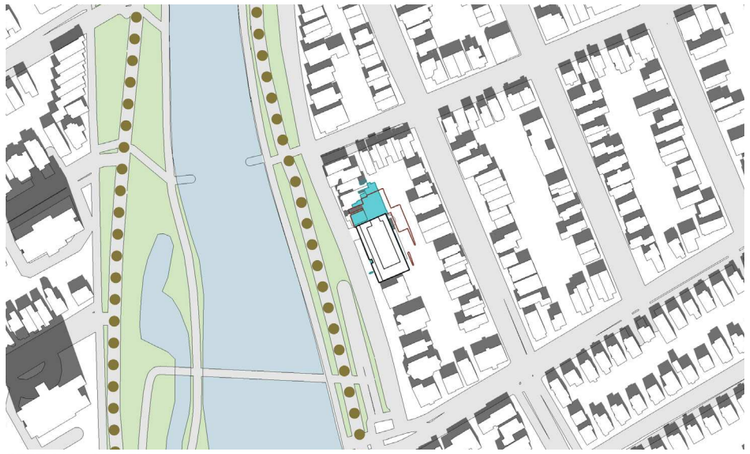
SEPT 21 - 9:00 AM



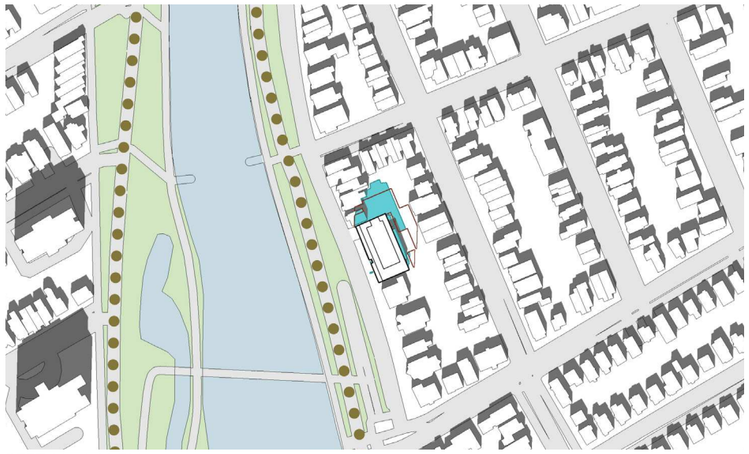
SEPT 21 - 10:00 AM



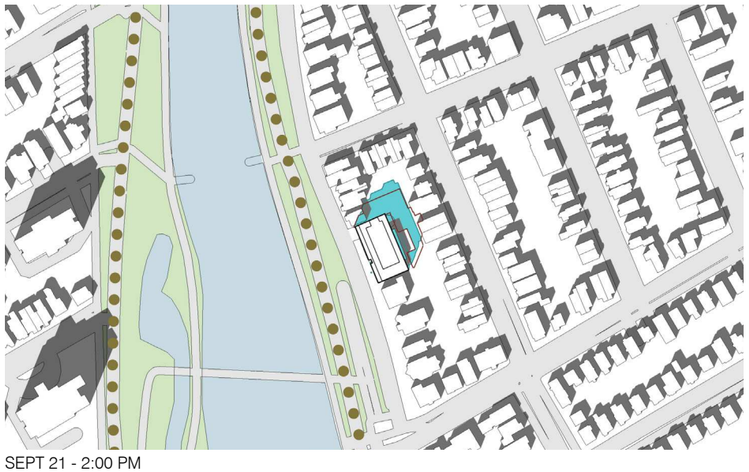
SEPT 21 - 11:00 AM



SEPT 21 - 12:00 PM



SEPT 21 - 1:00 PM



SEPT 21 - 2:00 PM



SEPT 21 - 3:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

N

441 ECHO DRIVE SHADOW ANALYSIS - SEPTEMBER 21

| 2514 | SCALE: N.T.S.

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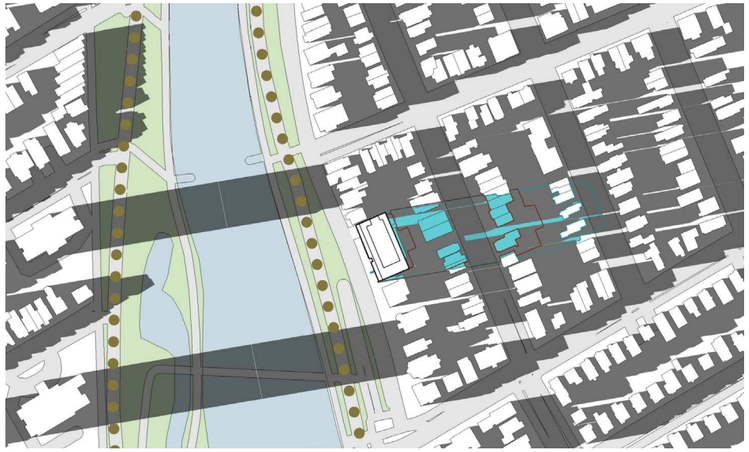
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SEPT 21 - 4:00 PM



SEPT 21 - 5:00 PM



SEPT 21 - 6:00 PM



JUNE 21 - 8:00 AM



JUNE 21 - 9:00 AM



JUNE 21 - 10:00 AM



JUNE 21 - 11:00 AM



JUNE 21 - 12:00 PM

LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

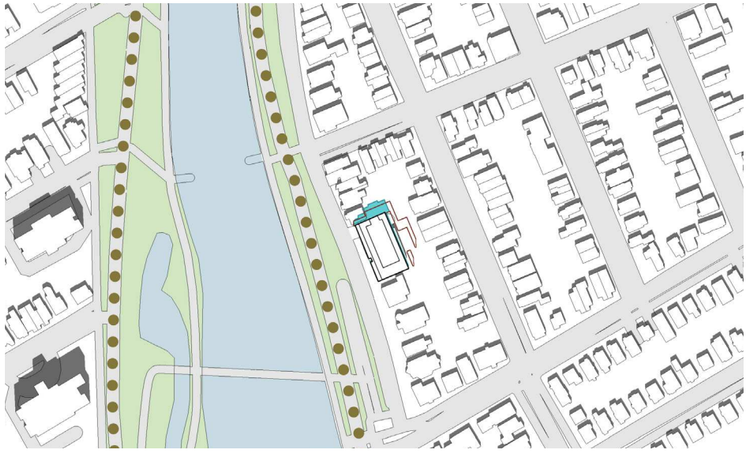
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441 ECHO DRIVE SHADOW ANALYSIS - SEPTEMBER 21 / JUNE 21

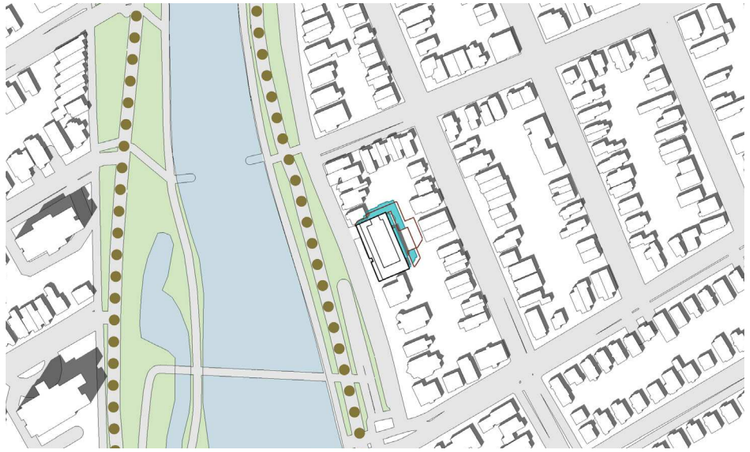
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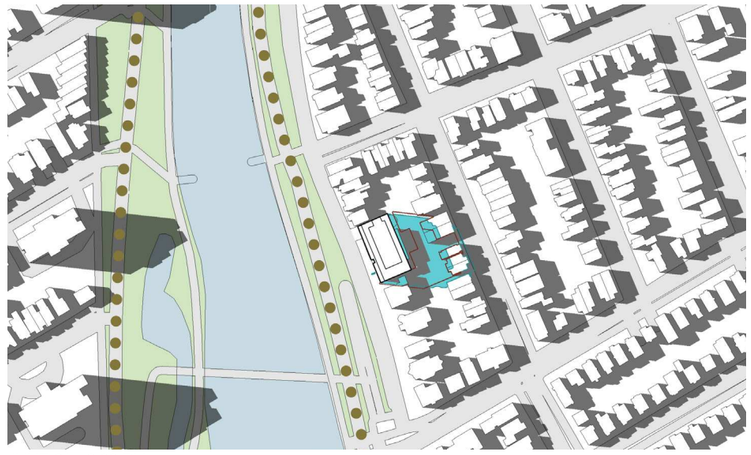
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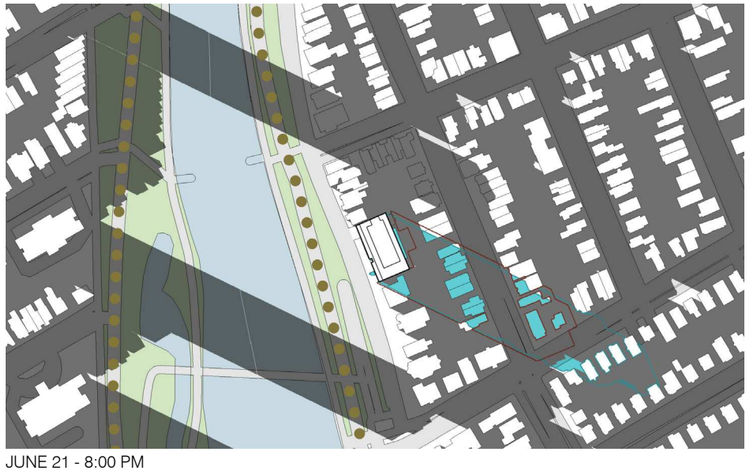
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LEGEND

- As-of-Right Shadow Outline
- Proposed Project Shadow/Outline
- Public Park
- Communal Area
- Arterial Mainstreet
- Major Collector Road
- Provincial Highway

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441 ECHO DRIVE SHADOW ANALYSIS - JUNE 21

| 2514 | SCALE: N.T.S.

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1. INTRODUCTION

1.1. REASON FOR THE HIA

Juxta Architects Inc. was retained in December 2025 by JBPA Developments Inc. to prepare a Heritage Impact Assessment (HIA) in support of a proposed development at 441 Echo Drive, Ottawa.

The proposed development consists of a 6-storey residential building, which is located across the street and within 30 metres of the Rideau Canal - a site designated as a National Historic Site of Canada, a UNESCO World Heritage Site, and a Canadian Heritage River.

In accordance with Section 4.5.2, Policy 2 of the City of Ottawa Official Plan, an HIA is required where development is proposed on, adjacent to, across the street from, or within 30 metres of a protected heritage property, where there is potential to adversely impact the heritage resource. The HIA must be completed in accordance with the Council-approved guidelines for HIAs, as amended from time to time.

1.2. SCOPE OF WORK

This Heritage Impact Assessment (HIA) examines the proposed development at 441 Echo Drive in relation to the Rideau Canal National Historic Site of Canada, a site recognized under the Historic Sites and Monuments Act. It documents existing conditions, reviews the history and cultural heritage value of the Rideau Canal within the “Ottawa Urban Section,” assesses potential impacts of the development, and recommends mitigation strategies to ensure the proposal respects the Rideau Canal’s heritage attributes.

1.3. BACKGROUND DOCUMENTS

In addition to a visit to the site and surrounding areas, the following documents were consulted during the preparation of this report:

- The City of Ottawa Heritage Impact Assessment guidelines.
- The City of Ottawa *Official Plan* and zoning by-law.
- Standards & Guidelines for the Conservation of Historic Places in Canada, Parks Canada.
- Rideau Canal: World Heritage Site Management Plan, Parks Canada, 2005
- Rideau Canal and Merrickville Blockhouse National Historic Sites of Canada Management Plan, 2023-2024 Implementation Report, Parks Canada.
- Rideau Corridor Landscape Strategy, Parks Canada and Dillon Consulting, 2013.
- 441 Echo Drive Revised Design Package by Project1 Studio, December 2, 2025
- 441 Echo Drive - Issued for Site Plan Control, Project 1 Studio, April 30th, 2026
- 441 Echo Drive Urban Design Brief, Project1 Studio, May 6, 2026

2. DEVELOPMENT SITE & ADJACENT PROPERTY

2.1. ADDRESS AND OWNER CONTACT INFORMATION

Site Address: 441 Echo Drive,
Ottawa, Ontario K1S 1N6

Owner/Contact: JBPA Developments
107 Pretoria Ave,
Ottawa, Ontario, K1S 1W8
613-695-6767

2.2. LOCATION AND CURRENT CONDITIONS



Figure 1: Location of the development site at 441 Echo Drive and the adjacent Rideau Canal (Source: geoOttawa).

The subject property at 441 Echo Drive is adjacent to the Rideau Canal, near the Flora Footbridge. The site is visible from the Rideau Canal, and is partially screened behind the mature trees planted alongside the mixed-use pathway within the established 30 metre buffer zone.

The property features approximately 130 feet of frontage along Echo Drive, providing visibility and accessibility. Situated in the cultural landscape of the Rideau Canal, the City of Ottawa, the National Capital Commission and Parks Canada are currently studying the surrounding environment of the canal for its heritage

values and character-defining elements. Per this ongoing report, Echo Drive is considered to have significant influence on the canal and its cultural landscape.

The City of Ottawa Comprehensive Zoning By-law (2008-250) designates the area of the subject property as R4UD within the Mature Neighbourhoods Overlay and as N4B within the forthcoming New Zoning By-law. The UD subzone allows for a variety of residential configurations while regulating development to be compatible with existing land use patterns and maintaining the residential character of the neighbourhood.



Figure 2: View of the property, as seen from across the Rideau Canal, with the adjacent Flora Footbridge ramp on the right side. (Source: Juxta Architects).



Figure 3: Map of the Rideau Canal Cultural Landscape study area (Source: City of Ottawa)

3. BACKGROUND RESEARCH AND ANALYSIS

3.1. SITE HISTORY

The Rideau Canal was constructed between 1826 and 1832 by Lieutenant-Colonel John By for the British government. The canal is 202 kilometres long and extends from Ottawa to Kingston, connecting Canada's current capital to the former 1800s capital of the United Province of Canada.

The Rideau Canal is currently managed by Parks Canada and has been a National Historic Site of Canada since 1925. In 2000, the canal was designated a Canadian Heritage River and in 2007 it was designated a UNESCO World Heritage Site.

The Rideau Canal was constructed during a pivotal moment in Canada's history, following the war of 1812, when Great Britain and the United States were in conflict for control of the northern portion of the North American continent. Great Britain ascertained the key to the defence of Canada was in the transportation route between Montreal and Kingston, necessitating the creation of a course more secure and defensible than the St. Lawrence River. Built concurrently with a series of military fortifications, the canal enabled the British military to retain the colony of Canada from American forces. The success of the Rideau Canal and the British military defence strategy was instrumental to the growth of colonial Canada and its development as an independent nation. Ultimately, leading to the development of two distinct political and cultural identities across North America.

4. STATEMENT OF SIGNIFICANCE – THE RIDEAU CANAL NATIONAL HISTORIC SITE

4.1. CULTURAL HERITAGE VALUE

Apart from it's defensive and military history, the Rideau canal is also recognized as an innovative and creative feat of human ingenuity with respect to its design and engineering. Parks Canada Statement of Outstanding Universal Value indicates:

"*The Rideau Canal is the most outstanding surviving example of an early-19th century slackwater canal system in the world and one of the first canals designed specifically for steam-powered vessels. It is an exceptional example of the transfer of European transportation technology and its ingenious advancement in the North American environment*."

The canal system connects the existing watersheds of the Rideau and the Cataraqui with engineered channels, a distance and scale previously unattempted in North America or Europe. This allowed boats to bypass the falls, rapids, swamps and rocky shallows between Kingston and Ottawa through a series of canal locks and dams. Not only did the canal allow for unprecedented movement across North America, but it was also one of the first canals in the world to be designed specifically for steam-powered vessels, recognizing a critical change in human values and technology.

4.2. LANDSCAPE HERITAGE VALUE

Landscape character is defined by Parks Canada as the "*distinctive and recognizable pattern of elements in a landscape that give a locality its sense of place*."

The Rideau Canal landscape is unique due to its combination of cultural, natural and recreational values. The canal corridor not only reflects early 19th century forms, materials and technologies but dynamic human and ecological relationships throughout its length.

Due to the diversity of landscape and environmental context along the canal's path, it is divided into multiple sections. The section of the canal hosting the subject property is known as *Ottawa to Hartwell Locks* and is 6.4 kilometres in length. The longest stretch of excavated channel throughout the canal, this section is delineated on both sides by masonry or concrete walls with railings. Along this section, the canal weaves through modern and historic portions of Ottawa and extensive parkland. Cultural and civic structures reside in this section, such as Dows Lake, Carleton University and the Experimental Farm.

4.3. HERITAGE ATTRIBUTES

Contextual Elements

- The completeness of the cultural landscape as a longstanding system of transportations facilities, including: the waterways, locks, blockhouses, dams, weirs and lock stations, associated shore lands and communities, and extensive wetlands and lakes.
- Historic, ecological, and visual associations with shore lands and communities along the canal's route, such as the pathways, view sheds from the locks and the channel, and the fortifications.
- Views to the Parliament buildings and the Chateau Laurier.
- Views from the bridges to the canal.

Architectural Elements

- The remnants of historic engineering design, including the canal route, walls, locks, weirs and bridges.
- The manual operation technologies to work the locks.
- The canal bed's excavated channel and construction.
- The original built resource's form, craftmanship and materials, such as the ensemble of early blockhouses, lockmasters' houses and canal walls.

These elements collectively show how the Rideau Canal embodies a cultural landscape of dynamic ecological and human relations, rooted in a pivotal moment in the history of North America and the colonial development of Canada.

5. DESCRIPTION OF THE PROPOSED DEVELOPMENT

5.1. 441 ECHO DRIVE

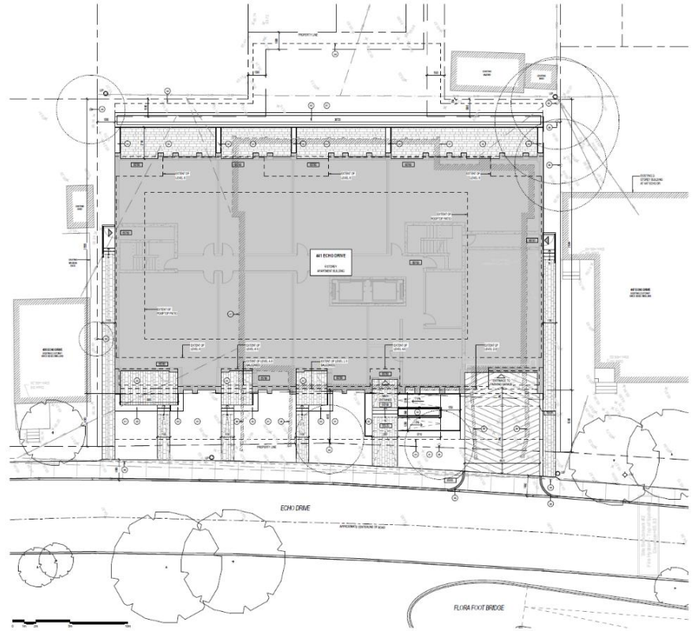


Figure 4: Site plan of 441 Echo Drive (Source: Project1 Studio)

The proposed development consists of a 6-storey residential building, located on Echo Drive adjacent to the Rideau Canal. The proposed development will reach 22.8 metres in height and has a footprint of approximately 755 square metres.

The project provides a total of 52 residential units. The unit mix includes 18 one-bedroom units, 10 one-bedroom plus den units, 21 two-bedroom units, 1 two-bedroom plus den unit, and 2 three-bedroom units.



Figure 5: 3D rendering of the proposed building in context of the Rideau Canal (Source: Project1 Studio).



Figure 6: West elevation of proposed residential building (Source: Project1 Studio).

6. IMPACT OF PROPOSED DEVELOPMENT

6.1. SIGHTLINE ANALYSIS

Juxta Architects visited 441 Echo Drive to conduct a sightline analysis of the existing conditions of the property and analyze the potential impacts of the proposed development on the canal in relation to the visual relationship, height, massing, scale and landscape character. The analysis adheres to Section 6.6.2.2: The Rideau Canal Special District, Policies 3) and 4) a). Policy 3 states:

> "Working with partners, including the National Capital Commission and Parks Canada to respect the Rideau Canal UNESCO World Heritage Site and protect cultural heritage landscapes. The following will apply: a) Development and capital projects adjacent to the Rideau Canal may require a Heritage Impact Assessment. Mitigation measures may be required to conserve the cultural heritage landscape and the heritage values of the Rideau Canal as a World Heritage Site and National Historic site. The cultural heritage landscape of the Rideau Canal is comprised of, but not limited to, the physical canal and its landscape buffer, the pathways, the parkways, planting beds, mature forest, mowed grass and open lawns with trees; and b) All lighting and light fixtures, commercial and digital signage, including those located on private and institutional properties, must not overwhelm or detract the long-range views of the Rideau Canal, as identified in the Capital Illumination Plan, nor the experience along the federal parkways, pathways and the associated greenspaces, which are lined by the iconic light fixtures that provide nighttime lighting, and daytime visual interest."

Policy 4) a) states:

> "Where properties are within or on the edge of established Low-rise residential areas, development will be subject to all of the following: i) Development will respect the existing patterns of building footprints, height, massing, scale, setback and landscape character within the associated streetscape. The associated streetscape will be determined by the existing low-rise properties on one, or if applicable, both sides of the same street, on the same block as the subject property; ii) In order to be consistent with nearby low-rise residential development, anticipated Secondary Plan process for the area as references in Subsection 6.6.3, Policy 1) will consider if Site Plan Control By-Law may extend within the Rideau Canal Special District; and iii) Carefully consider the visual relationship between the site and the Canal, including the adjacent or nearby federal parkways and the preservation of mature trees by ensuring the continuity of the existing landscape patterns, orientation of buildings and preserving views to and from the Canal;"

Views were considered from a wide range of vantage points, including: the multi-use pathway, atop the Flora Footbridge and across the canal. The analysis was documented in February, offering the annual minimum of foliage and the most visual exposure.

- **Flora Footbridge**
  The site is located at the base of the Flora Footbridge, with the building being highly obscured by the ramp and stairs when facing north along the multi-use pathway and across the canal (fig.8). Given the

additional 2-storeys of the proposed development, the building is expected to still be primarily obstructed in view.

- **Across the Canal**
  View of the existing conditions are largely obstructed by the mature trees along the canal corridor (fig.9). These trees are planted along the multi-use path and will not be impacted by the proposed development, continuing their role in maintaining the ecological values of the corridor and buffering the canal from adjacent infrastructure.



Figure 7: Views of the existing property in relation to the Rideau Canal (Source: Juxta Architects).



Figure 8: Views of the existing property obscured by the Flora Footbridge, photographed from the East side of the Canal (Source: Juxta Architects)



Figure 9: Views of the existing property obscured by the Flora Footbridge, photographed from the West side of the Canal (Source: Juxta Architects).



Figure 10: Views of the existing property obscured by the Canal's trees, with foliage at annual minimum (Source: Juxta Architects).



Figure 11: Residential building located on the opposing side of the Flora Footbridge, featuring similar materiality and adjacencies to the canal (Source: Juxta Architects).

6.2. POTENTIAL ADVERSE IMPACTS

The proposed development has the potential to adversely affect the cultural heritage value of the Rideau Canal and landscape. Key concerns include:

- The building's scale and contemporary materials, particularly on the west façade facing the Rideau Canal, may contrast sharply with the existing neighbouring buildings, reducing contextual integration.
- The increased building footprint may diminish the subject property's existing landscaping, reducing contextual integration and contrasting the mature trees and vegetation within the canal's 30 metre buffer zone.
- At 6-storeys, the height of the building is large for the low-rise community, creating visual intrusion and potentially casting shadows on neighbouring buildings and pathways.

6.3. POTENTIAL POSITIVE IMPACTS

The development also presents opportunities to benefit the local community:

- Eliminating the existing parking lot on site in favour of underground parking will increase visual density and make more efficient use of the property, creating a more pleasant pedestrian experience.
- While not in the scope of the Heritage Impact Assessment, the development will increase the density and availability of rental housing in central Ottawa, potentially contributing positively to the housing shortage across the city.

Through careful design and collaboration, these positive outcomes could be maximized, allowing the development to integrate sensitively with the heritage landscape of the Rideau Canal while supporting community needs and enhancing the overall character of the canal corridor.

7. MITIGATION STRATEGIES

7.1. RECOMMENDED MITIGATION STRATEGIES

To minimize potential adverse impacts on the Rideau Canal corridor, the following mitigation measures should be considered:

- **Preserving Trees and Vegetation**
  Maintaining the mature trees on the site and/or planting new vegetation will help integrate the proposed development with the surrounding neighbourhood and preserve the ecological relationship between the canal and the multi-use pathway within the corridor. This strategy has already been implemented, since the public lands in front of the development will retain their mature trees and additional trees are to be planted on the site, as per the referenced site plan.

- **Contextual Architectural Design**
  Using materials, colours and forms sympathetic to the surrounding neighbourhood character can help blend the development's additional height within its surroundings. This context driven design logic has already been implemented through the selection of brick as the façade material, as this is a common material along the corridor. The addition of the balconies also maintains the existing condition of the building and further activates the nearby pathway. The upper level being setback will help to reduce overshadowing.

- **Minimal Impact Signage and Lighting**

  As per the Cultural Landscape Study of the urban section of the Rideau Canal draft guidelines, signage and visual clutter should be minimized to prevent obscuring heritage viewscapes. Current renderings do not indicate any signage or lighting conditions. Any future signage should be of minimal design as to not obscure the views and be reviewed after the design is finalized.

The designer has consulted with Juxta Architects during the design phase of the project, and has, in our opinion, already met the recommended mitigation strategies.

8. CONCLUSION & OPINION

The Rideau Canal Corridor is an important cultural heritage resource, notable for its engineering design, dynamic approach to human and ecological relationships, and historic role in the colonial development of Canada. Juxta Architects, in our role as conservation specialists, believe the proposed development at 441

Echo Drive is compatible with the historic place in its present form, as it balances opportunities and challenges in relation to these heritage values.

While the development will add height to the existing site, the building typology (apartment building), and materiality (predominantly brick) minimizes the change to the site. Our opinion is supported by the sightline analysis, the placement of the adjacent Flora Footbridge, the vegetation screening the building from view and the contextual architectural design of the proposal.

Many potentially adverse impacts have been mitigated through contextual architectural design and the existing site features; the new building will be largely screened from view by the footbridge and the mature trees along the corridor. The material selection speaks to the character of the neighbouring buildings while the balconies maintain the existing conditions while further activating the pathway.

The increased density and additional units of the proposed development represent a significant positive impact. These benefits contribute to the need for additional housing across Ottawa and should be considered alongside heritage protections as part of a balanced evaluation of the project's overall value.

In the opinion of the consultant, the change to the historic place can be integrated with minimal negative impacts into the Rideau Canal's views and cultural landscape.

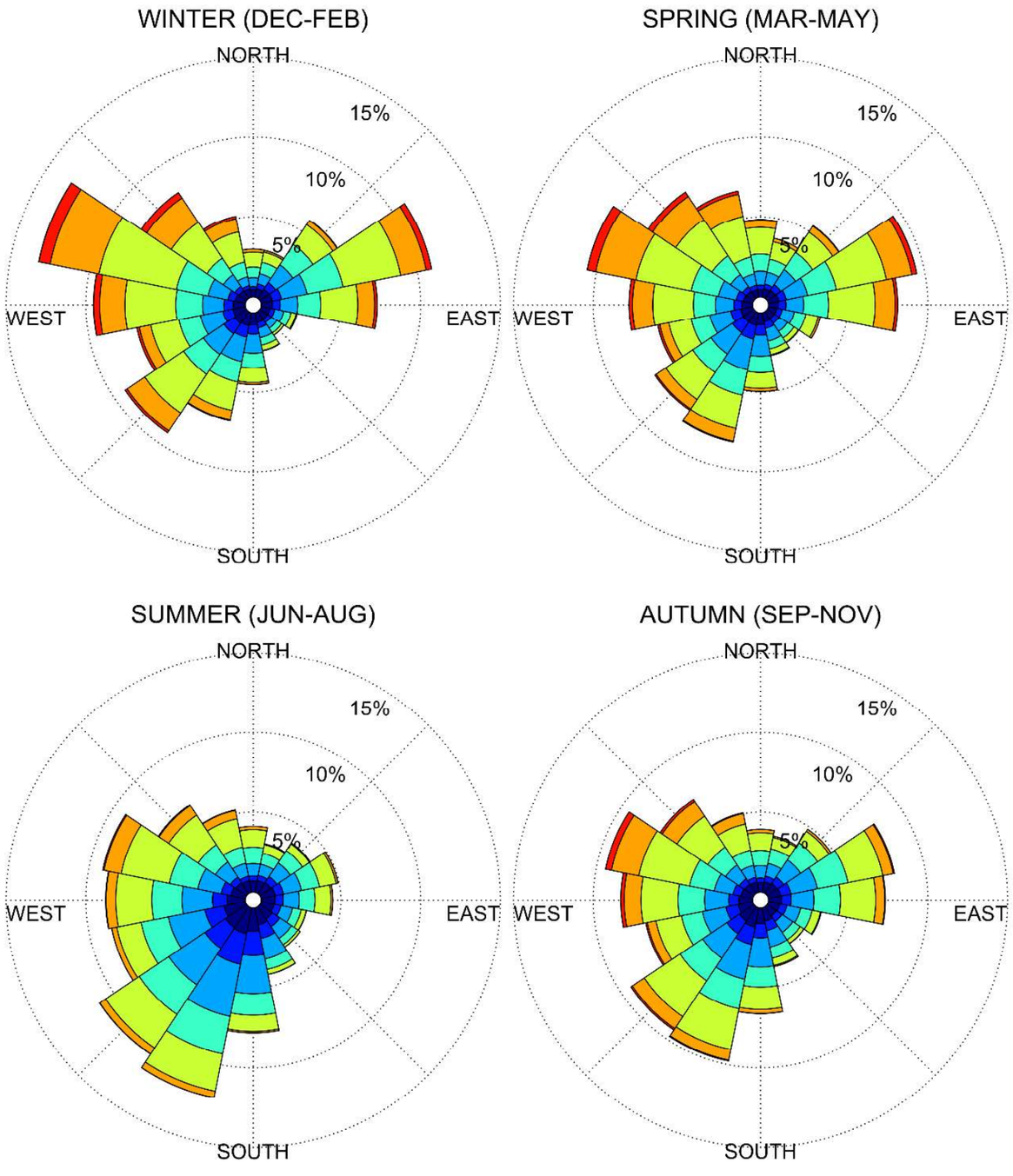
Sincerely,



juxta

STEFAN GINGRAS
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SEASONAL DISTRIBUTION OF WIND
OTTAWA MACDONALD-CARTIER INTERNATIONAL AIRPORT



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.



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.

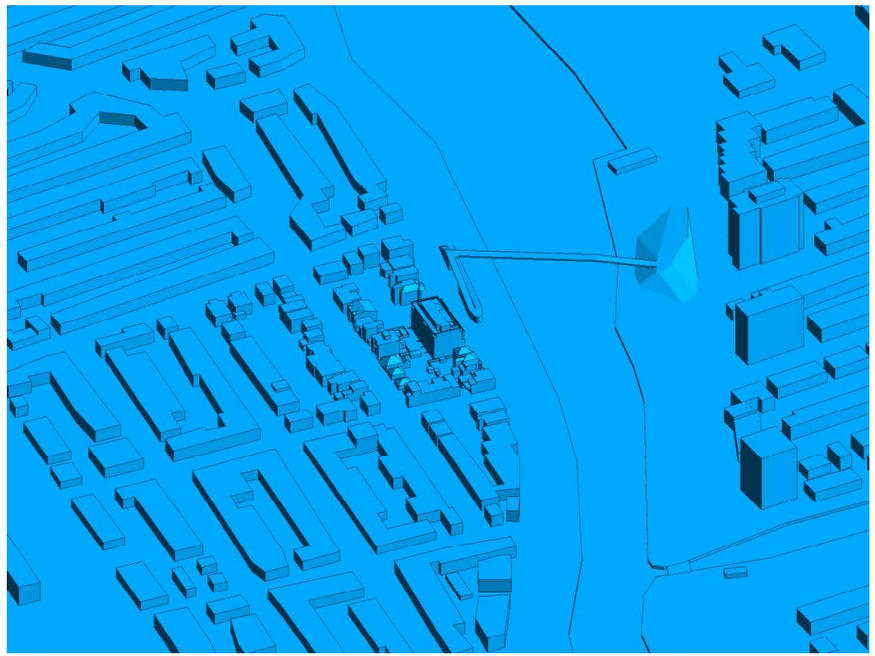


FIGURE 2A: COMPUTATIONAL MODEL, PROPOSED MASSING, NORTH PERSPECTIVE

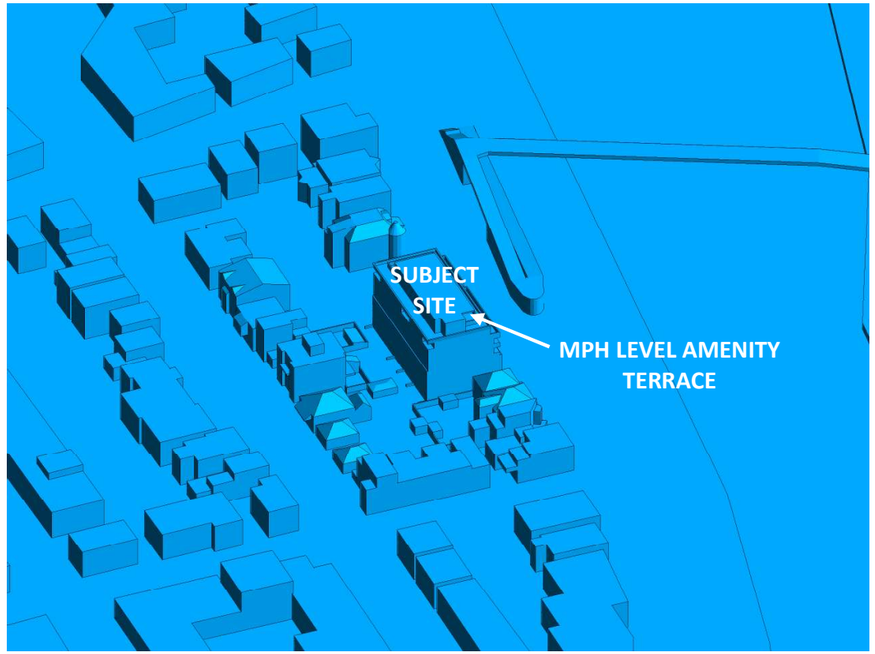


FIGURE 2B: CLOSE UP OF FIGURE 2A

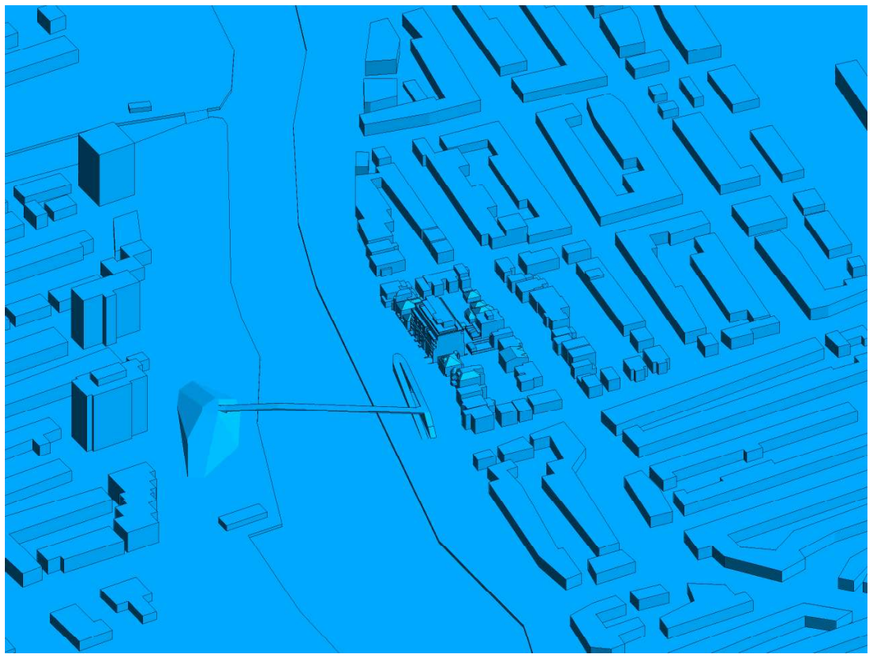


FIGURE 2E: COMPUTATIONAL MODEL, PROPOSED MASSING, SOUTH PERSPECTIVE

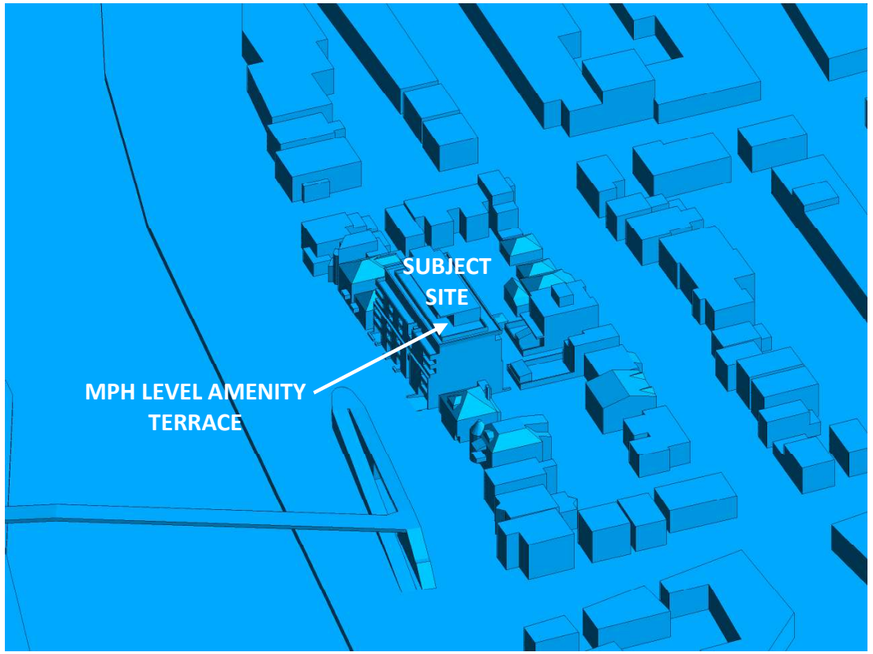


FIGURE 2F: CLOSE UP OF FIGURE 2E

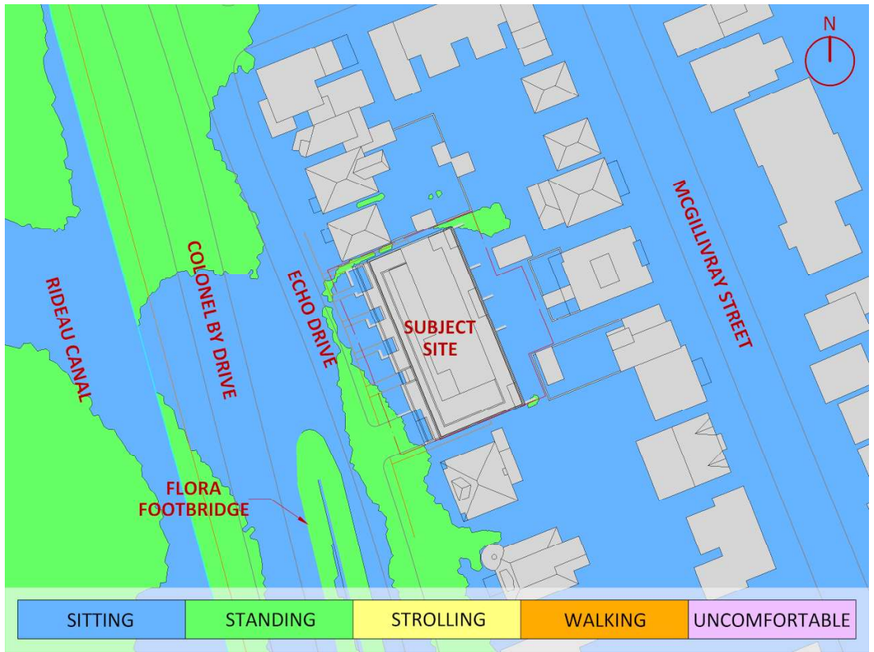


FIGURE 3A: SPRING – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

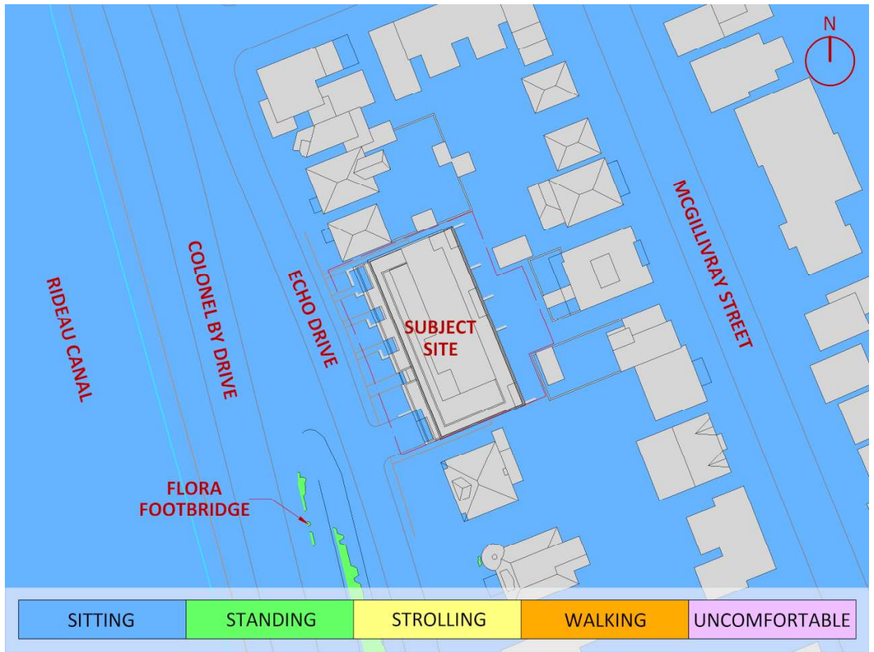


FIGURE 4A: SUMMER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

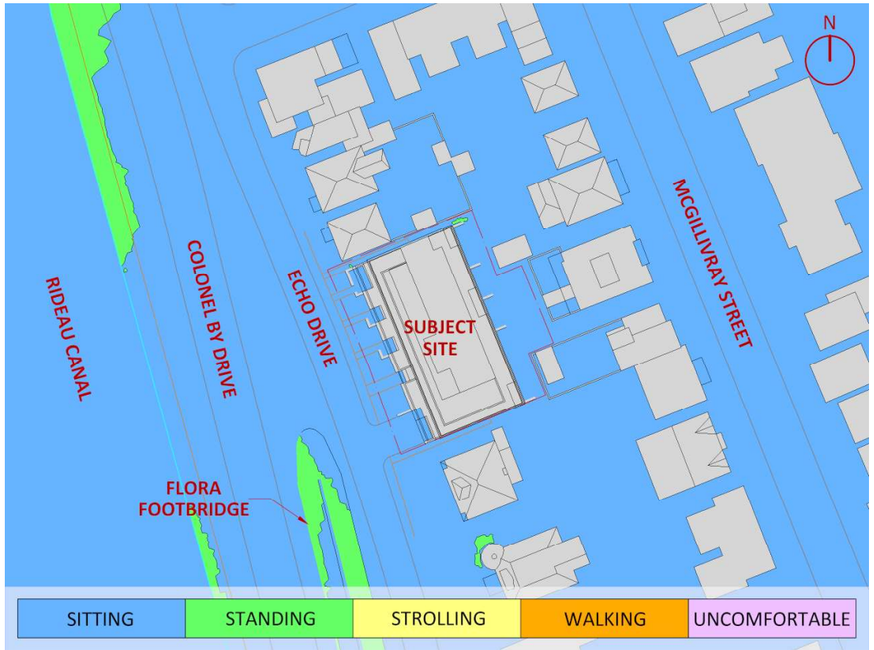


FIGURE 5A: AUTUMN – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

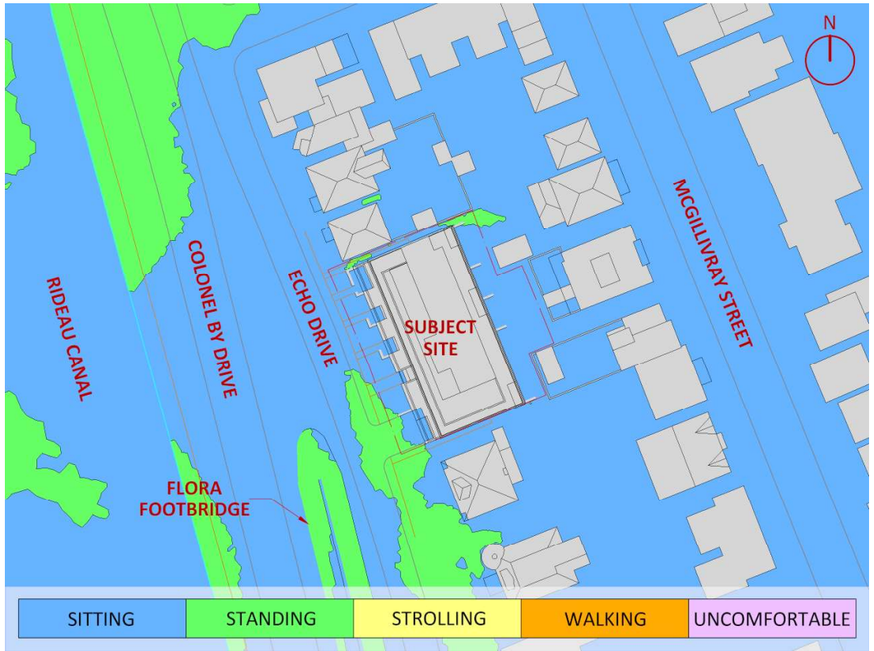


FIGURE 6A: WINTER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING



FIGURE 8A: SPRING – WIND COMFORT, AMENITY TERRACE

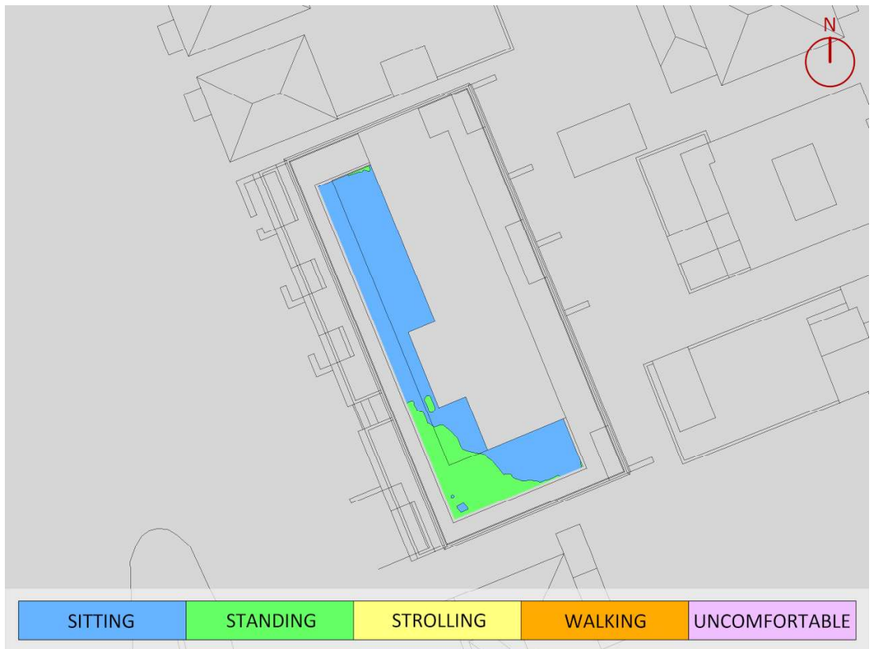


FIGURE 8C: AUTUMN – WIND COMFORT, AMENITY TERRACE

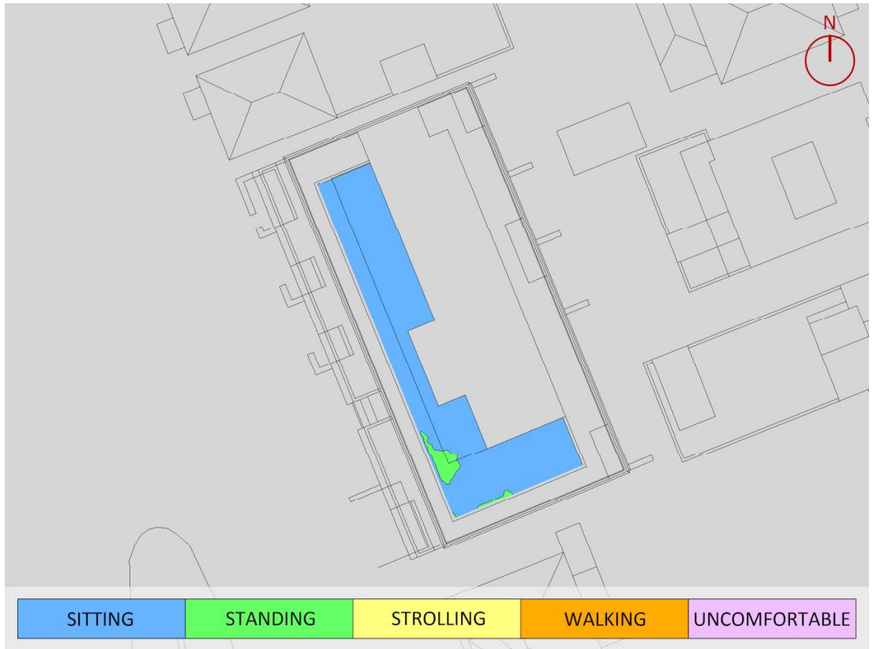


FIGURE 8B: SUMMER – WIND COMFORT, AMENITY TERRACE



FIGURE 8D: WINTER – WIND COMFORT, AMENITY TERRACE

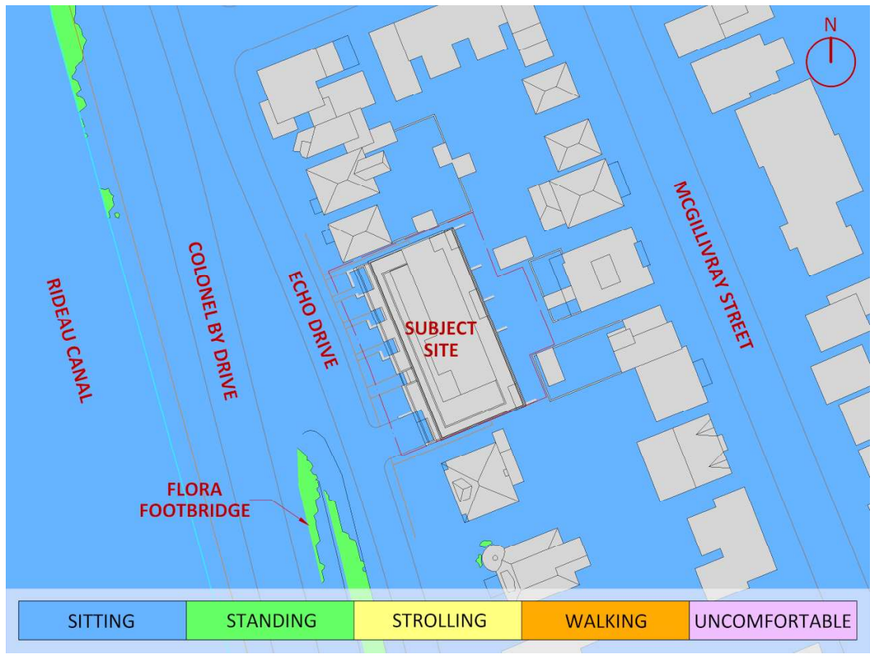


FIGURE 7: TYPICAL USE PERIOD – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING



FIGURE 9: TYPICAL USE PERIOD – WIND COMFORT, AMENITY TERRACE

5.1 WIND COMFORT CONDITIONS GRADE LEVEL

SIDEWALKS ALONG ECHO DRIVE AND MCGILLIVRAY STREET
Following the introduction of the proposed development, wind comfort conditions over the public sidewalks along Echo Drive are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. Conditions over the sidewalks along Echo Drive under the existing massing are predicted to be suitable for sitting throughout the year with an area to the northwest corner being suitable for standing in the winter and spring. Prior to and following the introduction of the proposed development, wind conditions along McGillivray Street are predicted to be suitable for sitting throughout the year. While the introduction of the proposed development produces slightly windier conditions in comparison to existing conditions along Echo Drive, wind comfort conditions with the proposed development are nevertheless considered acceptable for the noted public sidewalks.

WALKING/BICYCLE PATH AND GREEN SPACE ALONG THE RIDEAU CANAL:
Prior to and following the introduction of the proposed development, wind conditions over the nearby walking and bicycle path and green space along the Rideau Canal are predicted to be suitable for sitting in the summer, becoming suitable for a mix of sitting and standing for the remainder of the year. The noted conditions are considered acceptable.

FLORA FOOTBRIDGE:
Prior to and following the introduction of the proposed development, wind conditions over the ramp for the Flora Footbridge are predicted to be suitable for standing, or better, throughout the year. The noted conditions are considered acceptable.

PROPOSED PARKING RAMP:
Conditions over the proposed underground parking entrance ramp are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. The noted conditions are considered acceptable.

PROPOSED BUILDING ACCESS POINTS:
Owing to the protection of the building façade, wind conditions in the vicinity of the main entrance, situated at the west elevation of the proposed development, are predicted to be suitable for sitting throughout the year. Conditions at the secondary building entrances, situated at the north and south elevations, as well as the private unit entrances, are predicted to be suitable for sitting throughout the year. Conditions at the walkways within the subject site are predicted to be suitable for sitting in the summer and autumn, becoming suitable for a mix of sitting and standing in the winter and spring. The noted conditions are considered acceptable.

5.2 WIND COMFORT CONDITIONS COMMON AMENITY TERRACE

During the typical use period, wind comfort conditions within the common amenity terrace serving the proposed development at the Penthouse Level are predicted to be suitable for mostly sitting, with an isolated region suitable for standing in the southwest corner of the terrace. Depending on the programming of this space, the noted conditions may be considered acceptable. Specifically, if the noted windier area suitable for standing during the typical use period will not accommodate seating or more sedentary activities, the noted wind conditions would be considered acceptable. If required by programming, sitting conditions within the terrace may be extended to the full terrace area
by implementing a tall wind screen, typically glazed, extending 1.8 m above the walking surface along the perimeter of the terrace, in place of standard height guards.

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-9. 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 and public walkways, bicycle paths, green spaces, parking entrances, building access points, and walkways are considered acceptable.

2) During the typical use period (May to October, inclusive), wind comfort conditions over the rooftop amenity terrace serving the proposed development at the Penthouse Level are predicted to be suitable for mostly sitting, with an isolated area of standing conditions to the southwest.

a. Depending on the programming of the exterior area, the noted conditions may be considered acceptable. Specifically, if the southwest of the terrace will not accommodate seating or more sedentary activities, the noted wind conditions would be considered acceptable.

b. If required by programming, sitting conditions may be extended over the full terrace area by implementing a 1.8-m-tall wind perimeter wind screen as noted in Section 5.2.

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