1440 Blair Towers Pl

URBAN DESIGN REVIEW PANEL REPORT | DECEMBER 20TH, 2024

LE GROUPE MAURICE LES RETRAITÉS NOUS HABITENT

FOTENN Planning + Design

HOBIN ARCHITECTURE

Portfolio of Projects

LE **GROUPE MAURICE**







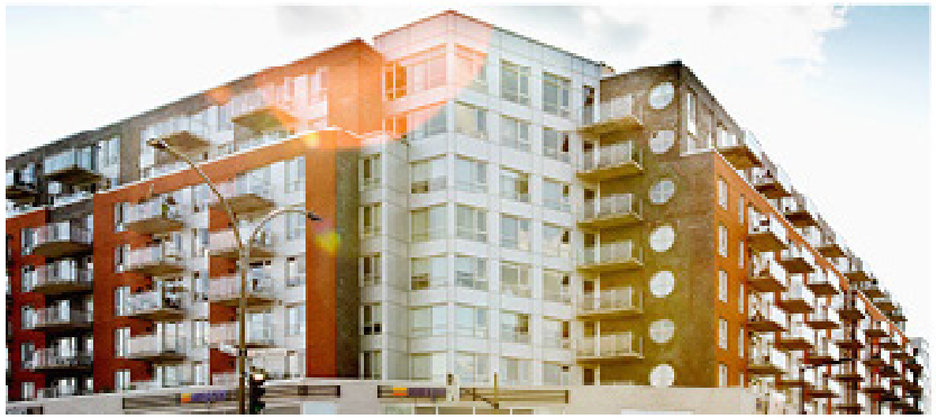


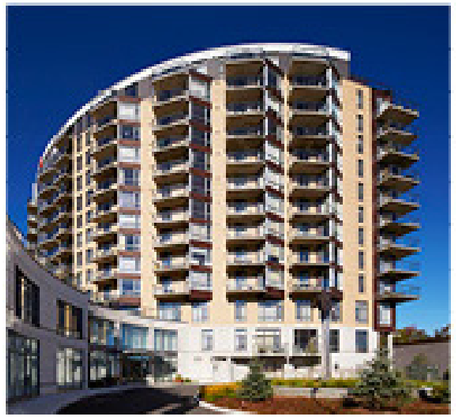
















211 Centrum Blvd.

LE **GROUPE MAURICE**

LEGROUPE MAURICE LES RETRAITÉS NOUS HABITENT

FOTENN Planning + Design

HOBIN ARCHITECTURE

Introduction

Developer Information

Groupe Maurice

Project Summary

The applicant is proposing the development of a retirement home on the subject lands, municipally known as 1440 Blair Towers Place, located at the southeast corner of Blair Road and Ogilvie Road in the Beacon Hill South - Cardinal Heights community of the City of Ottawa. The site is within 400 metres of Blair Station.

The subject site is undeveloped with the exception of a looping extension of Blair Towers Place offering an egress from Blair Road. The application proposes to access the site from Blair Towers Place and from Blair Road (northbound) .

The building is designed to include 18 and 22 storey towers connected by a six (6) storey podium. The massing is sensitively designed with respect to the surrounding residential and non-residential uses. As low-rise, low-denisty residential dwellings are located on the north side of Ogilvie Road, the towers are oriented toward the south of the site, with the taller tower oriented furthest from Ogilvie Road. A public park is proposed at the corner of Blair Road and Ogilvie Road, providing transition between existing and proposed structures and increasing landscaped open in the neighbourhood.

Key Statistics

/ **Heights:** 22 storey tower, 18 storey tower, and 6 storey base

/ **Residential Units:**

/ **Types:**

/ **Vehicle Parking:**

/ **Amenity Area:**



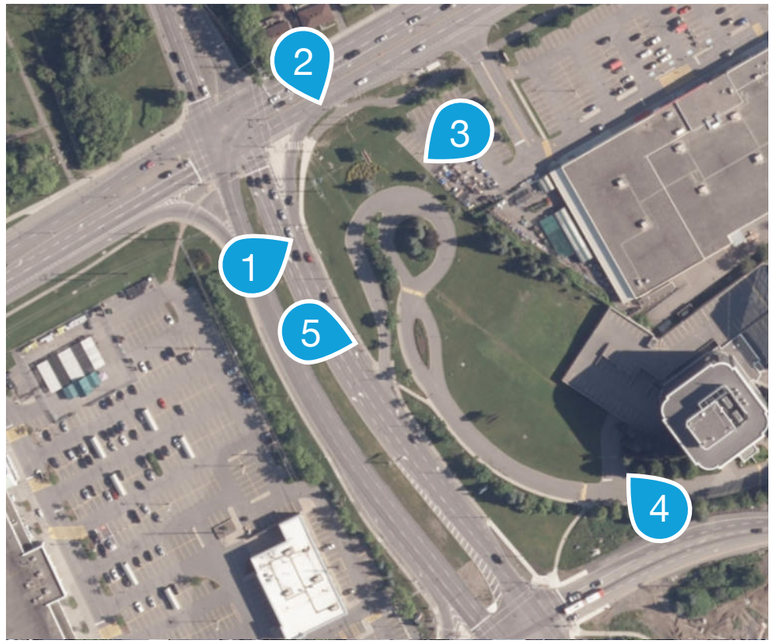
1440 Blair Towers Place
Urban Design Review Panel
October 4, 2024

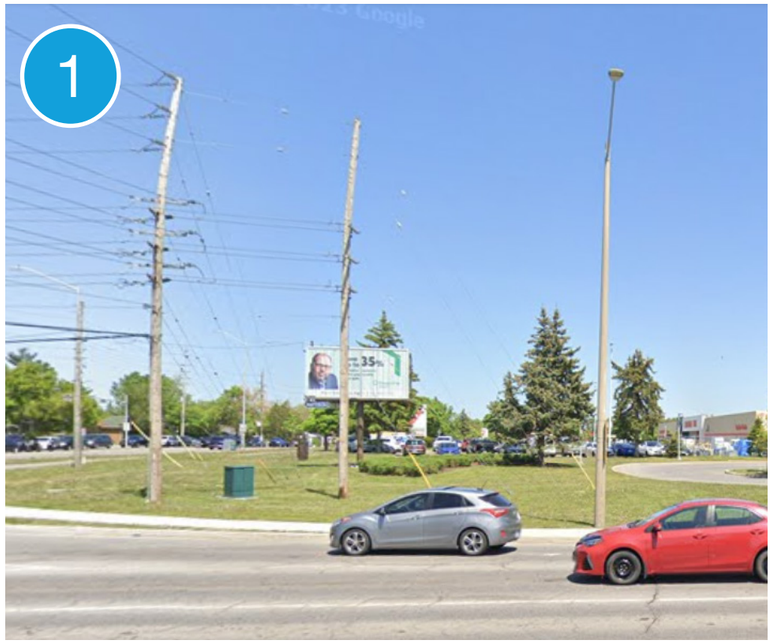
Subject Property

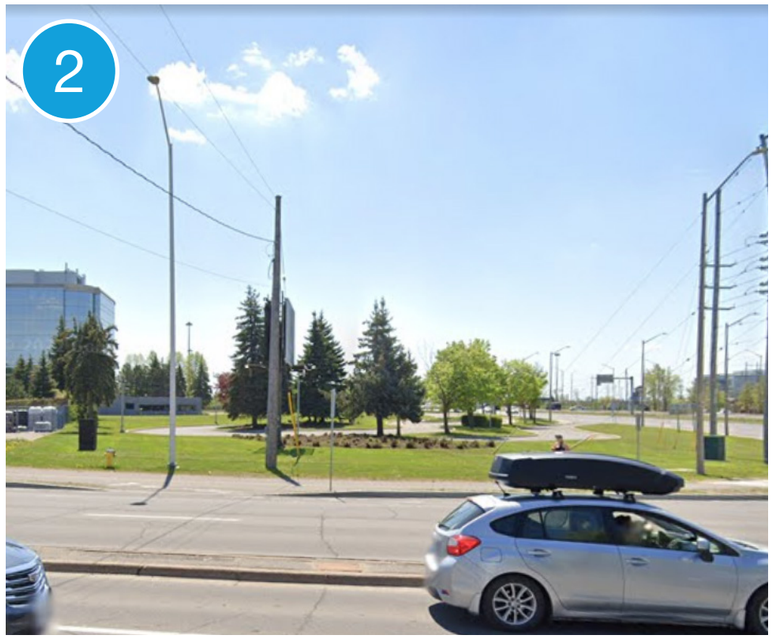


Aerial image of the subject property and surrounding area

Site Photos













Streetviews of the subject site

Site Analysis - Transit Network

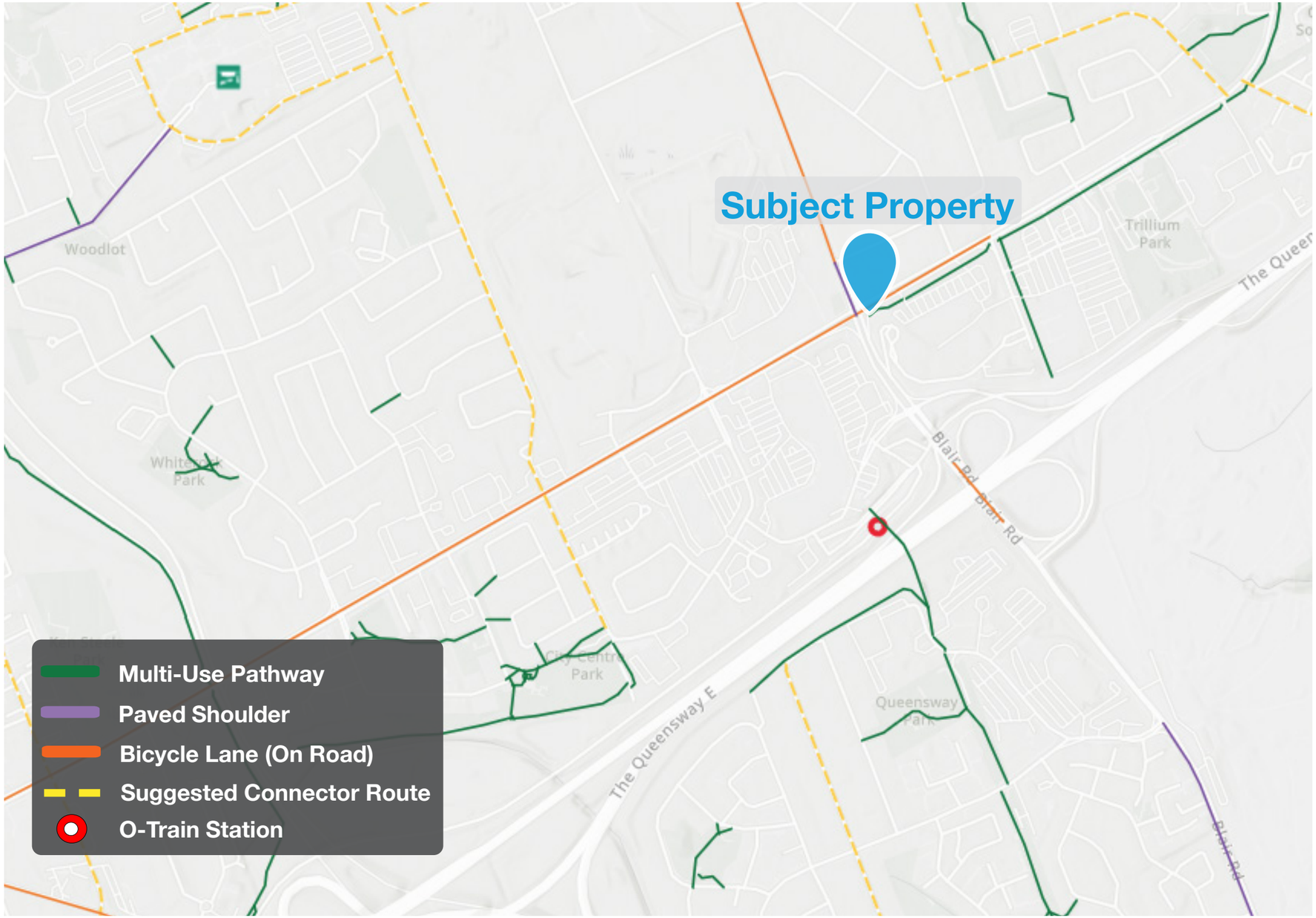


Schedule C2 — Transit Network - City of Ottawa Official Plan

The subject lands front Blair Road and Ogilvie Road, which are both identified as Transit Priority Corridors on Schedule C2 - Transit Network, in the City of Ottawa Official Plan. These corridors provide a higher-level of bus service than conventional local routes.

The lands are also located in close proximity, under 400 metres, to Blair Station. This OC Transpo hub operates as the current easternmost point of O-Train Line 1 and as a Transitway station. O-Train Line 1 shall extend service east beyond Blair Station starting in 2025.

Site Analysis - Active Transportation Network

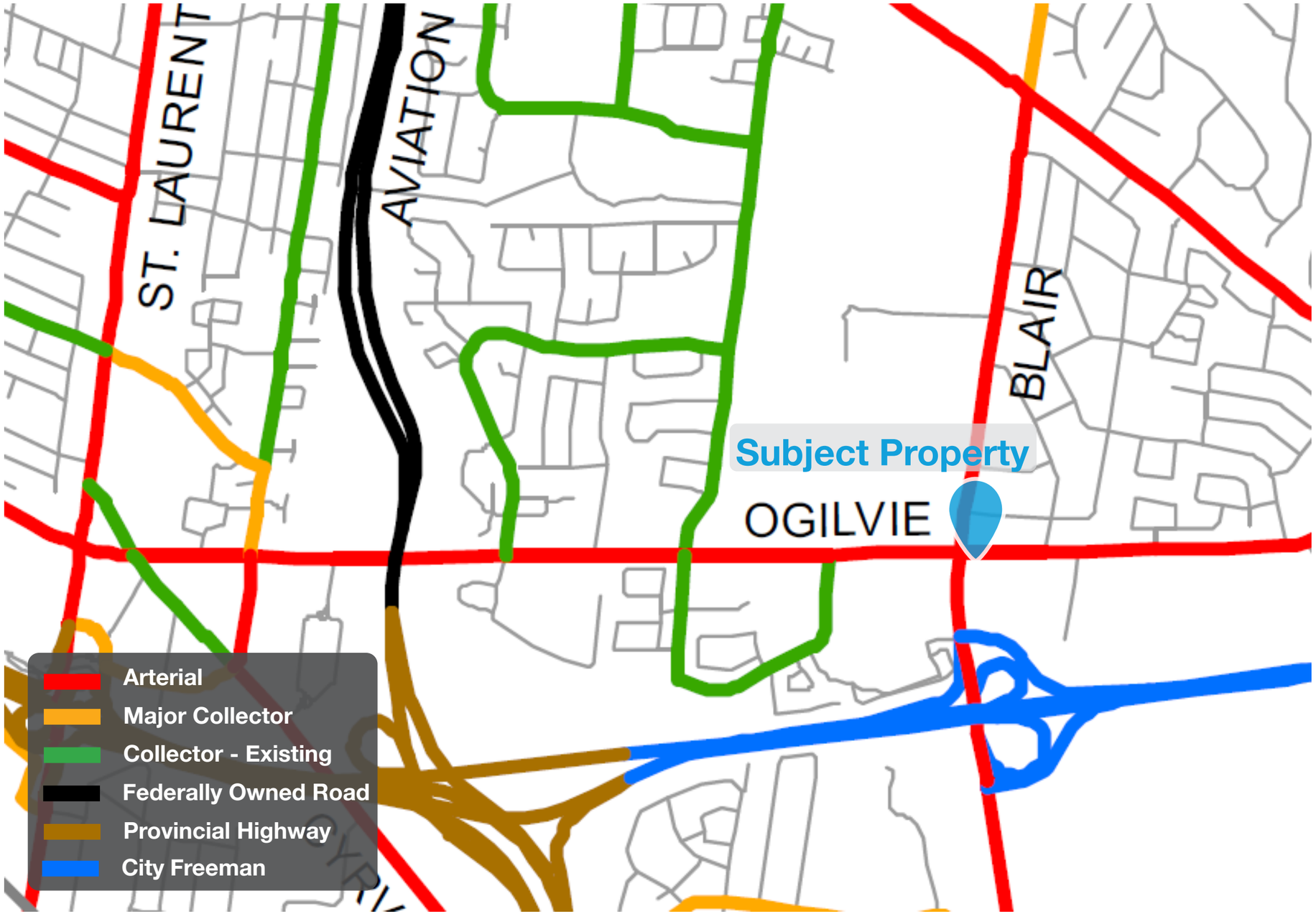


Official Cycling Map for Ottawa-Gatineau and the Outaouais Region, National Capital Commission

Ogilvie Road features on road bicycle lanes. Beginning at the corner of Blair Road and Ogilvie Road, a multi-use pathway runs east on the south side of the right-of-right. Blair Road, north of the Blair Road and Ogilvie Road intersection, has on road bicycle lanes.

Blair Station features a bicycle parking shelter to link active transportation and transit use.

Site Analysis - Street Network



Schedule C4 — Urban Road Network, City of Ottawa Official Plan

As per Schedule C4 of the Official Plan, Blair Road and Ogilvie Road are identified as Arterial Roads. Blair Towers Place is a Local Road.

Ingress and egress to the site will be from Blair Towers Place and to the northbound lanes of Blair Road.

Site Analysis - Surrounding Amenities



Aerial view of the subject properties with surrounding amenities identified

Development Applications - OPA, ZBLA, & SPC



Rendering of the proposed building.

Official Plan Amendment

An amendment to Schedule A - Maximum Building Heights and Minimum Densities of the Inner East Lines 1 and 3 Stations Secondary Plan is required to permit a maximum built height of 22 storeys, whereas 20 storeys is permitted within the subject property's current Area B designation.

Orginally, an amendment was sought to Section 6.1.2 to permit a reduced minumum lot coverage whereas 70% minimum lot coverage is required within PMTSAs. However, this policy is proposed elimintate the a prescriptive lot coverage through the upcoming Ominbus.

Zoning By-law Amendment

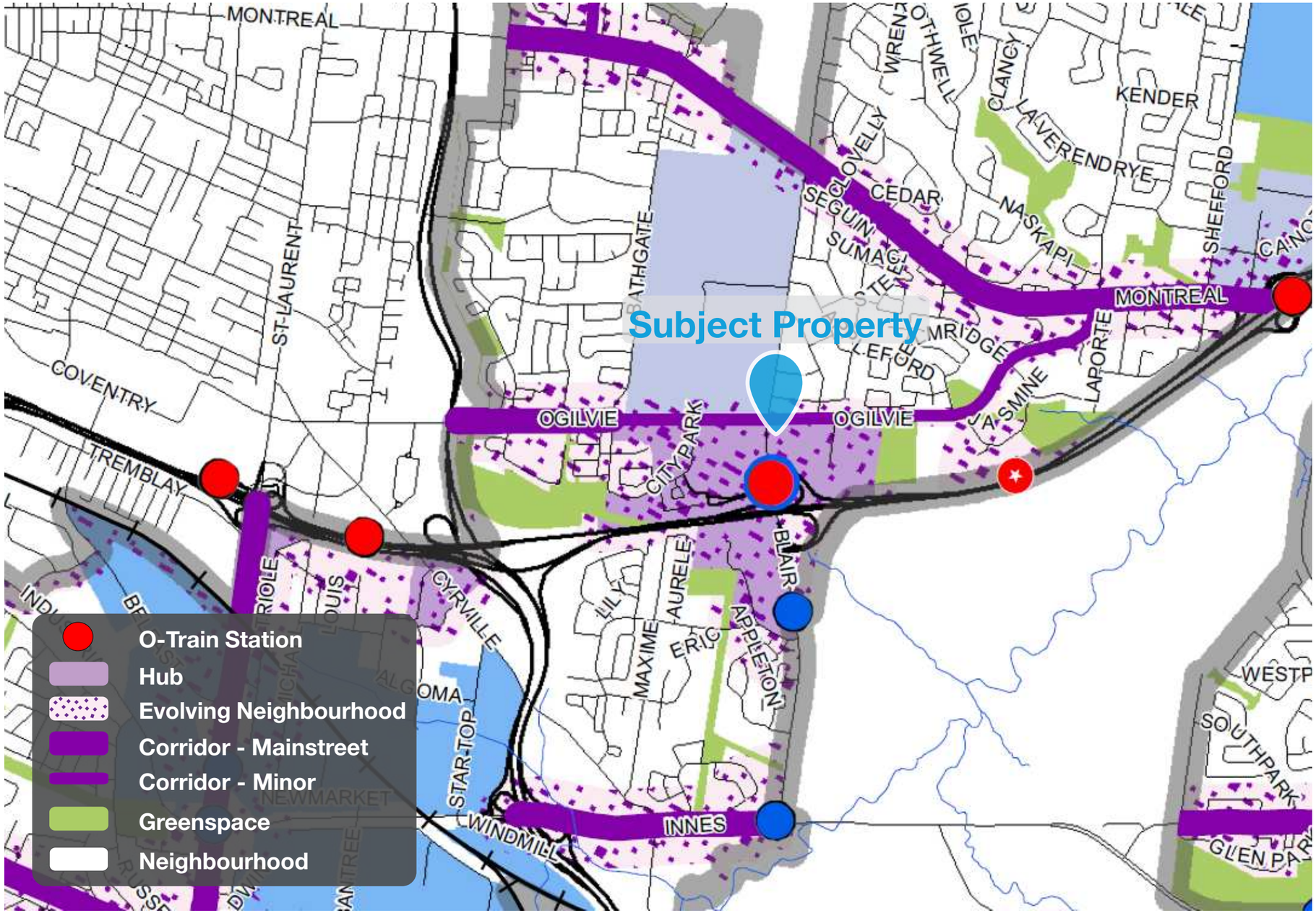
The proposed Zoning By-law Amendment would replace the existing exception of 2085 to permit up to 22 storeys and reduce the active frotage provisions given the unique lot fabric. The Transit Orineted Development Zone, Subzone 2 (TD2) is proposed to remain.

Site Plan Control

The proposed Site Plan Control application would permit the development as presently conceived.

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Urban Design Review Panel
October 4, 2024

Policy Context - Official Plan



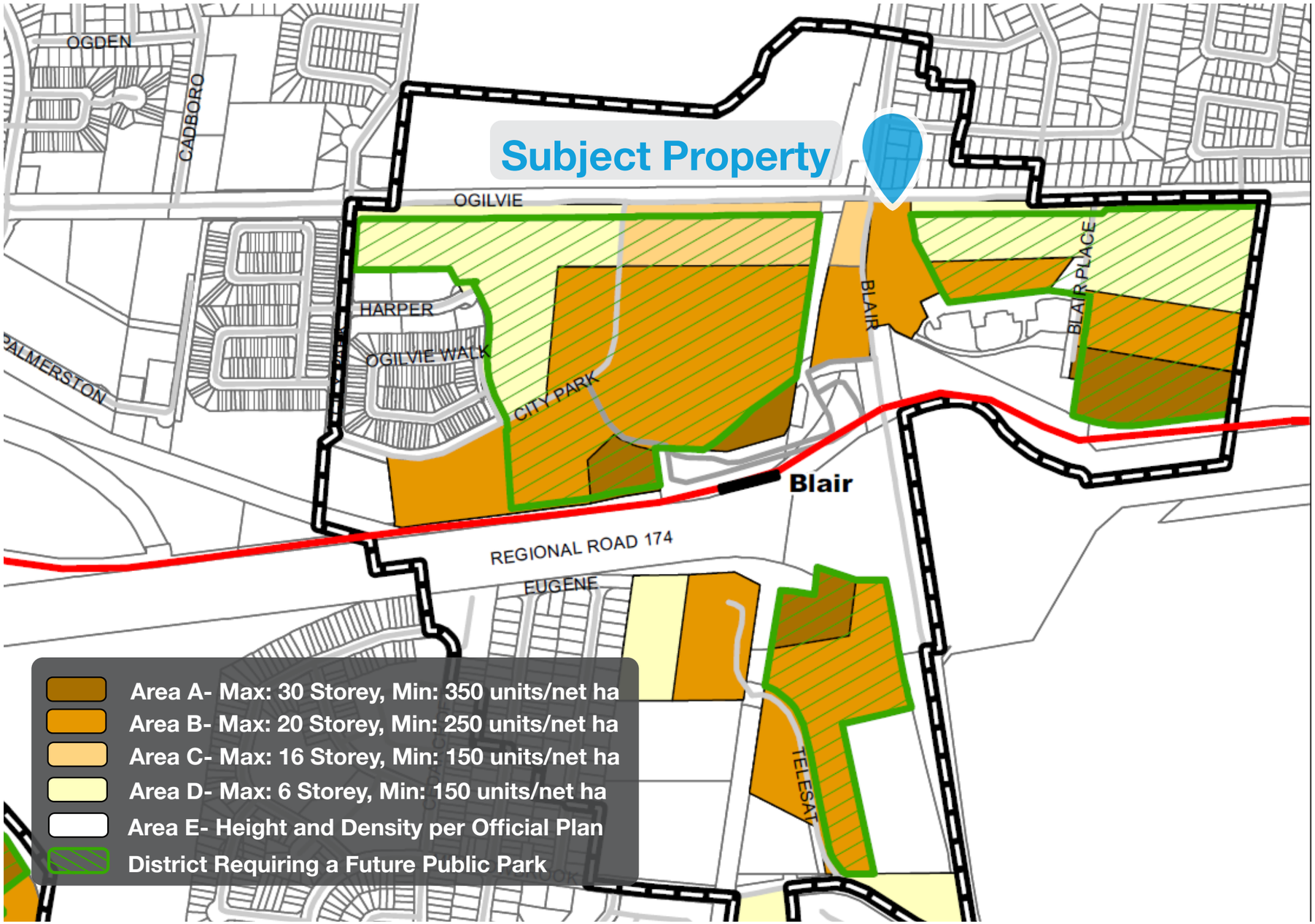
Schedule B3 — Outer Urban Transect, City of Ottawa Official Plan

The subject lands are located in the Outer Urban Transect of the City of Ottawa Official Plan. This area includes neighbourhoods inside the Greenbelt built in the last third of the twentieth century.

The subject lands are designated Corridor - Minor and Hub on Schedule B3 of the City of Ottawa Official Plan. The site is also within a PMTSA. Together with Mainstreet Corridors, Minor Corridors generally have a higher level of transit service and permit higher density than the surrounding Neighbourhood designations. Hubs permitted the highest densities in relation to Transit Stations.

The Minor Corridor designation applies to lands up to 120 metres from the centreline of the corridor street (Ogilvie), including along side streets. Generally, building heights up to six (6) storeys are permitted, subject to any specific policies in the Secondary Plan. Hub maximum heights are subject to Secondary Plan polcies.

Policy Context - Inner East Lines 1 and 3 Stations Secondary Plan



Schedule A — Maximum Building Heights and Minimum Densities, Inner East Lines 1 and 3 Stations Secondary Plan

The subject lands are located in the Inner East Lines 1 and 3 Stations Secondary Plan.

Schedule A of the Secondary Plan designatied the site is within Area B which establihses a maximum height of 20 storeys and a minimum density of 250 units per net hectare.

The policies for the Secondary Plan are informed by Transit-Oriented Development.

Policy Context - Design Guidelines



Urban Design Guidelines for High-rise Buildings

The guidelines address the design of high-rise buildings (10+ storeys) in relation to their context, built form, and impact on pedestrian realm. The following design guidelines are applicable to
the development:

/ **Transition and Orientation:**
– Fills in the corner lot to provide gateway at corner.
– Tower is oriented away from the low-rise residential to the northlocated closest to the intersection, highest tower is positioned closest to office buidlings and intersection of Blair and Regional Road 174.
– Oriented north-south to minimize shadowing.
– Frames Blair Road.
/ **Tower Seperation:**
– More than 23 metres of tower seperation to permit sunlight to reach public and private at grade spaces.
/ **Parking:**
– Underground parking accessed from Blair Towers Road.
– Surface visitor parking.
– Drop-off/pick-up pull outs by main entrance.
– Loading zone located away from main entrance.



Transit-Oriented Design Guidelines

These guidelines are to be applied throughout Ottawa for all development within a 600 metre walking distance of a rapid transit station or stop. The following selected guidelines are applicable to the proposed development:

/ **Land Use**
– Transit-supportive, being high-density residential within 400 metres of a O-Train and Transitway Station.
/ **Built Form**
– Create highly visible landmarks through building design, easily identified and located.
– Set large buildings back from the property line to provide space for pedestrians and landscaping.
– First floor rooftop garden and generous windows on the first floor to animate the public realm.
/ **Pedestrians**
– Barrier-free pathways surrounding entire buidling and connect to larger sidewalk network leading to Blair Station.
/ **Parking**
– Parking is located underground.

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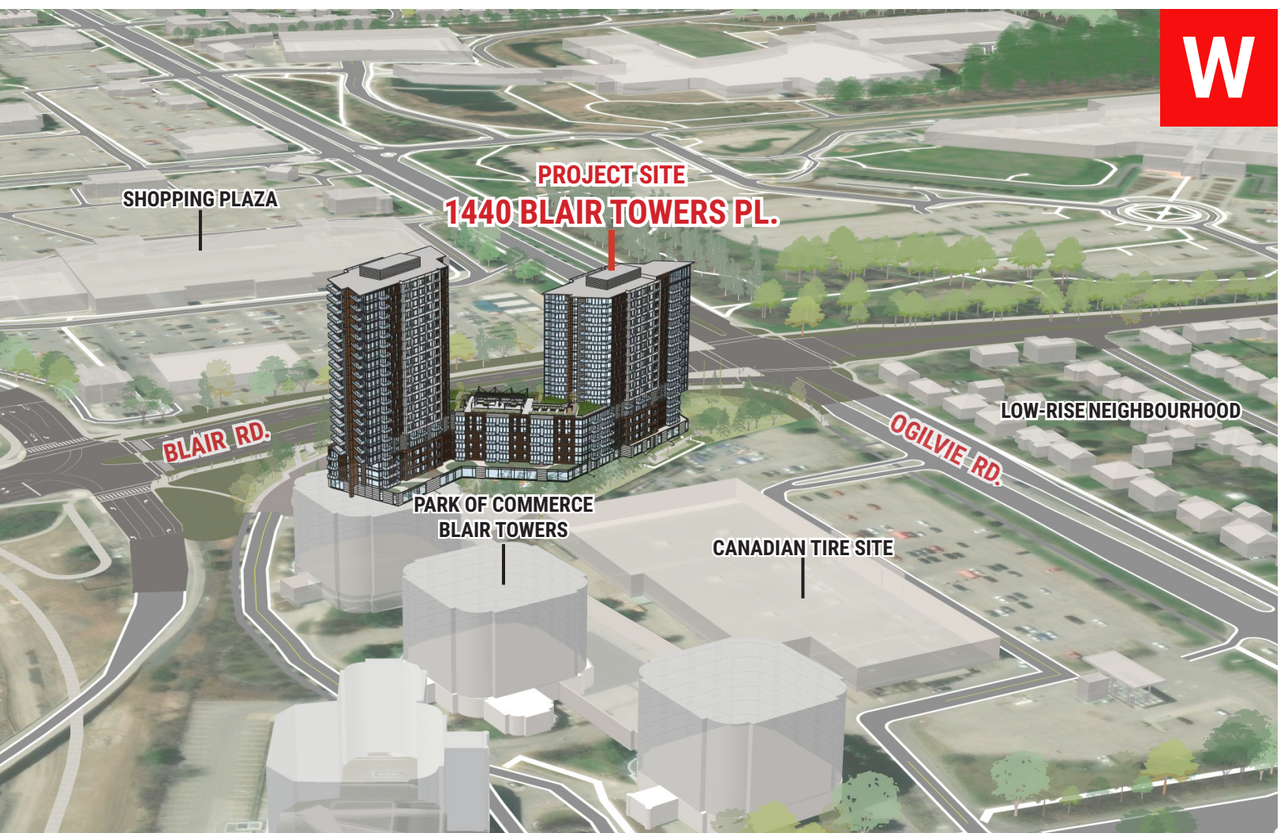
CONTEXT MAP



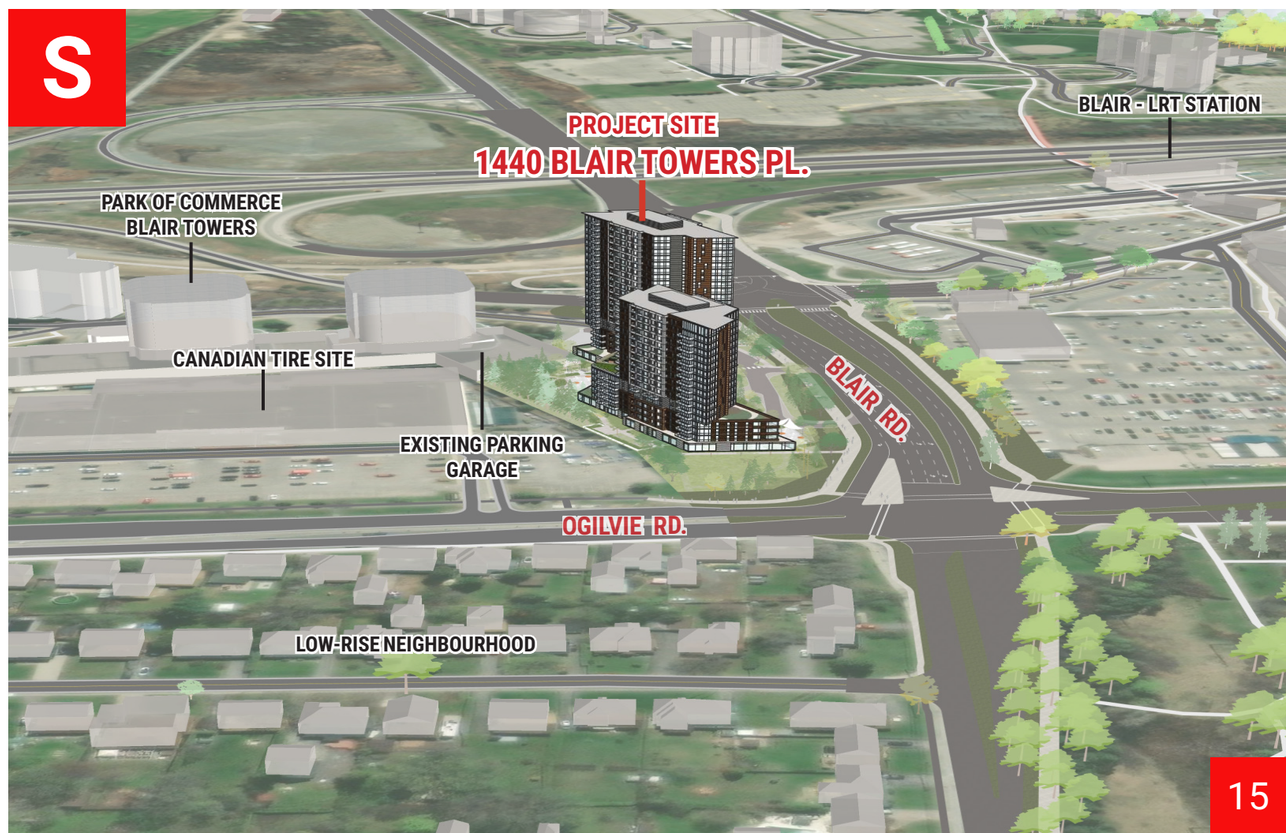
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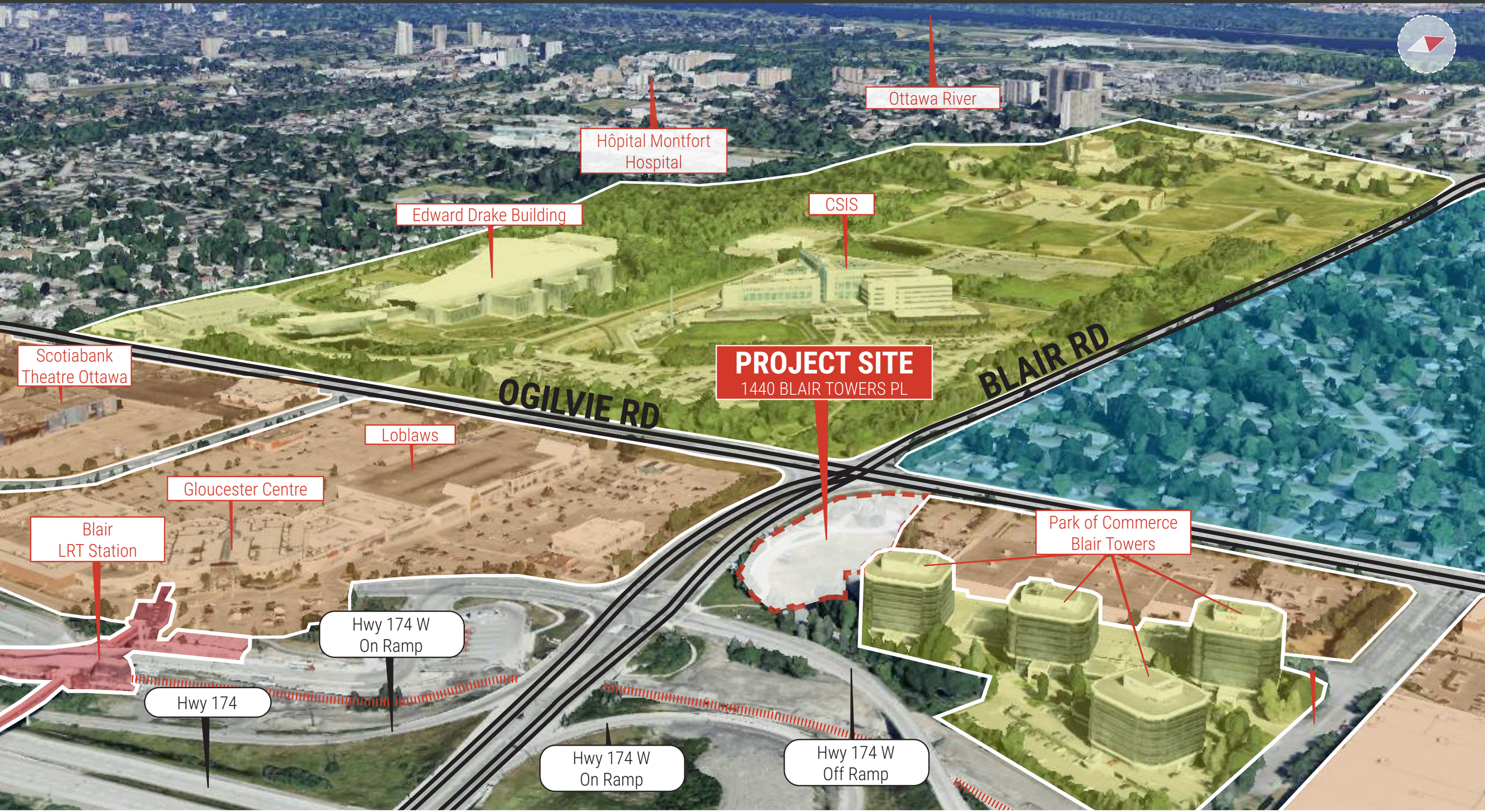


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CONTEXT MAP



PROJECT SITE | LOW-RISE RESIDENTIAL | OFFICE PARK | LRT TRANSIT STATION | TRANSITWAY | RETAIL & RESTAURANTS

SUSTAINABILITY STATEMENT



THE PROPOSED DEVELOPMENT aims to provide a economically, socially, and environmentally sustainable place for future residents to live.

In addition to the site's proximity to walkable surrounding local retail amenities and various bus stations encouraging sustainable methods of transit, the project team is exploring design and construction methods to conserve energy, reduce greenhouse gas emissions, and provide an accessible, safe and inviting environment for residents and surrounding community.

SITE NARRATIVES

1 BUILDING FORM

2 BUILDING SETBACKS & SEPARATION

3 10% PARKLAND DEDICATION

4 LANDSCAPE INTERFACES

5 SITE ACCESS & LOADING

6 PUBLIC REALM ANIMATION

7 ENTRANCE EXPERIENCE

8 PRIVATE COURTYARD

9 PUBLIC PARKLAND

10 EXTERIOR MATERIALS

MASSING STUDY OPTIONS



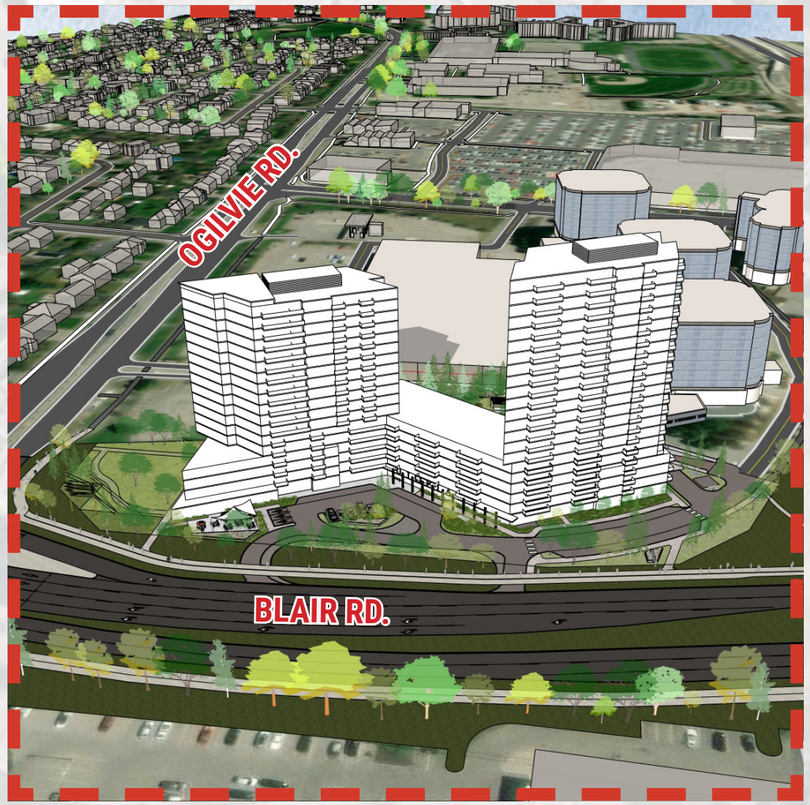
2023 - Past Option 2

Building Heights:
20 floors + 16 floors + 6 floors.



2023 - Past Option 3

Building Heights:
20 floors + 16 floors + 6 floors.



2024 - Current Proposal

Building Heights:
22 floors + 18 floors + 4-6 floors.

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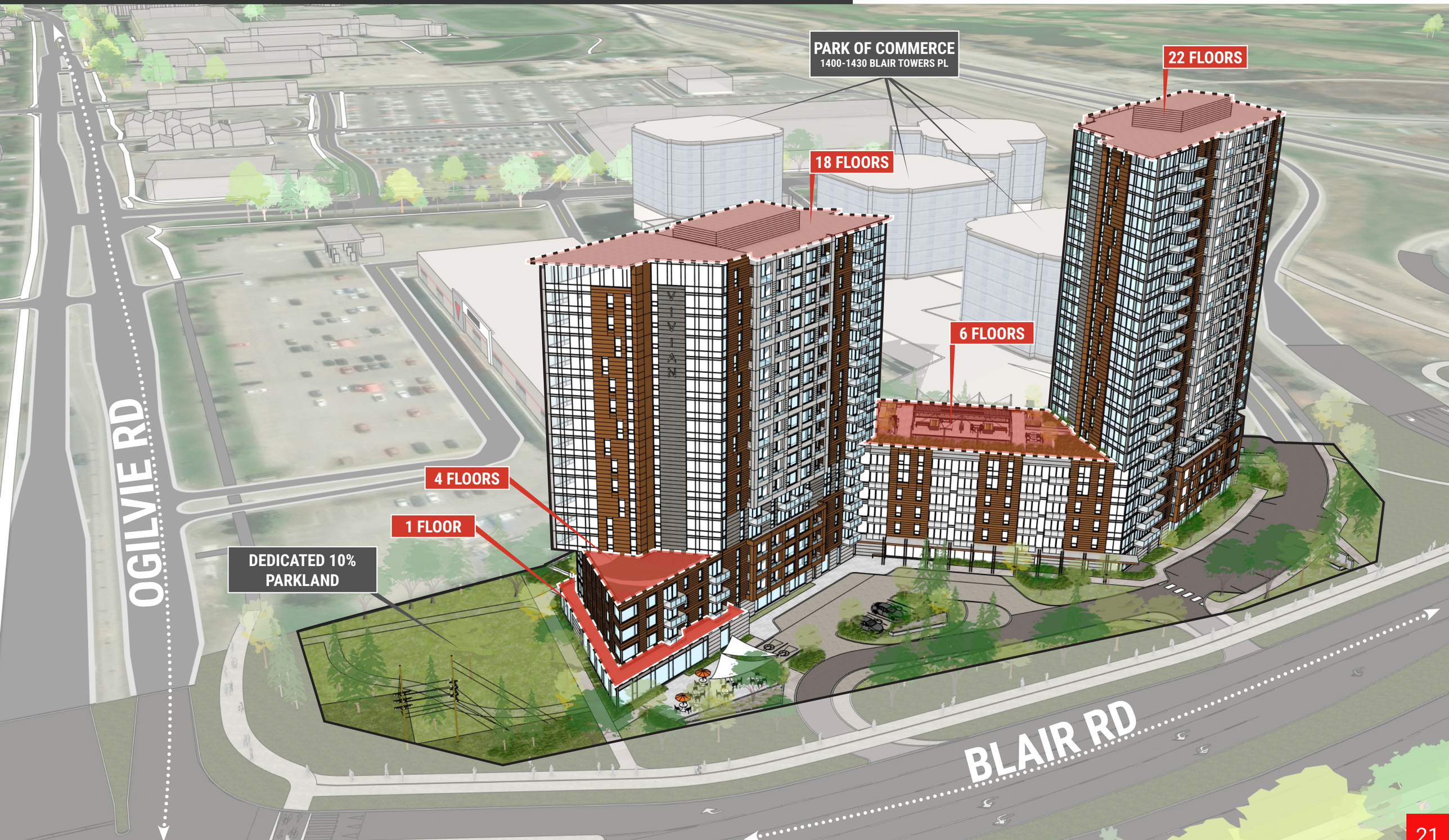


2024 - Current Proposal

Building Heights:
22 floors + 18 floors + 4-6 floors.

1 BUILDING FORM

BLDG HEIGHTS - E AERIAL VIEW



BLDG HEIGHTS - BLAIR & OGILVIE

18 and 22 floor towers designed with a 4-6 floor podium.



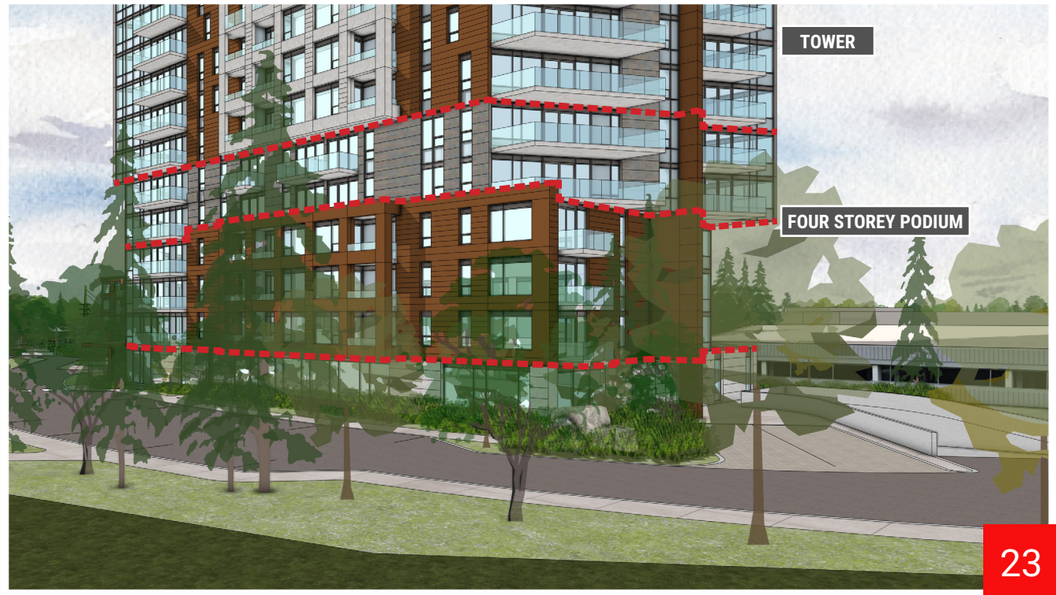
1 BUILDING FORM



VIEW FROM HIGHWAY 174 (SOUTH)

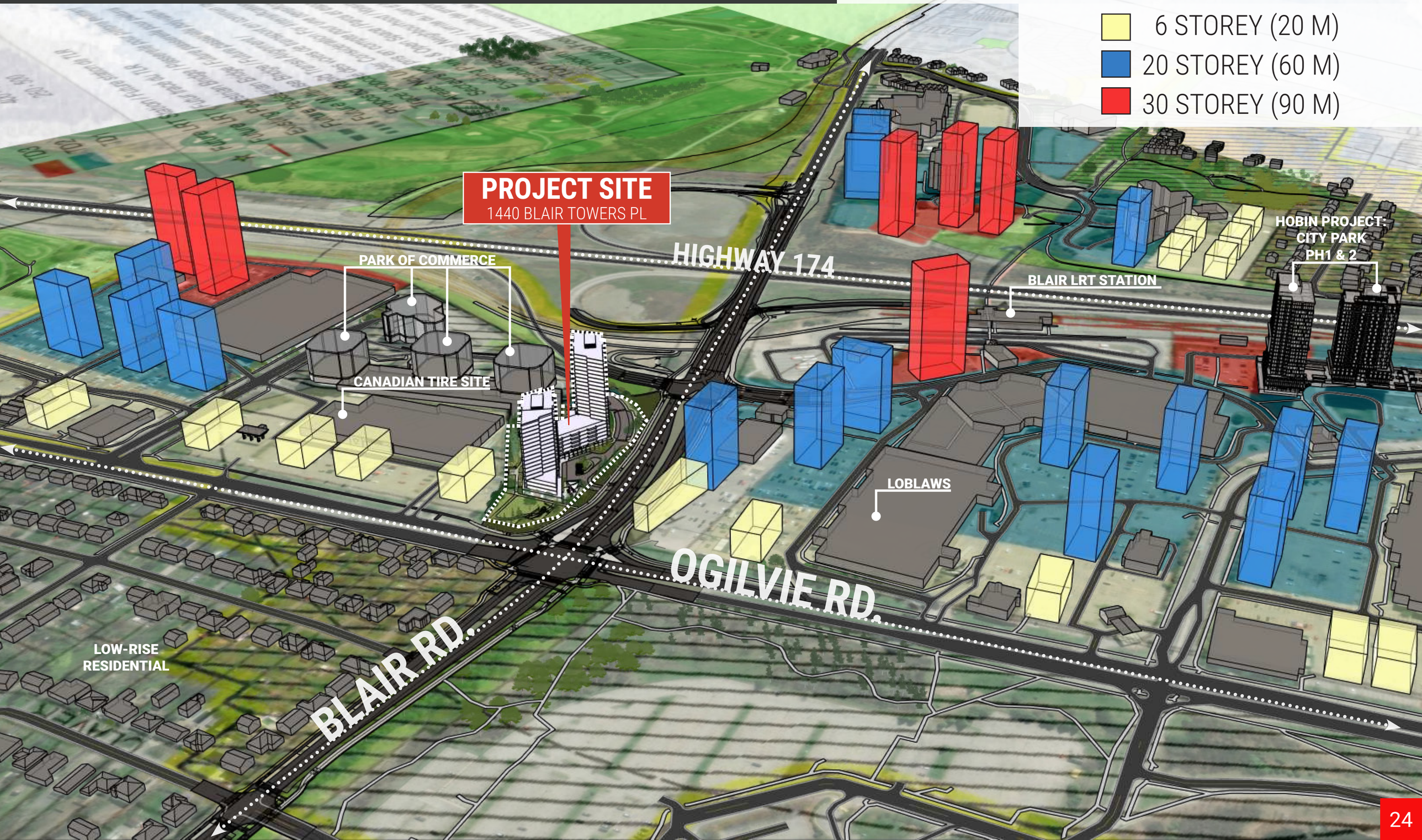
Podium design: with six floors in the center and four floors at the north and south ends using contrasting material and colour to differentiate the podium and the towers.



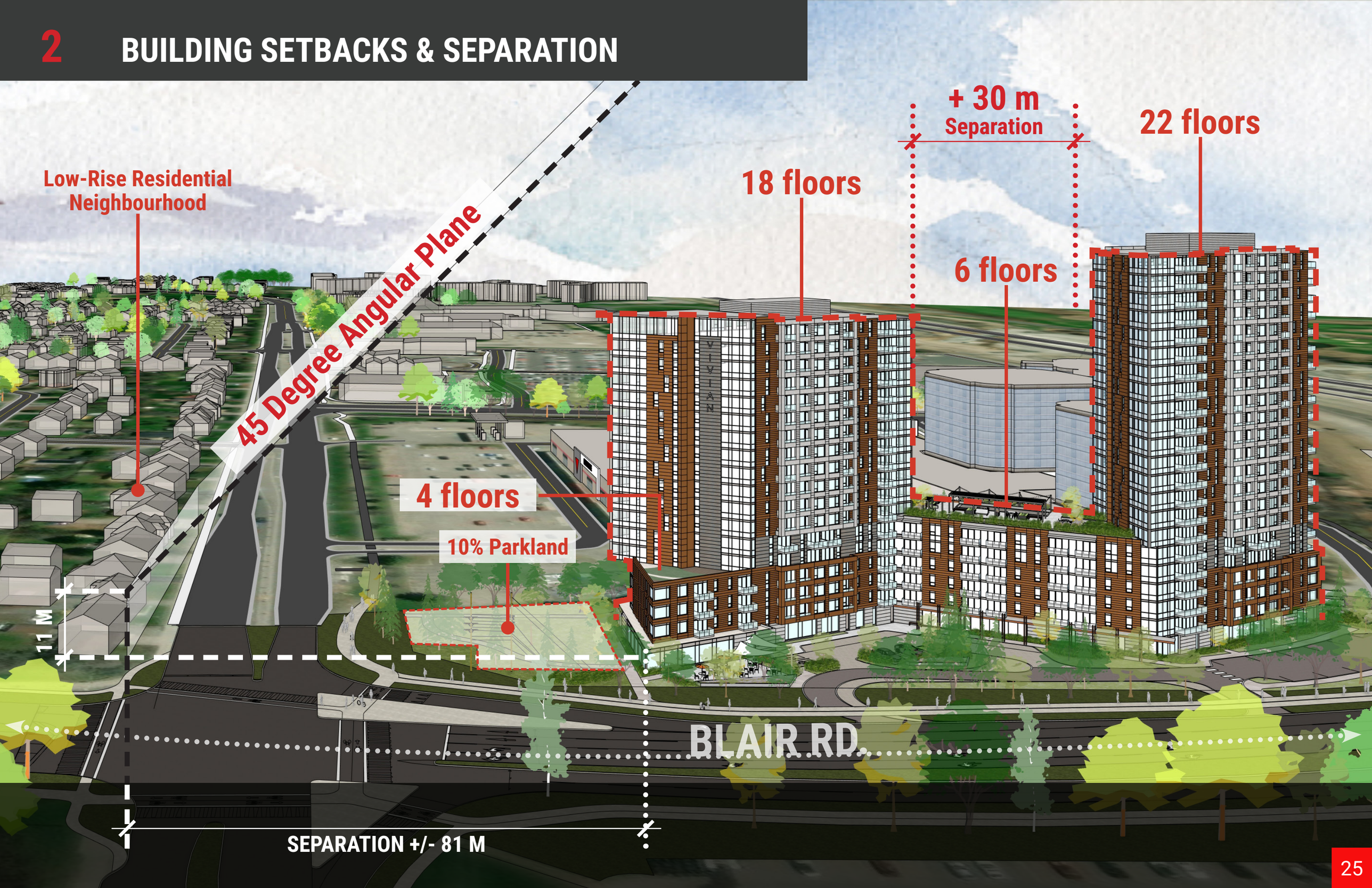


1 BUILDING FORM

FUTURE MASSING BLAIR TOD PLAN



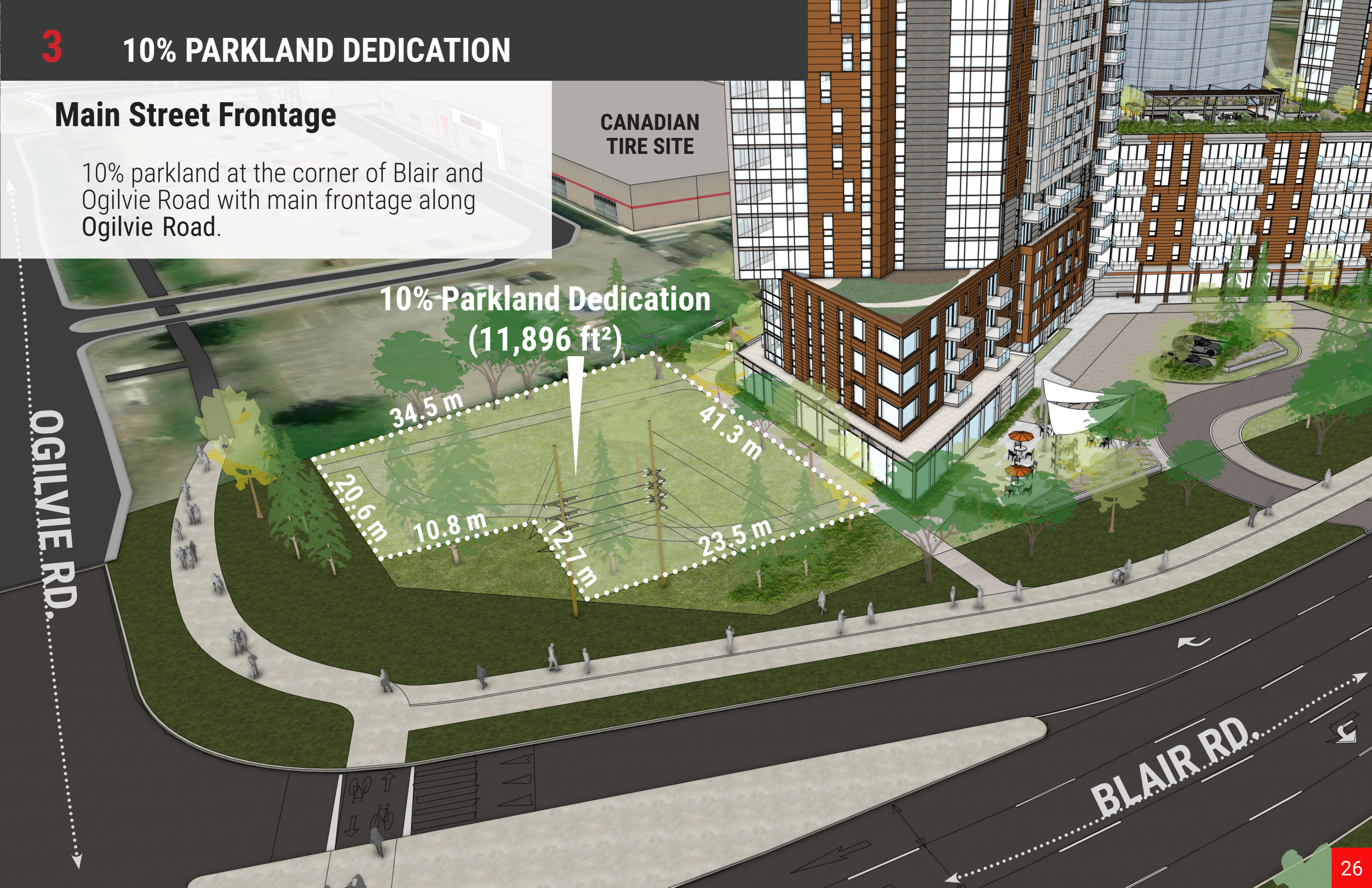
2 BUILDING SETBACKS & SEPARATION



3 10% PARKLAND DEDICATION

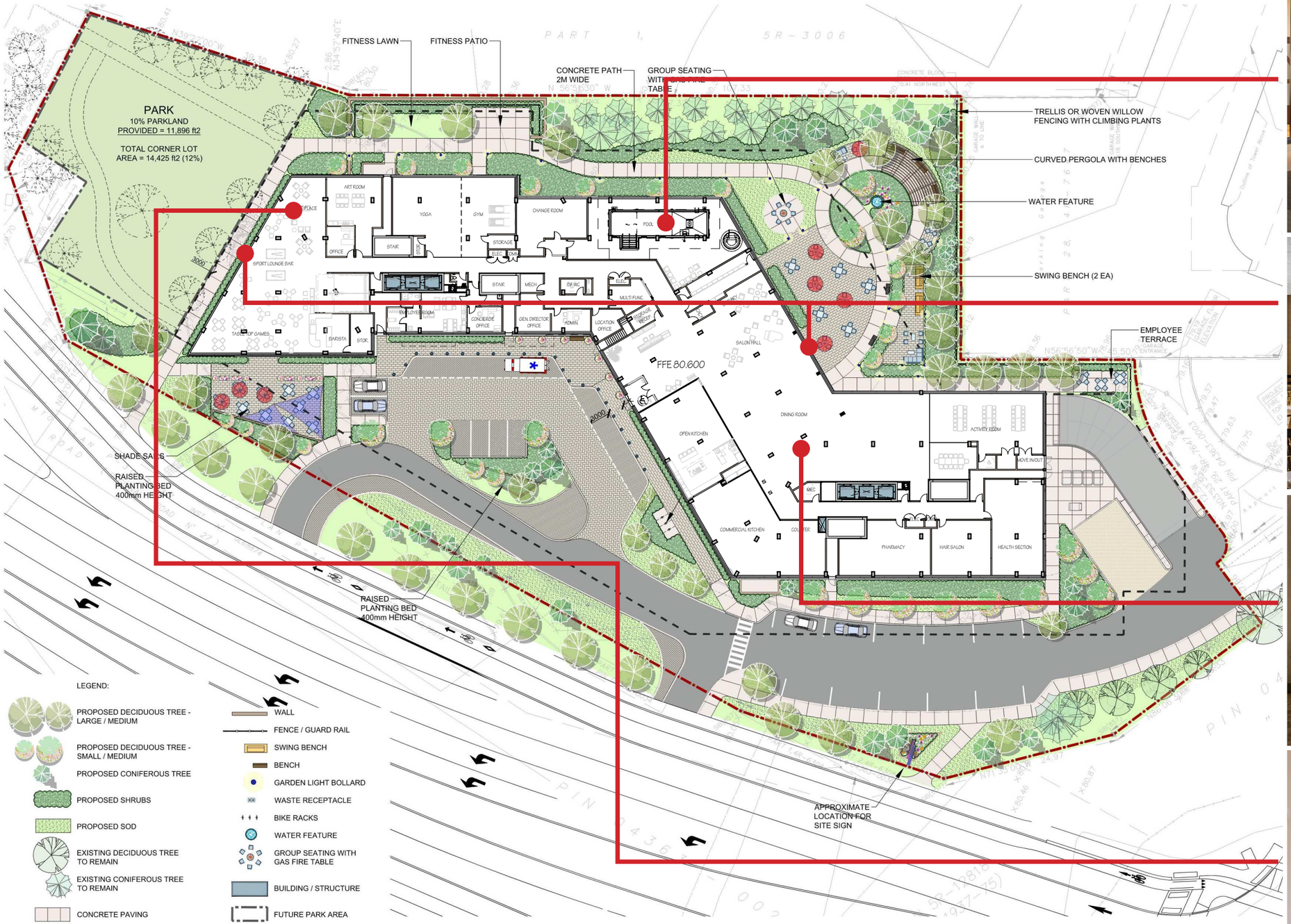
Main Street Frontage

10% parkland at the corner of Blair and Ogilvie Road with main frontage along **Ogilvie Road**.



4 LANDSCAPE INTERFACE

EXAMPLES OF INDOOR/OUTDOOR AMENITY PROGRAMS











4 LANDSCAPE INTERFACE

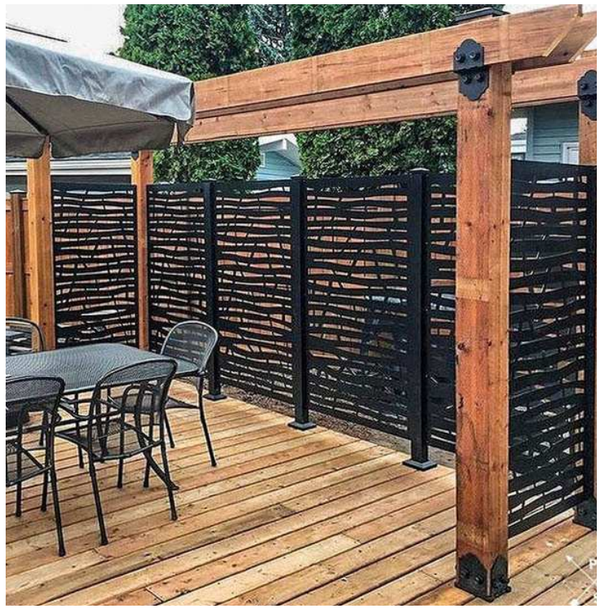


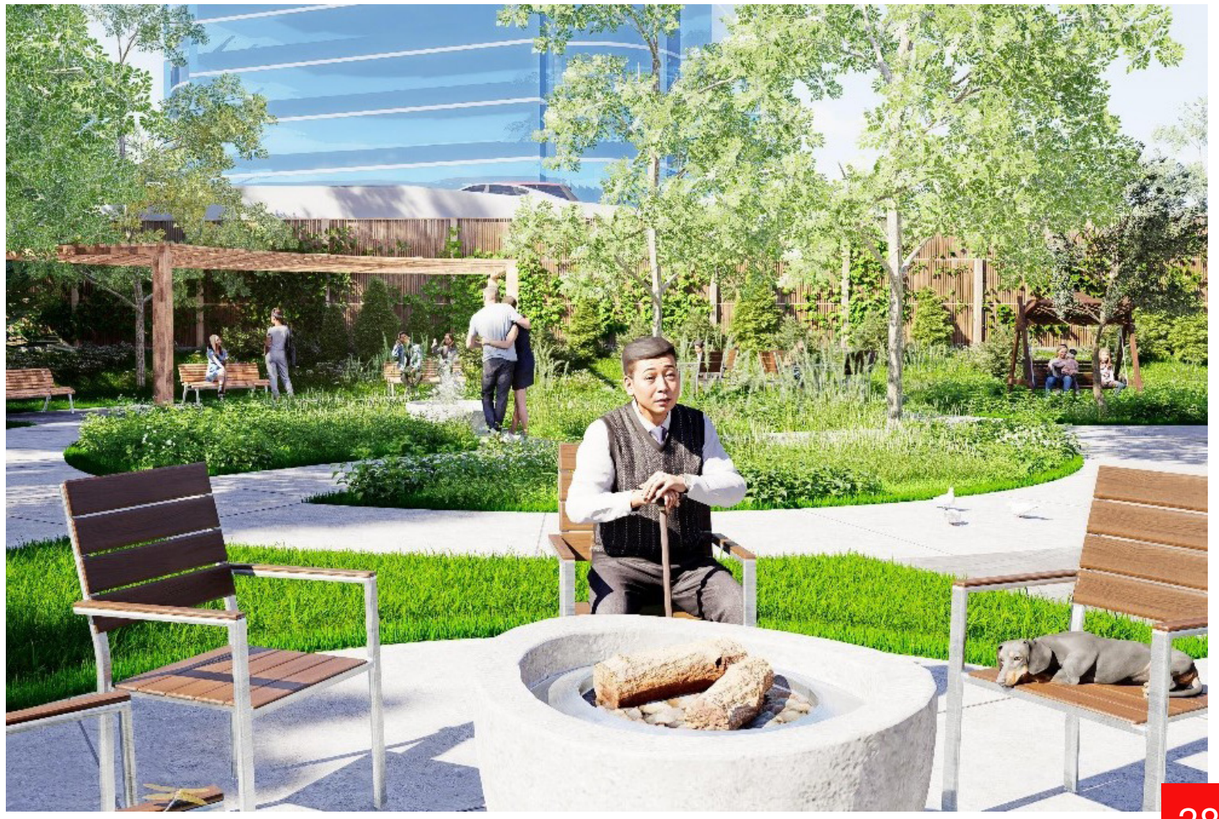
Ground Level Private Courtyard:

Climbing vines with combination of wood trellis, laser cut metal panels and/or woven willow fence screen to parking garage. Outdoor dining and lounge space, walking paths and outdoor fitness.

HARD LANDSCAPING MATERIAL





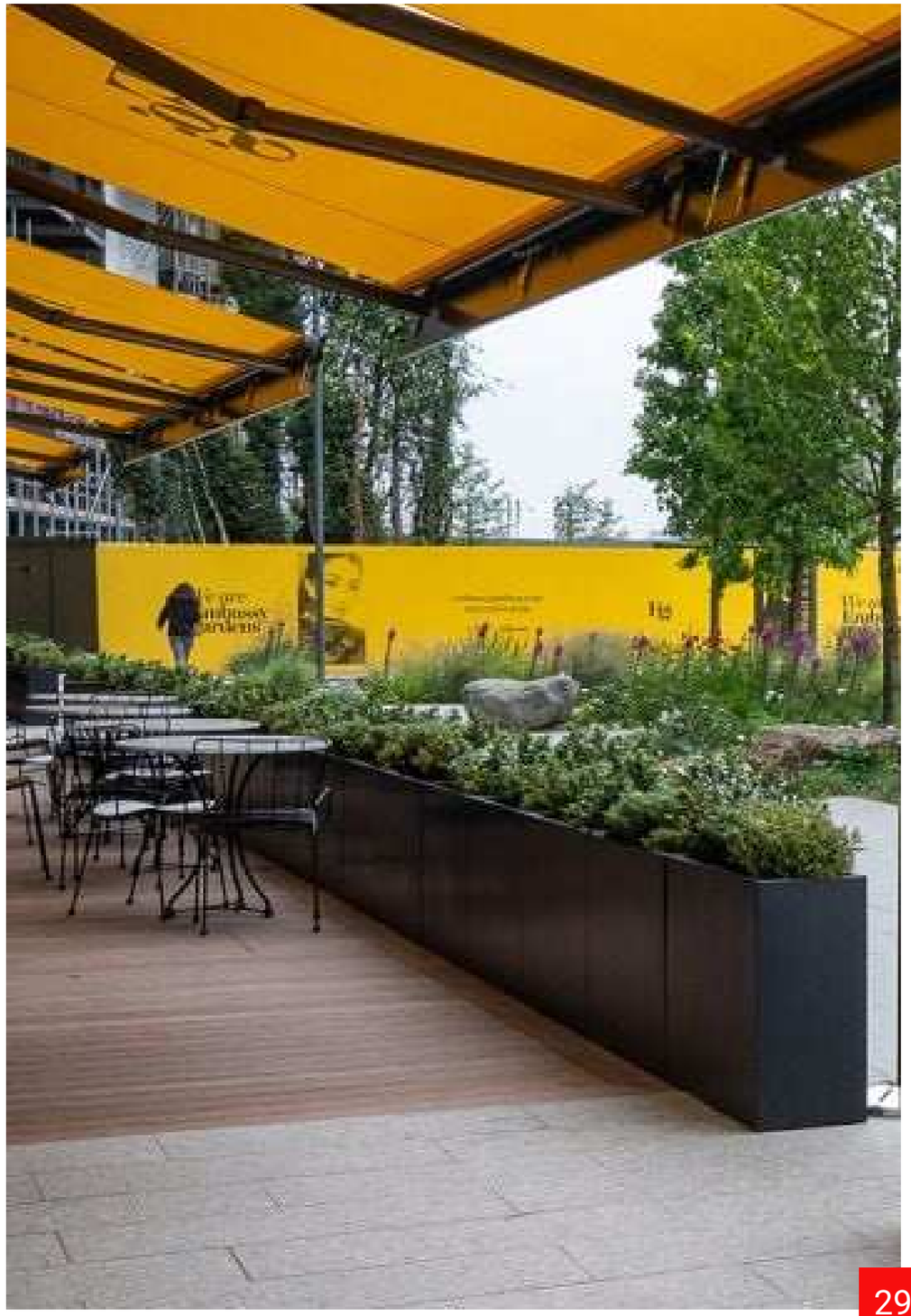


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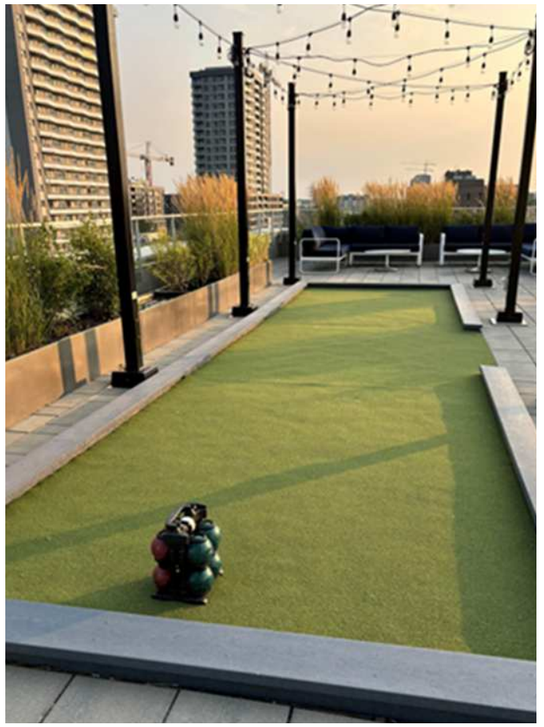


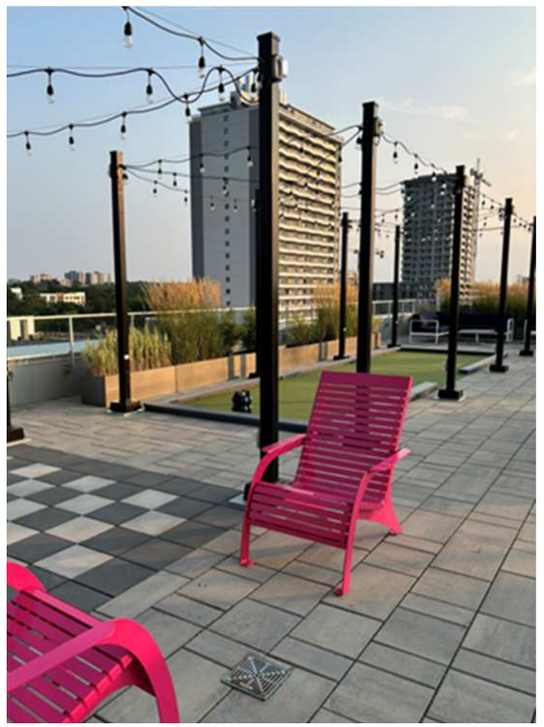
Ground Level Bistro Terrace:

Bistro terrace with shade sails, lighting and raised planters.

HARD LANDSCAPING MATERIAL





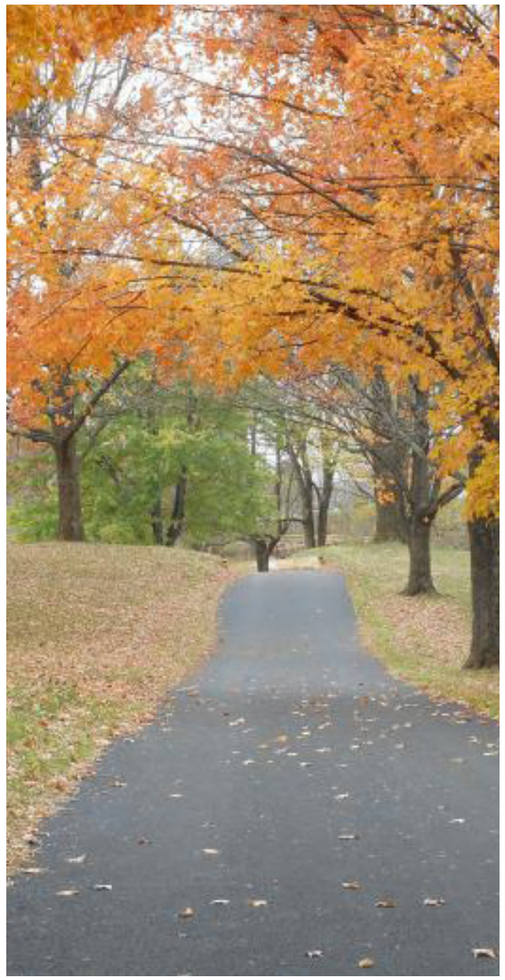




Upper Terrace Amenity Space:

Shade shelters, outdoor games and social spaces, raised planters and community gardens.

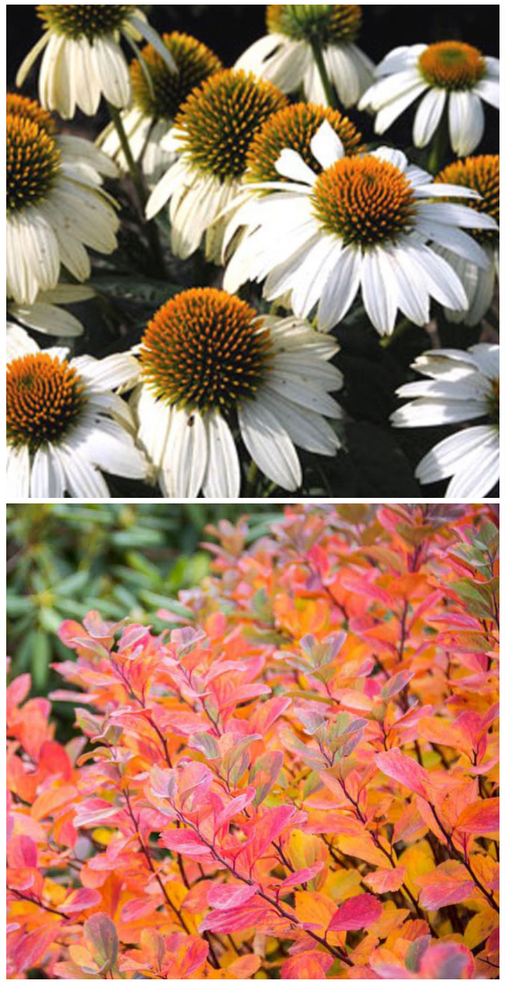
SOFT LANDSCAPING MATERIAL



Large deciduous tree planting along.



Mixed coniferous tree planting to enhance landscape buffer to the South.



Four season planting design.

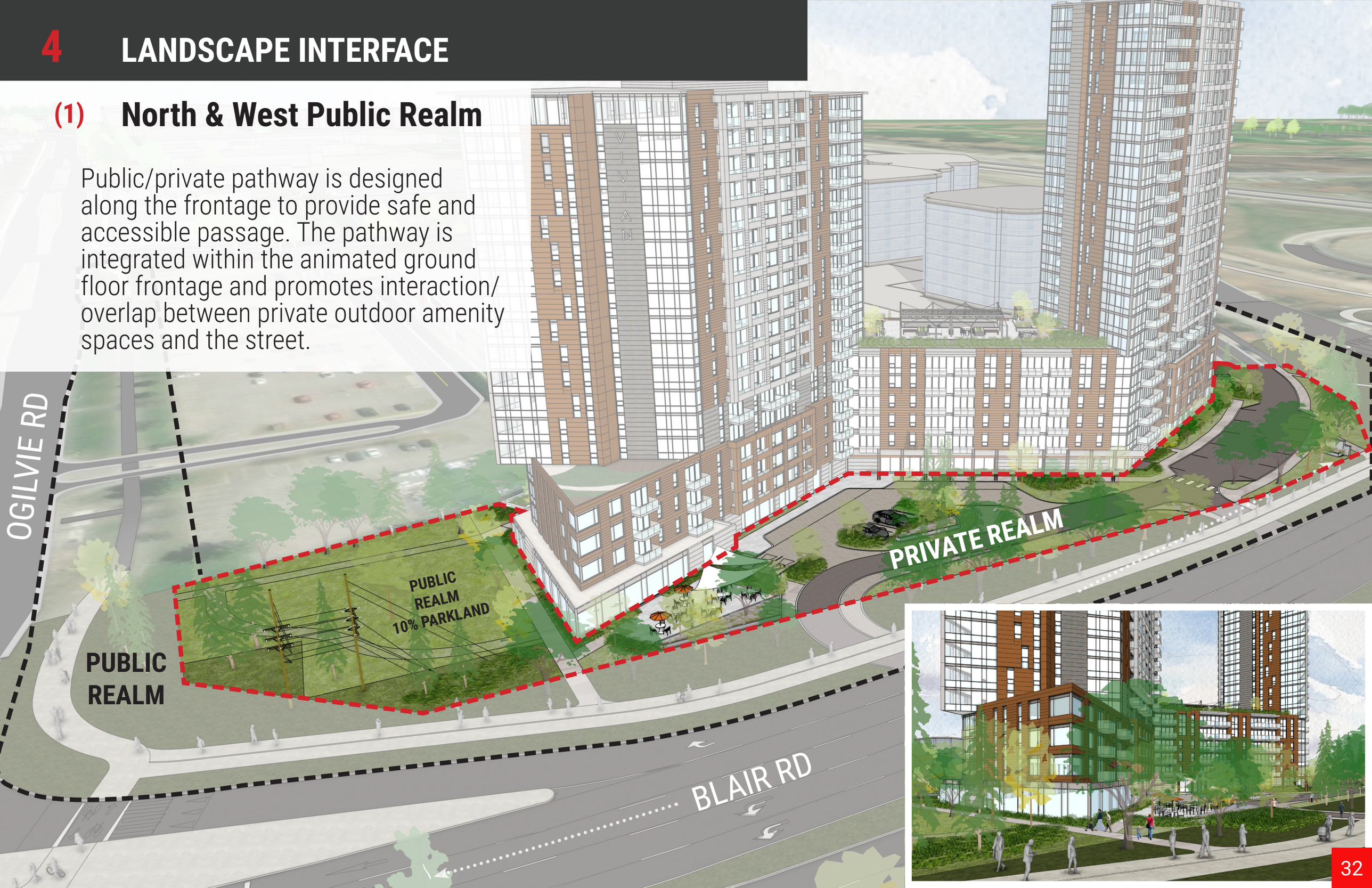


Landscape planting provides a park like setting for the proposed development with large, deciduous tree planting, mixed coniferous landscape buffer and four-season planting design to enhance building setting and courtyard landscape.

4 LANDSCAPE INTERFACE

(1) North & West Public Realm

Public/private pathway is designed along the frontage to provide safe and accessible passage. The pathway is integrated within the animated ground floor frontage and promotes interaction/ overlap between private outdoor amenity spaces and the street.



4 LANDSCAPE INTERFACE

(2) East & South Public Realm

SOUTH: This landscape interface provides access to garage and loading for resident.

EAST: Private landscape courtyard connects to the public parkland fronting on Ogilvie Rd.



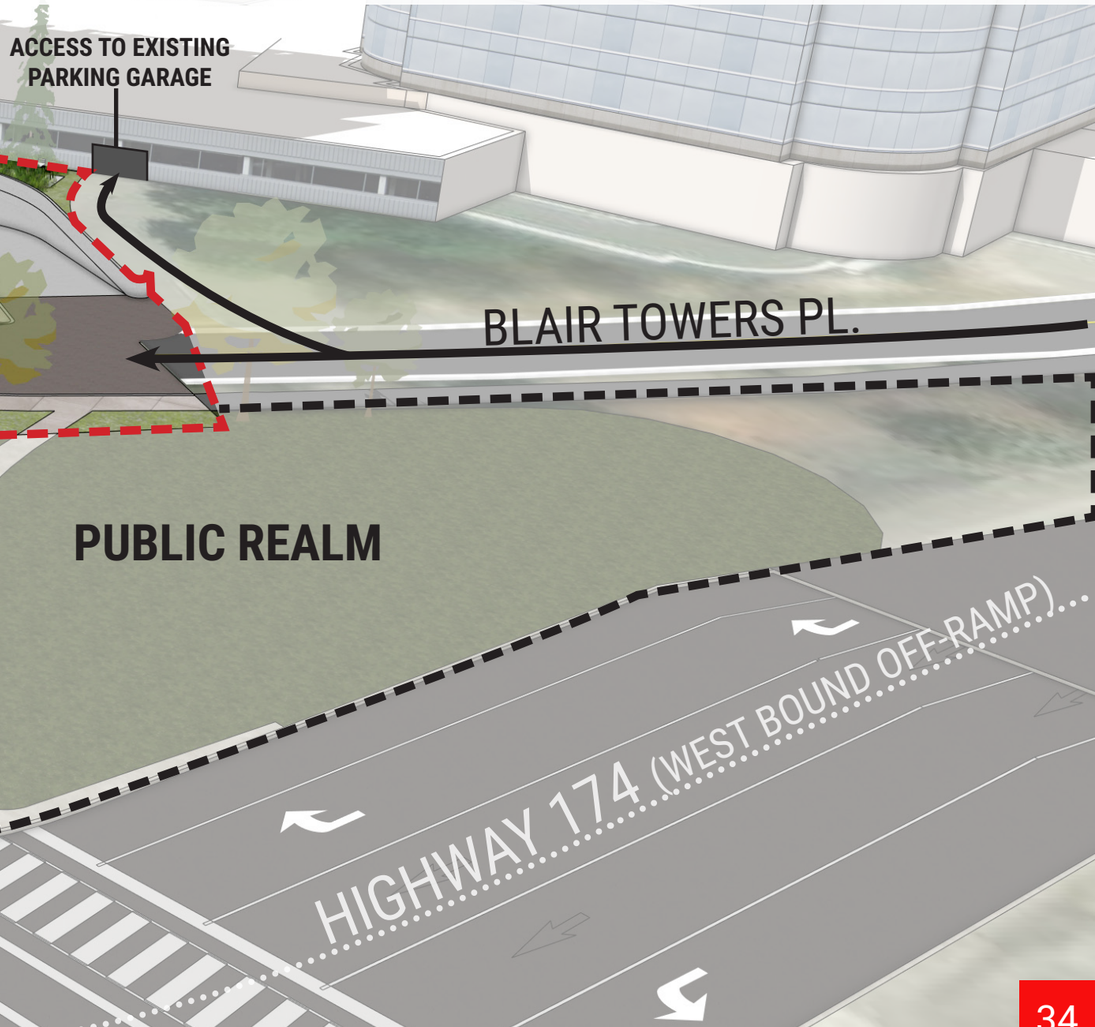




(3) West & South Public Realm

This landscape interface organizes the shared driveway for drop-off and access to parking. The soft landscape interface provides safe and accessible pedestrian connections to local retail/commercial ammenites surrounding the property.

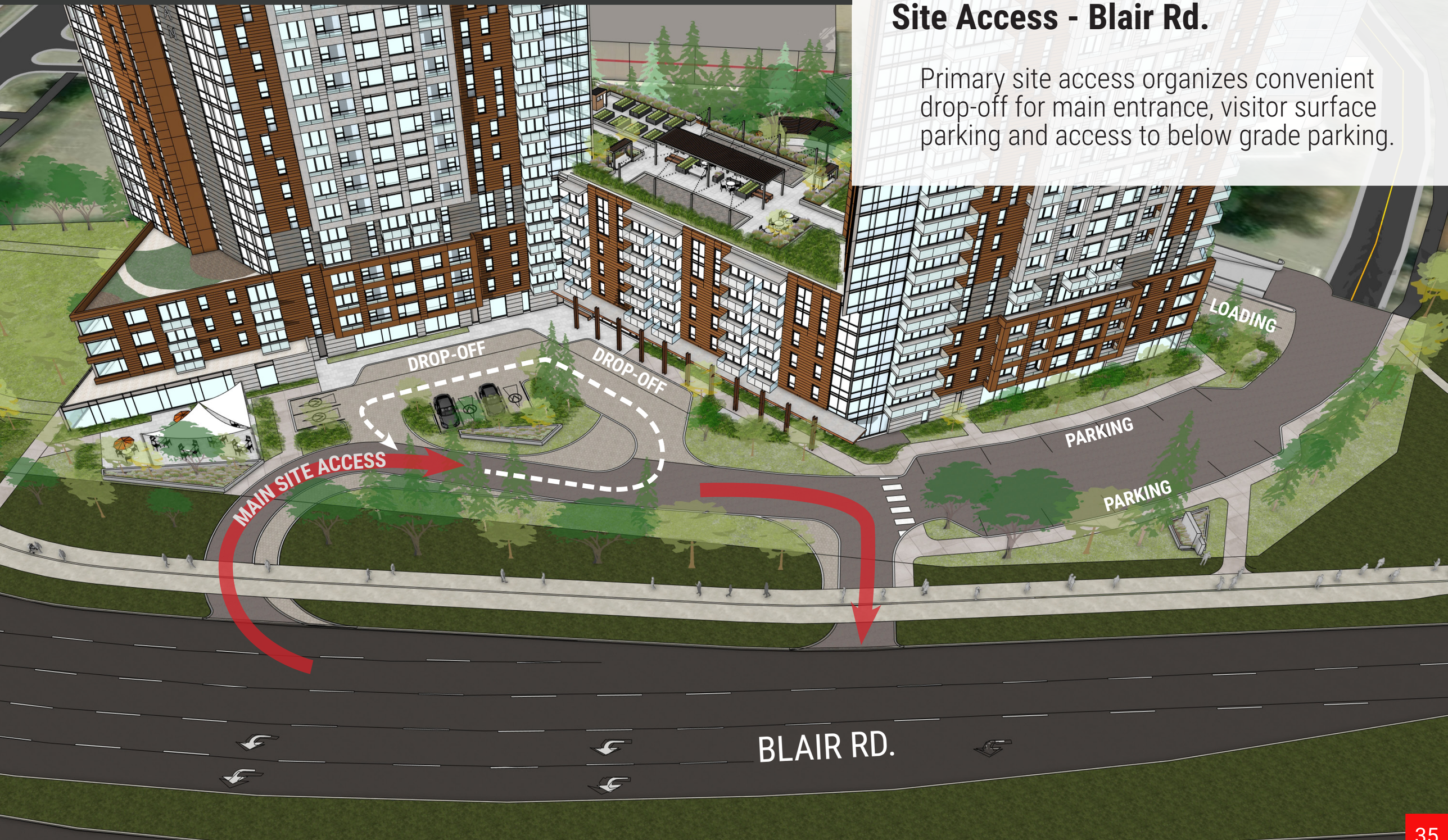




5 SITE ACCESS & LOADING

Site Access - Blair Rd.

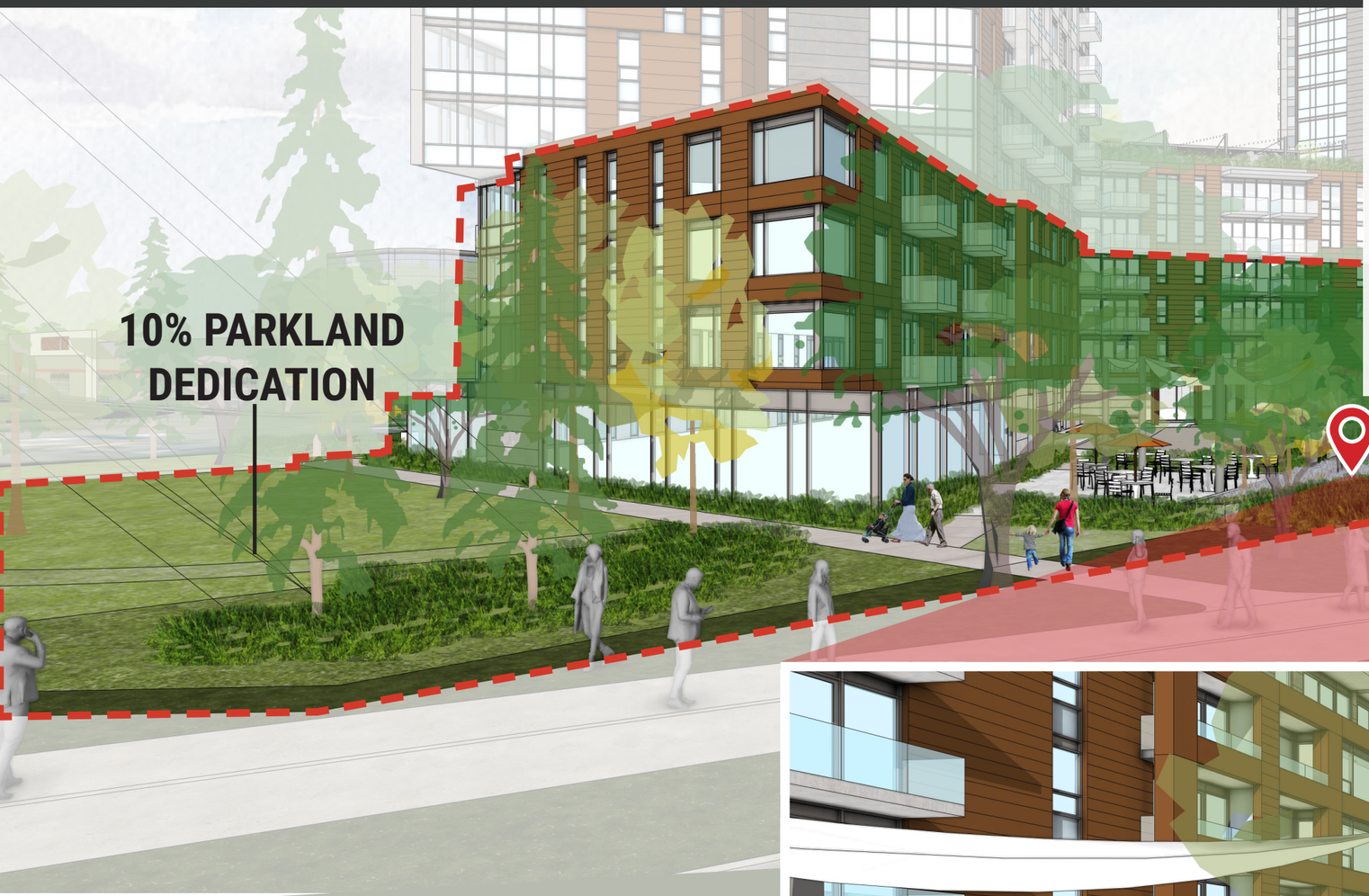
Primary site access organizes convenient drop-off for main entrance, visitor surface parking and access to below grade parking.



6 PUBLIC REALM ANIMATION

Ground Level Activation

This proposal provides an animated frontage along Blair and Ogilvie Rd with ground floor amenity activating the parkland frontage with continuous/full height glazing.





7 ENTRANCE EXPERIENCE

Main Entrance - Blair Rd.

Main entrance is visually connected to Blair Rd to promote accessibility and convenient drop-off for residents.



8 PRIVATE COURTYARD

Private Outdoor Space

This proposal is designed around a open courtyard theme which organizes all private indoor/outdoor amenity programs, promoting health and wellness with dynamic activity spaces that interconnect with the public realm.

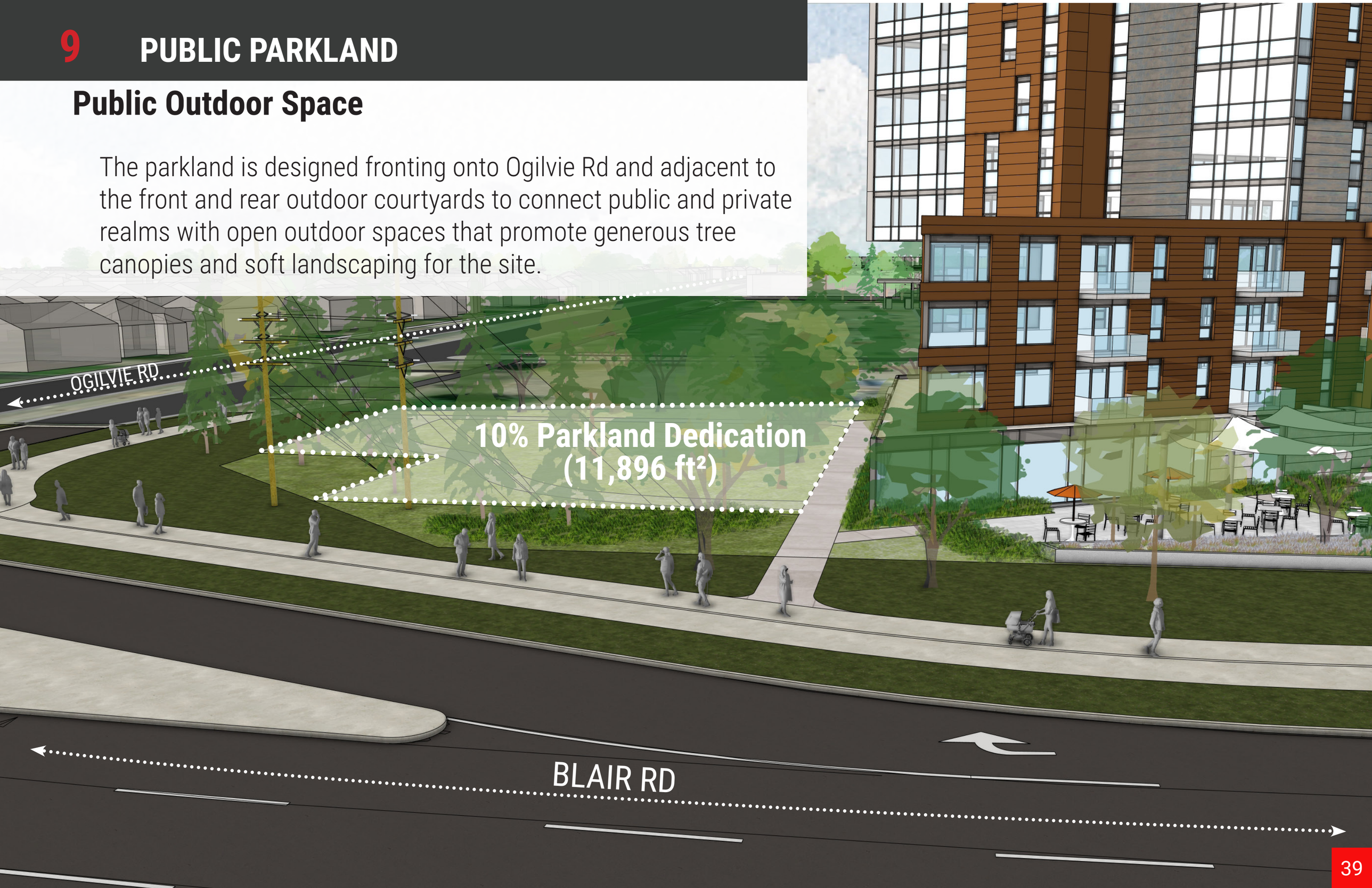


EXISTING PARKING GARAGE

9 PUBLIC PARKLAND

Public Outdoor Space

The parkland is designed fronting onto Ogilvie Rd and adjacent to the front and rear outdoor courtyards to connect public and private realms with open outdoor spaces that promote generous tree canopies and soft landscaping for the site.

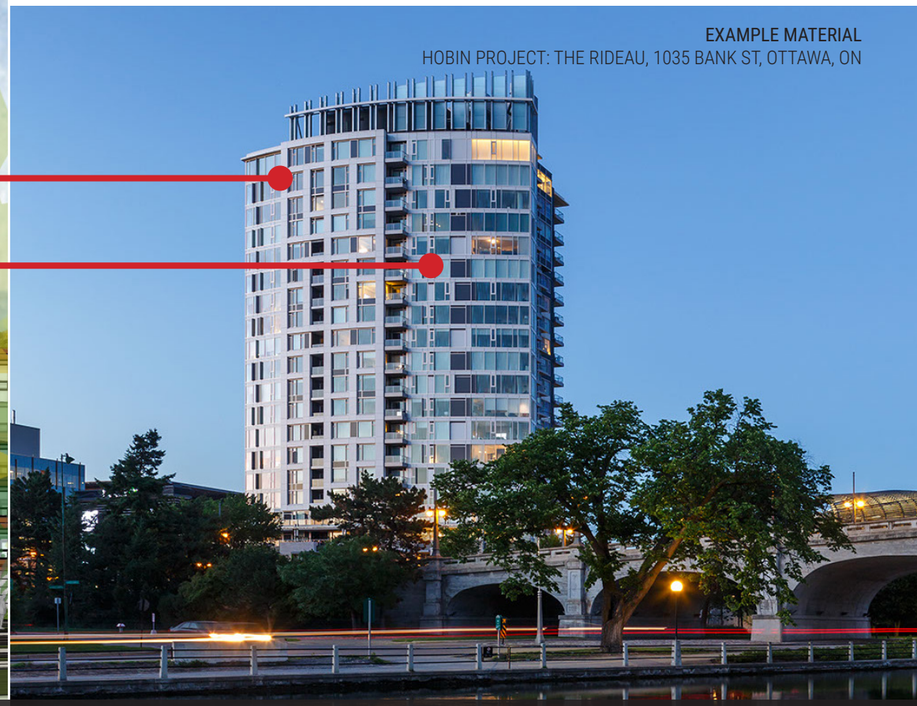


EXTERIOR MATERIALS



PROPOSED EXTERIOR MATERIALS

1. Terracotta Cladding/Brick Masonry
2. Architectural Aluminum Panel
3. Metal Siding
4. Aluminum Windows
5. Glass and Aluminum Guardrails



EXAMPLE MATERIAL
HOBIN PROJECT: THE RIDEAU, 1035 BANK ST, OTTAWA, ON

The project will consider mitigation measures aimed at reducing risks to birds in the built environment. Reference to the CSA Brid-Friendly Design Standards and Ottawa Bird Safe Design Guidelines will serve as a reference point.
Provided the incorporation of bird safe measures into the design is economically viable" a variety of design options will be explored to mitigate bird strikes and provide a bird-friendly building.

EXTERIOR MATERIALS

PROPOSED EXTERIOR MATERIALS

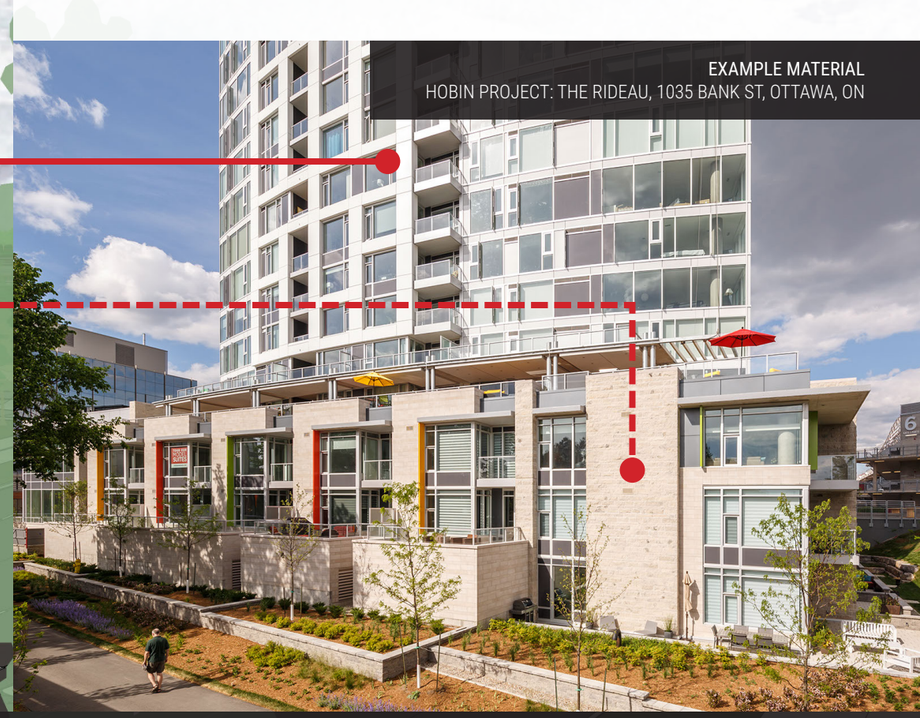
1 Terracotta Cladding/Brick Masonry

2 Architectural Aluminum Panel

3 Metal Siding

4 Aluminum Windows

5 Stone Masonry



EXAMPLE MATERIAL
HOBIN PROJECT: THE RIDEAU, 1035 BANK ST, OTTAWA, ON

The project will consider mitigation measures aimed at reducing risks to birds in the built environment. Reference to the CSA Brid-Friendly Design Standards and Ottawa Bird Safe Design Guidelines will serve as a reference point.
Provided the incorporation of bird safe measures into the design is economically viable" a variety of design options will be explored to mitigate bird strikes and provide a bird-friendly building.

Thank You :)

LEGROUPE MAURICE
LES RETRAITÉS NOUS HABITENT

FOTENN
Planning + Design

HOBIN
ARCHITECTURE



PROJECT STATISTICS

SITE AREA = 118,960 ft²
10% PARKLAND PROVIDED = 11,896 ft²
TOTAL CORNER LOT AREA = 13,603 ft²
TOTAL PROJECT SITE AREA = 105,357 ft²
TOTAL UNITS = 398
FOOTPRINT AREA = 35,587 ft²

LOT COVERAGE = 32.5% (OF PROJECT SITE AREA)
OPEN SPACE = 67.5%

PARKING SUMMARY

TOTAL PARKING COUNT = 293

TOTAL ABOVE GROUND PARKING	
PARKING SPACE 5200 X 2600 VISITOR	6
PARKING SPACE 6700 X 2600 VISITOR	10
	16
TOTAL BELOW GRADE PARKING P1	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	3
PARKING SPOT 5500 X 2750	124
	130
TOTAL BELOW GRADE PARKING P2	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	6
PARKING SPOT 5500 X 2750	138
	147

BICYCLE PARKING SUMMARY

TOTAL SURFACE LEVEL BICYCLE PARKING = 6

TOTAL UNDERGROUND BICYCLE PARKING
P1 = 62
P2 = 32

TOTAL BICYCLE PARKING COUNT = 100

ZONING GFA SUMMARY

* AS PER SECTION 54 (DEFINITIONS-GROSS FLOOR AREA) CITY OF OTTAWA ZONING BY-LAW.

	GFA PER FLOOR		# OF FLOORS	TOTAL GFA	
LEVEL 2-4	2,194 m²	23,611 ft²	3	6,581 m²	70,832 ft²
LEVEL 5-6	2,049 m²	22,058 ft²	2	4,099 m²	44,116 ft²
LEVEL 7 NORTH	631 m²	6,788 ft²	1	631 m²	6,788 ft²
LEVEL 7 SOUTH	491 m²	5,290 ft²	1	491 m²	5,290 ft²
LEVEL 8-17 NORTH	646 m²	6,956 ft²	10	6,462 m²	69,561 ft²
LEVEL 8-17 SOUTH	644 m²	6,936 ft²	10	6,443 m²	69,355 ft²
LEVEL 18 NORTH	512 m²	5,508 ft²	1	512 m²	5,508 ft²
LEVEL 18 SOUTH	644 m²	6,936 ft²	1	644 m²	6,936 ft²
LEVEL 19-22	644 m²	6,936 ft²	4	2,577 m²	27,742 ft²
ZONING GFA TOTAL				28,440 m²	306,128 ft²

GFA SUMMARY *(NOT INCLUDING PARKING)*

	GFA PER FLOOR		# OF FLOORS	TOTAL GFA	
LEVEL 1	3,306 m²	35,587 ft²	1	3,306 m²	35,587 ft²
LEVEL 2-4	2,635 m²	28,368 ft²	3	7,906 m²	85,105 ft²
LEVEL 5-6	2,479 m²	26,683 ft²	2	4,958 m²	53,366 ft²
LEVEL 7 NORTH	811 m²	8,728 ft²	1	811 m²	8,728 ft²
LEVEL 7 SOUTH	811 m²	8,728 ft²	1	811 m²	8,728 ft²
LEVEL 7 TERRACE	870 m²	9,366 ft²	1	870 m²	9,366 ft²
LEVEL 8-17 NORTH	811 m²	8,728 ft²	10	8,109 m²	87,280 ft²
LEVEL 8-17 SOUTH	811 m²	8,728 ft²	10	8,109 m²	87,280 ft²
LEVEL18 NORTH	811 m²	8,728 ft²	1	811 m²	8,728 ft²
LEVEL18 SOUTH	811 m²	8,728 ft²	1	811 m²	8,728 ft²
LEVEL 19-22	811 m²	8,728 ft²	4	3,243 m²	34,912 ft²
				39,745 m²	427,807 ft²

GFA SUMMARY - PARKING *(UNDERGROUND)*

	# OF FLOORS	TOTAL GFA	
P2 PARKING	1	6,715 m²	72,280 ft²
P1 PARKING	1	6,715 m²	72,280 ft²
		13,430 m²	144,560 ft²

NET RES AREA SUMMARY

	NET RES AREA PER FLOOR		# OF FLOORS	TOTAL NET RES AREA		EFF.
LEVEL 2-4	2,289 m²	24,637 ft²	3	6,866 m²	73,910 ft²	86.85%
LEVEL 5-6	2,139 m²	23,028 ft²	2	4,279 m²	46,057 ft²	86.30%
LEVEL 7 NORTH	676 m²	7,277 ft²	1	676 m²	7,277 ft²	83.38%
LEVEL 7 SOUTH	527 m²	5,669 ft²	1	527 m²	5,669 ft²	64.95%
LEVEL 8-17 NORTH	692 m²	7,453 ft²	10	6,924 m²	74,527 ft²	85.39%
LEVEL 8-17 SOUTH	690 m²	7,431 ft²	10	6,904 m²	74,309 ft²	851.38%
LEVEL 18 NORTH	531 m²	5,711 ft²	1	531 m²	5,711 ft²	6.54%
LEVEL 18 SOUTH	676 m²	7,277 ft²	1	676 m²	7,277 ft²	83.38%
LEVEL 19-22	676 m²	7,277 ft²	4	2,704 m²	29,109 ft²	83.38%
TOTAL NET RES AREA	8,896 m²	95,761 ft²		30,086 m²	323,847 ft²	

AMENITY AREA SUMMARY *(COMMUNAL)*

		TOTAL AMENITYGFA	
LEVEL 1	INT. AMENITY - LEVEL 1	2,827 m²	30,426 ft²
LEVEL 1	EXT. AMENITY - REAR COURTYARD	1,251 m²	13,464 ft²
LEVEL 1	EXT. AMENITY - FRONT TERRACE	310 m²	3,338 ft²
LEVEL 7 SOUTH TOWER	INT. AMENITY - CINEMA	145 m²	1,557 ft²
LEVEL 7	EXT. AMENITY - ROOF TOP TERRACE	854 m²	9,195 ft²
LEVEL 18 NORTH TOWER	INT. AMENITY - SALON PANORAMIQUE	151 m²	1,622 ft²
TOTAL AMENITY AREA PROVIDED		5,537 m²	59,602 ft²

TOTAL AMENITY AREA REQUIRED = 6 m² X 398 UNITS = 2,388 m²
**** 50% OF REQUIRED AMENITY AREA IS COMMUNAL = 1,194 m²***

HOBIN ARCHITECTURE

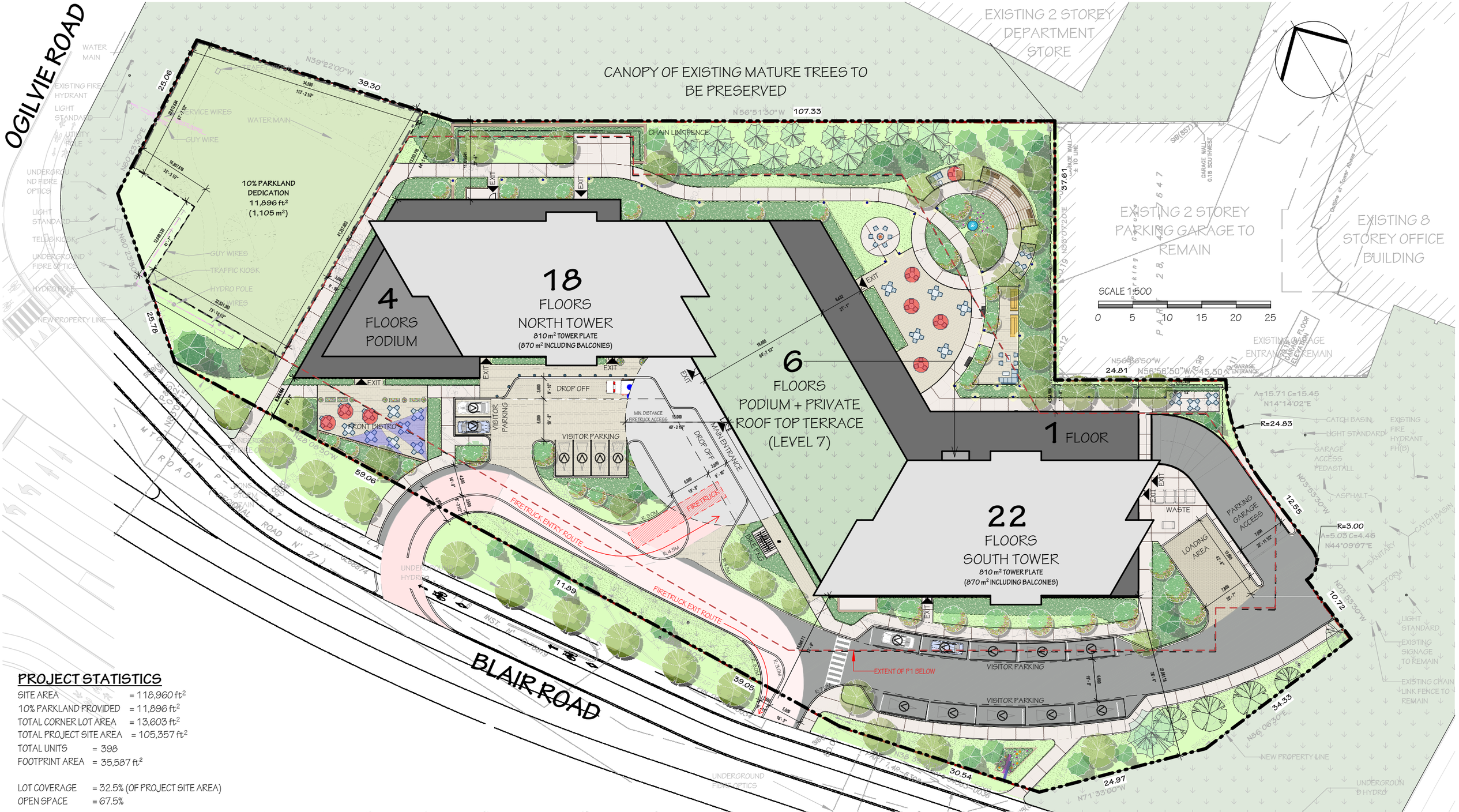
BLAIR & OGILVIE

1440 Blair Towers Pl

PROJECT STATS

SCALE

December 20, 2024



PROJECT STATISTICS

SITE AREA	= 118,960 ft²
10% PARKLAND PROVIDED	= 11,896 ft²
TOTAL CORNER LOT AREA	= 13,603 ft²
TOTAL PROJECT SITE AREA	= 105,357 ft²
TOTAL UNITS	= 398
FOOTPRINT AREA	= 35,587 ft²
LOT COVERAGE	= 32.5% (OF PROJECT SITE AREA)
OPEN SPACE	= 67.5%

HOBIN ARCHITECTURE

BLAIR & OGILVIE

1440 Blair Towers Pl

SITE PLAN

SITE PLAN

SCALE 1 : 500

December 20, 2024



SCALE 1:500

0 5 10 15 20 25

BLAIR & OGILVIE

1440 Blair Towers Pl

FLOOR PLAN

LEVEL P1

SCALE 1 : 500

December 20, 2024

HOBIN ARCHITECTURE

GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL P1	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
PARKING GARAGE P1	6,735 m²	72,497 ft²	1	6,735 m²	72,497 ft²
TOTAL GFA	6,735 m²	72,497 ft²		6,735 m²	72,497 ft²

TOTAL BELOW GRADE PARKING P1	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	3
PARKING SPOT 5500 X 2750	124
	130



SCALE 1:500

0 5 10 15 20 25

HOBIN ARCHITECTURE

BLAIR & OGILVIE

1440 Blair Towers Pl

FLOOR PLAN

LEVEL P2

SCALE 1 : 500

December 20, 2024

GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL P2	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
PARKING GARAGE P1	6,735 m²	72,497 ft²	1	6,735 m²	72,497 ft²
TOTAL GFA	6,735 m²	72,497 ft²		6,735 m²	72,497 ft²

TOTAL BELOW GRADE PARKING P2	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	6
PARKING SPOT 5500 X 2750	138
	147



BLAIR & OGILVIE

1440 Blair Towers Pl

HOBIN ARCHITECTURE

FLOOR PLAN

LEVEL 1

SCALE 1 : 500

December 20, 2024

GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 1	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
COMMON AREA	2,827 m²	30,426 ft²	1	2,827 m²	30,426 ft²
AMENITY AREA (EXT)	1,561 m²	16,802 ft²	1	1,561 m²	16,802 ft²
TOTAL GFA	4,388 m²	47,228 ft²		4,388 m²	47,228 ft²

LEVEL 1 AMENITY GFA SUMMARY

Name	# of Floors	Total Area m2	Total Area ft2
AMENITY AREA BACK (EXT)	1	1,251 m²	13,464 ft²
AMENITY AREA FRONT (EXT)	1	310 m²	3,338 ft²
		1,561 m²	16,802 ft²

TOTAL ABOVE GROUND PARKING	
PARKING SPACE 5290 X 2600 VISITOR	6
PARKING SPACE 6700 X 2600 VISITOR	10
	16



UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BACH (1½)	3	3	9
1 BED (3½)	15	3	45
1 BED (3½) + BAY	7	3	21
1 BED (3½) + DEN	3	3	9
2 BED (4½)	3	3	9
3 BED (5½)	2	3	6
	33		99

SCALE 1:500

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BLAIR & OGILVIE

1440 Blair Towers Pl

HOBIN ARCHITECTURE

FLOOR PLAN

LEVEL 2-4

SCALE 1 : 500

December 20, 2024

GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 2-4	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	2,289 m²	24,637 ft²	3	6,866 m²	73,910 ft²
COMMON AREA	347 m²	3,731 ft²	3	1,040 m²	11,194 ft²
TOTAL GFA	2,635 m²	28,368 ft²		7,906 m²	85,105 ft²



UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BACH (1½)	3	2	6
1 BED (3½)	16	2	32
1 BED (3½) + BAY	5	2	10
1 BED (3½) + DEN	2	2	4
2 BED (4½)	3	2	6
2 BED (4½) + BAY	1	2	2
3 BED (5½)	1	2	2
	31		62

SCALE 1:500

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BLAIR & OGILVIE

1440 Blair Towers Pl

HOBIN ARCHITECTURE

FLOOR PLAN

LEVEL 5-6

SCALE 1 : 500

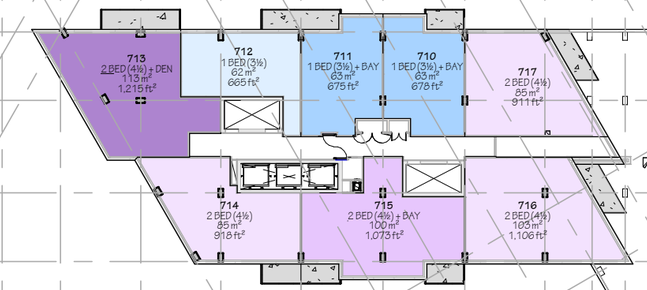
December 20, 2024

GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 5-6	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	2,139 m²	23,028 ft²	2	4,279 m²	46,057 ft²
COMMON AREA	340 m²	3,655 ft²	2	679 m²	7,309 ft²
TOTAL GFA	2,479 m²	26,683 ft²		4,958 m²	53,366 ft²

OGILVIE ROAD

BLAIR ROAD



ROOF TOP GARDEN TERRACE
854 m²
9,195 ft²

UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BED (2½) + BAY	2	1	2
1 BED (3½)	1	1	1
1 BED (3½) + BAY	4	1	4
2 BED (4½)	6	1	6
2 BED (4½) + BAY	1	1	1
2 BED (4½) + DEN	1	1	1
	15		15

SCALE 1:500

0 5 10 15 20 25

BLAIR & OGILVIE

1440 Blair Towers Pl

HOBIN ARCHITECTURE

FLOOR PLAN

LEVEL 7

SCALE 1 : 500

December 20, 2024

AMENITY AREA SUMMARY

	Total Area m2	Total Area ft2
AMENITY AREA (EXT)	854 m²	9,195 ft²
AMENITY AREA (INT)	152 m²	1,634 ft²

NORTH TOWER GFA SUMMARY

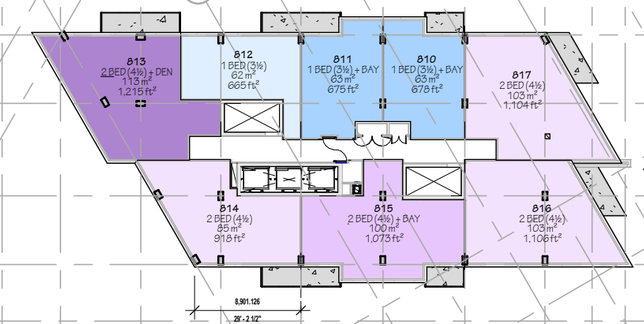
	GFA PER FLOOR			TOTAL GFA LEVEL 7	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	676 m²	7,277 ft²	1	676 m²	7,277 ft²
COMMON AREA	135 m²	1,451 ft²	1	135 m²	1,451 ft²
TOTAL GFA	811 m²	8,728 ft²		811 m²	8,728 ft²
TOTAL GFA *INCLUDING BALCONIES	870 m²	9,369 ft²	1	870 m²	9,369 ft²

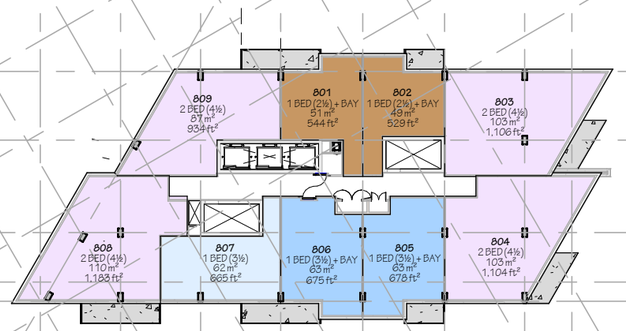
SOUTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 7	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	527 m²	5,669 ft²	1	527 m²	5,669 ft²
COMMON AREA	132 m²	1,426 ft²	1	132 m²	1,426 ft²
AMENITY AREA (INT)	152 m²	1,634 ft²	1	152 m²	1,634 ft²
TOTAL GFA	811 m²	8,728 ft²		811 m²	8,728 ft²
TOTAL GFA *INCLUDING BALCONIES	870 m²	9,369 ft²	1	870 m²	9,369 ft²

OGILVIE ROAD

BLAIR ROAD





UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BED (2½) + BAY	2	10	20
1 BED (3½)	2	10	20
1 BED (3½) + BAY	4	10	40
2 BED (4½)	7	10	70
2 BED (4½) + BAY	1	10	10
2 BED (4½) + DEN	1	10	10
	17		170

SCALE 1:500

0 5 10 15 20 25

HOBIN ARCHITECTURE

BLAIR & OGILVIE

1440 Blair Towers Pl

FLOOR PLAN

LEVEL 8-17

SCALE 1 : 500

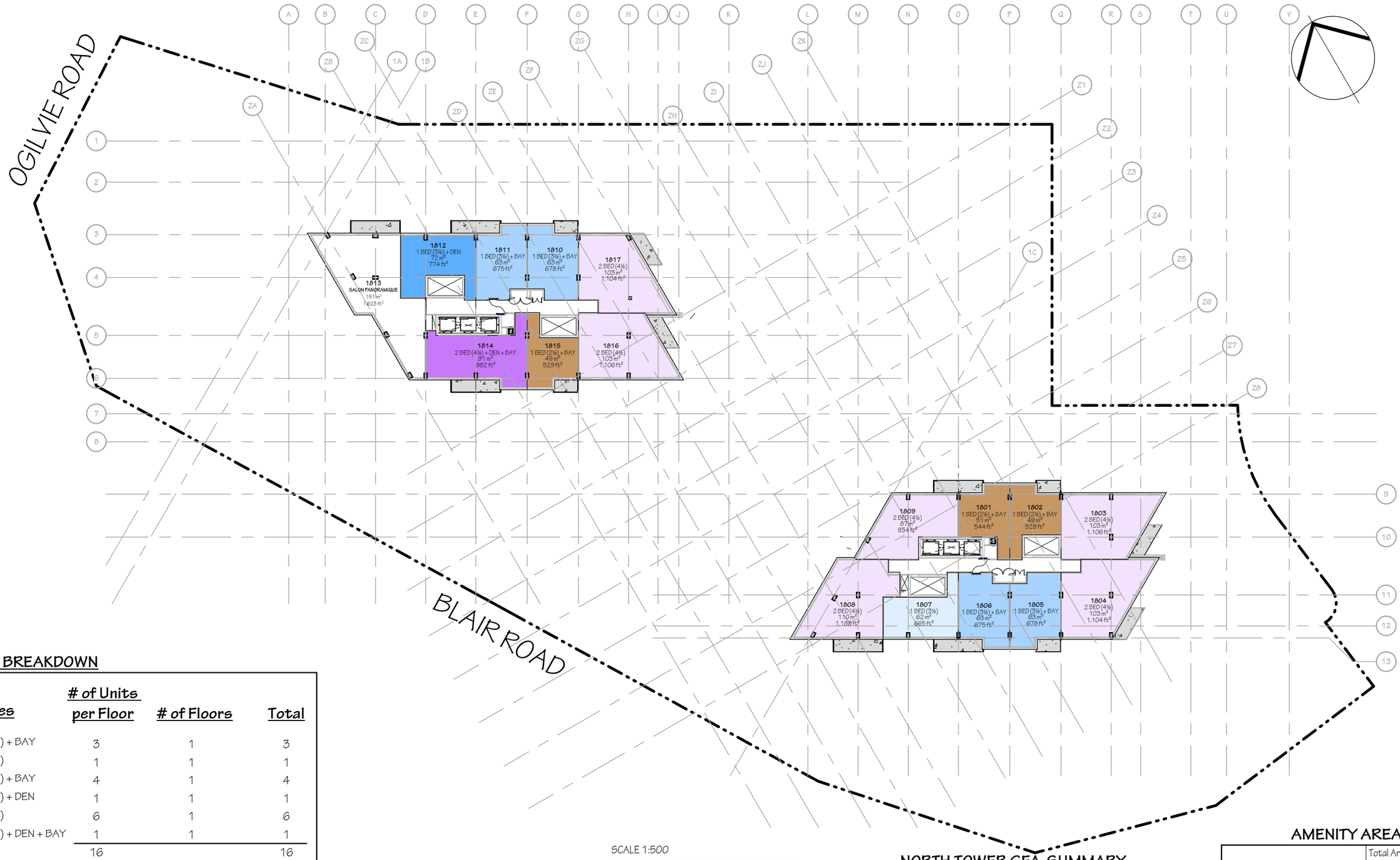
December 20, 2024

NORTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 8-17	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	692 m²	7,453 ft²	10	6,924 m²	74,527 ft²
COMMON AREA	118 m²	1,275 ft²	10	1,185 m²	12,753 ft²
TOTAL GFA	811 m²	8,728 ft²		8,109 m²	87,280 ft²
TOTAL GFA * INCLUDING BALCONIES	870 m²	9,369 ft²	10	8,704 m²	93,692 ft²

SOUTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 8-17	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	690 m²	7,431 ft²	10	6,904 m²	74,309 ft²
COMMON AREA	121 m²	1,297 ft²	10	1,205 m²	12,971 ft²
TOTAL GFA	811 m²	8,728 ft²		8,109 m²	87,280 ft²
TOTAL GFA * INCLUDING BALCONIES	870 m²	9,369 ft²	10	8,704 m²	93,692 ft²



UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BED (2½) + BAY	3	1	3
1 BED (3½)	1	1	1
1 BED (3½) + BAY	4	1	4
1 BED (3½) + DEN	1	1	1
2 BED (4½)	6	1	6
2 BED (4½) + DEN + BAY	1	1	1
	16		16

SCALE 1:500

0 5 10 15 20 25

HOBIN ARCHITECTURE

BLAIR & OGILVIE

1440 Blair Towers Pl

FLOOR PLAN

LEVEL 18

SCALE 1 : 500

December 20, 2024

NORTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 18	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	531 m²	5,711 ft²	1	531 m²	5,711 ft²
COMMON AREA	130 m²	1,395 ft²	1	130 m²	1,395 ft²
AMENITY AREA (INT)	151 m²	1,622 ft²	1	151 m²	1,622 ft²
TOTAL GFA	811 m²	8,728 ft²		811 m²	8,728 ft²
TOTAL GFA *INCLUDING BALCONIES	870 m²	9,369 ft²	1	870 m²	9,369 ft²

AMENITY AREA SUMMARY

	Total Area m2	Total Area ft2
AMENITY AREA (INT)	151 m²	1,622 ft²

SOUTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 18	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	676 m²	7,277 ft²	1	676 m²	7,277 ft²
COMMON AREA	135 m²	1,451 ft²	1	135 m²	1,451 ft²
TOTAL GFA	811 m²	8,728 ft²		811 m²	8,728 ft²
TOTAL GFA *INCLUDING BALCONIES	870 m²	9,369 ft²	1	870 m²	9,369 ft²



UNIT TYPE BREAKDOWN

Area Types	# of Units per Floor	# of Floors	Total
1 BED (2½) + BAY	2	4	8
1 BED (3½)	1	4	4
1 BED (3½) + BAY	2	4	8
2 BED (4½)	4	4	16
	9		36

SCALE 1:500

0 5 10 15 20 25

SOUTH TOWER GFA SUMMARY

	GFA PER FLOOR			TOTAL GFA LEVEL 19-22	
	Area m2	Area ft2	# of Floors	Total Area m2	Total Area ft2
NET RES AREA	676 m²	7,277 ft²	4	2,704 m²	29,109 ft²
COMMON AREA	135 m²	1,451 ft²	4	539 m²	5,802 ft²
TOTAL GFA	811 m²	8,728 ft²		3,243 m²	34,912 ft²
TOTAL GFA *INCLUDING BALCONIES	870 m²	9,369 ft²	4	3,482 m²	37,477 ft²

HOBIN ARCHITECTURE

BLAIR & OGILVIE

1440 Blair Towers Pl

FLOOR PLAN

LEVEL 19-22

SCALE 1 : 500

December 20, 2024

CONNECT TO EXISTING WATERMAIN

6m EASEMENT (WATERMAIN)

FITNESS LAWN

FITNESS PATIO

CANOPY OF EXISTING MATURE TREES TO BE PRESERVED

CONCRETE PATH 2M WIDE

GROUP SEATING WITH GAS FIRE TABLE

CHAIN LINK FENCE

TRELLIS OR WOVEN WILLOW FENCING WITH CLIMBING PLANTS

CURVED PERGOLA WITH BENCHES

WATER FEATURE

SWING BENCH (2 EA)

EMPLOYEE TERRACE

EXISTING 2 STOREY DEPARTMENT STORE

EXISTING 2 STOREY PARKING GARAGE TO REMAIN

EXISTING 8 STOREY OFFICE BUILDING

EXISTING GARAGE ENTRANCE TO REMAIN

SCALE 1:500

0 5 10 15 20 25

PARK
10% PARKLAND
PROVIDED = 11,896 ft2

TOTAL CORNER LOT AREA = 14,425 ft2 (12%)

LIMIT OF UNDERGROUNG STRUCTURE TO BE REVIEWED

4 FLOORS PODIUM

18 FLOORS NORTH TOWER
810 m² TOWER PLATE
(870 m² INCLUDING BALCONIES)

6 FLOORS PODIUM + PRIVATE ROOF TOP TERRACE (LEVEL 7)

1 FLOOR

22 FLOORS SOUTH TOWER
810 m² TOWER PLATE
(870 m² INCLUDING BALCONIES)

DROP OFF

VISITOR PARKING

MAIN ENTRANCE

FIRETRUCK ENTRY ROUTE

FIRETRUCK EXIT ROUTE

MOVE IN/OUT

WASTE

LOADING AREA

PARKING GARAGE ACCESS

GENERATOR & TRANSFORMER

P1 UNDERGROUND PARKING FOOTPRINT

RAISED PLANTING BED 400mm HEIGHT

SHADE SAILS

CONNECT TO EXISTING WATERMAIN

LIMIT OF UNDERGROUNG STRUCTURE TO BE REVIEWED

CONNECT TO EXISTING WATERMAIN,SANITARY AND STORM SEWERS

PROJECT STATISTICS

SITE AREA	= 118,960 ft²
10% PARKLAND PROVIDED	= 11,896 ft²
TOTAL CORNER LOT AREA	= 13,603 ft²
TOTAL PROJECT SITE AREA	= 105,357 ft²
TOTAL UNITS	= 398
FOOTPRINT AREA	= 35,587 ft²
LOT COVERAGE	= 32.5% (OF PROJECT SITE AREA)
OPEN SPACE	= 67.5%

GFA SUMMARY *(NOT INCLUDING PARKING)*

	GFA PER FLOOR	# OF FLOORS	TOTAL GFA
LEVEL 1	35,587 ft²	1	35,587 ft²
LEVEL 2	28,368 ft²	1	28,368 ft²
LEVEL 3	28,368 ft²	1	28,368 ft²
LEVEL 4	28,368 ft²	1	28,368 ft²
LEVEL 5-6	26,683 ft²	2	53,366 ft²
LEVEL 7 NORTH	8,728 ft²	1	8,728 ft²
LEVEL 7 SOUTH	8,728 ft²	1	8,728 ft²
LEVEL 7 TERRACE	9,366 ft²	1	9,366 ft²
LEVEL 8-17 NORTH	8,728 ft²	10	87,280 ft²
LEVEL 8-17 SOUTH	8,728 ft²	10	87,280 ft²
LEVEL18 NORTH	8,728 ft²	1	8,728 ft²
LEVEL18 SOUTH	8,728 ft²	1	8,728 ft²
LEVEL 19-22	8,728 ft²	4	34,912 ft²
			427,807 ft²

GFA SUMMARY - PARKING

	GFA PER FLOOR	# OF FLOORS	TOTAL GFA
P2 PARKING	72280 ft²	1	72,279.85 ft²
P1 PARKING	72280 ft²	1	72,279.85 ft²
			144,559.70 ft²

PARKING SUMMARY

TOTAL PARKING COUNT = 295

TOTAL ABOVE GROUND PARKING	
PARKING SPACE 5200 X 2600 VISITOR	8
PARKING SPACE 6700 X 2600 VISITOR	10
	18

TOTAL BELOW GRADE PARKING P1	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	3
PARKING SPOT 5500 X 2750	124
	130

TOTAL BELOW GRADE PARKING P2	
PARKING SPACE 5500X2400 SMALL	3
PARKING SPOT 5500 X 2600	6
PARKING SPOT 5500 X 2750	138
	147

CONCEPTUAL SERVICING LEGEND

- CONCEPTUAL SANITARY SEWER
- *EXISTING SANITARY SEWER*
- CONCEPTUAL SANITARY MECHANICAL PLUMBING
- CONCEPTUAL STORM SEWER
- *EXISTING STORM SEWER*
- CONCEPTUAL STORM MECHANICAL PLUMBING
- CONCEPTUAL WATER MAIN
- *EXISTING WATERMAIN*
- CONCEPTUAL WATER MECHANICAL PLUMBING

CONCEPTUAL WATERMAIN AND SEWERS ONLY (SKETCH DOES NOT INCLUDE MHs, VALVES, HYDRANTS, ETC.)

HOBIN ARCHITECTURE

BLAIR & OGILVIE

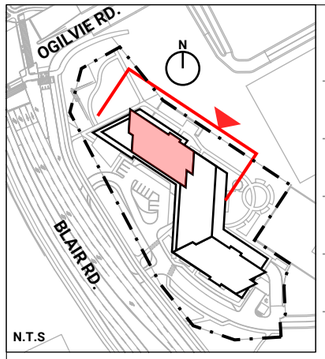
1440 Blair Towers Pl

SITE PLAN

SITE PLAN

SCALE 1 : 500

September 19, 2024



GLG | ALW | ALP-1 | MS-1 | GLG | ALW

BUILDING HEIGHT 54.00 M

BRM-1 | STM-1 | ALW

LEVEL ROOF	144.40	2.90 m
LEVEL 22	141.50	2.90 m
LEVEL 21	138.60	2.90 m
LEVEL 20	135.70	2.90 m
LEVEL 19	132.80	2.90 m
LEVEL 18	129.90	2.90 m
LEVEL 17	127.00	2.90 m
LEVEL 16	124.10	2.90 m
LEVEL 15	121.20	2.90 m
LEVEL 14	118.30	2.90 m
LEVEL 13	115.40	2.90 m
LEVEL 12	112.50	2.90 m
LEVEL 11	109.60	2.90 m
LEVEL 10	106.70	2.90 m
LEVEL 9	103.80	2.90 m
LEVEL 8	100.90	2.90 m
LEVEL 7	98.00	2.90 m
LEVEL 6	95.10	2.90 m
LEVEL 5	92.20	2.90 m
LEVEL 4	89.30	2.90 m
LEVEL 3	86.40	2.90 m
LEVEL 2	83.50	2.90 m
GROUND LEVEL	80.60	

ALP-1	BRM-1	STM-1	MS-1	GLG	ALW
ALUMINUM PANEL 1	BRICK MASONRY 1 / TERRACOTTA SIDING	STONE MASONRY	METAL SIDING 1	GLASS GUARD RAIL	ALUMINUM WINDOWS / SPANDREL GLASS

HOBIN

Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

EAST ELEVATION (NORTH TOWER)

SCALE 1:300
DECEMBER 2024



ALP-1 ALUMINUM PANEL 1

BRM-1 BRICK MASONRY 1 / TERRACOTTA SIDING

STM-1 STONE MASONRY

MS-1 METAL SIDING 1

GLG GLASS GUARD RAIL

ALW ALUMINUM WINDOWS / SPANDREL GLASS

HOBIN

Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

NORTH ELEVATION

SCALE 1:300
DECEMBER 2024



ALP-1	BRM-1	STM-1	MS-1	GLG	ALW
ALUMINUM PANEL 1	BRICK MASONRY 1 / TERRACOTTA SIDING	STONE MASONRY	METAL SIDING 1	GLASS GUARD RAIL	ALUMINUM WINDOWS / SPANDREL GLASS

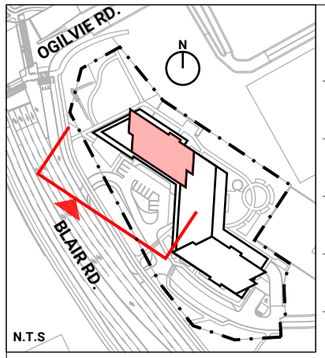
HOBIN

Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

EAST ELEVATION (SOUTH TOWER)

SCALE 1:300
DECEMBER 2024



ALW BRM-1 MS-1 GLG MS-1 ALP-1 GLG ALW

BUILDING HEIGHT 54.00 M

BRM-1 BRM-1 STM-1

LEVEL ROOF	144.40	2.90 m
LEVEL 22	141.50	2.90 m
LEVEL 21	138.60	2.90 m
LEVEL 20	135.70	2.90 m
LEVEL 19	132.80	2.90 m
LEVEL 18	129.90	2.90 m
LEVEL 17	127.00	2.90 m
LEVEL 16	124.10	2.90 m
LEVEL 15	121.20	2.90 m
LEVEL 14	118.30	2.90 m
LEVEL 13	115.40	2.90 m
LEVEL 12	112.50	2.90 m
LEVEL 11	109.60	2.90 m
LEVEL 10	106.70	2.90 m
LEVEL 9	103.80	2.90 m
LEVEL 8	100.90	2.90 m
LEVEL 7	98.00	2.90 m
LEVEL 6	95.10	2.90 m
LEVEL 5	92.20	2.90 m
LEVEL 4	89.30	2.90 m
LEVEL 3	86.40	2.90 m
LEVEL 2	83.50	2.90 m
GROUND LEVEL	80.60	

ALP-1	ALUMINUM PANEL 1
BRM-1	BRICK MASONRY 1 / TERRACOTTA SIDING
STM-1	STONE MASONRY
MS-1	METAL SIDING 1
GLG	GLASS GUARD RAIL
ALW	ALUMINUM WINDOWS / SPANDREL GLASS

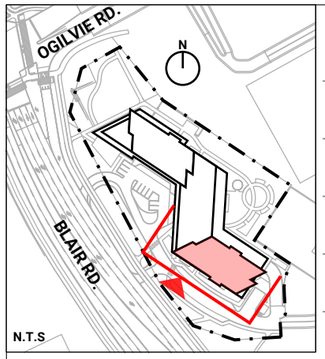
HOBIN

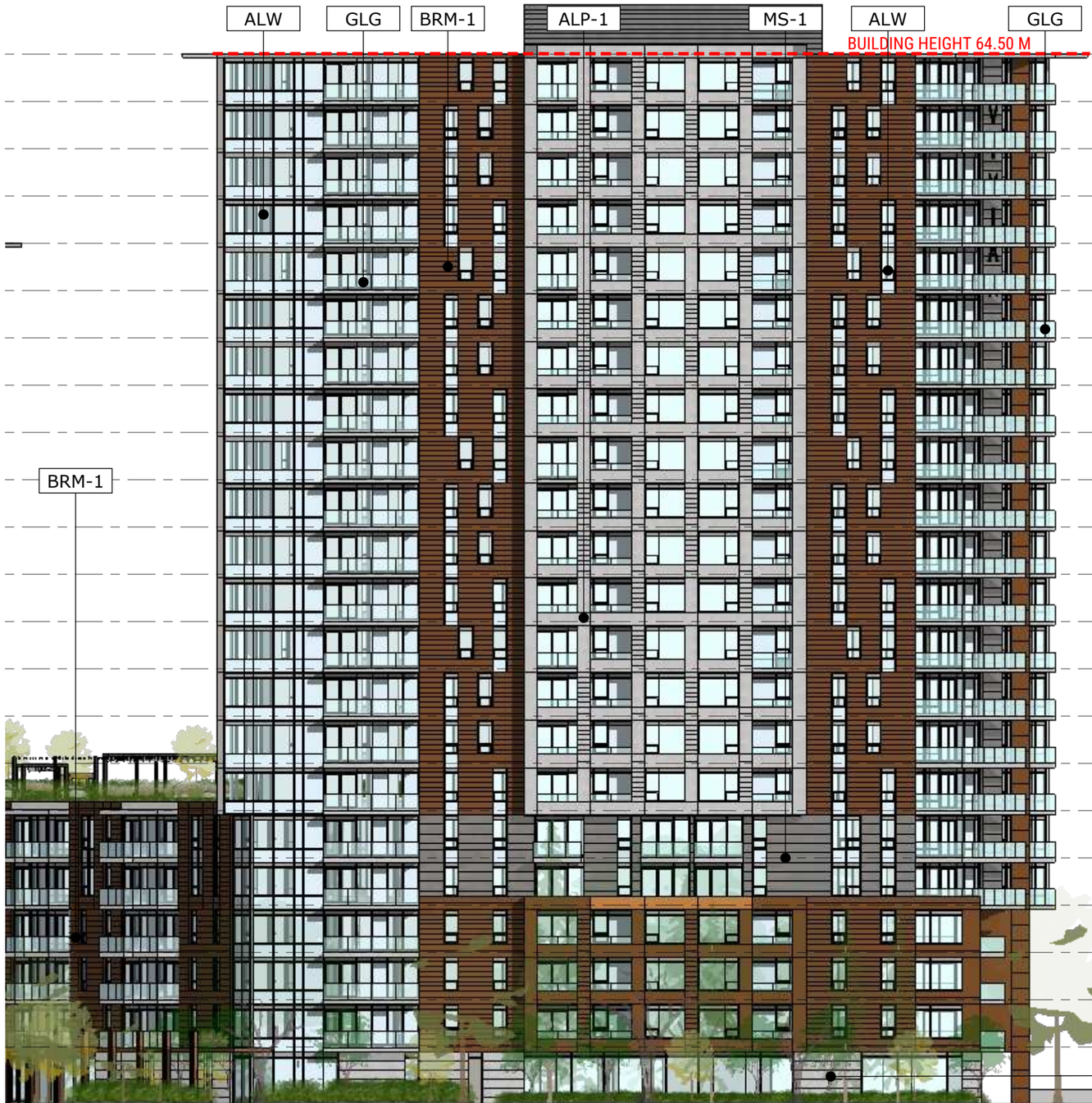
Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

WEST ELEVATION (NORTH TOWER)

SCALE 1:300
DECEMBER 2024





ALP-1	BRM-1	STM-1	MS-1	GLG	ALW
ALUMINUM PANEL 1	BRICK MASONRY 1 / TERRACOTTA SIDING	STONE MASONRY	METAL SIDING 1	GLASS GUARD RAIL	ALUMINUM WINDOWS / SPANDREL GLASS

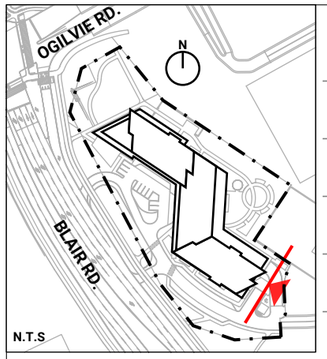
HOBIN

Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

WEST ELEVATION (SOUTH TOWER)

SCALE 1:300
DECEMBER 2024



ALW MS-1 GLG

BUILDING HEIGHT 64.50 M

ALP-1 MS-1 ALW

BUILDING HEIGHT 54.00 M

STM-1 BRM-1

LEVEL ROOF	144.40	
LEVEL 22	141.50	2.90 m
LEVEL 21	138.60	2.90 m
LEVEL 20	135.70	2.90 m
LEVEL 19	132.80	2.90 m
LEVEL 18	129.90	2.90 m
LEVEL 17	127.00	2.90 m
LEVEL 16	124.10	2.90 m
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LEVEL 10	106.70	2.90 m
LEVEL 9	103.80	2.90 m
LEVEL 8	100.90	2.90 m
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LEVEL 6	95.10	2.90 m
LEVEL 5	92.20	2.90 m
LEVEL 4	89.30	2.90 m
LEVEL 3	86.40	2.90 m
LEVEL 2	83.50	2.90 m
GROUND LEVEL	80.60	

ALP-1	BRM-1	STM-1	MS-1	GLG	ALW
ALUMINUM PANEL 1	BRICK MASONRY 1 / TERRACOTTA SIDING	STONE MASONRY	METAL SIDING 1	GLASS GUARD RAIL	ALUMINUM WINDOWS / SPANDREL GLASS

HOBIN

Blair and Ogilvie Road

1440 Blair Towers Pl, Ottawa, ON

SOUTH ELEVATION

SCALE 1:300
DECEMBER 2024

Sun Shadow Analysis Written Summary

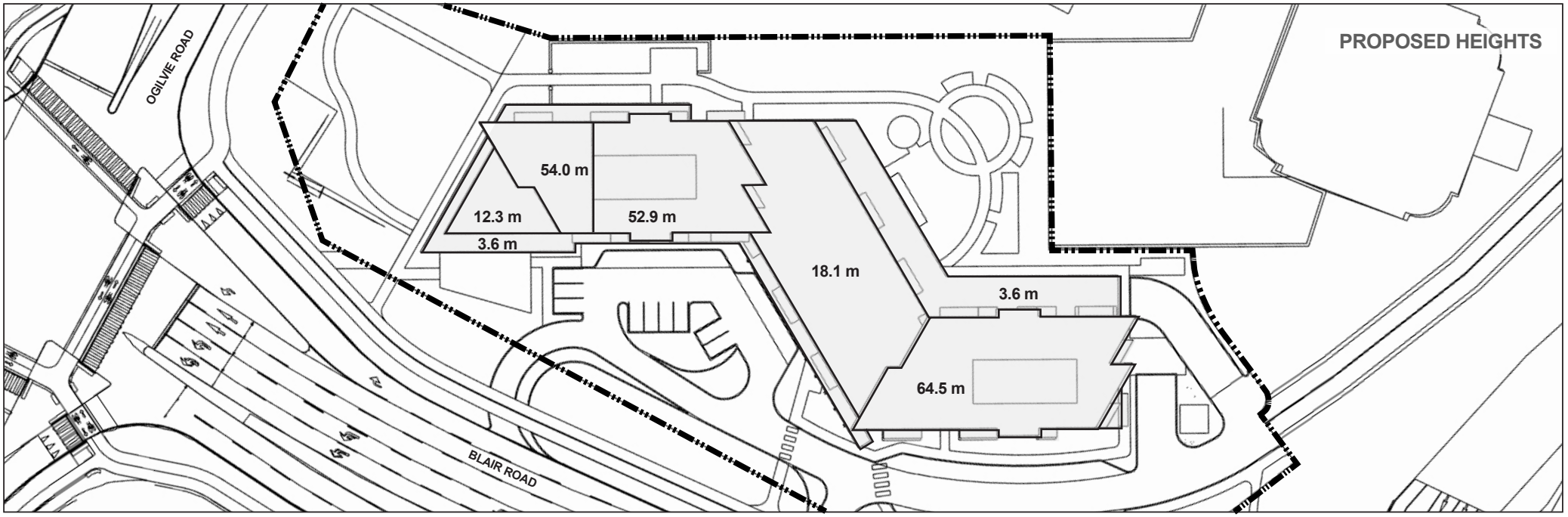
Shadow impacts:

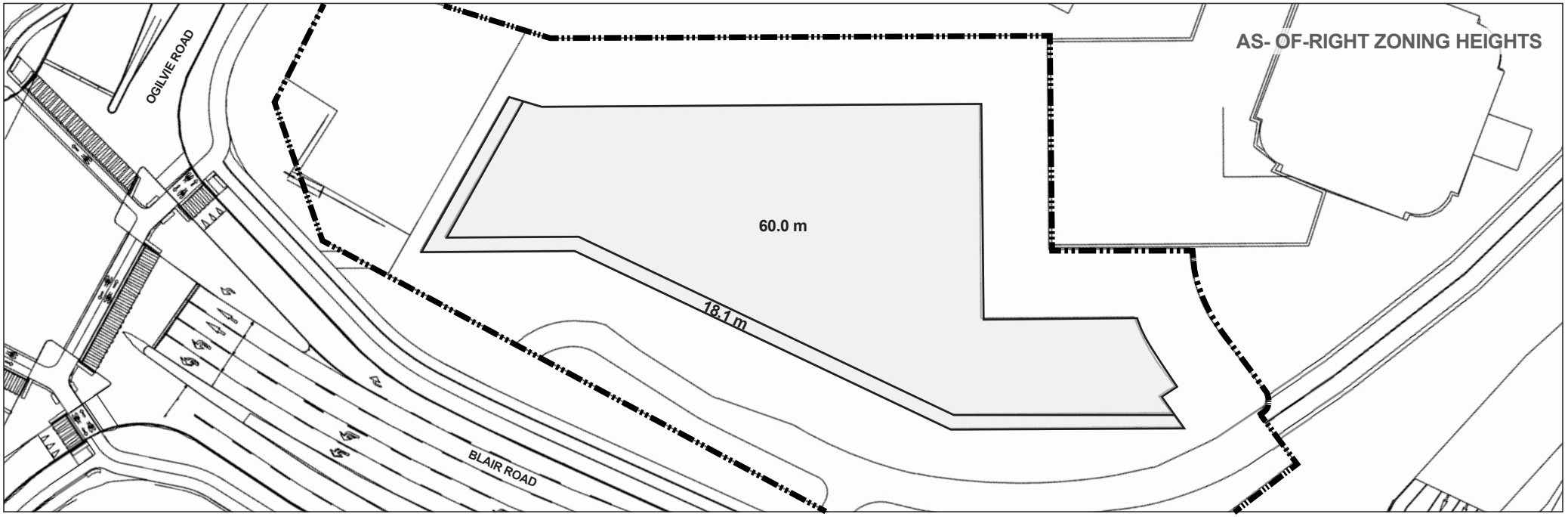
Sensitive areas within the sun shadow analysis' study area include arterial mainstreets (Blair Road and Ogilvie Road) and a park. This sun shadow study represents the park spaces as a green hatch and Hazeldean Road as a blue dashed line (refer to sensitive areas legend).

Public spaces including parks, open spaces and plazas are not impacted by the criteria of any new net shadow that results in an average of 50% of any public space being cast in shadow for 5 or more hourly interval times during the September test date.

The arterial mainstreet of Blair Road and Ogilvie Road area not impacted by the criteria of a new net shadow in any one spot for more than 3 consecutive hourly test times of the sidewalk on the opposite side of the street, being cast in shadow during the September test date.

No new net shadow within the no impact zone of any residential private outdoor amenity space is being cast in shadow for more than two consecutive hourly test times during the June and September test date. In summary, the proposed building projects less rear yard shadow compared to the as-of-right massing.





1:1000
0 m 10 m 20 m 50 m

BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

HOBIN

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

As-Of-Right & Proposed
HEIGHT & MASSING



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 8:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

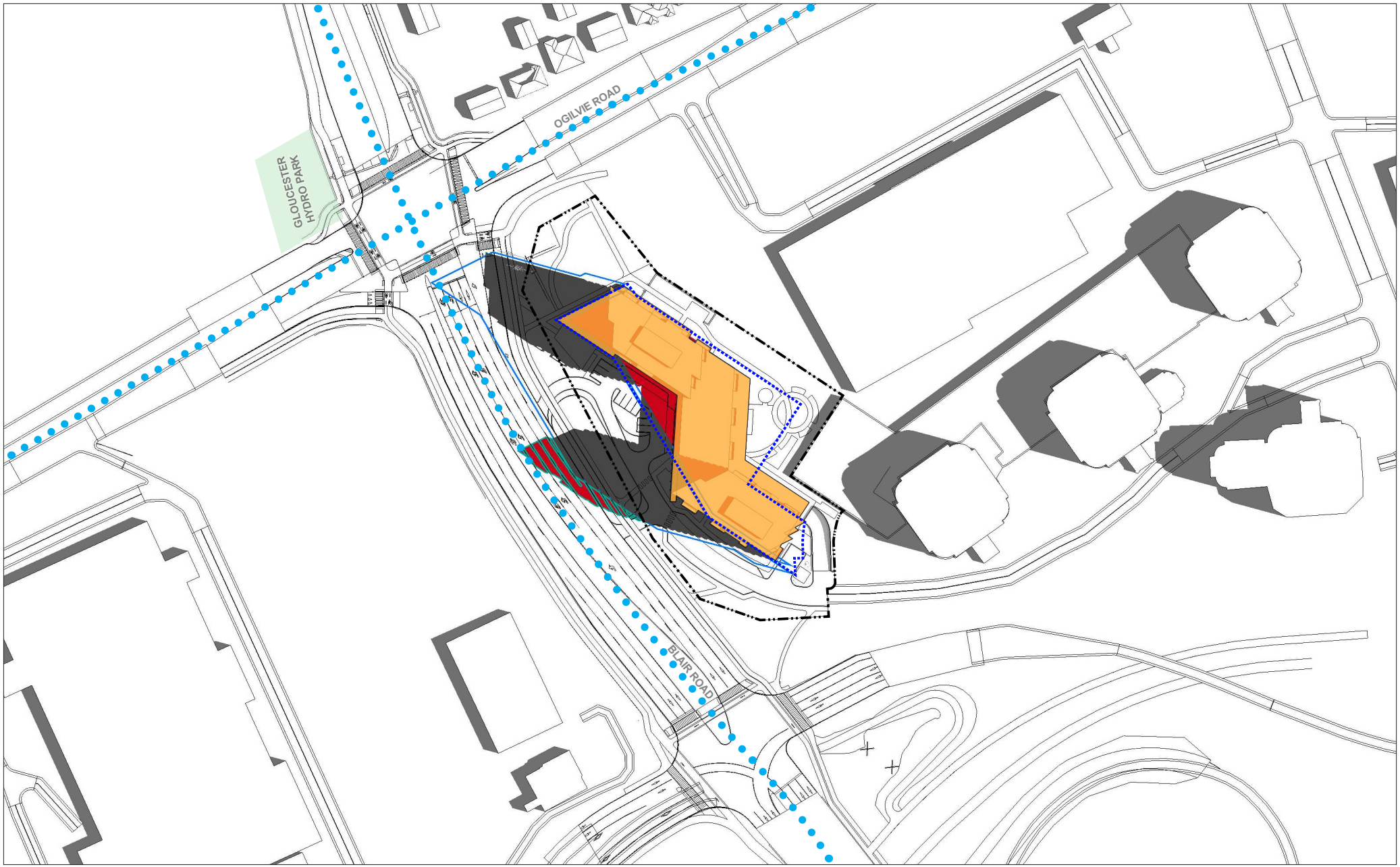
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 9:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 10:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

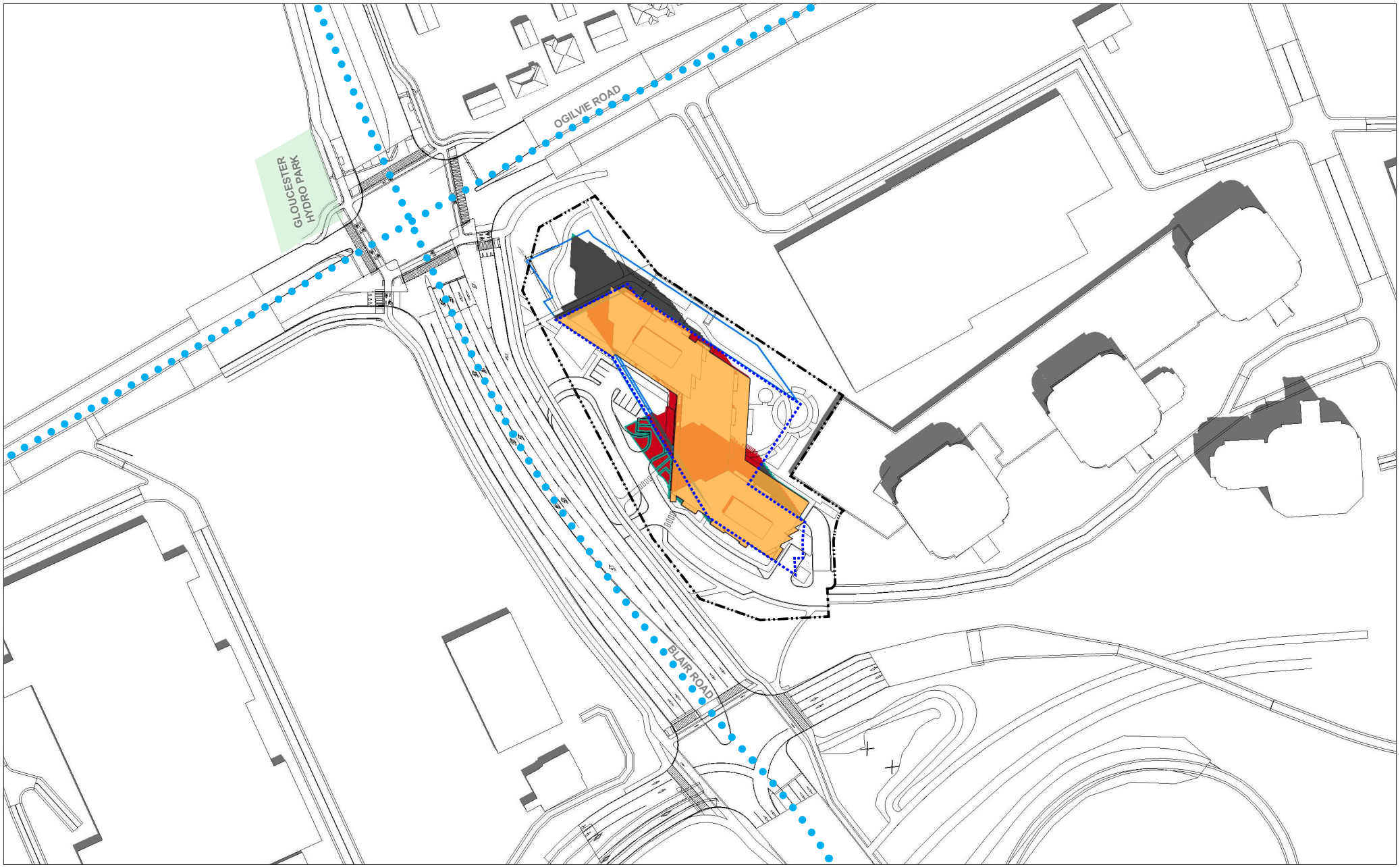
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 11:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000

0 m 10 m 20 m 50 m 100 m

HOBIN

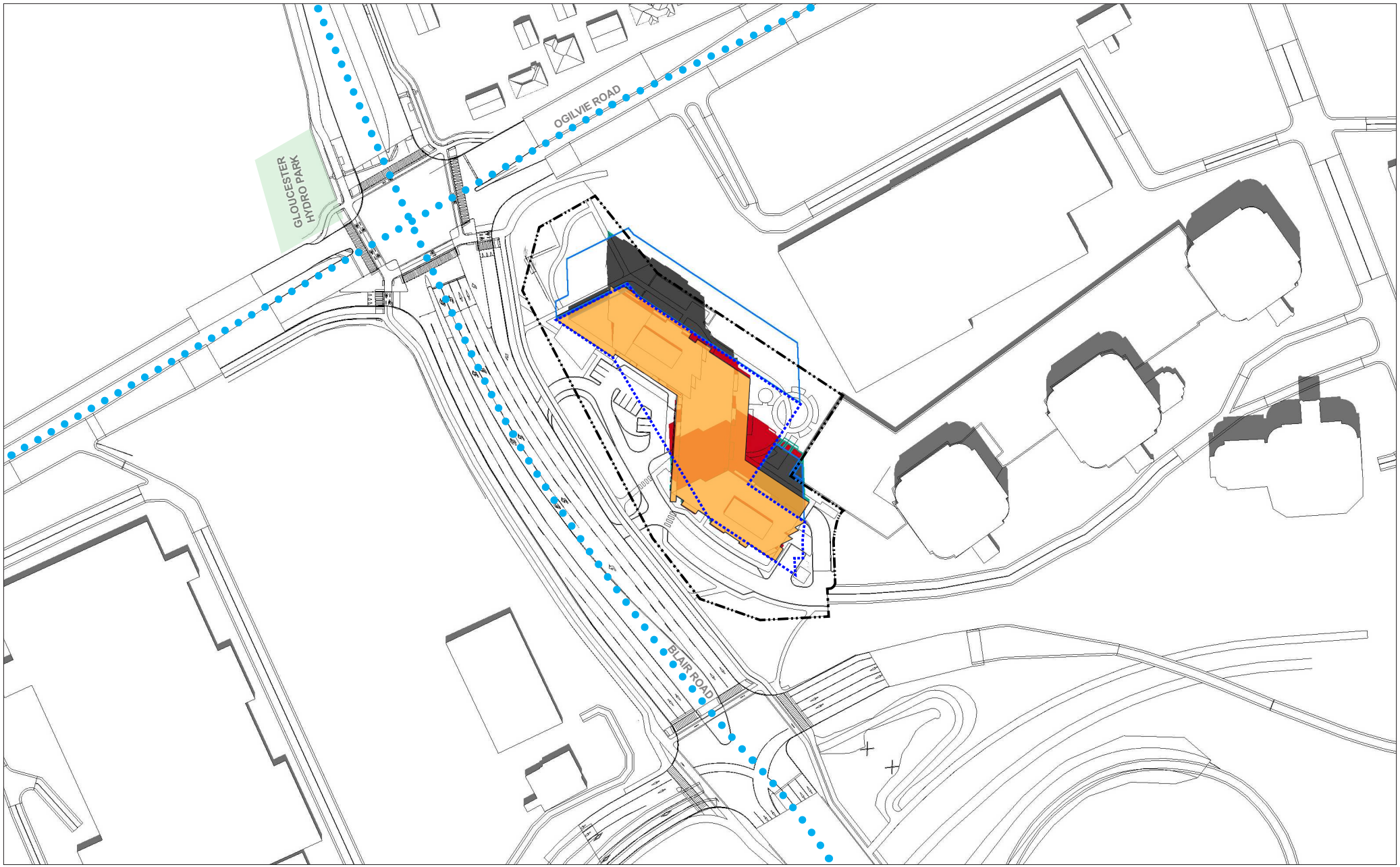
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 12:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

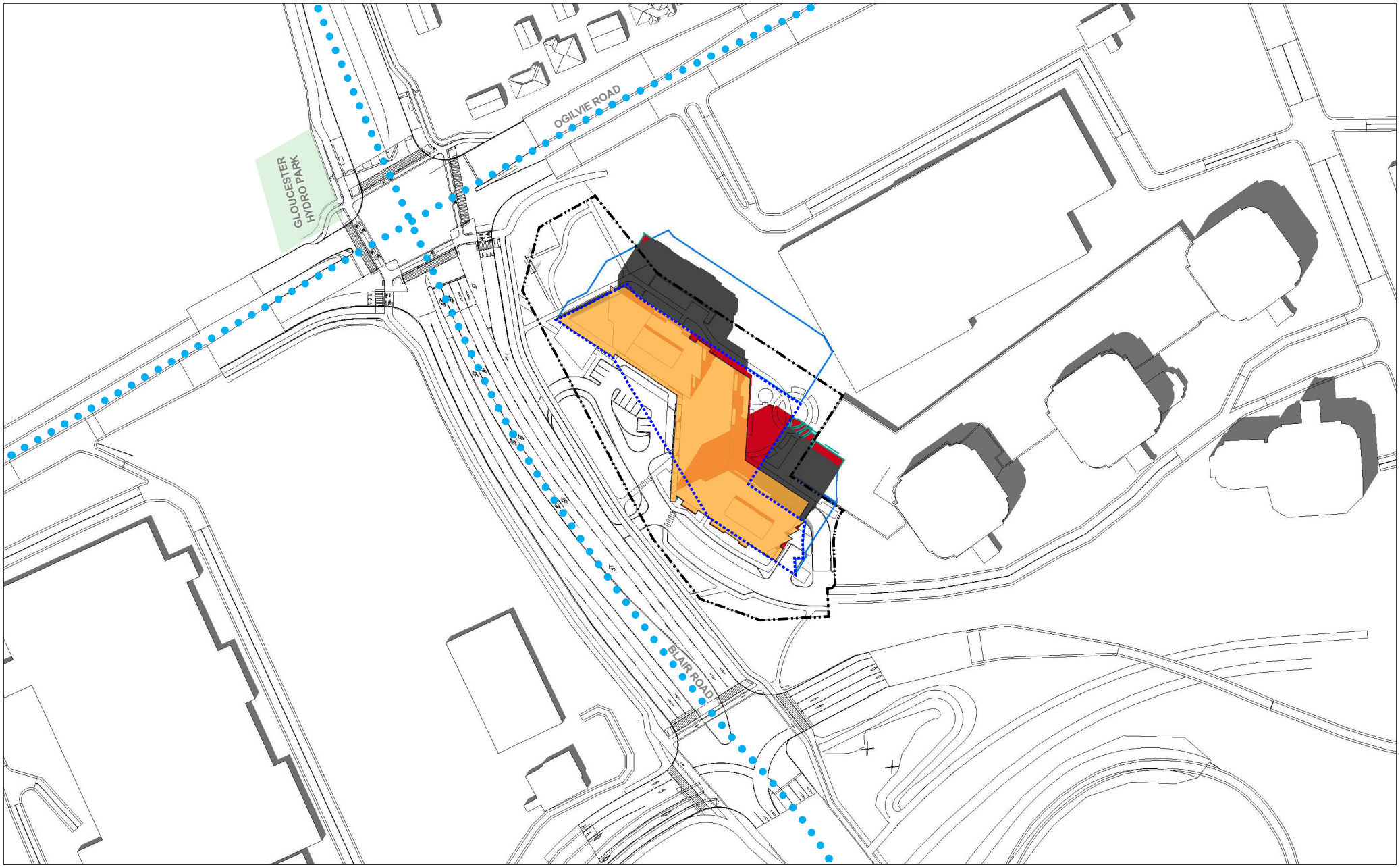
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 1:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

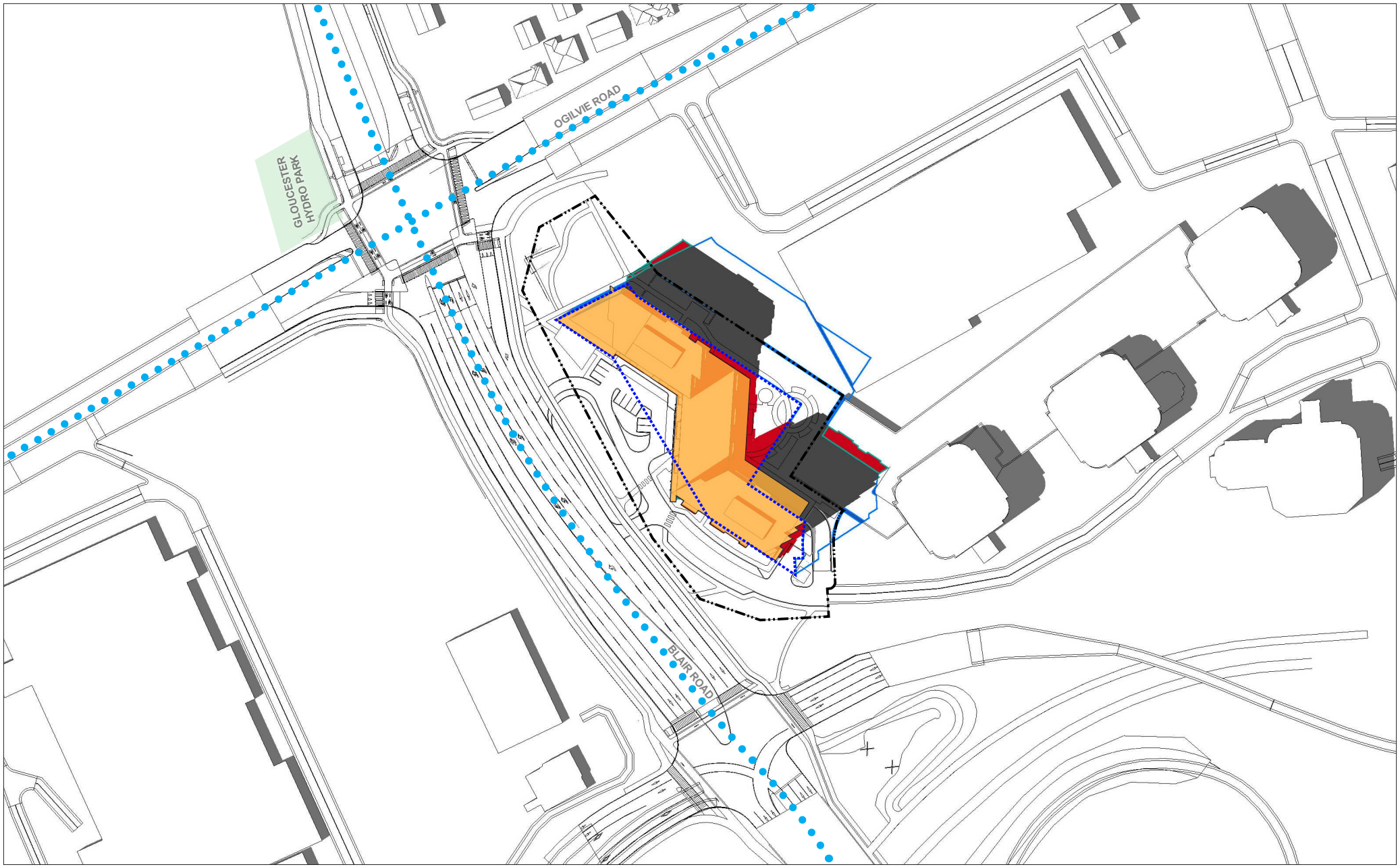
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 2:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

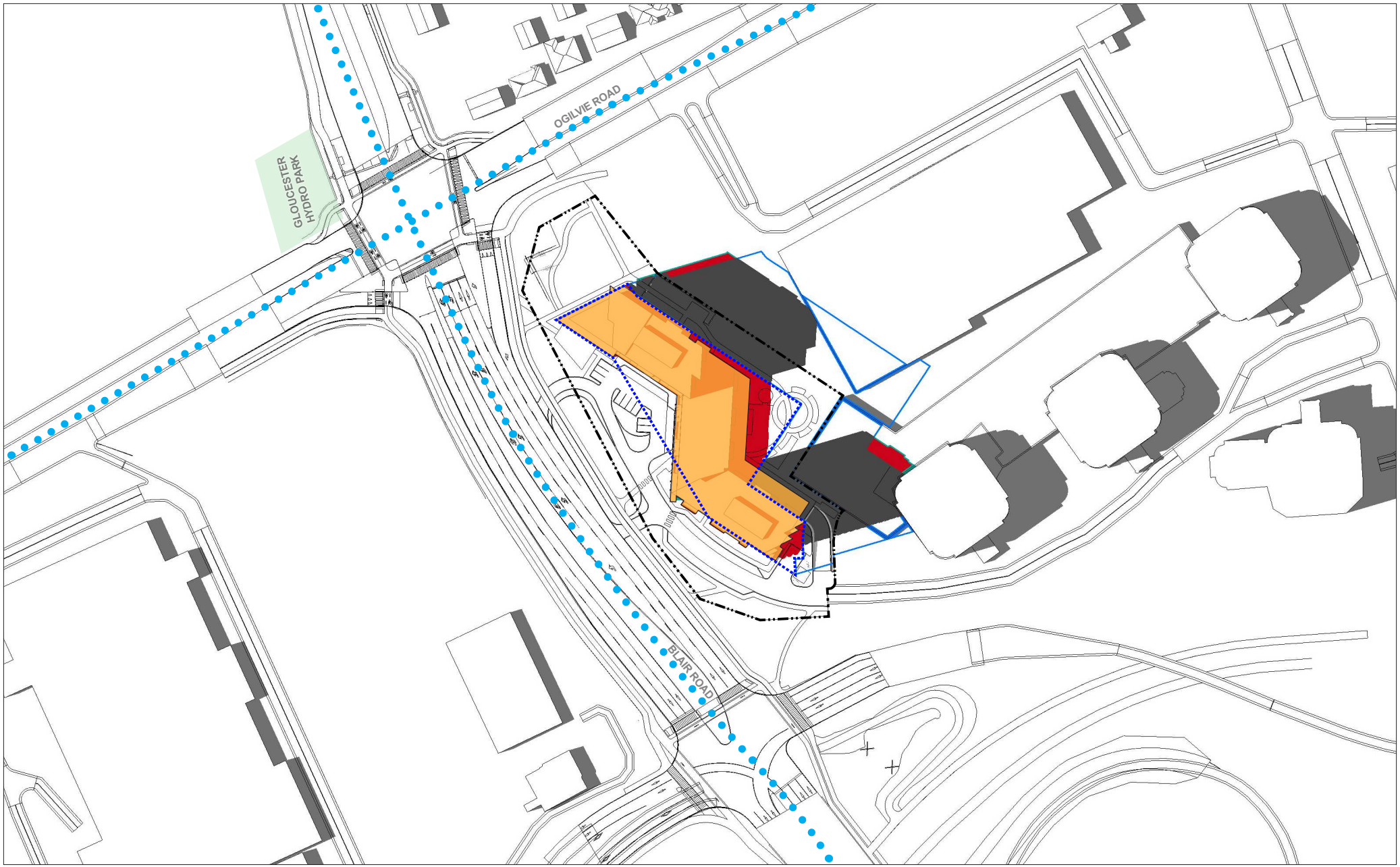
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 3:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000

0 m 10 m 20 m 50 m 100 m

HOBIN

BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 4:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000

0 m 10 m 20 m 50 m 100 m

HOBIN

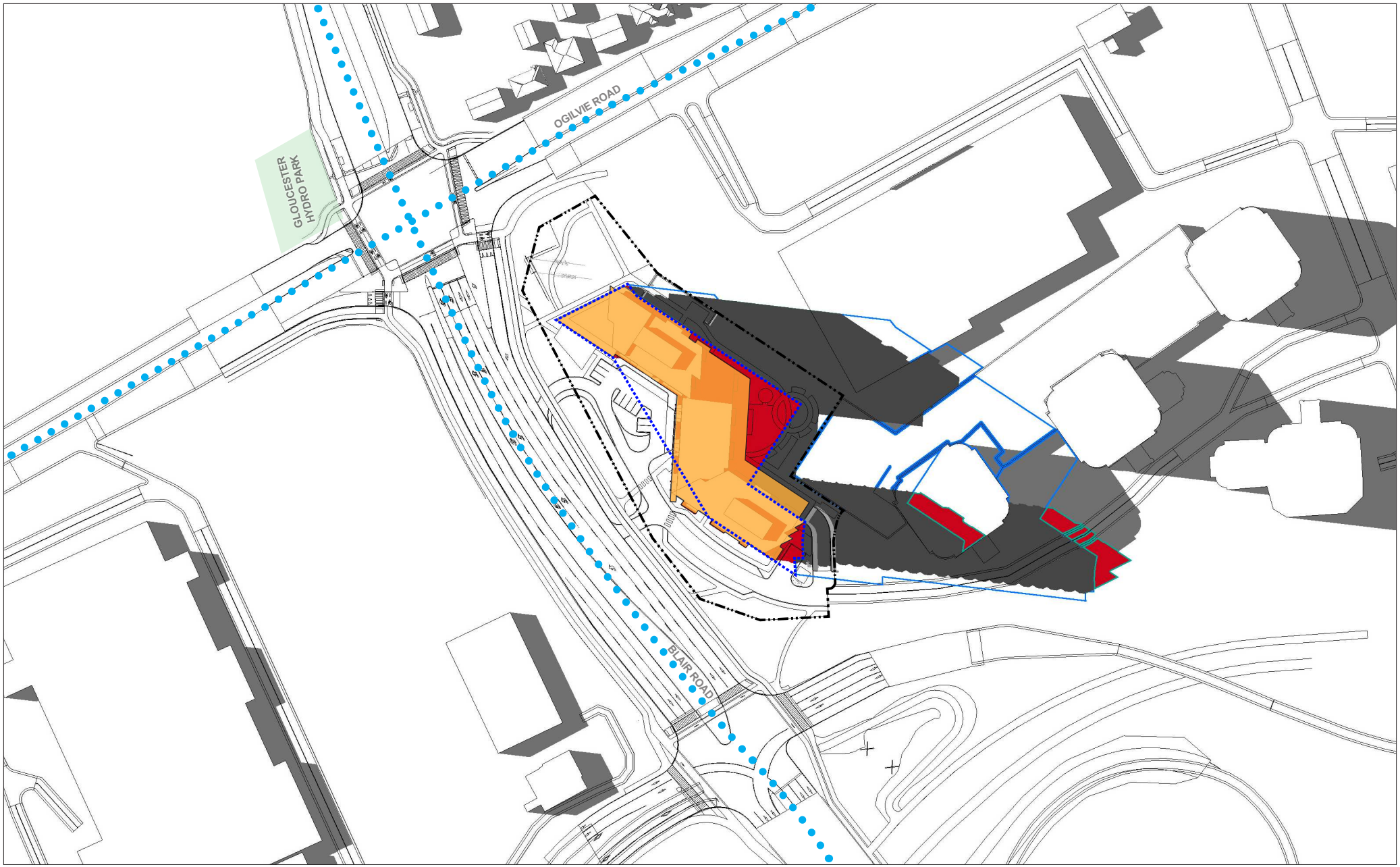
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 5:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000

0 m 10 m 20 m 50 m 100 m

HOBIN

BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 6:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000

0 m 10 m 20 m 50 m 100 m

HOBIN

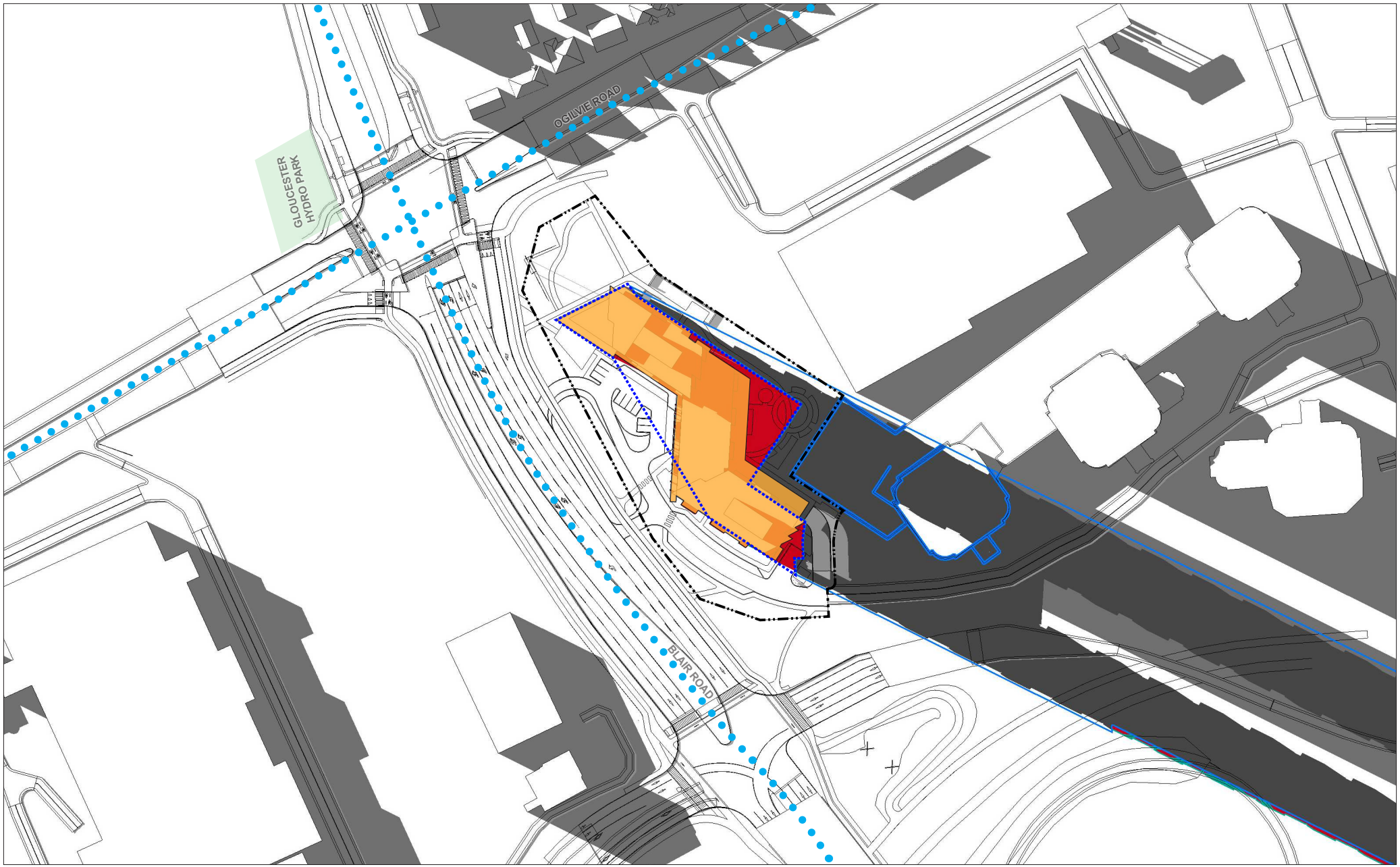
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 7:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

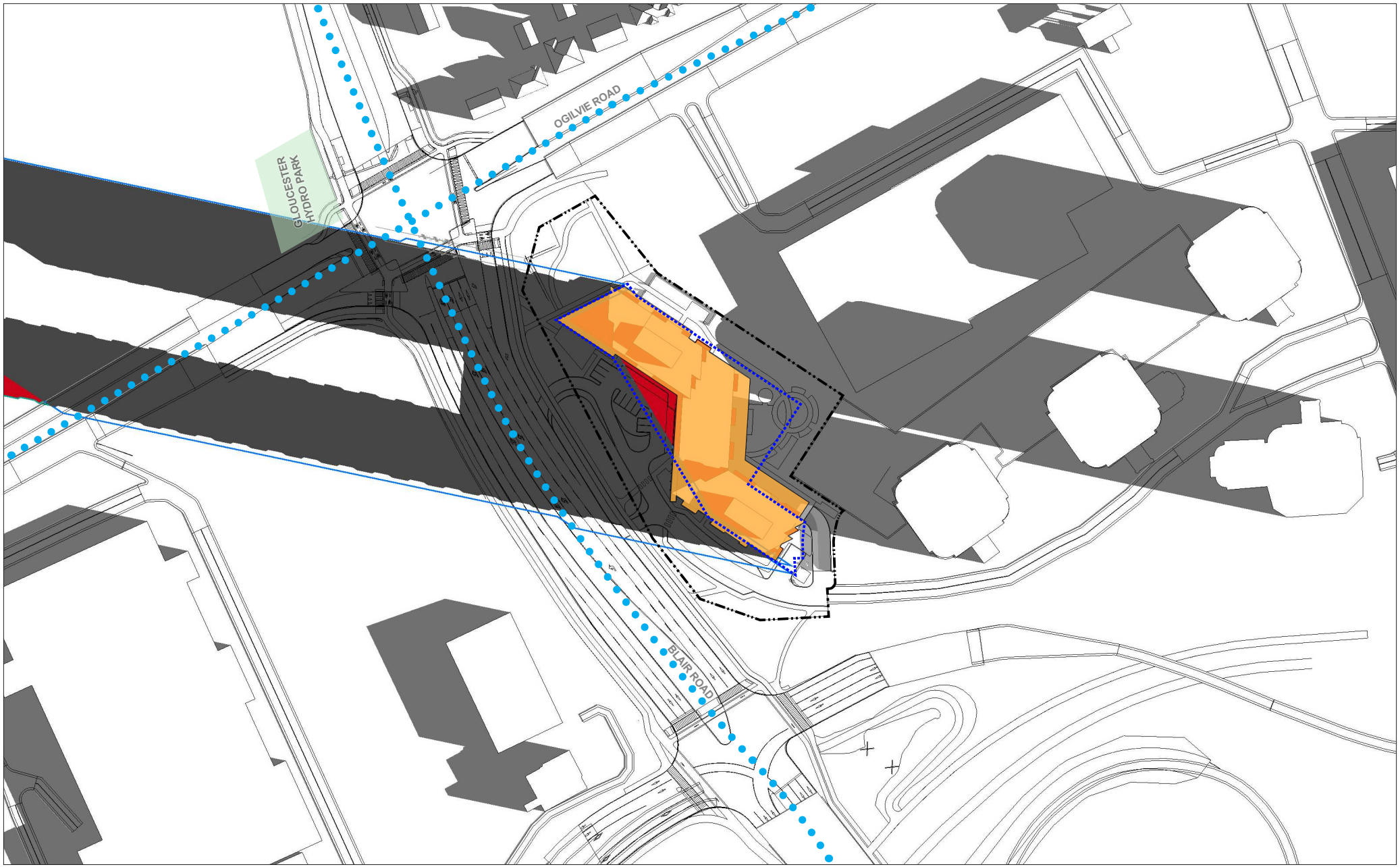
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
JUNE 21 8:00pm
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

1:2000
0 m 10 m 20 m 50 m 100 m

HOBIN

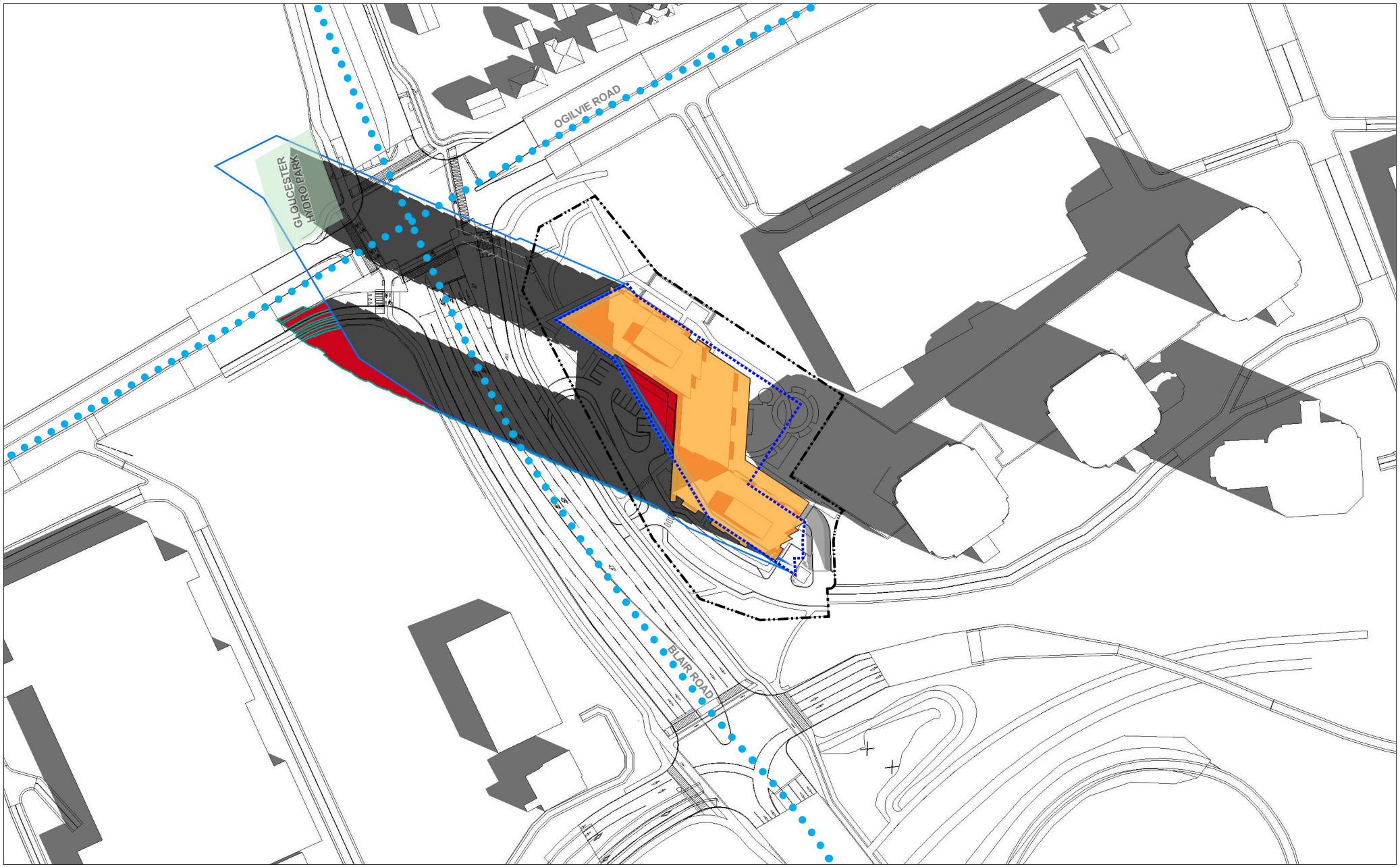
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
SEPTEMBER 21 8:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
- New Development
- AOR Footprint
- New Net Shadow
- Overlap of AOR & New Shadow
- Property Line

SENSITIVE AREAS:

- Park Spaces
- Traditional / Arterial Mainstreets

New = Proposed Development
AOR = As-Of-Right

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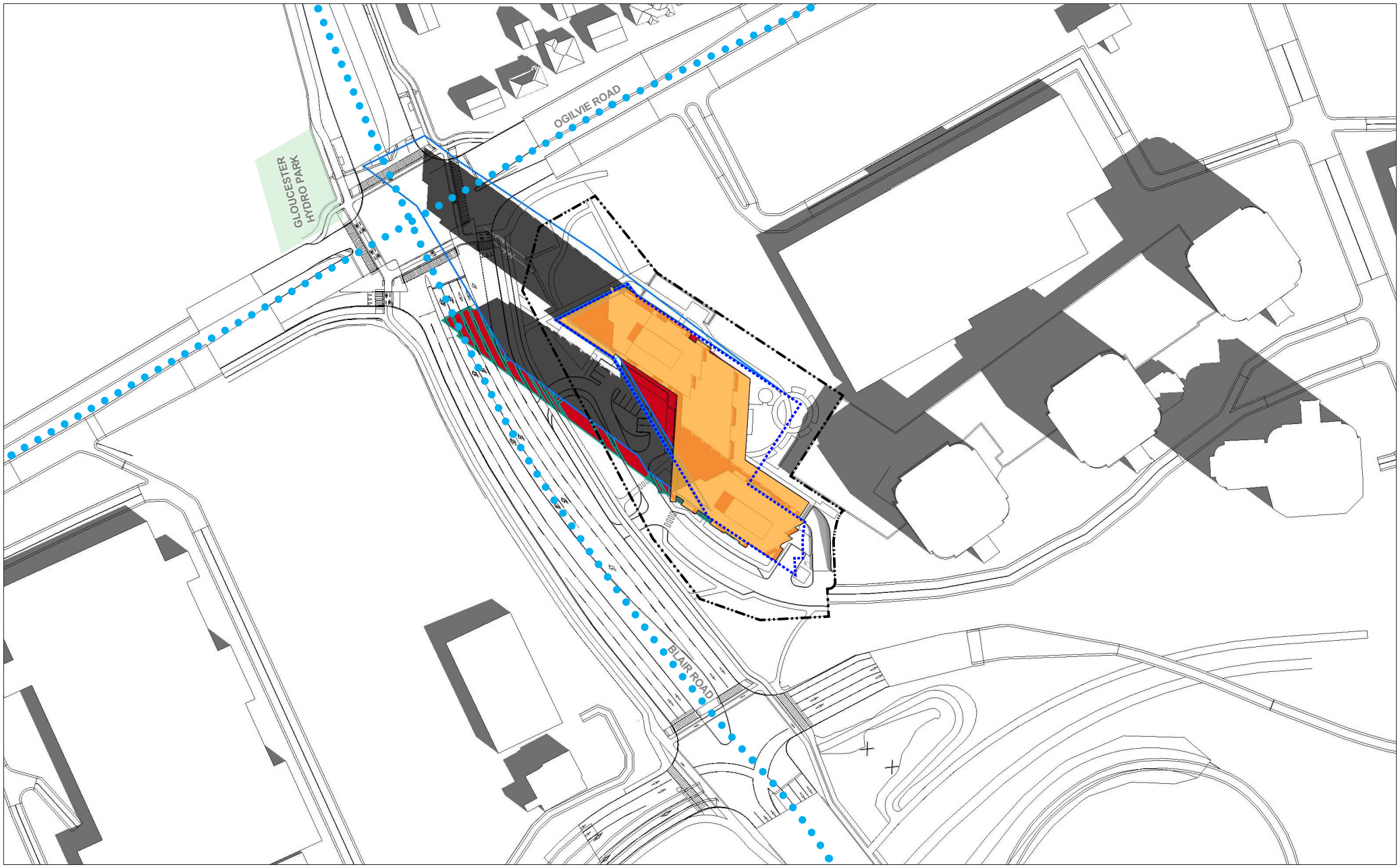
BLAIR & OGILVIE RD

1440 BLAIR TOWERS PL, OTTAWA, ON

Top-View Shadow Analysis

Company:	Hobin Architecture
Prepared by:	Cristina Hoang
Date:	SEP 19, 2024
Application No.:	UDRP Presentation
Application Type:	
Scale:	1:2000

Figure test time:
SEPTEMBER 21 9:00am
Eastern Daylight Time (EDT) = Universal Time, 4 hours



LEGEND:

- New Shadow Outline
- AOR Shadow Outline
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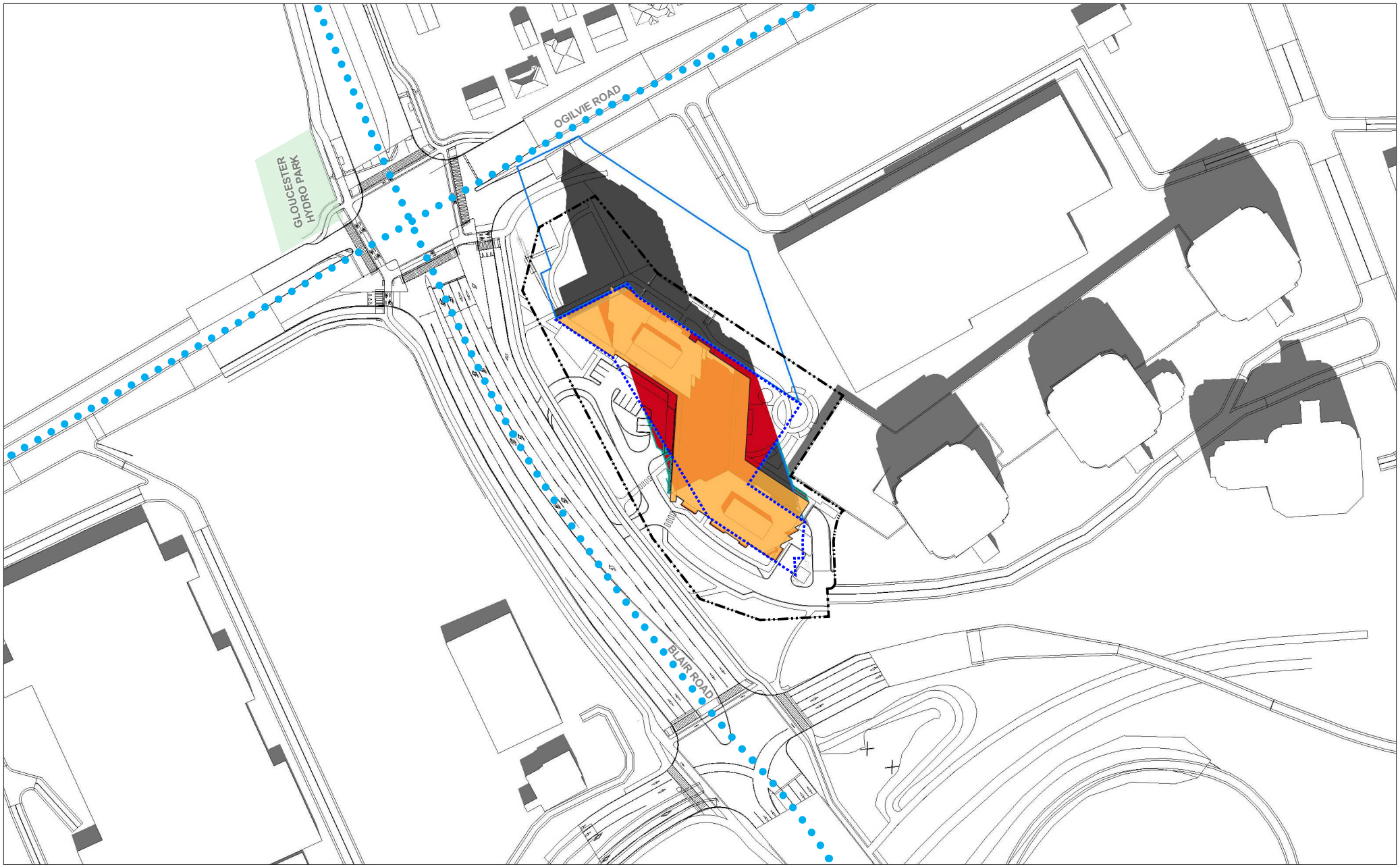
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SEPTEMBER 21 11:00am
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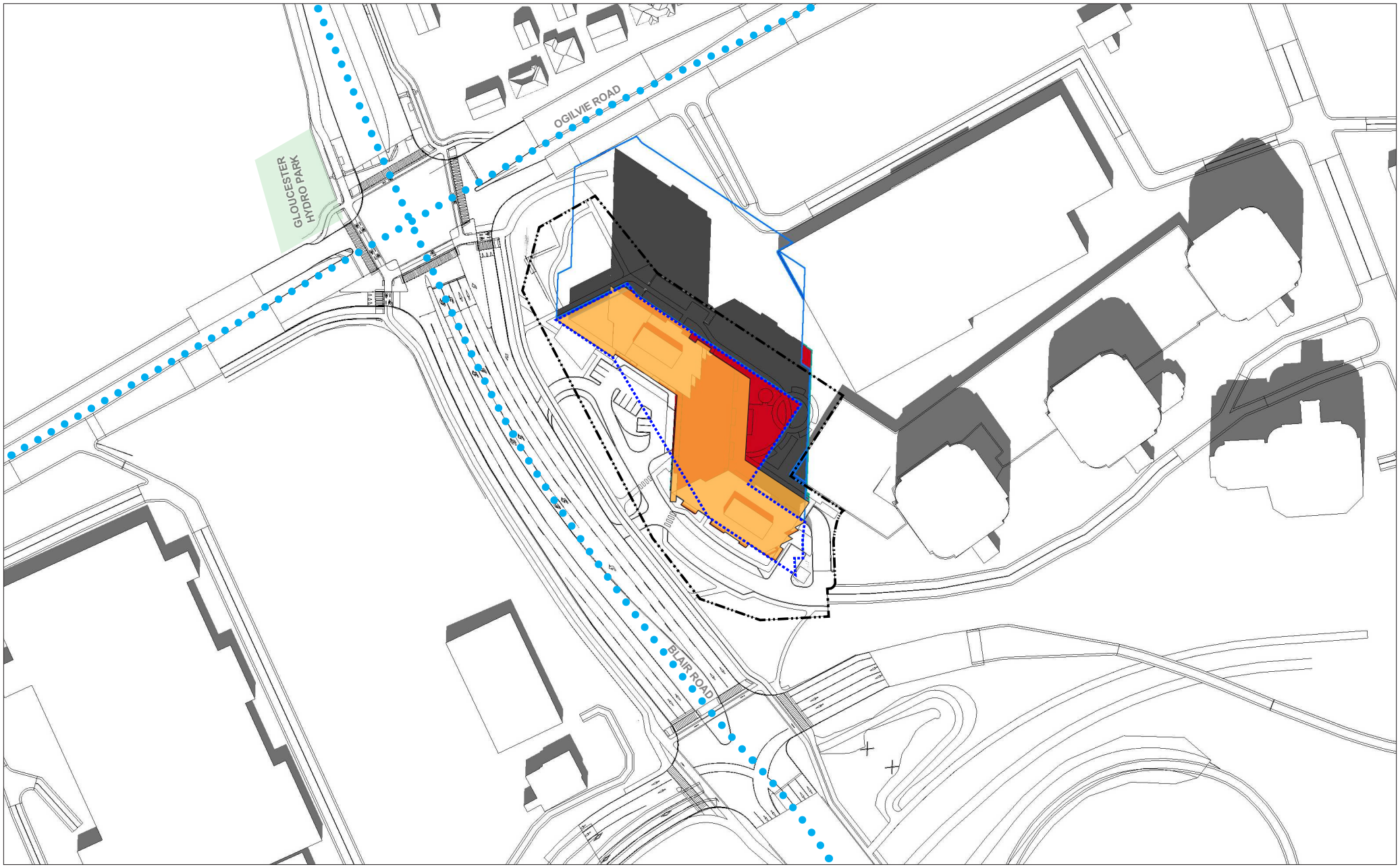
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Figure test time:
SEPTEMBER 21 12:00pm
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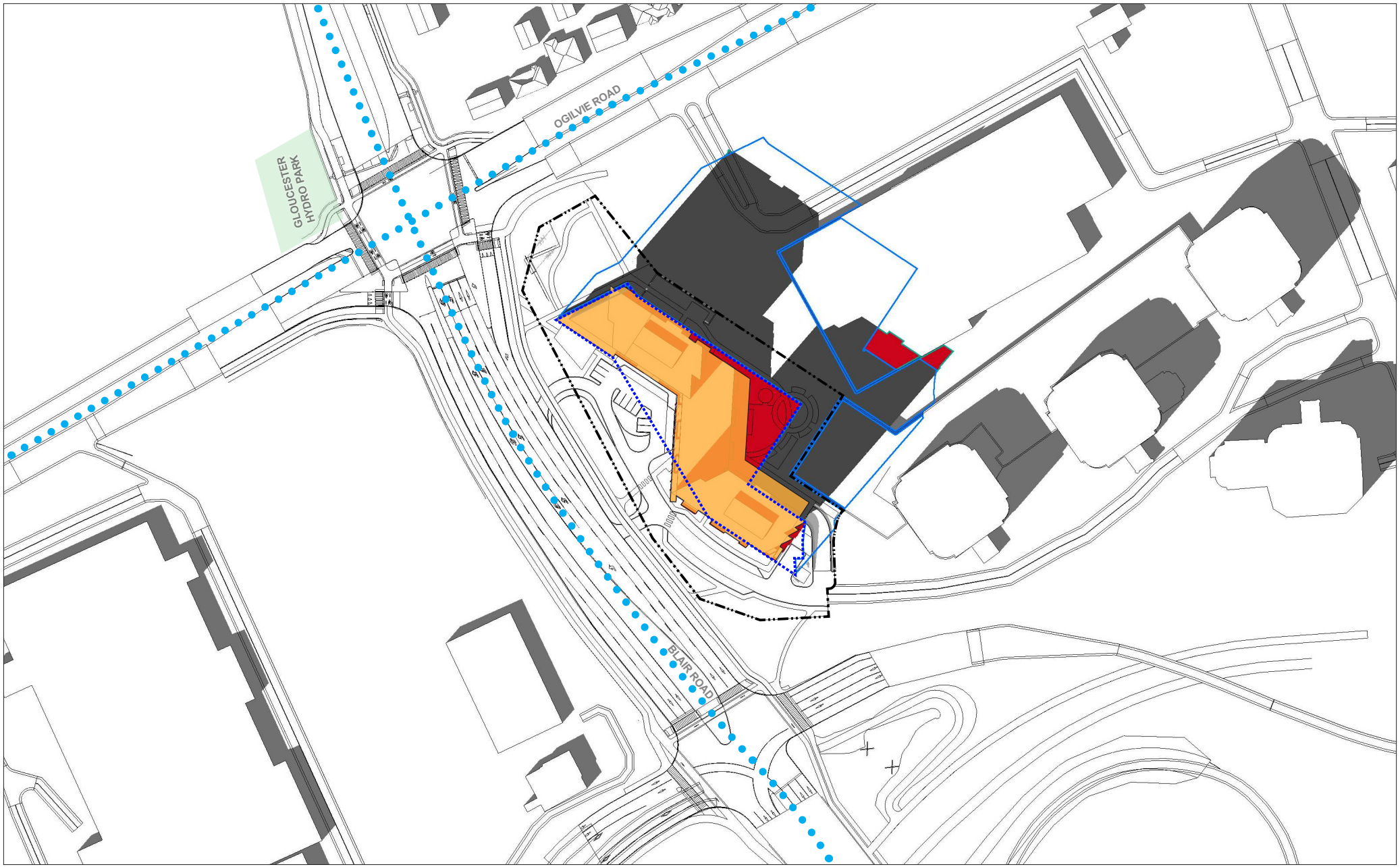
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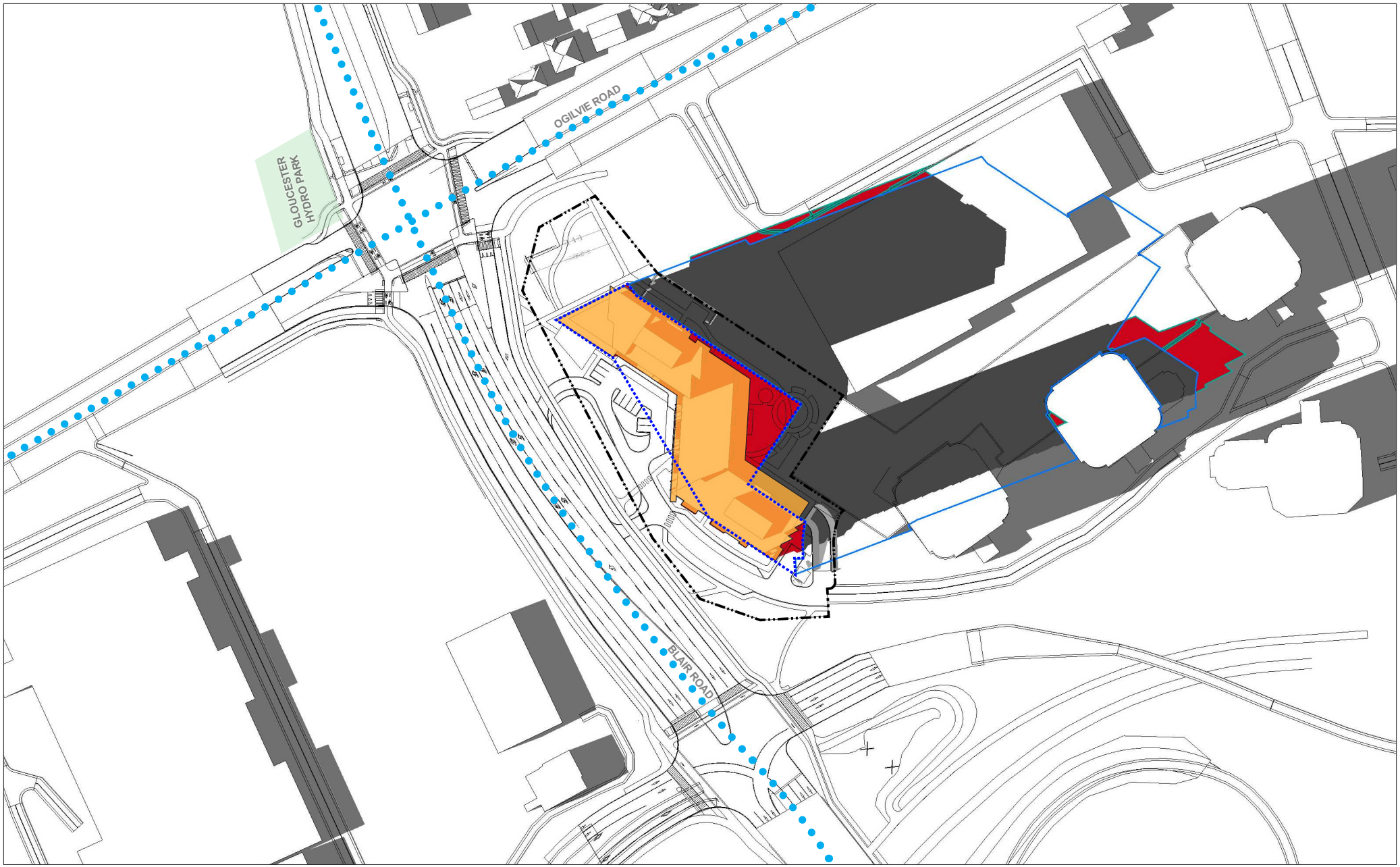
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Figure test time:
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Eastern Daylight Time (EDT) = Universal Time, 4 hours



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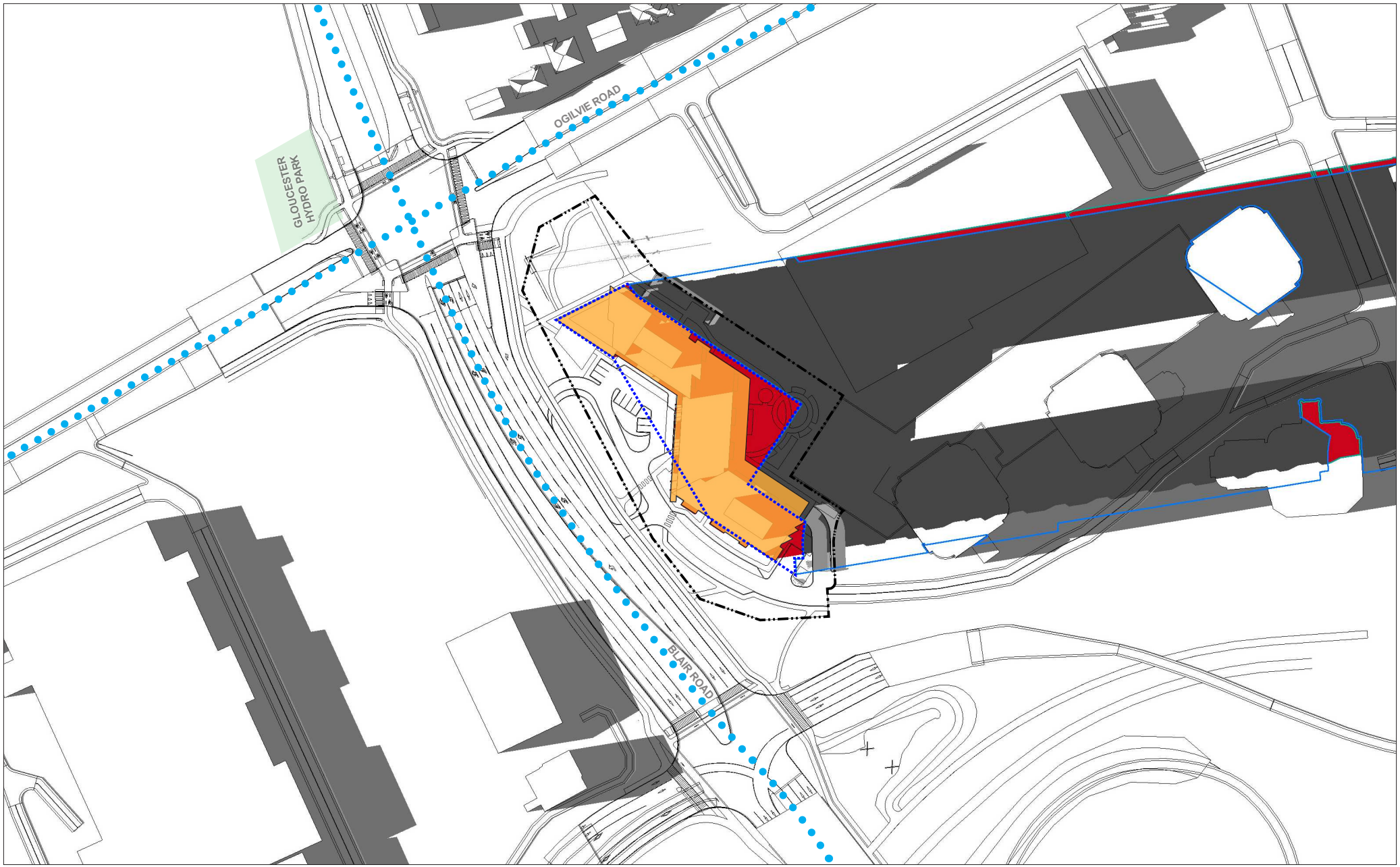
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Eastern Daylight Time (EDT) = Universal Time, 4 hours



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Figure test time:
DECEMBER 21 9:00am
Eastern Standard Time (EST) = Universal Time, 5 hours



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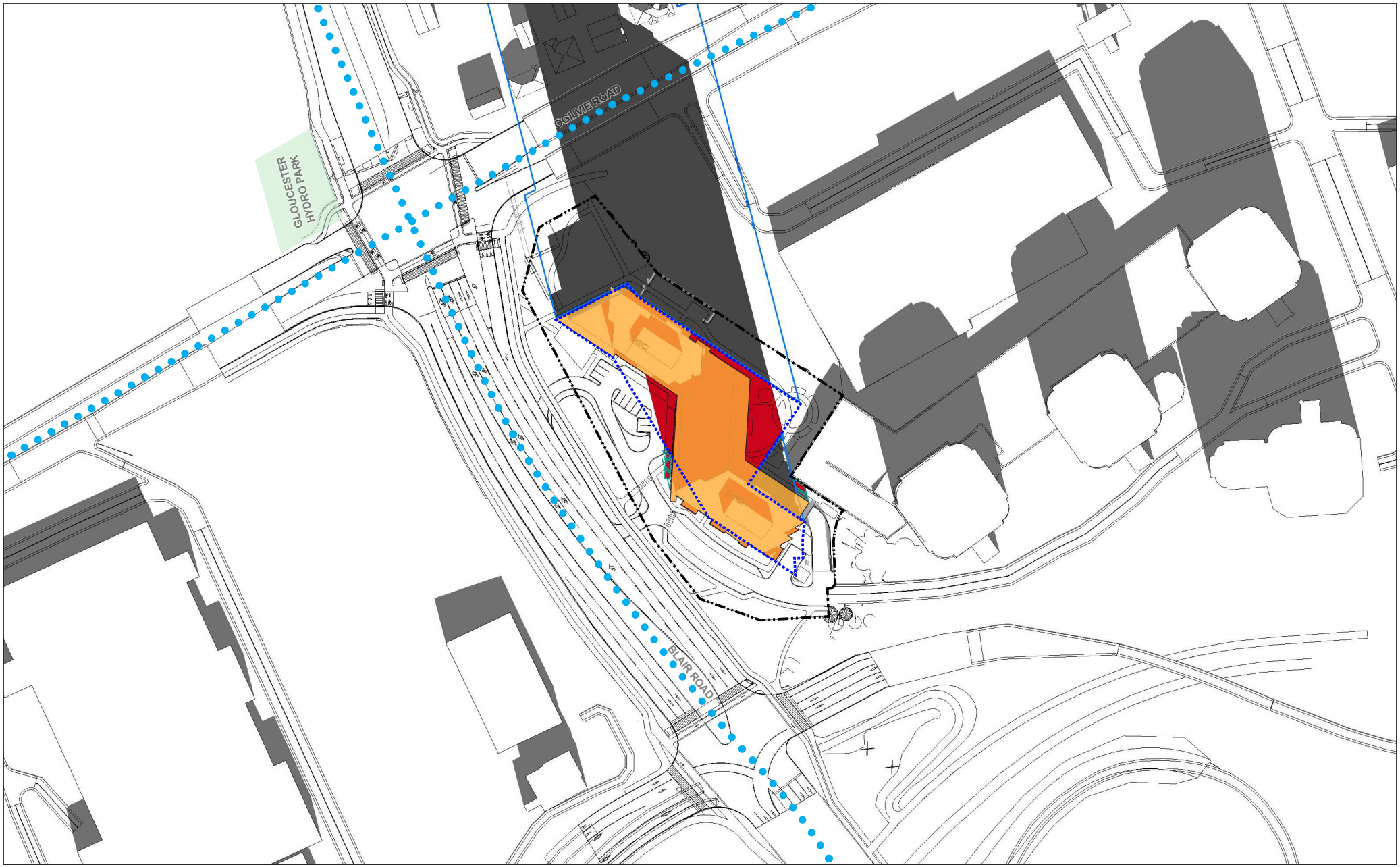
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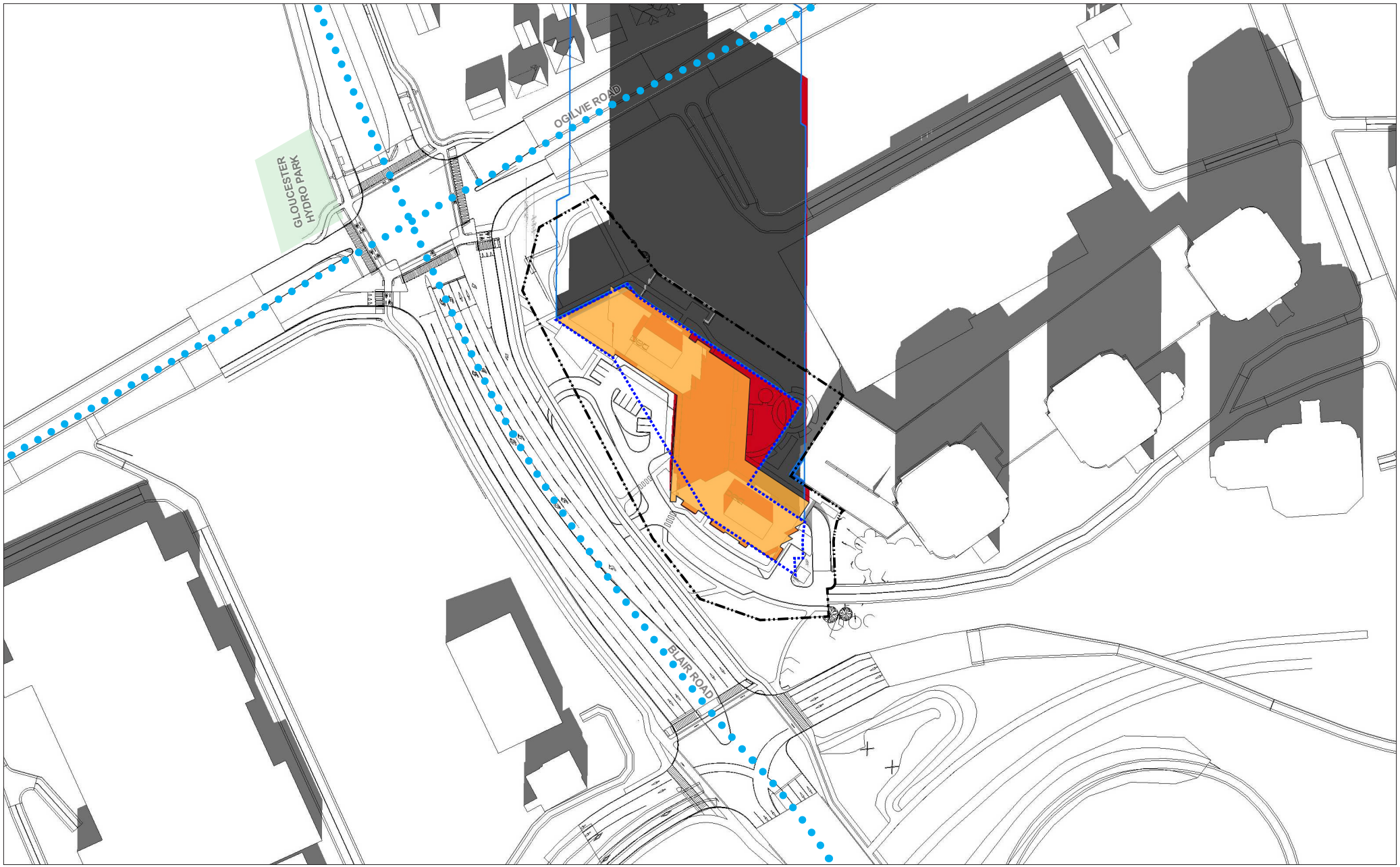
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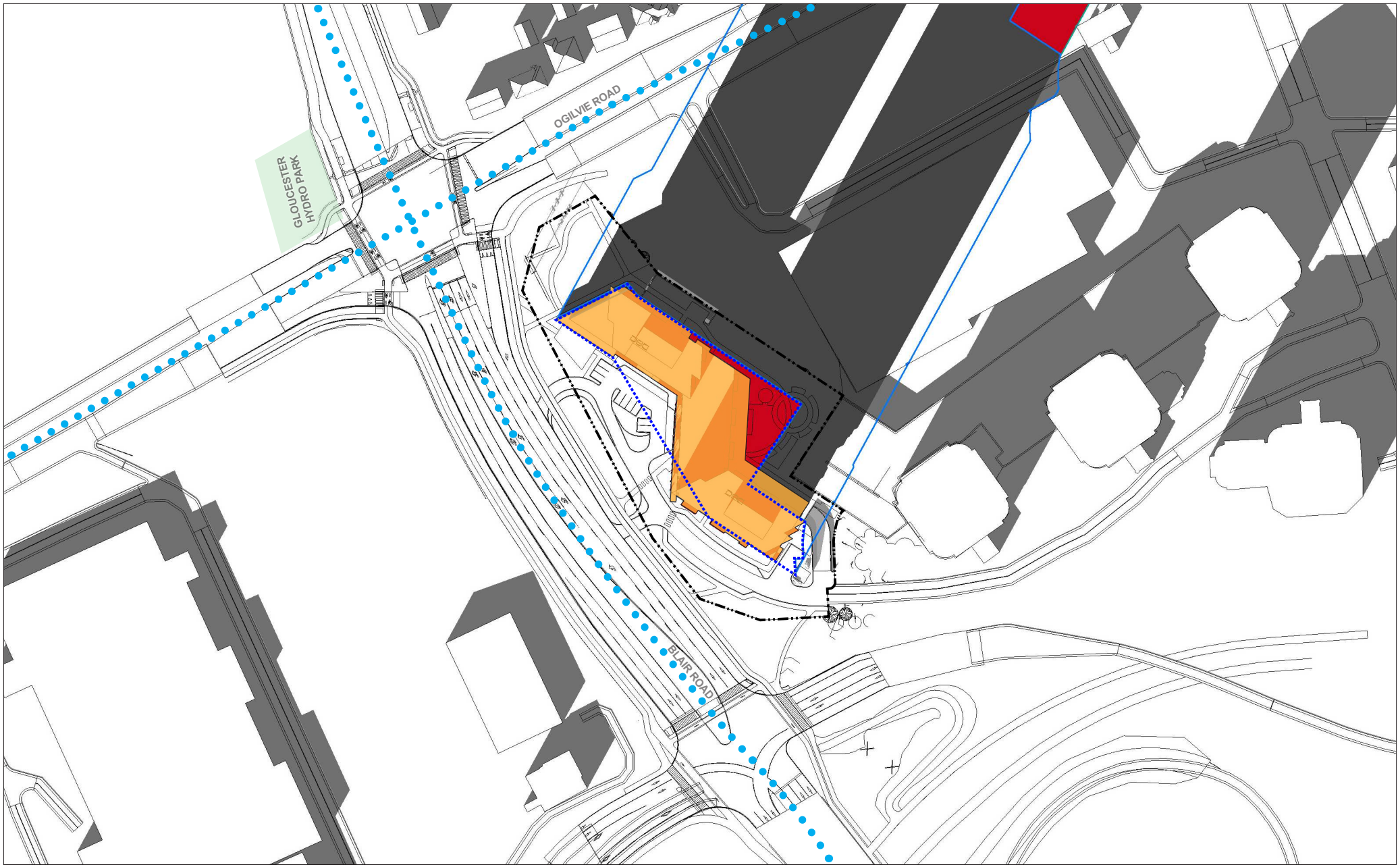
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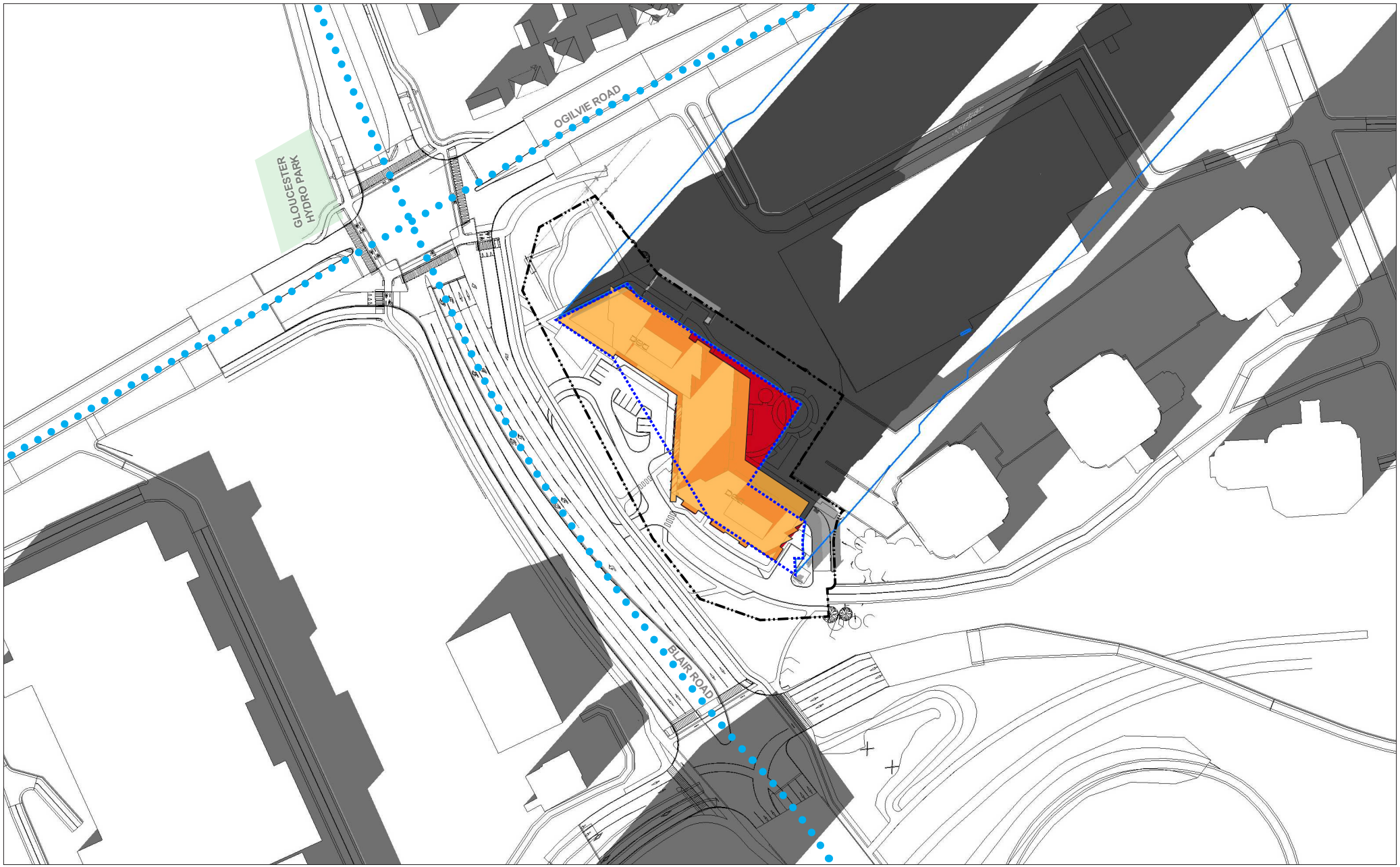
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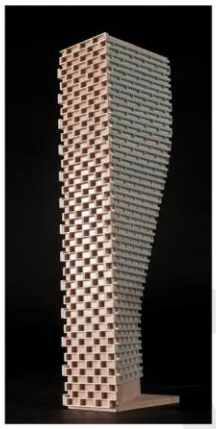
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GRADIENTWIND
ENGINEERS & SCIENTISTS

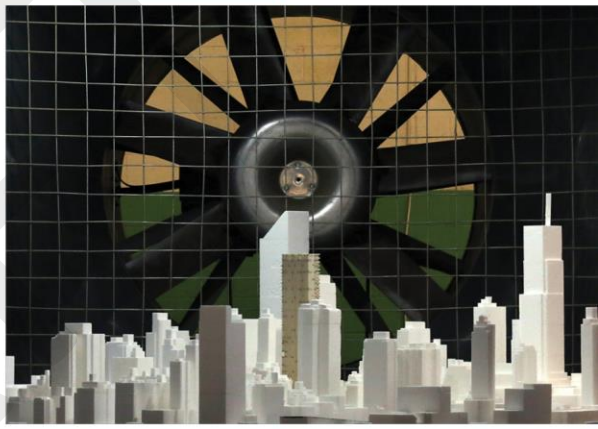
PEDESTRIAN LEVEL WIND STUDY

1440 Blair Towers Place
Ottawa, Ontario

Report: 24-160-PLW







August 23, 2024

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PREPARED FOR
Le Groupe Maurice
2400 rue des Nations, bureau 137
Saint-Laurent, QC H4R 3G4

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

EXECUTIVE SUMMARY

This report describes a pedestrian level wind (PLW) study undertaken to satisfy Site Plan Control application submission requirements for the proposed mixed-use residential development, referred to as "Blair and Ogilvie," located at 1440 Blair Towers Place in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). Our mandate within this study is to investigate pedestrian wind conditions within and surrounding the subject site, and to identify areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where required.

The study involves simulation of wind speeds for selected wind directions in a three-dimensional (3D) computer model using the computational fluid dynamics (CFD) technique, combined with meteorological data integration, to assess pedestrian wind comfort and safety within and surrounding the subject site according to City of Ottawa wind comfort and safety criteria. The results and recommendations derived from these considerations are detailed in the main body of the report (Section 5), illustrated in Figures 3A-9, and summarized as follows:

1) Most 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, neighbouring existing surface parking lots, the proposed drive aisle, drop-off areas, surface parking, walkways, fitness lawn, fitness patio, and private rear courtyard, and in the vicinity of building access points, are considered acceptable.

    a. Regarding the park to the north of the subject site and the employee terrace at the southeast corner of the South Tower, conditions during the typical use period (that is, May to October, inclusive) are predicted to be suitable for mostly standing, while conditions during the same period over the seating area at the northwest corner of the North Tower are predicted to be mixed between sitting and standing.

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- To improve comfort levels where conditions are predicted to be suitable for standing, targeted landscaping elements may be implemented such as tall wind screens and coniferous trees in dense arrangements, in combination with strategically placed seating with high-back benches and other local wind mitigation that are targeted adjacent to designated seating areas.

- The extent of mitigation measures is dependent on the programming of the noted spaces. If required by programming, appropriate mitigation strategy will be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

2) During the typical use period, conditions over the common amenity terrace serving the proposed development at Level 7 are predicted to be suitable for mostly standing.

    a. To improve comfort levels, mitigation inboard of the terrace perimeters and targeted around sensitive areas is recommended, in combination with taller perimeter wind screens, rising to at least 1.8 m above the local walking surface along the full perimeter of the terrace. Inboard mitigation could take the form of targeted wind barriers located adjacent to designated seating areas. Canopies may also be required above sensitive areas.

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

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

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TABLE OF CONTENTS

1. INTRODUCTION 1

2. TERMS OF REFERENCE 1

3. OBJECTIVES 2

4. METHODOLOGY 3

4.1 Computer-Based Context Modelling 3

4.2 Wind Speed Measurements 3

4.3 Historical Wind Speed and Direction Data 4

4.4 Pedestrian Wind Comfort and Safety Criteria – City of Ottawa 6

5. RESULTS AND DISCUSSION 8

5.1 Wind Comfort Conditions – Grade Level 9

5.2 Wind Comfort Conditions – Level 7 Common Amenity Terrace 12

5.3 Wind Safety 12

5.4 Applicability of Results 12

6. CONCLUSIONS AND RECOMMENDATIONS 13

FIGURES

APPENDICES

Appendix A – Simulation of the Atmospheric Boundary Layer

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1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Le Groupe Maurice to undertake a pedestrian level wind (PLW) study to satisfy Site Plan Control application submission requirements for the proposed mixed-use residential development, referred to as "Blair and Ogilvie" and located at 1440 Blair Towers Place in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). Our mandate within the current study is to investigate pedestrian wind conditions within and surrounding the subject site, and to identify areas where wind conditions may interfere with certain pedestrian activities so that mitigation measures may be considered, where required.

Our work is based on industry standard computer simulations using the computational fluid dynamics (CFD) technique and data analysis procedures, City of Ottawa wind comfort and safety criteria, architectural drawings prepared by Hobin Architecture and landscape drawings prepared by CSW Landscape Architects Limited in August 2024, surrounding street layouts and existing and approved future building massing information obtained from the City of Ottawa, as well as recent satellite imagery.

2. TERMS OF REFERENCE

The subject site is located at 1440 Blair Towers Place in Ottawa, situated to the southeast at the intersection of Blair Road and Ogilvie Road on a parcel of land bordered by Ogilvie Road to the northwest, a low-rise commercial building to the northeast, Blair Towers Place and a parking garage to the southeast, and Blair Road and Blair Towers Place to the southwest.

The proposed development comprises a North Tower (18 storeys) and a South Tower (22 storeys), both topped with a mechanical penthouse (MPH), rising above a common 6-storey podium. A parkland is provided to the north of the subject site, a fitness lawn and a fitness patio are to the east of the North Tower, a private rear courtyard is to the southeast of the subject site, an employee terrace is at the southeast corner of the South Tower, and a seating area is located at the northwest corner of the North Tower. A drive aisle extending from Blair Towers Place provides access to surface parking to the west of the subject site, with additional surface parking located along Blair Towers Place, and a parking ramp leading to the two underground parking levels shared by the towers is situated at the southeast corner of the South Tower.

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Above the underground parking, the ground floor of the proposed development comprises a 'Z'-shaped planform and includes a main entrance and drop-off areas to the west, various retail spaces at the southwest corner, and mostly various indoor amenities throughout the level. The remaining podium levels (Levels 2-6) are reserved for residential use. The building steps back from the northwest and east elevations at Level 2 and a common amenity terrace is provided atop the podium between the North and South Towers at Level 7. Levels 7-17 of the North Tower and Levels 7-22 of the South Tower comprise near trapezoidal planforms and are reserved for residential occupancy. Level 18 of the North Tower includes an indoor amenity to the north and residential units throughout the remainder of the level.

The near-field surroundings (defined as an area within 200 metres (m) of the subject site) are composed of low-rise residential dwellings to the north, a commercial plaza with a surface parking lot to the northeast, three mid-rise office towers above a parking garage to the east, low-rise commercial buildings with a surface parking lot to the southwest, and green spaces and public roads in the remaining directions. The far-field surroundings (defined as an area beyond the near-field but within a 2-kilometre (km) radius of the subject site) contribute suburban wind exposures from the south-southeast clockwise to the east-northeast, with isolated mid- and high-rise buildings in these directions. The Pine View Golf Course and forested areas located from the east clockwise to the southeast provide more open wind exposures from these directions.

Site plans for the proposed and existing massing scenarios are illustrated in Figures 1A and 1B, while Figures 2A-2H illustrate the computational models used to conduct the study. The existing massing scenario includes the existing massing and any developments which have been approved by the City of Ottawa.

3. OBJECTIVES

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

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4. METHODOLOGY

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

4.1 Computer-Based Context Modelling

A computer based PLW study was performed to determine the influence of the wind environment on pedestrian comfort over the proposed development site. Pedestrian comfort predictions, based on the mechanical effects of wind, were determined by combining measured wind speed data from CFD simulations with statistical weather data obtained from Ottawa Macdonald-Cartier International Airport. The general concept and approach to CFD modelling is to represent building and topographic details in the immediate vicinity of the subject site on the surrounding model, and to create suitable atmospheric wind profiles at the model boundary. The wind profiles are designed to have similar mean and turbulent wind properties consistent with actual site exposures.

An industry standard practice is to omit trees, vegetation, and other existing and planned landscape elements from the model due to the difficulty of providing accurate seasonal representation of vegetation. The omission of trees and other landscaping elements produces slightly stronger wind speeds.

4.2 Wind Speed Measurements

The PLW analysis was performed by simulating wind flows and gathering velocity data over a CFD model of the site for 16 wind directions. The CFD simulation model was centered on the proposed development, complete with surrounding massing within a radius of 490 m. The process was performed for two context massing scenarios, as noted in Section 2.

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

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Mean and peak wind speed data obtained over the subject site for each wind direction were interpolated to 36 wind directions at 10° intervals, representing the full compass azimuth. Measured wind speeds approximately 1.5 m above local grade and over the Level 7 common amenity terrace serving the proposed development were referenced to the wind speed at gradient height to generate mean and peak velocity ratios, which were used to calculate full-scale values. Gradient height represents the theoretical depth of the boundary layer of the earth's atmosphere, above which the mean wind speed remains constant. Further details of the wind flow simulation technique are presented in Appendix A.

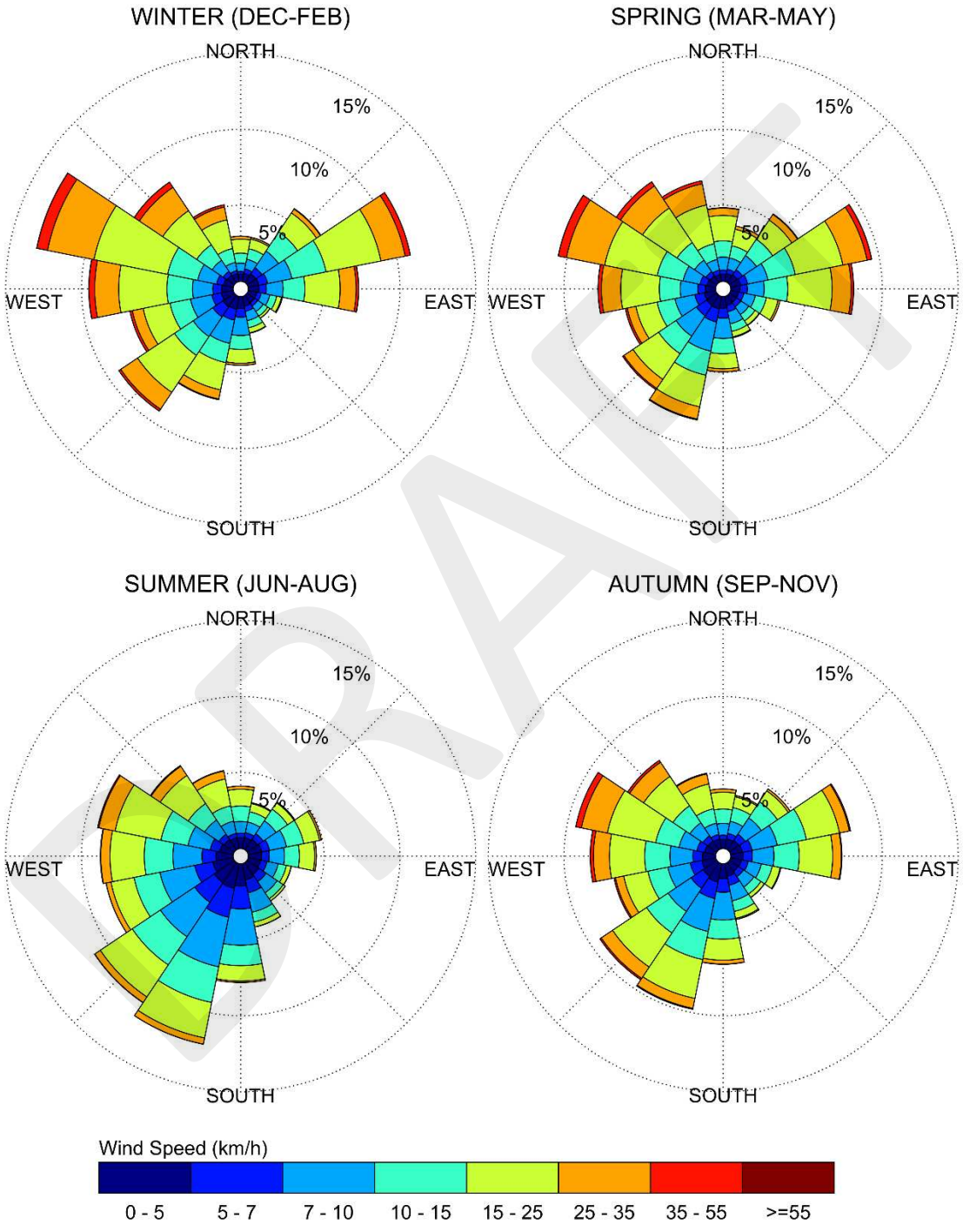
4.3 Historical Wind Speed and Direction Data

A statistical model for winds in Ottawa was developed from approximately 40 years of hourly meteorological wind data recorded at Ottawa Macdonald-Cartier International Airport and obtained from Environment and Climate Change Canada. Wind speed and direction data were analyzed during the appropriate hours of pedestrian usage (that is, between 06:00 and 23:00) and divided into four distinct seasons, as stipulated in the wind criteria. Specifically, the spring season is defined as March through May, the summer season is defined as June through August, the autumn season is defined as September through November, and the winter season is defined as December through February, inclusive.

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

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Notes:

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

4.4 Pedestrian Wind Comfort and Safety Criteria – City of Ottawa

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

PEDESTRIAN WIND COMFORT CLASS DEFINITIONS

Wind Comfort Class	Mean Speed (km/h)	Description
SITTING	≤ 10	Mean wind speeds no greater than 10 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 16 km/h.
STANDING	≤ 14	Mean wind speeds no greater than 14 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 22 km/h.
STROLLING	≤ 17	Mean wind speeds no greater than 17 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 27 km/h.
WALKING	≤ 20	Mean wind speeds no greater than 20 km/h occurring at least 80% of the time. The equivalent gust wind speed is approximately 32 km/h.
UNCOMFORTABLE	> 20	Uncomfortable conditions are characterized by predicted values that fall below the 80% target for walking. Brisk walking and exercise, such as jogging, would be acceptable for moderate excesses of this criterion.

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Regarding wind safety, the pedestrian safety wind speed criterion is based on the approximate threshold that would cause a vulnerable member of the population to fall. A 0.1% exceedance gust wind speed of 90 km/h is classified as dangerous. From calculations of stability, it can be shown that gust wind speeds of 90 km/h would be the approximate threshold wind speed that would cause an average elderly person in good health to fall. Notably, pedestrians tend to be more sensitive to wind gusts than to steady winds for lower wind speed ranges. For strong winds approaching dangerous levels, this effect is less important because the mean wind can also create problems for pedestrians.

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

Once the pedestrian wind speed predictions have been established throughout the subject site, the assessment of pedestrian comfort involves determining the suitability of the predicted wind conditions for discrete regions within and surrounding the subject site. This step involves comparing the predicted comfort classes to the target comfort classes, which are dictated by the location type for each region (that is, a sidewalk, building entrance, amenity space, or other). An overview of common pedestrian location types and their typical windiest target comfort classes are summarized on the following page. Depending on the programming of a space, the desired comfort class may differ from this table.

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TARGET PEDESTRIAN WIND COMFORT CLASSES FOR VARIOUS LOCATION TYPES

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

5. RESULTS AND DISCUSSION

The following discussion of the predicted pedestrian wind conditions for the subject site is accompanied by Figures 3A-6B, which illustrate wind conditions at grade level for the proposed and existing massing scenarios, and by Figures 8A-D, which illustrate conditions over the common amenity terrace serving the proposed development at Level 7. Conditions are presented as continuous contours of wind comfort throughout the subject site and correspond to the comfort classes presented in Section 4.4.

Wind comfort conditions are also reported for the typical use period, which is defined as May to October, inclusive. Figures 7 and 9 illustrate wind comfort conditions at grade level and within the noted amenity terrace serving the proposed development, respectively, consistent with the comfort classes illustrated in Section 4.4.

The details of these conditions are summarized in the following pages for each area of interest.

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5.1 Wind Comfort Conditions – Grade Level

Sidewalks along Blair Road: Wind comfort conditions over the nearby public sidewalks along Blair Road are predicted to be suitable for standing, or better, during the summer, becoming suitable for a mix of standing and strolling during the spring, autumn, and winter, prior to and following the introduction of the proposed development. The noted conditions are considered acceptable.

Sidewalks along Ogilvie Road: Following the introduction of the proposed development, conditions over the nearby public sidewalks along Ogilvie Road are predicted to be suitable for mostly standing during the summer and autumn, becoming suitable for a mix of standing and strolling during the spring and winter. The noted conditions are considered acceptable.

Conditions over the sidewalks along Ogilvie Road under the existing massing are predicted to be suitable for mostly standing during the summer, becoming suitable for a mix of standing and strolling throughout the remainder of the year. Notably, the introduction of the proposed development is predicted to improve comfort levels over some areas along Ogilvie Road, in comparison to existing conditions, and wind conditions with the proposed development are nevertheless considered acceptable.

Sidewalks along Blair Towers Place: Following the introduction of the proposed development, conditions over the nearby public sidewalks along Blair Towers Place are predicted to be suitable for standing, or better, during the summer, becoming suitable for strolling, or better, during the autumn, and suitable for a mix of standing and strolling during the spring and winter with isolated regions suitable for walking. The noted conditions are considered acceptable.

Conditions over the sidewalks along Blair Towers Place under the existing massing are predicted to be suitable for standing, or better, during the summer and autumn, becoming suitable for a mix of standing and strolling during the spring and winter. While the introduction of the proposed development produces slightly windier conditions in comparison to existing conditions, wind comfort conditions along Blair Towers Place are nevertheless considered acceptable.

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Neighbouring Existing Surface Parking Lots: Wind comfort conditions over the existing surface parking lot to the west across Blair Road are predicted to be suitable for standing, or better, during the summer and autumn, becoming suitable for strolling, or better, during the spring and winter, prior to and following the introduction of the proposed development. The noted conditions are considered acceptable.

Following the introduction of the proposed development, conditions over the nearby areas of the existing surface parking lot within the commercial plaza to the northeast of the proposed development are predicted to be suitable for a mix of sitting and standing during the summer and autumn, becoming suitable for strolling, or better, during the spring and winter. Conditions over the existing neighbouring parking structure to the southeast are predicted to be suitable for a mix of sitting and standing throughout the year with isolated regions suitable for strolling. The noted conditions are considered acceptable.

Under the existing massing, conditions over the surface parking lot to the northeast are predicted to be suitable for standing, or better, throughout the year. Conditions over the neighbouring parking structure to the southeast under the existing massing are predicted to be suitable for a mix of sitting and standing during the summer and autumn, becoming suitable for strolling, or better, during the spring and winter with isolated regions suitable for walking during the winter. While the introduction of the proposed development produces slightly windier conditions over the existing surface parking lot to the northeast, conditions over the parking structure to the southeast are predicted to improve in comparison to existing conditions and conditions with the proposed development are nevertheless considered acceptable.

Fitness Lawn, Fitness Patio, and Private Rear Courtyard: During the typical use period, as illustrated in Figure 7, wind conditions within the grade-level fitness patio to the east of the North Tower and the private rear courtyard to the east of the subject site are predicted to be suitable for mostly sitting. The noted conditions are considered acceptable.

Park, Employee Terrace, and Seating Area: During the typical use period, wind comfort conditions over the park to the north of the subject site are predicted to be suitable for mostly standing, with an isolated region suitable for sitting near the southeast corner of the park, conditions over the employee terrace at the southeast corner of the South Tower are predicted to be suitable for standing, and conditions over the seating area to the northwest of the North Tower are predicted to be suitable for sitting to the east along the building façade and suitable for standing to the west.

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To improve comfort levels where conditions are predicted to be suitable for standing, targeted landscaping elements may be implemented such as tall wind screens and coniferous trees in dense arrangements, in combination with strategically placed seating with high-back benches and other local wind mitigation. The extent of mitigation measures is dependent on the programming of the noted spaces. If required by programming, an appropriate mitigation strategy will be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

Drive Aisle, Drop-off Areas, Surface Parking, and Walkways within Subject Site: Conditions over the drop-off areas along the west elevation of the proposed development are predicted to be suitable for mostly sitting throughout the year. Wind conditions over the drive aisles, surface parking, and walkways within the subject site are predicted to be suitable for standing, or better, during the summer, becoming suitable for strolling, or better, throughout the remainder of the year with an isolated area of walking conditions to the north of the North Tower during the winter season. The noted conditions are considered acceptable.

Building Access Points: Owing to the protection of the building façade, wind conditions in the vicinity of the building access points serving the proposed development are predicted to be suitable for standing, or better, throughout the year, which is considered acceptable.

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5.2 Wind Comfort Conditions – Level 7 Common Amenity Terrace

As illustrated in Figure 9, wind comfort conditions within the common amenity terrace serving the proposed development at Level 7 are predicted to be suitable for mostly standing during the typical use period, with regions of sitting conditions to the north and south and an isolated region suitable for strolling near the southwest corner of the terrace.

To improve comfort levels within the Level 7 terrace serving the proposed development, mitigation inboard of the terrace perimeters and targeted around sensitive areas is recommended, in combination with perimeter wind screens, rising to at least 1.8 m above the local walking surface along the full perimeter of the terrace. Inboard mitigation could take the form of wind barriers in combination with other common landscape elements that are located adjacent to designated seating areas. Canopies may also be required above sensitive areas.

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

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.

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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) Most 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, neighbouring existing surface parking lots, the proposed drive aisle, drop-off areas, surface parking, walkways, fitness lawn, fitness patio, and private rear courtyard, and in the vicinity of building access points, are considered acceptable.

    a. Regarding the park to the north of the subject site and the employee terrace at the southeast corner of the South Tower, conditions during the typical use period (that is, May to October, inclusive) are predicted to be suitable for mostly standing, while conditions during the same period over the seating area at the northwest corner of the North Tower are predicted to be mixed between sitting and standing.

        - To improve comfort levels where conditions are predicted to be suitable for standing, targeted landscaping elements may be implemented such as tall wind screens and coniferous trees in dense arrangements, in combination with strategically placed seating with high-back benches and other local wind mitigation that are targeted adjacent to designated seating areas.

        - The extent of mitigation measures is dependent on the programming of the noted spaces. If required by programming, appropriate mitigation strategy will be developed in collaboration with the building and landscape architects as the design of the proposed development progresses.

2) During the typical use period, conditions over the common amenity terrace serving the proposed development at Level 7 are predicted to be suitable for mostly standing.

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a. To improve comfort levels, mitigation inboard of the terrace perimeters and targeted around sensitive areas is recommended, in combination with taller perimeter wind screens, rising to at least 1.8 m above the local walking surface along the full perimeter of the terrace. Inboard mitigation could take the form of targeted wind barriers located adjacent to designated seating areas. Canopies may also be required above sensitive areas.

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

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

Sincerely,

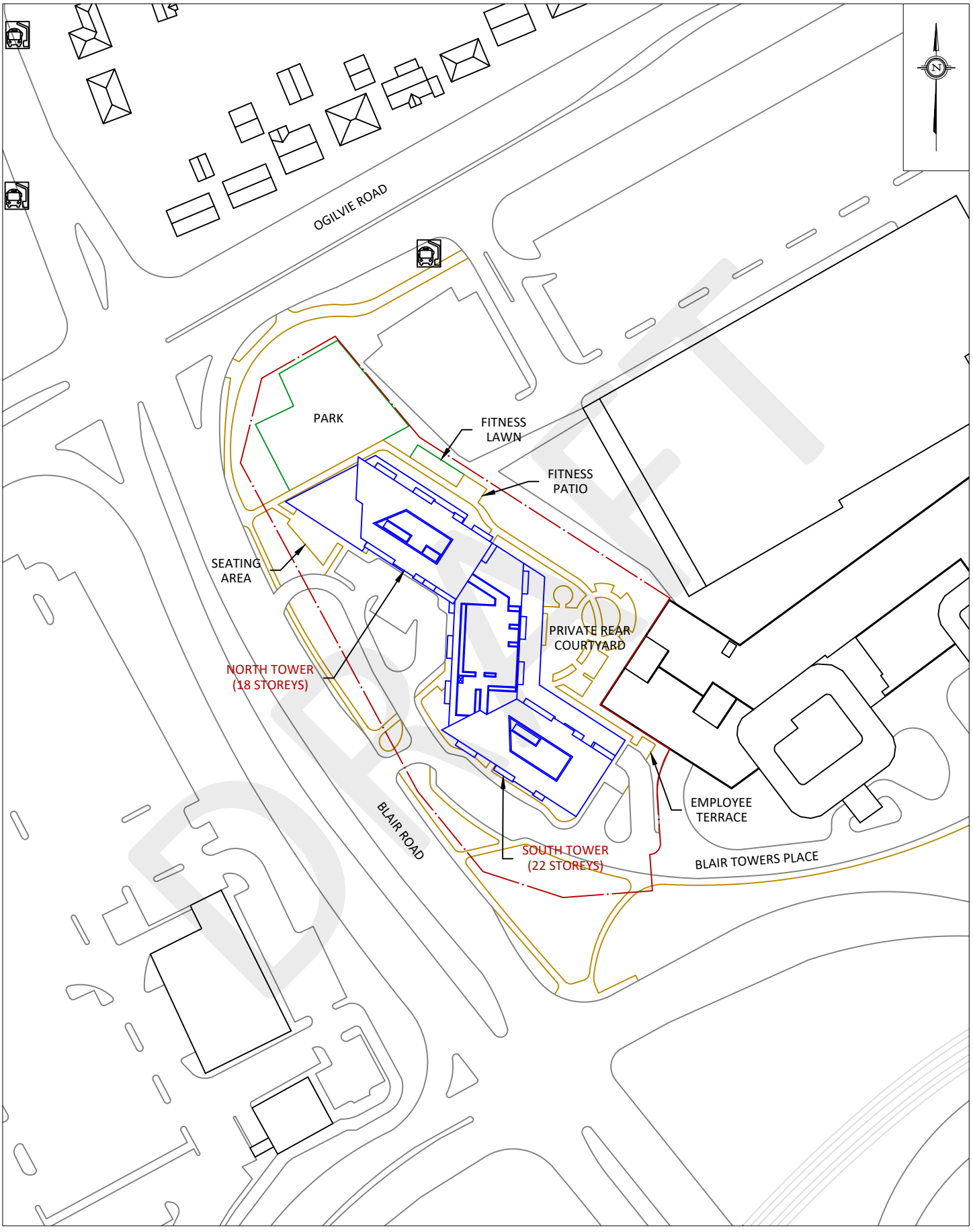
Gradient Wind Engineering Inc.

Justin Denne, M.A.Sc.
Junior Wind Scientist

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

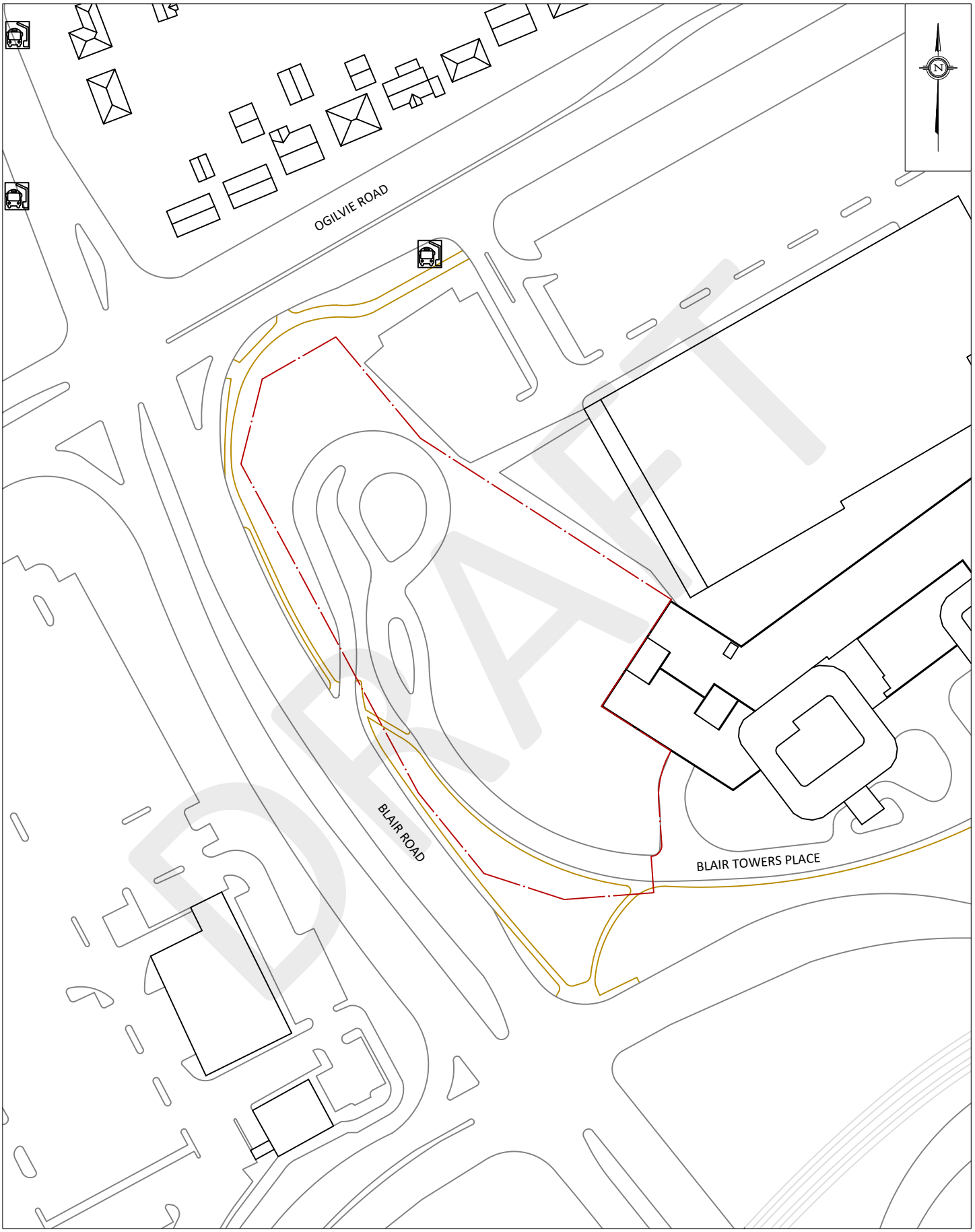
Sunny Kang, B.A.S.
Project Coordinator

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PROJECT	1440 BLAIR TOWERS PLACE, OTTAWA PEDESTRIAN LEVEL WIND STUDY
SCALE	1:1500
DRAWING NO.	24-160-PLW-1A
DATE	AUGUST 23, 2024
DRAWN BY	S.K.
DESCRIPTION	FIGURE 1A: PROPOSED SITE PLAN AND SURROUNDING CONTEXT



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PROJECT	1440 BLAIR TOWERS PLACE, OTTAWA PEDESTRIAN LEVEL WIND STUDY		DESCRIPTION
SCALE	1:1500	DRAWING NO.	24-160-PLW-1B
DATE	AUGUST 23, 2024	DRAWN BY	S.K.

FIGURE 1B:
EXISTING SITE PLAN AND SURROUNDING CONTEXT

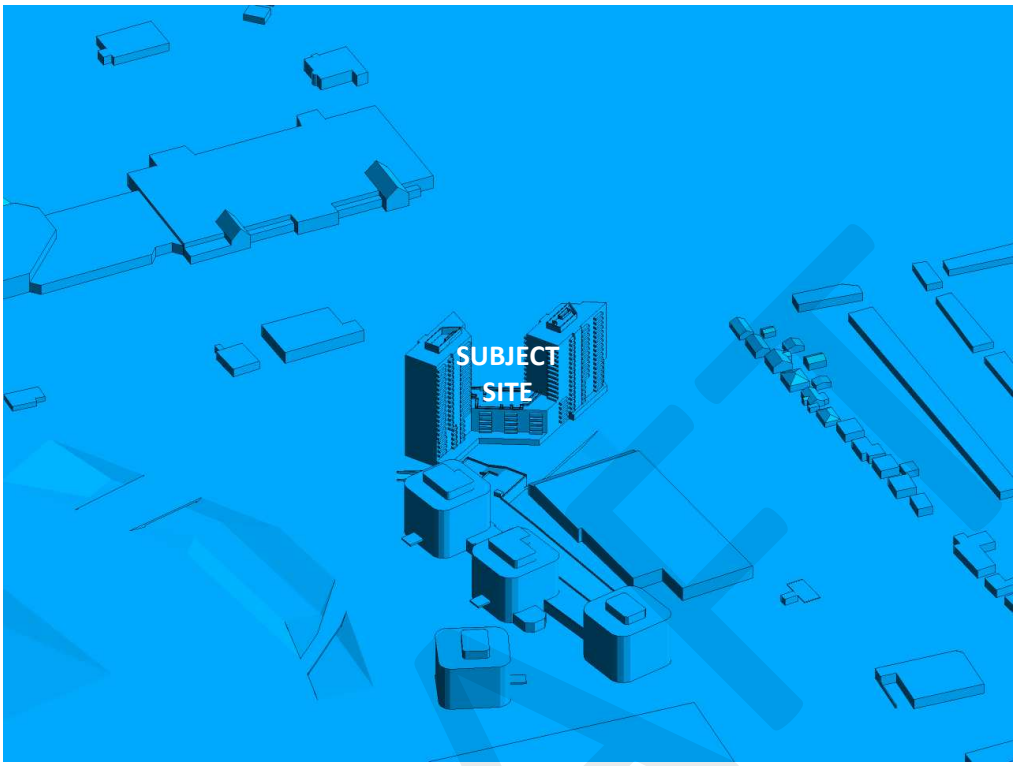


FIGURE 2A: COMPUTATIONAL MODEL, PROPOSED MASSING, EAST PERSPECTIVE



FIGURE 2B: CLOSE UP OF FIGURE 2A

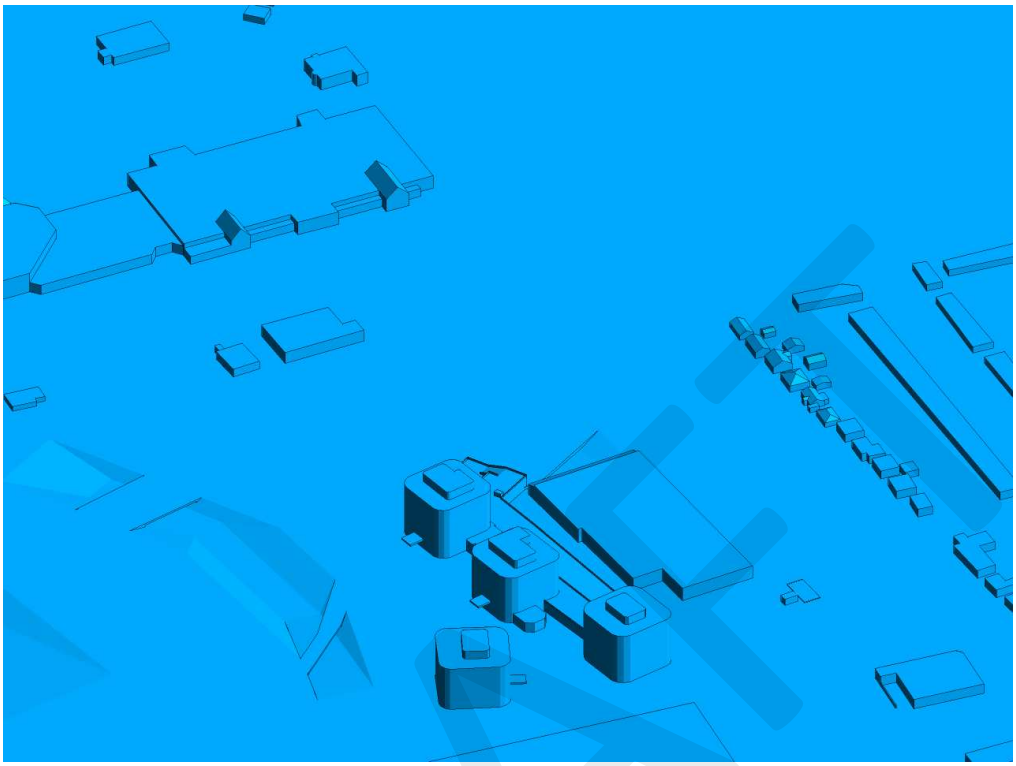


FIGURE 2C: COMPUTATIONAL MODEL, EXISTING MASSING, EAST PERSPECTIVE



FIGURE 2D: CLOSE UP OF FIGURE 2C

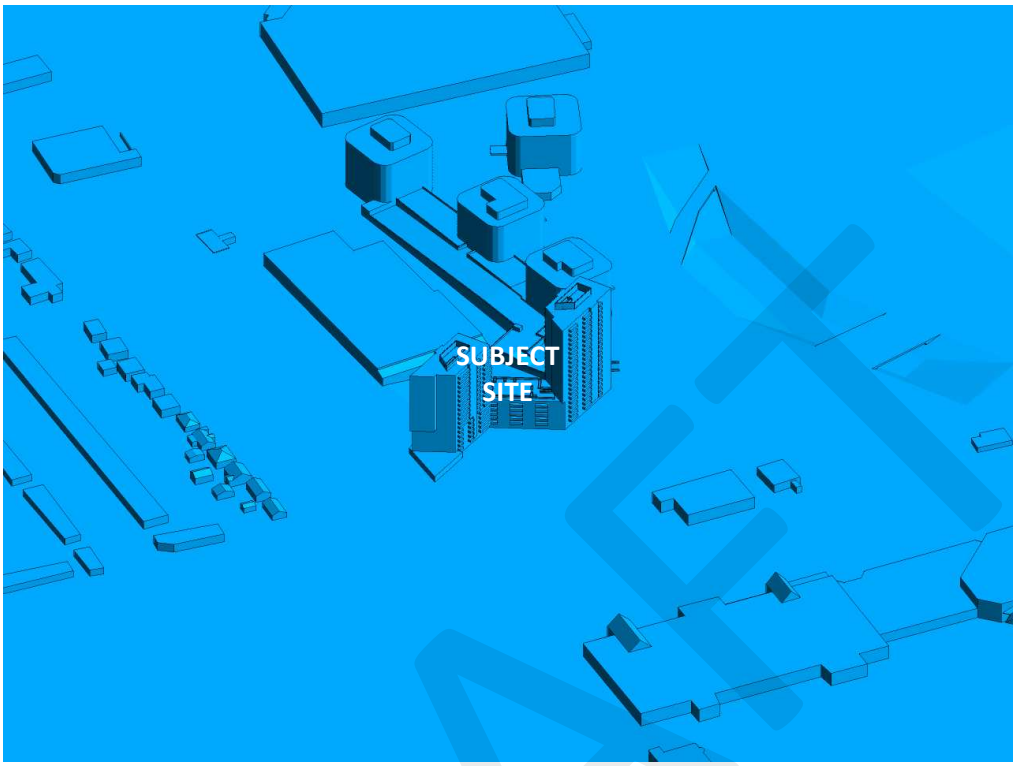


FIGURE 2E: COMPUTATIONAL MODEL, PROPOSED MASSING, WEST PERSPECTIVE



FIGURE 2F: CLOSE UP OF FIGURE 2E

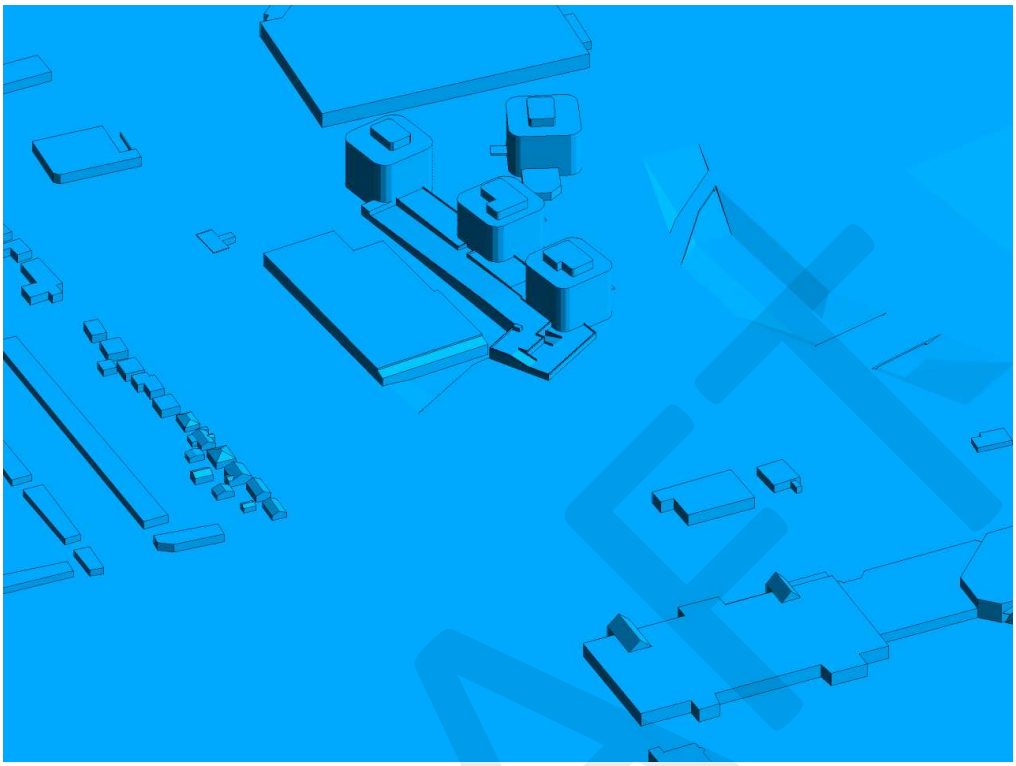


FIGURE 2G: COMPUTATIONAL MODEL, EXISTING MASSING, WEST PERSPECTIVE



FIGURE 2H: CLOSE UP OF FIGURE 2G

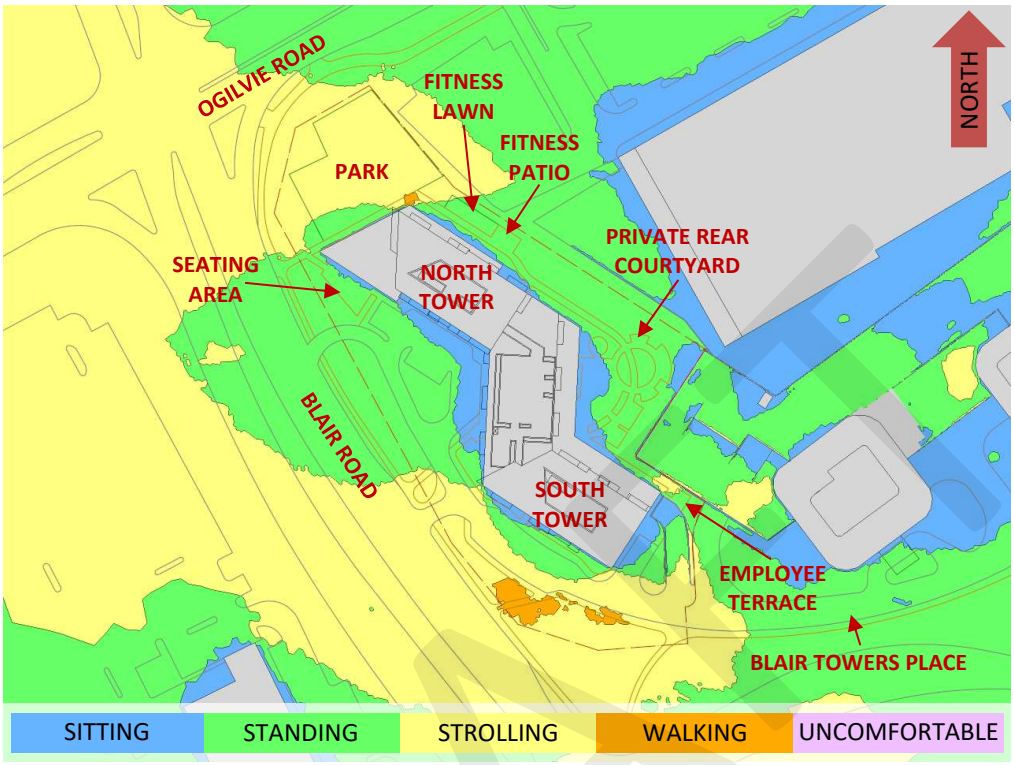


FIGURE 3A: SPRING – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

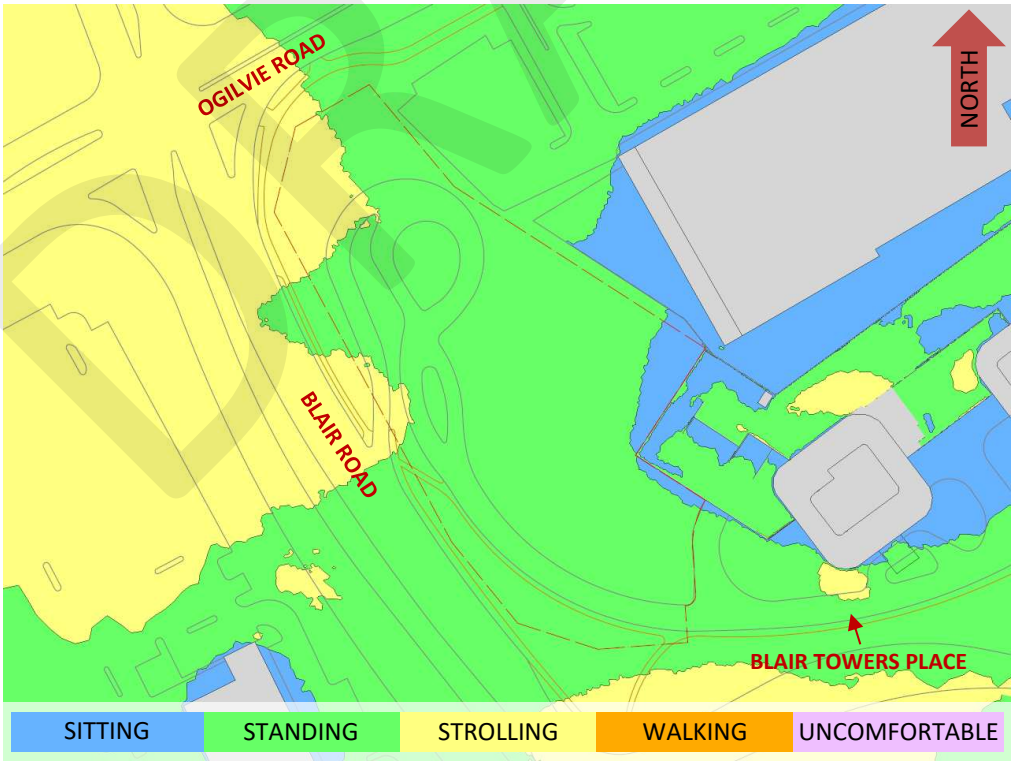


FIGURE 3B: SPRING – WIND COMFORT, GRADE LEVEL– EXISTING MASSING

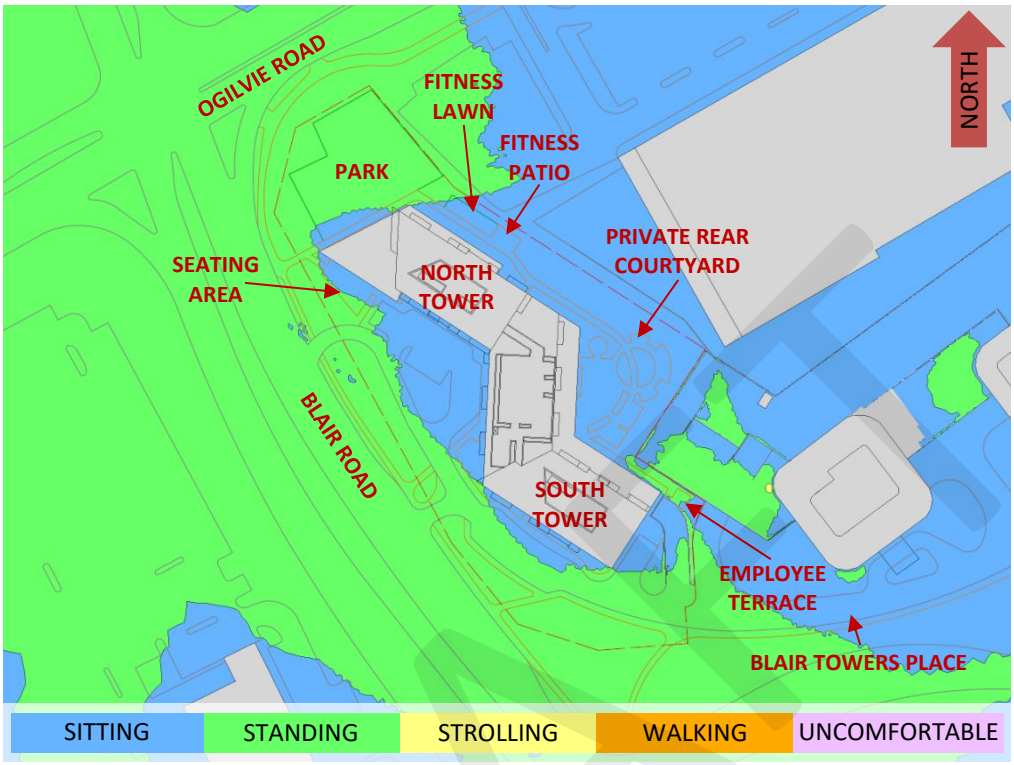


FIGURE 4A: SUMMER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

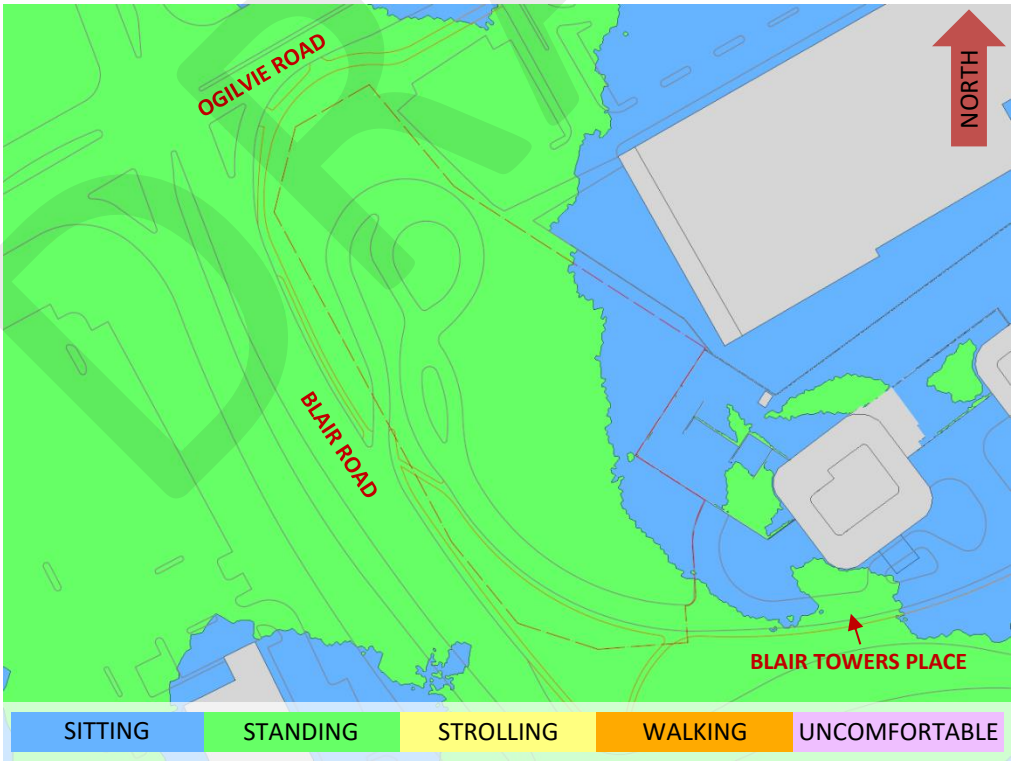


FIGURE 4B: SUMMER – WIND COMFORT, GRADE LEVEL– EXISTING MASSING

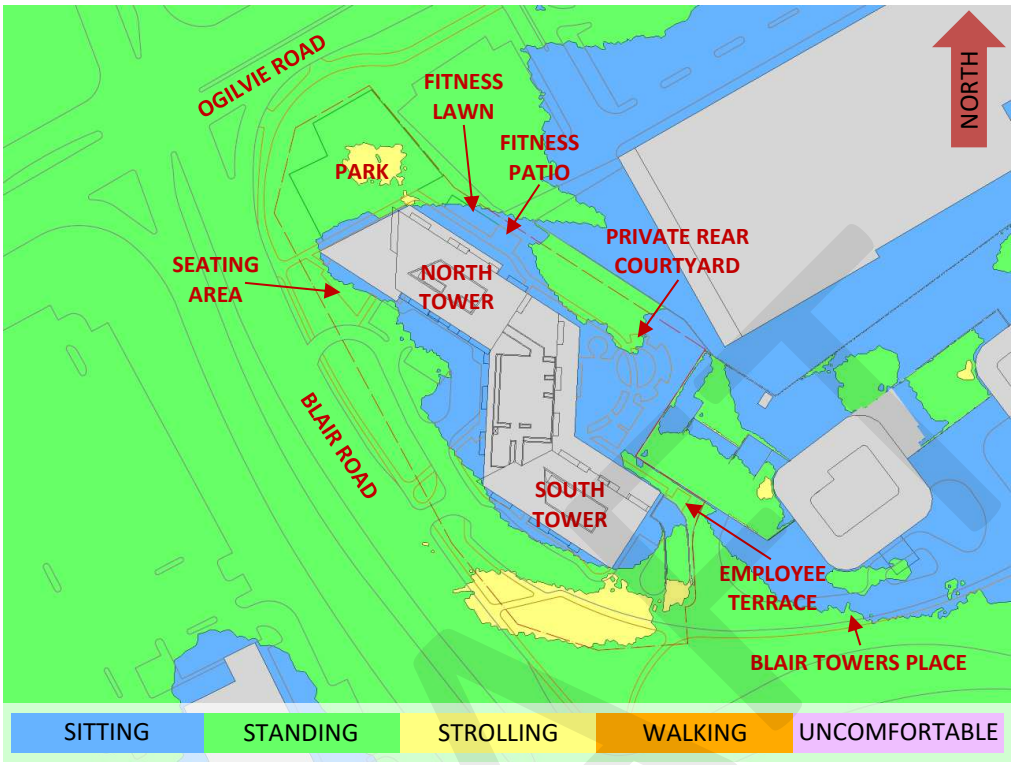


FIGURE 5A: AUTUMN – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

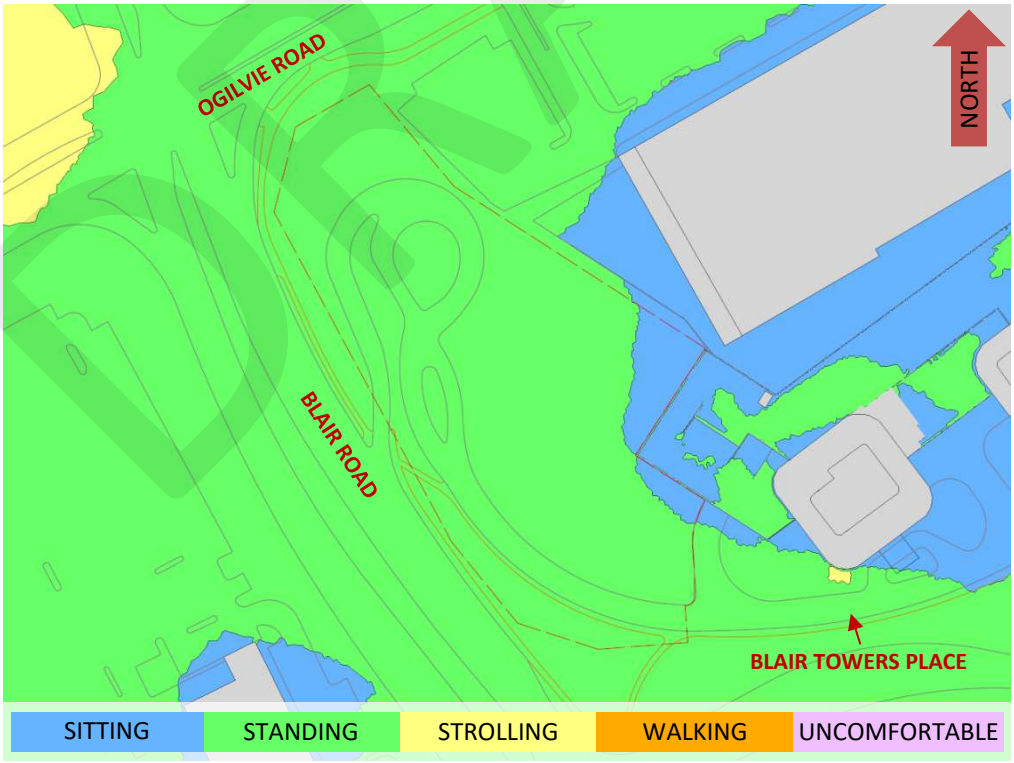


FIGURE 5B: AUTUMN – WIND COMFORT, GRADE LEVEL– EXISTING MASSING

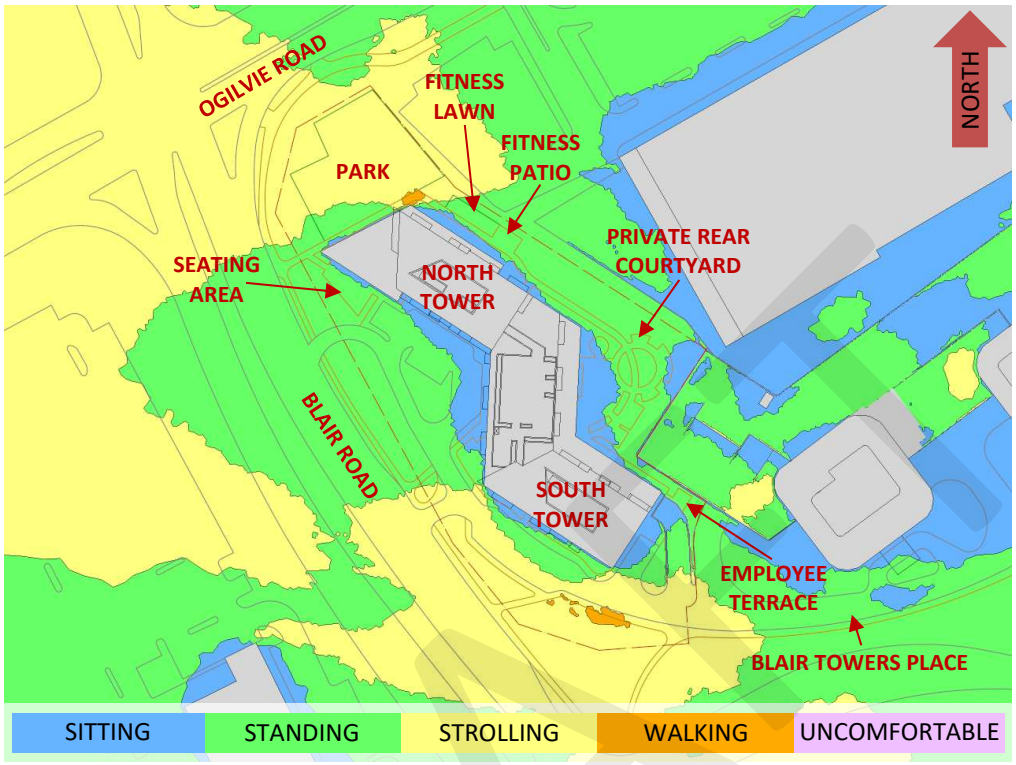


FIGURE 6A: WINTER – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

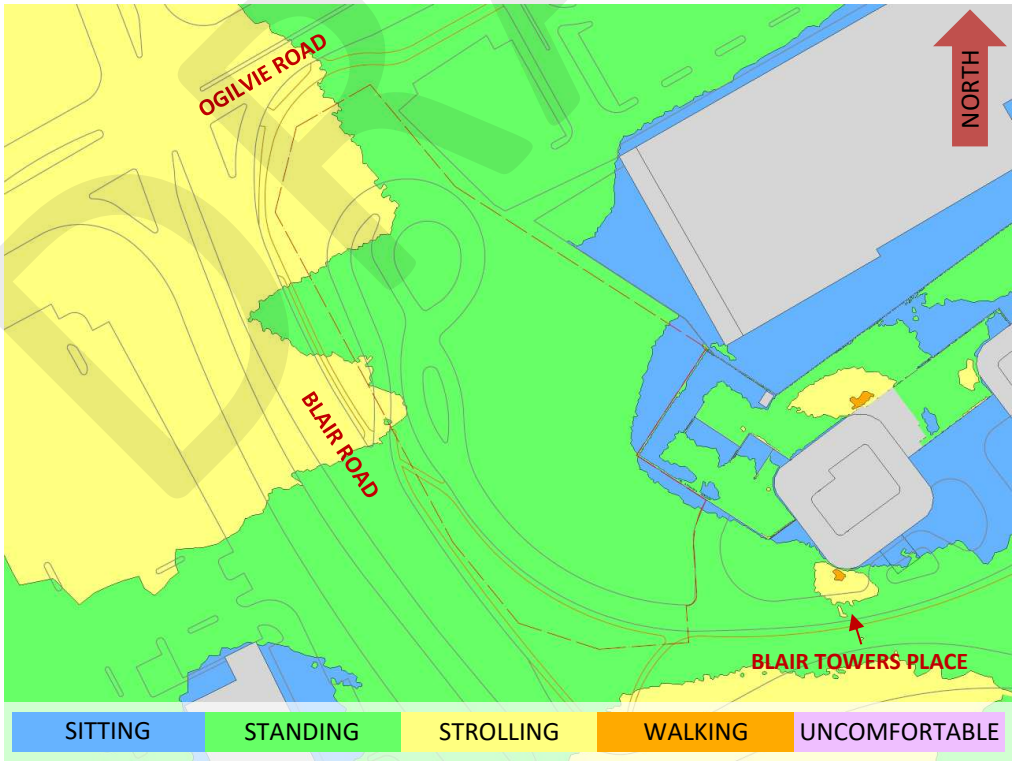


FIGURE 6B: WINTER – WIND COMFORT, GRADE LEVEL– EXISTING MASSING

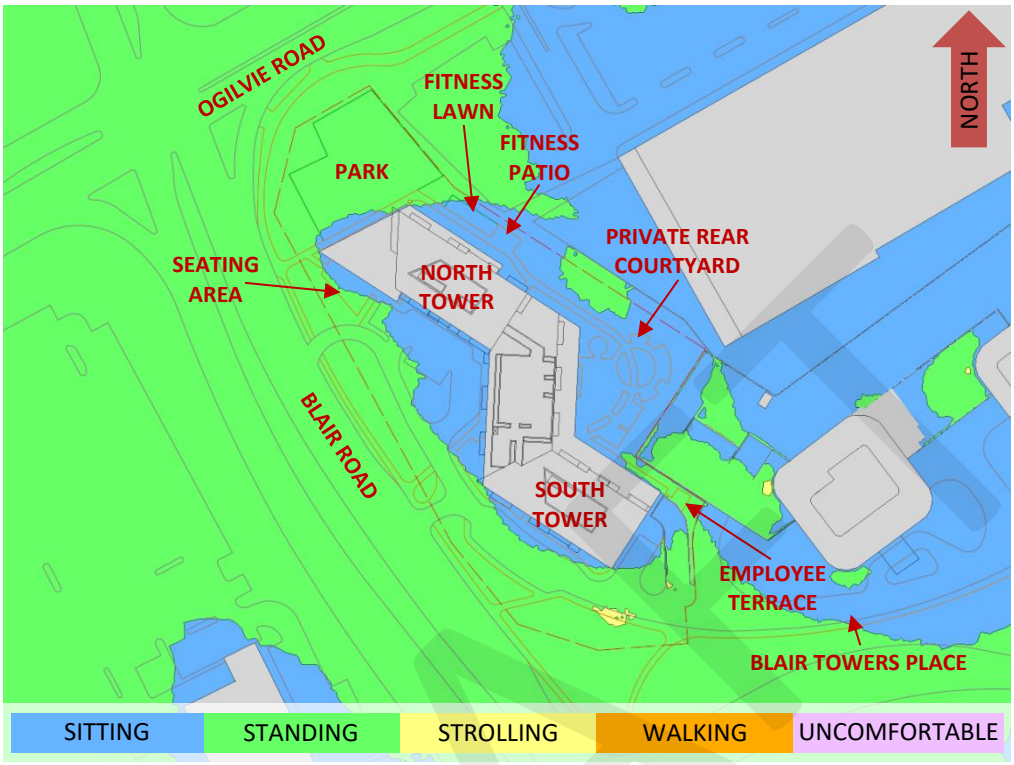


FIGURE 7: TYPICAL USE PERIOD – WIND COMFORT, GRADE LEVEL – PROPOSED MASSING

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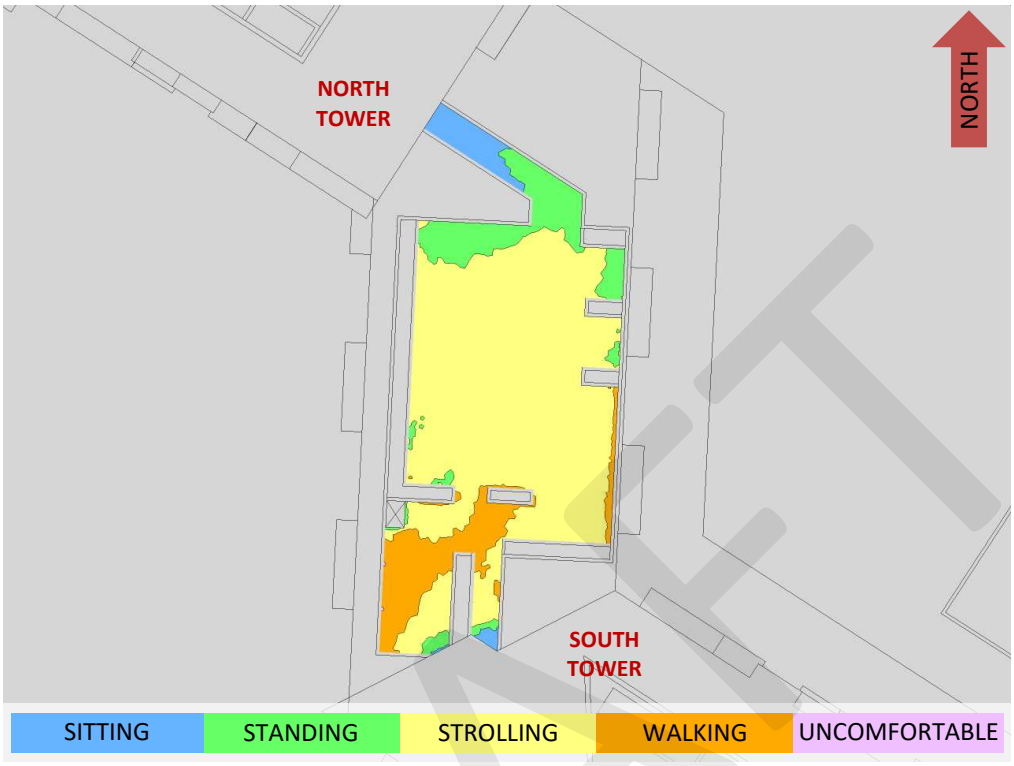


FIGURE 8A: SPRING – WIND COMFORT, LEVEL 7 COMMON AMENITY TERRACE

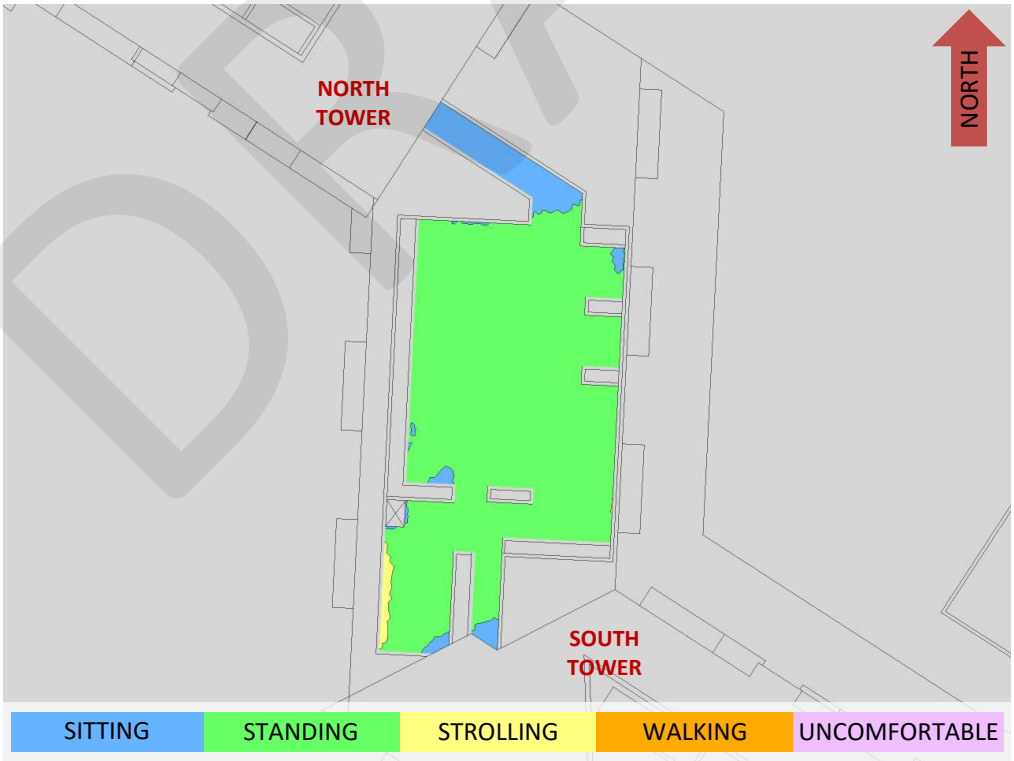


FIGURE 8B: SUMMER – WIND COMFORT, LEVEL 7 COMMON AMENITY TERRACE

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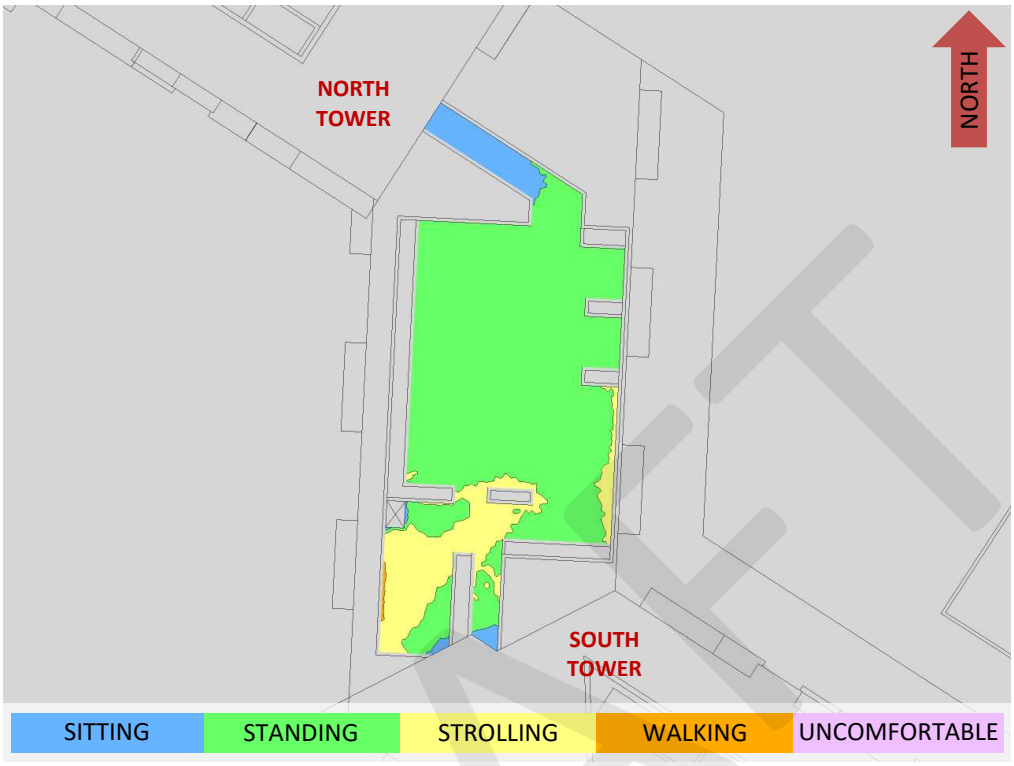


FIGURE 8C: AUTUMN – WIND COMFORT, LEVEL 7 COMMON AMENITY TERRACE

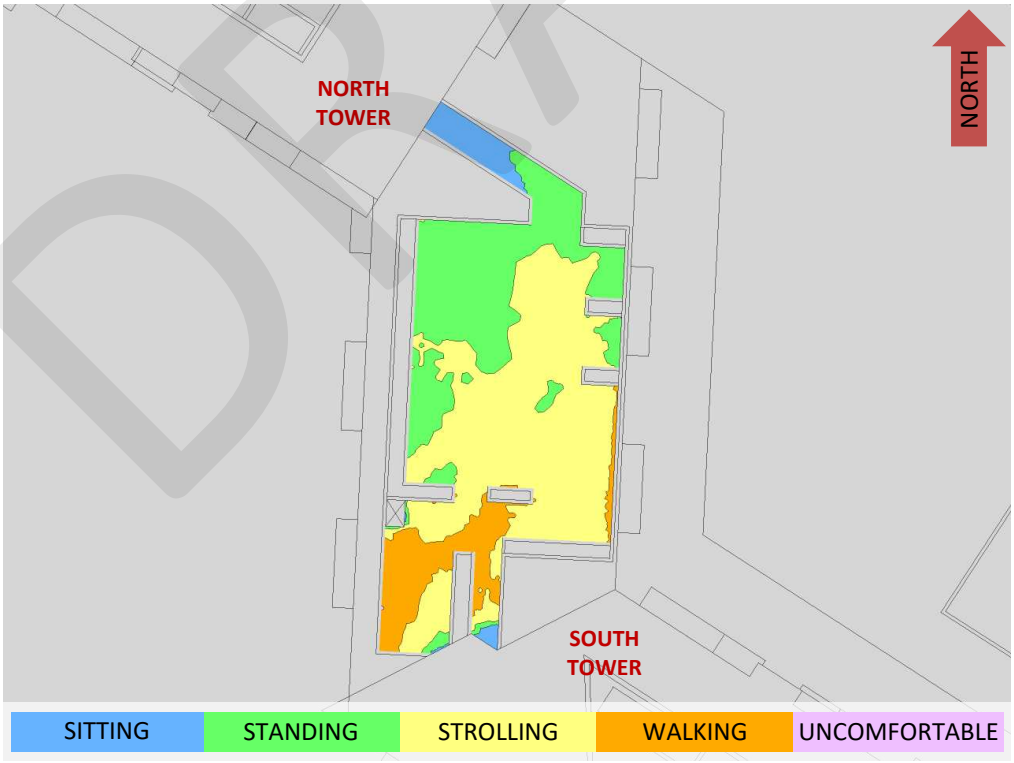


FIGURE 8D: WINTER – WIND COMFORT, LEVEL 7 COMMON AMENITY TERRACE

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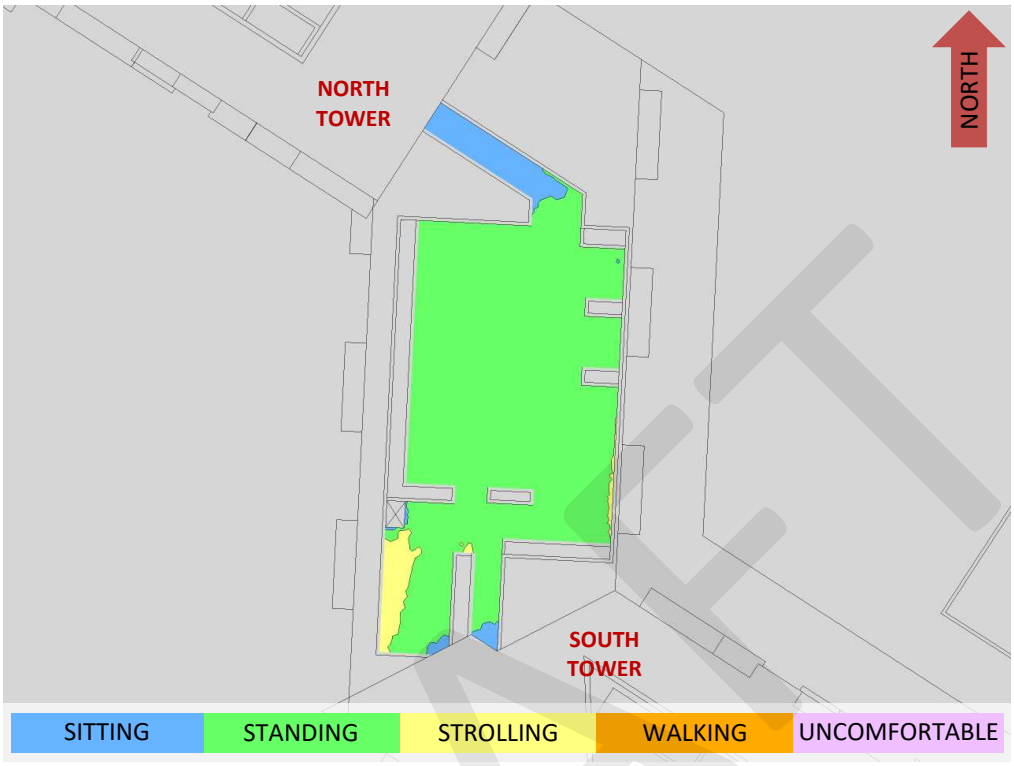


FIGURE 9: TYPICAL USE PERIOD – LEVEL 7 COMMON AMENITY TERRACE

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APPENDIX A

SIMULATION OF THE ATMOSPHERIC BOUNDARY LAYER

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SIMULATION OF THE ATMOSPHERIC BOUNDARY LAYER

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

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

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

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

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

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

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

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

Wind Direction (Degrees True)	Alpha Value (α)
0	0.24
22.5	0.24
45	0.23
67.5	0.22
90	0.20
112.5	0.19
135	0.19
157.5	0.22
180	0.24
202.5	0.24
225	0.25
247.5	0.25
270	0.25
292.5	0.25
315	0.24
337.5	0.24

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TABLE 2: DEFINITION OF UPSTREAM EXPOSURE (ALPHA VALUE)

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

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

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

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

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

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

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REFERENCES

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

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

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

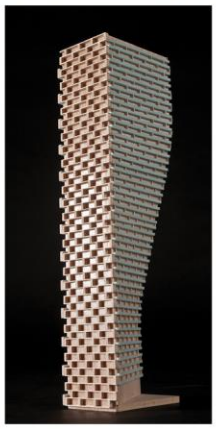
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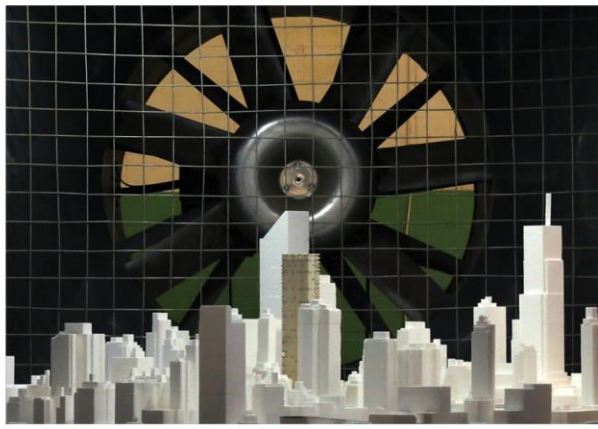
TRANSPORATION S NOISE ASSESSMENT

1440 Blair Towers Place
Ottawa, Ontario

REPORT: 24-160 – Noise







September 12, 2024

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PREPARED FOR
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EXECUTIVE SUMMARY

This report describes an environmental noise assessment undertaken to satisfy Site Plan Control application submission requirements for the proposed mixed-use residential development, referred to as "Blair and Ogilvie," located at 1440 Blair Towers Place in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). The objective of this study is to analyze the sound pressure levels in the area of interest and propose the necessary mitigation measures to ensure proper acoustic insulation.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) NPC-300, and City of Ottawa Environmental Noise Control Guidelines (ENCG) guidelines; (ii) future vehicular traffic volumes corresponding to roadway classification obtained from the City of Ottawa.

The results of the traffic noise analysis indicate that noise levels will range between 55 and 67 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (67 dBA). As a result, upgraded building components and central air conditioning will be required, as noise levels predicted due to roadway traffic exceed the criteria of 65 dBA during the daytime period, as listed in ENCG. Windows with a rating of STC 30 are required along all façades, to reduce indoor noise levels at or below the ENCG indoor sound criteria for noise-sensitive spaces. All units will require air conditioning. In addition, A Type D Warning Clause will also be required to be placed on all Lease, Purchase and Sale Agreements for all units.

The results also indicate that outdoor noise levels at the terrace are expected to be between 52 dBA and 60 dBA. Noise barriers are not required but should be considered where noise levels exceed 55 dBA. As discussed in Section 5.1, noise mitigation at the OLAs is recommended where technically and administratively feasible. Detailed mitigation measures would be explored during the site plan approval stage.

TABLE OF CONTENTS

1. INTRODUCTION 0

2. TERMS OF REFERENCE 0

3. OBJECTIVES 1

4. METHODOLOGY 1

4.1 Background 1

4.2 Criteria for Roadway Traffic Noise 2

4.3 Theoretical Roadway Noise Predictions 3

4.4 Roadway Traffic Volumes 4

5. ROADWAY TRAFFIC NOISE RESULTS 4

5.1 Roadway Traffic Noise Levels 4

6. CONCLUSIONS AND RECOMMENDATIONS 6

FIGURES

1. INTRODUCTION

Gradient Wind Engineering Inc was retained by Le Groupe Maurice to undertake an environmental noise assessment for a proposed subdivision development known as "Blair and Ogilvie" and located at 1440 Blair Towers Place in Ottawa, Ontario (hereinafter referred to as "subject site" or "proposed development"). This report summarizes the methodology, results, and recommendations related to the assessment of exterior and interior noise levels generated by local roadway traffic.

This assessment is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP) NPC-300[1], Ministry of Transportation Ontario (MTO)[2], and City of Ottawa Environmental Noise Control Guidelines (ENCG)[3] guidelines. Noise calculations were based on site plan drawings provided by Le Groupe Maurice, with future traffic volumes corresponding to roadway classification and theoretical roadway capacities, and recent satellite imagery.

2. TERMS OF REFERENCE

The subject site is located at 1440 Blair Towers Place in Ottawa, situated to the southeast at the intersection of Blair Road and Ogilvie Road on a parcel of land bordered by Ogilvie Road to the northwest, a low-rise commercial building to the northeast, Blair Towers Place and a parking garage to the southeast, and Blair Road and Blair Towers Place to the southwest.

The proposed development comprises a North Tower (18 storeys) and a South Tower (22 storeys), both topped with a mechanical penthouse (MPH), rising above a common 6-storey podium. A parkland is provided to the north of the subject site, a fitness lawn and a fitness patio are to the east of the North Tower, a private rear courtyard is to the southeast of the subject site, an employee terrace is at the southeast corner of the South Tower, and a seating area is located at the northwest corner of the North Tower. A drive aisle extending from Blair Towers Place provides access to surface parking to the west of the subject site, with additional surface parking located along Blair Towers Place, and a parking ramp

[1] Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013
[2] Ministry of Transportation Ontario, "*Environmental Guide for Noise*", February 2022
[3] City of Ottawa Environmental Noise Control Guidelines, January 2016

leading to the two underground parking levels shared by the towers is situated at the southeast corner of the South Tower.

Above the underground parking, the ground floor of the proposed development comprises a 'Z'-shaped planform and includes a main entrance and drop-off areas to the west, various retail spaces at the southwest corner, and mostly various indoor amenities throughout the level. The remaining podium levels (Levels 2-6) are reserved for residential use. The building steps back from the northwest and east elevations at Level 2 and a common amenity terrace is provided atop the podium between the North and South Towers at Level 7. Levels 7-17 of the North Tower and Levels 7-22 of the South Tower comprise near trapezoidal planforms and are reserved for residential occupancy. Level 18 of the North Tower includes an indoor amenity to the north and residential units throughout the remainder of the level. The primary sources of noise impacting the site are Blair Road, an arterial roadway to the west; Ogilvie Road, and arterial road to the north; and Highway 174, a freeway to the south. Figure 1 illustrates site plan and surrounding context.

3. OBJECTIVES

The principal objectives of this study are to (i) calculate the future noise levels on the study buildings produced by local roadway traffic, and (ii) ensure that interior and exterior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines as outlined in Section 5.1 of this report.

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a

3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

4.2 Criteria for Roadway Traffic Noise

For surface roadway traffic noise, the equivalent sound energy level, L_{eq}, provides a measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specifies that the recommended indoor noise limit range (that is relevant to this study) is 45 and 40 dBA for living rooms and sleeping quarters, respectively, as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD) [4]

Type of Space	Time Period	L_{eq} (dBA)
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50
Living/dining/den areas of **residences**, hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45
Sleeping quarters of hotels/motels	23:00 – 07:00	45
Sleeping quarters of **residences**, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window can provide a minimum 20 dBA noise reduction[5]. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment[6]. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the

[4] Adapted from ENCG 2016 – Tables 2.2b and 2.2c
[5] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[6] MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8

building should consider the need for having windows and doors closed, which triggers the need for forced air heating with provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, air conditioning will be required and building components will require higher levels of sound attenuation[7].

The objective sound level for Outdoor Living Areas (OLA) is 55 dBA, which applies during the daytime (07:00 to 23:00).. Predicted noise levels at the outdoor living areas dictate the action required to achieve the recommended sound levels. According to the ENCG, if an area is to be used as an OLA, noise control measures are recommended where technical and administratively feasible to reduce the L_{eq} to 55 dBA. Where noise levels exceed 60 dBA noise measure are required if feasible.

As such, when noise levels at the POWs and OLAs exceed the criteria, specific Warning Clause requirements may apply.

4.3 Theoretical Roadway Noise Predictions

The impact of transportation noise sources on the development was determined by computer modelling. Transportation noise source modelling is based on the software program *Predictor-Lima* which utilizes the United States Federal Highway Administration's Traffic Noise Model (TNM) to represent the roadway line sources. The TNM model is also being accepted in the updated Environmental Guide for Noise of Ontario, 2022 by the Ministry of Transportation (MTO)[8]. This computer program can represent three-dimensional surfaces and first reflections of sound waves over a suitable spectrum for human hearing. A total of ten receptors locations were identified around the site, as illustrated in Figure 2.

Roadway noise calculations were performed by treating each road segment as separate line sources of noise, and by using existing and proposed building locations as noise barriers. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per ENCG requirements for noise level predictions.
- The day/night split was taken to be 92% / 8% respectively for all streets.

[7] MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3
[8] Ministry of Transportation Ontario, "*Environmental Guide for Noise*", February 2022

- Topography was assumed to be a flat/gentle slope surrounding the study building.
- Default ground surfaces were taken to be reflective due to the presence of hard (paved) ground.
- 10 receptors at different heights representative of the different levels on the building were strategically placed throughout the study area.

4.4 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan[9] which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes are then based on data in Table B1 of the ENCG for each roadway classification. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Traffic Data	Speed Limit (km/h)	Traffic Volumes
Ogilvie Road	4-Lane Urban Arterial Divided (4-UAD)	60	**35,000**
Blair Road	4-Lane Urban Arterial Divided (4-UAD)	50	**35,000**
Highway 174	Freeway 4 lanes	100	**73,332**
On and Off ramps to 174	Urban Collector	50	**8,000**

5. ROADWAY TRAFFIC NOISE RESULTS

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3. The results of the current analysis indicate that noise levels will range between 56 and 67 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (67

[9] City of Ottawa Transportation Master Plan, November 2013

dBA) occurs at the south of the development, which is directly exposed to the noise generated by the Queensway (Highway 174). Noise contours for the roadway traffic noise calculations covering the entire study site are shown in Figures 3 and 4 for the daytime and nighttime periods, respectively.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO TRANSPORATION SOURCES

Receptor	Location	Receptor Height (m)	Noise Level (dBA)	
			Day	Night
1	POW	2.5	66	59
2	POW	4.5	64	56
		25.5	64	57
		50	64	57
3	POW	4.5	57	49
		25.5	58	50
		50	59	51
4	POW	4.5	56	49
5	POW	4.5	63	55
		25.5	66	59
		50	67	59
6	POW	4.5	64	57
		25.5	66	58
		50	65	58
7	POW	4.5	63	55
8	POW	4.5	63	56
		25.5	64	56
		50	64	56
9	POW	2.5	66	59
10-OLA_A	OLA*	19.6	60	N/A

*Noise levels during the nighttime are not considered for OLAs

As a result, upgraded building components and central air conditioning will be required, as noise levels predicted due to roadway traffic exceed the criteria of 65 dBA during the daytime listed in ENCG. As noise levels just exceed 65 dBA during the daytime, windows with a rating of STC 30 are required. This will be sufficient in reducing indoor noise levels at or below the ENCG criterion for noise-sensitive spaces. All units will require air conditioning. In addition, A Type D Warning Clause will also be required to be placed on all Lease, Purchase and Sale Agreements for all units.

The results also indicate that noise levels at the terrace are expected to approach 60 dBA, as such noise barriers are not required. However, during the site plan stage further mitigation can be explored if desirable to reduce noise levels below 55 dBA. If it is not possible to reduce noise levels to be low 55 dBA a Type A warning clause will be required on purchase sale and lease agreements.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 56 and 67 dBA during the daytime period (07:00-23:00) and between 49 and 59 dBA during the nighttime period (23:00-07:00). The highest noise level (67 dBA) occurs at the south of the development, which is directly exposed to the noise generated by the Queensway. The following noise control measures will be required for the building:

1. Bedroom and Living room windows on all facades will require a minimum Sound Transmission Class Rating of 30.

2. The building will require air condition inside the suites to allow widows to remain closed thereby proving a quiet and comfortable living space.

3. The following Type D warning clause will be required to be placed on all purchase, sale, and lease agreements:

   "This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City of Ottawa and the Ministry of the Environment."

   Since noise levels on the terrace range between 55 dBA and 60 dBA the following Type A warning clause is also required on purchase sale and lease agreements, if a noise barrier is not provided to reduce noise levels to below 55 dBA:

   "Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City of Ottawa and the Ministry of the Environment."

This concludes our traffic noise assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

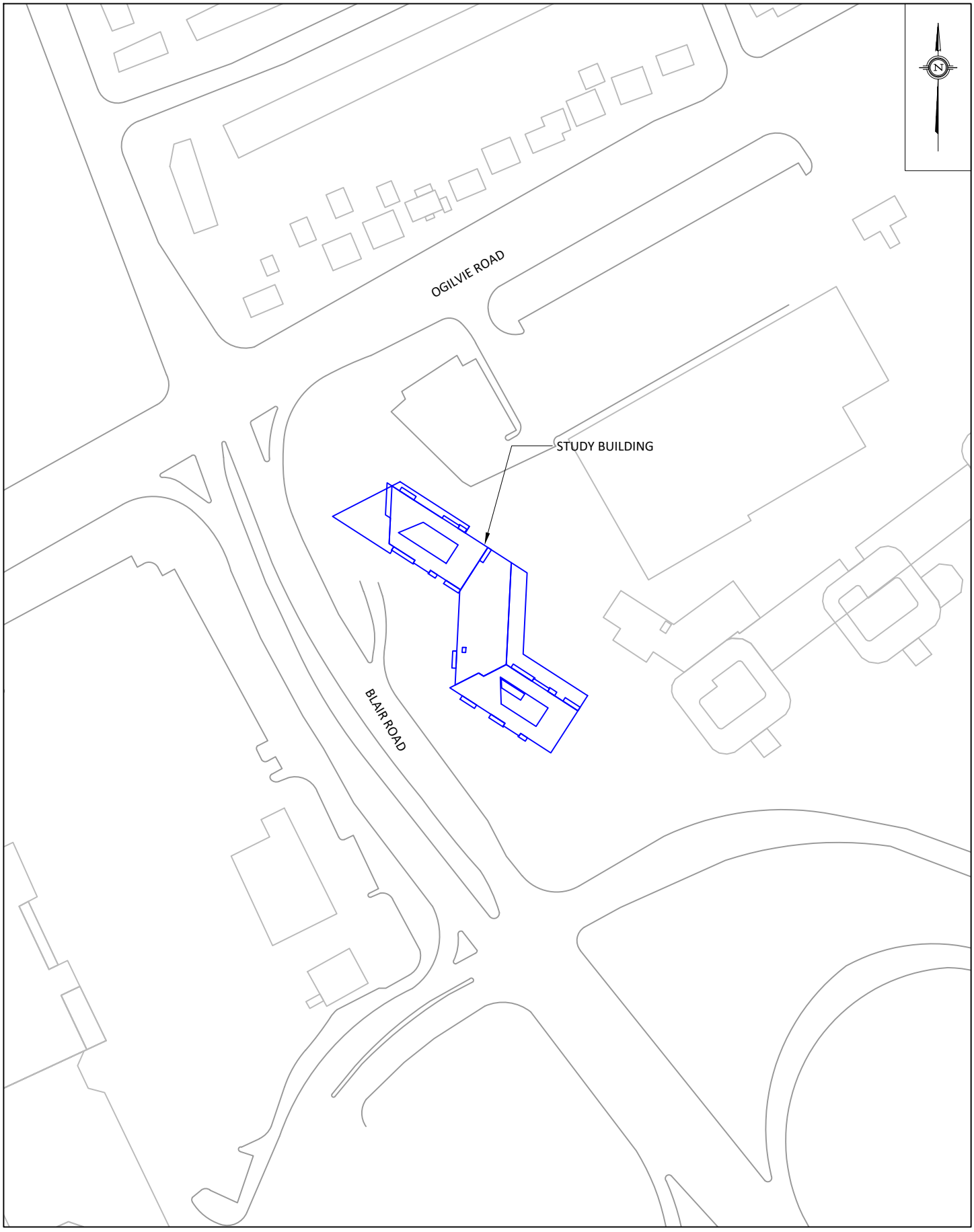
Sincerely,

Gradient Wind Engineering Inc.

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Lead Engineer

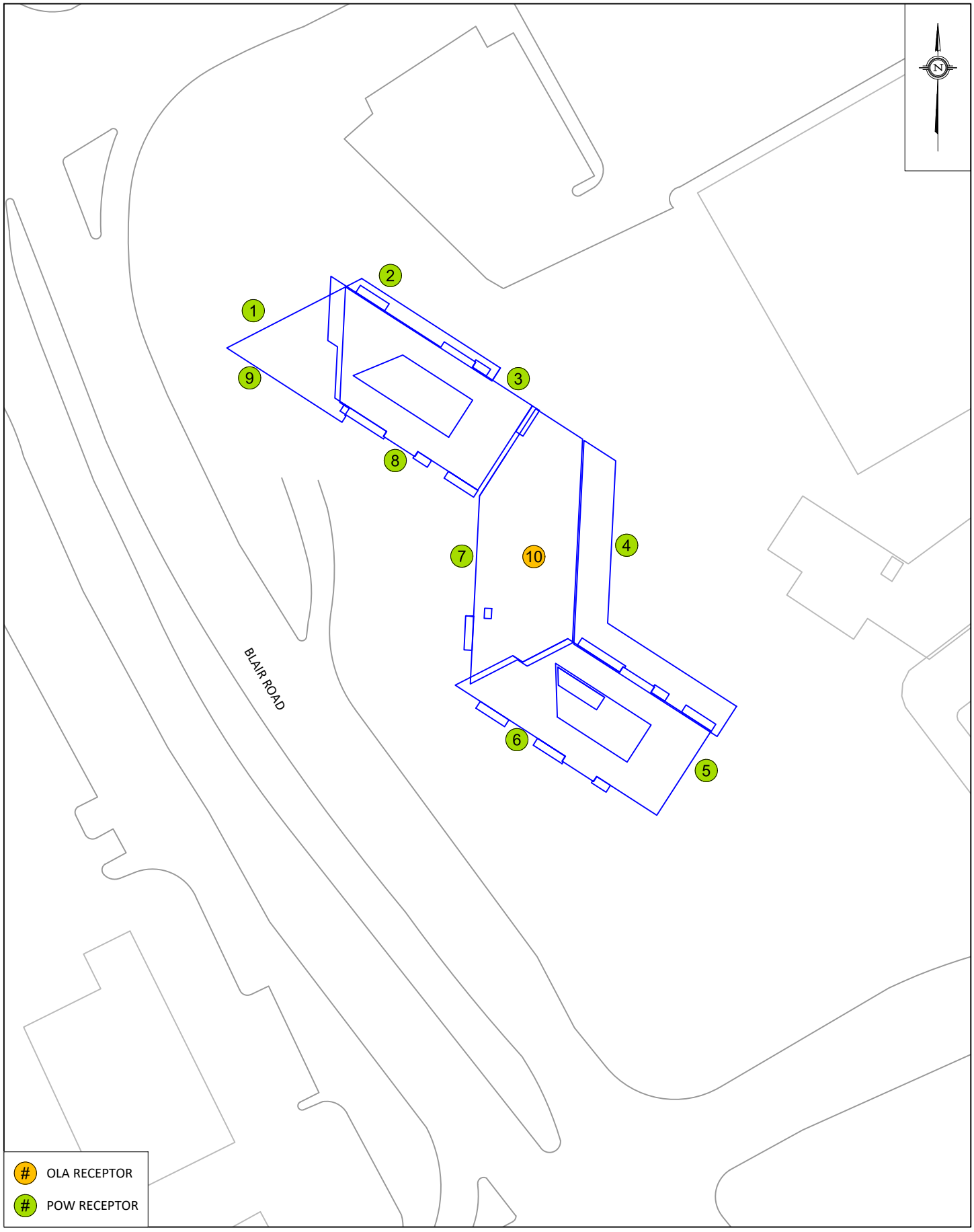


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PROJECT	1440 BLAIR TOWERS PLACE, OTTAWA TRANSPORTATION NOISE FEASIBILITY STUDY
SCALE	1:2000
DRAWING NO.	24-160-NOISE-FIG1
DATE	SEPTEMBER 09, 2024
DRAWN BY	S.N.

DESCRIPTION

FIGURE 1:
PROPOSED SITE PLAN AND SURROUNDING CONTEXT



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PROJECT	1440 BLAIR TOWERS PLACE, OTTAWA TRANSPORTATION NOISE FEASIBILITY STUDY
SCALE	1:500
DRAWING NO.	24-160-NOISE-FIG2
DATE	SEPTEMBER 06, 2024
DRAWN BY	S.N.

DESCRIPTION

FIGURE 2:
RECEPTOR LOCATIONS

FIGURE 3: DAYTIME NOISE CONTOURS (4.5M ABOVE GRADE)

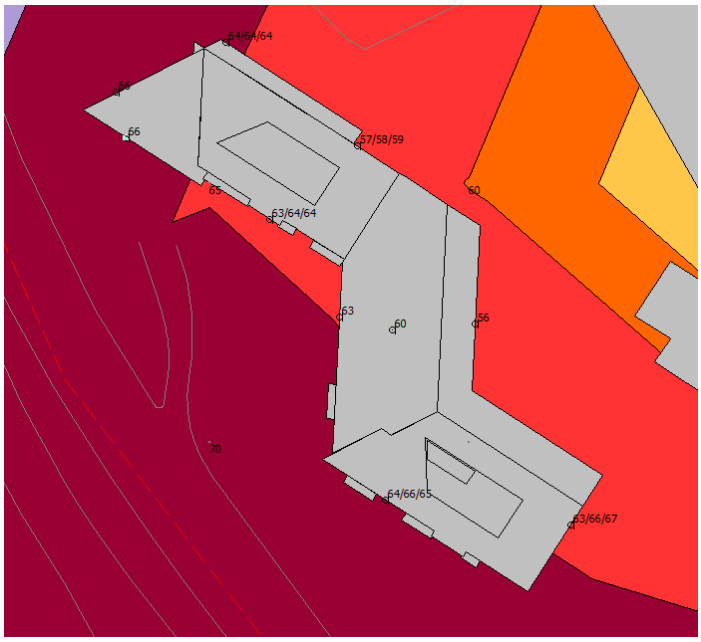


FIGURE 4: NIGHTTIME NOISE CONTOURS (4.5M ABOVE GRADE)

