THE UNIVERSITY OF BRITISH COLUMBIA

Campus + Community Planning

REPORT TO THE DEVELOPMENT PERMIT BOARD

Agenda Item: 3.1

Forwarded to: Development Permit Board on Recommendation of the Director, Campus & Community Planning

Approved for Submission:

Director, Development Services, Campus and Community Planning

Date: May 3, 2022

Subject: File # DP 22010 Lot BCR6, Wesbrook Place

Market Rental Residential and Faculty/Staff Residential Project

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RECOMMENDATION

That the Development Permit Board recommend that the Director of Planning, Campus and Community Planning issue a Development Permit for a market rental residential tower and two 6 storey faculty/staff residential buildings on Lot BCR 5 and BCR 6 in Wesbrook Place. The project comprises 221 dwelling units in an 18-storey high rise apartment building and 294 dwelling units for faculty/staff in two 6 storey midrise buildings, as detailed in the attached drawings prepared by DYS Architecture and Connect Landscape Architecture Ltd. (Attachment A), subject to the following conditions:

1) **That SC4C.5d of the *Development Handbook* and Sec. 4.1.6.1 d) of the UBC Land Use Plan be relaxed for this project to permit the height to project 1.18m above the permitted maximum height (53.0m) for a portion of the roof;**

2) **That SC3C.5 f) of the Development Handbook be relaxed to increase the maximum site coverage from 50% to 50.8%;**

3) **That Section 7.6 be relaxed in the Development Handbook to reduce the required number of Class 1 and Class 2 bicycle parking stalls from 1,068 to 842 for Class 1 and from 258 to 72 for Class 2; and**

4) **That the plans will be revised to meet the REAP 3.2 Zero Waste Ready (P1) prerequisite requirement for convenience.**

BACKGROUND

On February 22, 2022, UBC Properties Trust submitted a Development Permit application for a residential development on Lot BCR6 in Wesbrook Place. The project comprises an 18 storey high rise market rental apartment building and two 6-storey midrise buildings for faculty/staff. The gross floor area of the development is 14,141 m^2 (152,212 ft^2) in the high rise building and 26,357 m^2 (283,703 ft^2) in the two midrise buildings. The floor space ratio (FSR) of the development is 3.5.

LOCATION

The subject site comprises two partially treed lots - BCR 5 & 6 (to be consolidated). The 10,710.6 m^2 lot is located in the southeast quadrant of Wesbrook Place in the former BC Research Lands at the northeast corner of Wesbrook Mall and the east/west section of Binning Road in Wesbrook Place (outlined in bold in Figure 1). The lot is bordered by a 3rd party leased research building at 3800 Wesbrook Mall to the south, Nobel House (a 6-storey faculty/staff residential building) to the west across Wesbrook Mall, and greenways on the north and east sides connecting to the adjacent Research Park. The Research Park is centrally located in the BCR neighbourhood and is expected to be complete by summer 2022. The majority of the BCR development area is as yet undeveloped with the exception of BCR8 and BCR9 facing Gray Avenue which were previously approved by the Development Permit Board and are under construction.

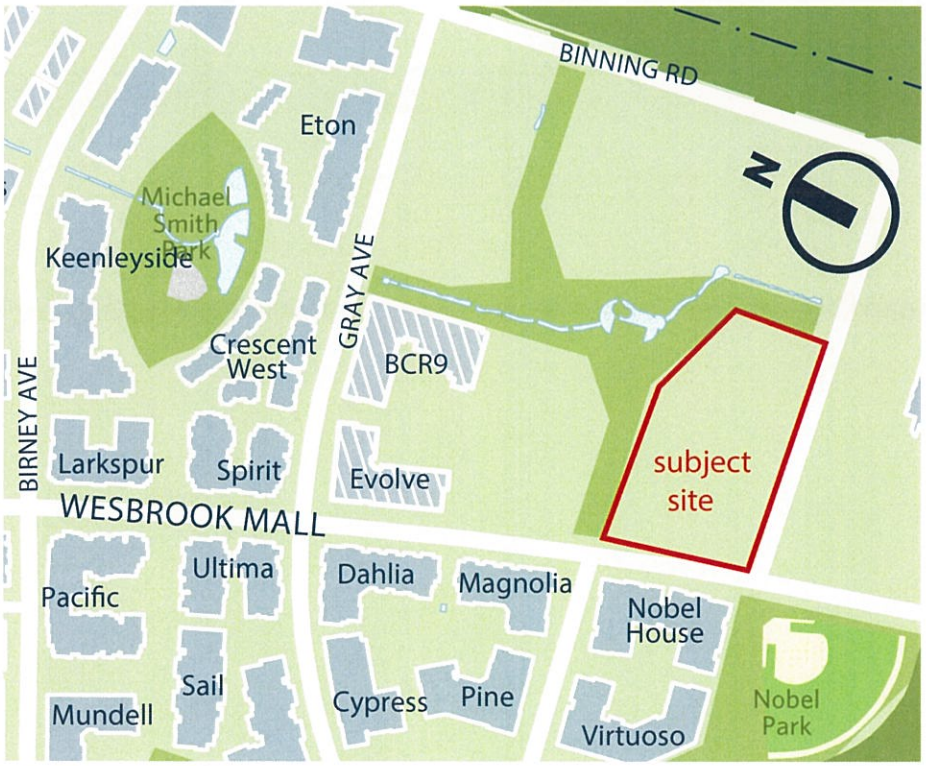


Figure 1. Location Map for BCR 5 and 6 site in the Wesbrook Place Neighbourhood

PROJECT DESCRIPTION

Site Condition

The project site slopes approximately 6 metres from the northwest to southeast. Although most of the site has been previously cleared, there is one stand of trees at the southwest corner of the lot that contains 28 trees. Of these 28 mixed conifer and deciduous trees, 12 are in poor health, 3 are dying, and two are dead. The remainder are in moderate health. All will require removal due to their conflicts with the underground parkade. 21 perimeter street trees along Wesbrook Mall and Binning Road are in good health and 9 of these trees are recommended for retention as part of this development. The remaining 12 trees will require removal due to conflicts with the adjacent roadworks. The new residential project would include 126 new trees to be located throughout the site. The arborist report prepared by Diamond Head is attached to this report (Attachment B).

Project Design

The proposed residential project includes one 18-storey high rise rental apartment building on the south side of the site comprising 221 units. The entry to the high rise (Building A) is off Binning Road. A day care occupies a portion of the ground floor and is accessed from the west side of the building. Two 6 storey faculty staff buildings (B and C) ring the remainder of the perimeter of the site with the northeast end of Building B lowered to 4 storeys next to the park. Building B occupies the northwest corner of the lot and is entered from Wesbrook Mall. Building C is slightly smaller and occupies the southeast area of the site. The parkade entrance serving the entire residential development is off of Binning Road as is the entry to Building C.

Openings between the buildings provide pedestrian access to the landscaped interior courtyards featuring woodland gardens, a children's natural play area, a central lawn, and outdoor gathering and seating areas. The outdoor area along the west side of the high rise is not yet programmed as it is to serve the daycare. This space will be designed in collaboration with the daycare provider and in accordance with provincial regulations when the daycare operator is selected.

A mix of unit sizes will be provided in the project ranging from studio to four-bedroom units (30% studio; 48% one or two bedrooms; 22% three or four bedrooms). A daycare will be located on the ground floor of the high rise. At 5570 ft^2, it will be programmed once a daycare operator has been selected. The outdoor area designated for the daycare and wraps around the high rise on the north, west and south sides and will be designed in accordance with provincial requirements in collaboration with the operator.

Amenity areas provided in the buildings include the daycare, meeting, and social spaces. These amenity areas as well as areas for storage and mechanical elements are excluded from building area calculations in accordance with the Development Handbook.

The project has been designed to adhere to the urban design principles of the Wesbrook Place Neighbourhood Plan. The architecture and landscaping abide by the requirements of the SC3C High Density Residential – High rise/Townhouses development area in the Development Handbook with the exception of a proposed variance for height in the high rise for a portion of the roof that extends 1.18m beyond the 53.0 meter maximum permitted height, and a small increase in site coverage from 50.0% to 50.8%.

The project plans prepared by DYS Architecture and Connect Landscape Architecture are included in Attachment A and provide more detail on the urban design, architecture, landscape and unit layouts.

Sustainability

The project is targeting Residential Environmental Assessment Program (REAP) 3.2 Gold (61 credits). The REAP summary is provided in Attachment F. Sustainability elements over and above the required credits include: enhanced energy performance, EV charging stations, on site rainwater management, climate ready energy efficient design, and exemplary community amenity spaces. However, the project has been found to be deficient in terms of meeting the Zero Waste Ready precondition (P1).

Parking and Access

Vehicle access to a one and a half level underground garage will be provided from the south side of the project below Building C off of Binning Road. The garage proposes 344 resident vehicle parking stalls, 60 of which are stalls that can accommodate people with disabilities, which is 50% of the total possible 693 resident stall maximum. There are an additional 52 visitor parking stalls, 2 daycare staff parking stalls, 5 daycare drop-off stalls, for a total of 403 stalls. Also included in the parkade are elevator lobby access, areas for storage, garbage and recycling, and 842 Class 1 bicycle stalls. Class 2 outdoor bicycle racks for 72 users are located in various areas within the landscaped project area.

Variances are also required to reduce the number of both Class 1 (resident) and Class 2 (visitor) bicycle parking stalls.

PUBLIC CONSULTATION and ADVISORY BODY REVIEW

Public Notification and Consultation

The details of the event were posted on-site on the Development Permit notification sign and the Campus and Community Planning website. An advertisement was posted online in the Ubyssey running from April 7 to 21, 2022. Notifications were emailed to the University Neighbourhood Association (UNA), the Alma Mater Society (AMS), and Graduate Student Society (GSS). Notification letters for residents within 30 m of the site were emailed to Village Gate Homes for distribution to residents of the Nobel, Magnolia, and Dalia Houses.

Campus & Community Planning staff introduced the project and representatives from UBC Properties Trust, the project architecture consultant, and landscape architecture consultant presented the project plans. Staff and the applicant team responded to questions about the project.

The meeting was accessible via a Zoom meeting link emailed out to registrants on the day of the event and also posted on the project website. Prior to the event, 4 registrants signed up using the online registration form. 2 participants attended the meeting.

Consultation Summary:

Feedback received from the consultations focused on concerns about the height and potential noise and traffic impacts. A more detailed consultation summary is provided in Attachment C.

The feedback received from the public consultation was received and acknowledged by both the applicant team and staff.

Advisory Urban Design Panel (AUDP)

The project received formal Advisory Urban Design Panel (AUDP) consideration on April 7 2022. The AUDP Minutes from this meeting are attached (Attachment D). The Panel unanimously supported the project with recommendations for further consideration of the following:

- Further refinement of tower elevations – massing and materiality
- Work with UBC PT and UNA to adjust the base building design of the high rise and associated outdoor landscaping to respond to the daycare providers requirements
- Further develop the nature-play concept throughout the courtyard design.

Development Review Committee (DRC)

The proposal was presented to the Development Review Committee (DRC) on Thursday April 14, 2022. The Committee supported the project, subject to the applicant working to address the following technical items: clarification of visitor and handicap parking provisions, locating bicycle racks close to the daycare entry, enabling short-term pick up on the roadway to serve the daycare, ensuring sufficient soil volume to support newly planted trees in the landscape plan, considering additional storage areas for residents and mitigating any noise impacts from mechanical units on the midrise buildings.

Should this application be supported by the Board, staff will be working with the applicant team to respond to these requirements prior to Development Permit issuance.

PROJECT EVALUATION

Compliance with Applicable Planning Policy Documents

The proposal has been reviewed for compliance with the University's development controls and land use rules including the *Land Use Plan,* the *Wesbrook Place Neighbourhood Plan, and the Development Handbook*. The attached Policy and Regulatory Evaluation Matrix evaluates the project according to relevant planning policies and development regulations (Attachment E).

As noted in the matrix, this development proposal is compliant with the majority of the university's land use development controls and policies. The following identifies the areas the project deviates from these policies and assesses their impacts.

Development Handbook

Height Variance

The applicant is requesting a variance to the maximum permitted height of the high rise apartment building. The maximum height permitted for this parcel is regulated in two ways: by the number of storeys (maximum 18 storeys as designated for this site in Map P-10 of the Wesbrook Neighbourhood Plan) and by a height measurement as described in the Development Handbook for this Development Area (53.0 metres as noted in Sec. SC3C.5 d). The Land Use Plan also stipulates a 53.0 meter maximum for residential buildings unless otherwise designated in the Neighbourhood Plan. The variance requested is for an additional 1.18 meter projection of the southeastern portion of the roof beyond the 53.0 meter maximum. Although the building complies with the maximum number of storeys permitted in the Neighbourhood Plan, a variance to the maximum measured height regulation in the Development Handbook and the Land Use Plan are required.

Analysis:

Because the site slopes approximately six meters from northwest to southeast the applicant is requesting this variance in order to provide extra floor to ceiling space for the daycare in response to provincial regulations. As a result, a portion of the southeastern section of the high rise roof extends 1.18 above the 53.0 metre height maximum. This height variance was

supported by the Advisory Urban Design Panel and by staff in order to allow the daycare to have extra volume. It is the opinion of staff that this variance will not have a significant impact on the height of the high rise while providing enhanced quality in the daycare space.

Site Coverage Variance

The site coverage calculation for this site is 50.8%. This exceeds the maximum permitted site coverage in the Development Handbook by 0.8%. It should be noted that the Wesbrook Neighbourhood Plan allows site coverage for developments up to 55%.

Analysis:

Due to the ambitious residential program for this development on this consolidated site and the generous distribution of landscaped outdoor spaces between the buildings, staff supports this variance to the Development Handbook.

Bicycle Parking Variance

The requirements for Bicycle Parking for residents (Class 1 - interior) and for visitors (Class 2 - outdoor) are provided in the Development Handbook. The applicants are seeking a variance to reduce the number of required Class 1 bicycle stalls from 1,068 to 842 and a reduction in Class 2 bicycle stalls from 258 to 72.

Analysis:

The number of Class 1 stalls that are required is calculated based on the number of total bedrooms in a development. Since 22% of the units are 3 or 4 bedroom, the number of required stalls is significant. Providing the required number of bicycle spaces in the parkade would impact the number of residential vehicle stalls that could be provided. Because the vehicle parking allocation is already approximately half of what could be built, staff supports the reduction of Class 1 bicycle parking for this development. A reduction in Class 2 outdoor stalls is also supported given the challenge of providing sufficient outdoor spaces to locate these racks without interfering with outdoor amenities.

SUMMARY

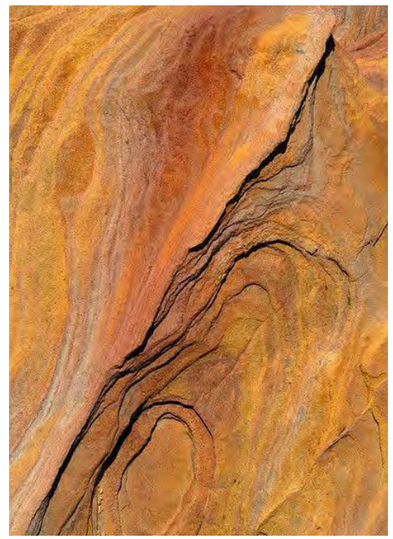
Campus and Community Planning has undertaken the steps required for a Development Permit review for the residential proposal for Lot BCR6 in the Wesbrook Place neighbourhood. Campus and Community Planning confirms that the project is consistent with the governance requirements of the University (Land Use Plan, Wesbrook Place Neighbourhood Plan and UBC Development Handbook) with the exception of the variances noted above. The applicant team has been receptive and responsive to the recommendations of both the advisory bodies and staff through the evolution of detailed planning and design for this project. Staff therefore recommends that the Development Permit Board endorse the recommendations to the Director of Planning on page one of this report.

A Building Permit with detailed construction drawings, consistent with the approved Development Permit, will be required following the issuance of the Development Permit.

ATTACHMENTS

- Attachment A: Proposal Plans
- Attachment B: Arborist Report, Diamond Head
- Attachment C: Public Consultation Summary
- Attachment D: April 7, 2022 Advisory Urban Design Panel (AUDP) Minutes
- Attachment E: Policy and Regulatory Evaluation Matrix
- Attachment F: REAP Summary



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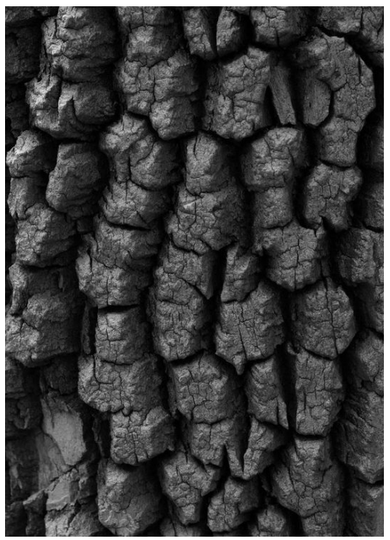
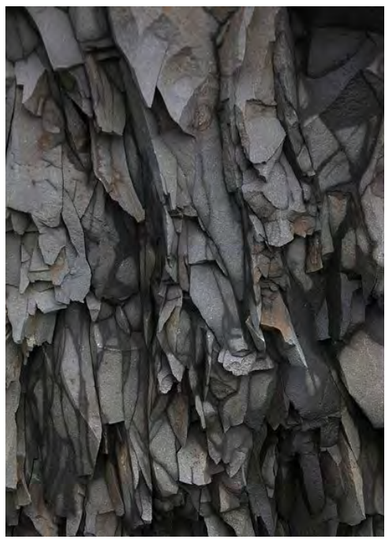
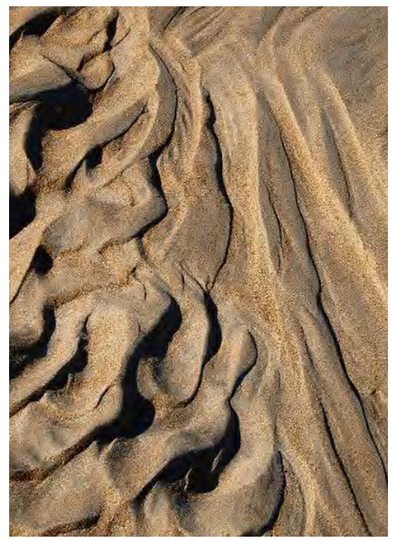





CLIENT:

UBC PROPERTIES TRUST

DESIGN TEAM:

dys architecture

connect
LANDSCAPE ARCHITECTURE

PROJECT STATISTICS
A220488 - UBC PROPERTIES TRUST - BC RESEARCH LOT 5& 6

CIVIC ADDRESS

LEGAL DESCRIPTION LOT 5 AND LOT 6, DISTRICT LOT 6494, GROUP 1, N.W.D, PLAN EPP86350

ZONING SC3C HIGH DENSITY RESIDENTIAL – HIGHRISE/TOWNHOUSES
(AS PER UBC DEVELOPMENT HANDBOOK 2020)

SITE AREA 115288.4 SQ.FT. 10710.6 SQ.M.

	ALLOWED		PROPOSED	
SETBACKS	**M**	**FT**	**M**	**FT**
FRONT YARD SETBACK	2.5	8.2	2.5	8.2
SIDE YARD SETBACK	2.5	8.2	2.5	8.2
REAR YARD SETBACK	2.5	8.2	2.5	8.2
FSR	3.5		3.50	
BUILDING AREA	37487.2 SQ.M.	403509.40 SQ.FT.	37480.7 SQ.M.	403438.7 SQ.FT.
SITE COVERAGE	50%		50.8%	

BUILDING HEIGHT	**ALLOWED**		**PROPOSED**	
BUILDING A -TOWER	18 STOREYS		18 STOREYS	
	53.0 M	173.9 FT	*54.18 M	177.8 FT
BUILDING B - MID-RISE			6 STOREYS	
BUILDING C - MID-RISE			6 STOREYS	

*** VARIANCE REQUEST**
Request height variance of 3'-11" to ensure the daycare space at L1 of the tower has adequate ceiling height

PARKING SUMMARY

VEHICLE PARKING	**ALLOWED/REQUEST**	**PROPOSED**	
BLDG.A-MARKET RENTAL (TOWER)	144	**147**	0.65 space per principal dwelling unit (per UBC Property Trust)
BLDG.B-FACULTY&STAFF RENTAL (MIDRISE)	103	**105**	0.65 space per principal dwelling unit (per UBC Property Trust)
BLDG.C-FACULTY&STAFF RENTAL (MIDRISE)	90	**92**	0.65 space per principal dwelling unit (per UBC Property Trust)
RESIDENT SUBTOTAL	**337**	**344**	
VISITOR STALLS	52	**52**	Min. 0.1 spaces per principal dwelling unit (UBC Development Handbook)
CHILD CARE - DROP-OFF	5	**5**	*1 parking stall for every 8 full time equivalent childcare spaces
CHILD CARE - STAFF	2	**2**	*Min.of 2 parking spaces for staff
			* As per Ciy of Vancouver Childcare Design Guidelines#1.6

TOTAL PARKING SPACES	**396**	**403**	
INCLUDING :			
HANDICAP STALLS (included in total)	52	**60**	Min. 0.1 spaces per principal dwelling unit (UBC Development Handbook)
SMALL CAR STALLS (included in total)	99	**40**	Max. 25% of the required # of parking spaces
CAR WASH	4	**4**	For every 100 parking spaces (per UBC Property Trust)

	MAIN LEVEL P1			UPPER LEVEL P0			P0 MEZZ.			SUBTOTAL
	STANDARD	SMALL CAR	H/C	STANDARD	SMALL CAR	H/C	STANDARD	SMALL CAR	H/C	
DAYCARE	5	0	2	0	0	0	0	0	0	**7**
VISITOR	40	6	6	0	0	0	0	0	0	**52**
RESIDENTIAL	112	19	44	135	15	8	11	0	0	**344**
SUBTOTAL	157	25	52	135	15	8	11	0	0	**403**
	234			**158**			**11**			

BICYCLE PARKING SUMMARY	**REQUIRED**	**PROPOSED**	
			As per REAP 3.2
RESIDENT STALLS - CLASS I			▪ An in building bicycle repair station; and
BLDG A-TOWER	400	**398**	▪ Provide Class 1 bicycle storage facilities at a rate of: 1.5 spaces per studio or one bedroom unit;
BLDG B-MID-RISE	355	**236**	2.5 spaces per 2 bedroom unit;
BLDG C-MID-RISE	314	**208**	and 3 spaces per 3 or 4 bedroom units.
			(Requirements include 10% oversize spaces, and one electrical outlet per two spaces); and
SUBTOTAL	**1068**	***842**	
			*Proposed Bike Parking Reduction to allow for reduced parkade & balance with residential storage

VISITOR STALLS - CLASS II			As per REAP 3.2
BLDG A-TOWER	111		▪ 0.5 Class 2 bicycle storage spaces per dwelling unit; and
BLDG B-MID-RISE	79		▪ A 2 x 3 m concrete pad outside the building, close to the building entrance,
BLDG C-MID-RISE	69		with a standard outlet or conduit for electrified bike share.
SUBTOTAL	**258**	**72**	

PROJECT STATISTICS
A220488 - UBC PROPERTIES TRUST - BC RESEARCH LOT 5&6

RESIDENTIAL AREA SUMMARY - BLDG A-TOWER (MARKET RENTAL)

LEVEL	GROSS FLOOR AREA external face (sq.ft)	BUILDING AREA to exterior face of stud wall (sq.ft)	EXCLUSION - AMENITY (day care, ammenity] (sq.ft)	EXCLUSION - STORAGE (sq.ft)	EXCLUSION - MECH. / ELEC. (sq.ft)	F.S.R AREA (sq.ft)
Rooftop						**0.0**
18	8456.2	8151.4			65.5	**8085.9**
17	8456.2	8151.4			65.5	**8085.9**
16	8456.2	8151.4			65.5	**8085.9**
15	8456.2	8151.4			65.5	**8085.9**
14	8456.2	8151.4			65.5	**8085.9**
13	8456.2	8151.4			65.5	**8085.9**
12	8456.2	8151.4			65.5	**8085.9**
11	8456.2	8151.4			65.5	**8085.9**
10	8456.2	8151.4			65.5	**8085.9**
9	8456.2	8151.4			65.5	**8085.9**
8	8456.2	8151.4			65.5	**8085.9**
7	8456.2	8151.4			65.5	**8085.9**
6	8456.2	8151.4			65.5	**8085.9**
5	8456.2	8151.4			65.5	**8085.9**
4	8456.2	8151.4			65.5	**8085.9**
3	8456.2	8151.4			65.5	**8085.9**
2	8456.2	8151.4			65.5	**8085.9**
1	8456.2	8151.4	5569.6		65.5	**2516.3**
TOTAL	**152,211.6**	**146,725.2**	**5,569.6**	**-**	**1179.0**	**139,976.6**

RESIDENTIAL AREA SUMMARY - BUILDING B-MID-RISE (FACULTY & STAFF)

LEVEL	GFA	BA	AMENITY	STORAGE	MECH./ELEC.	FSR AREA
Rooftop						**0.0**
6	23276.9	22479.8		650.4	68.2	**21761.2**
5	23276.9	22479.8		650.4	68.2	**21761.2**
4	26479.0	25589.2		677.1	68.2	**24843.9**
3	26479.0	25589.2		677.1	68.2	**24843.9**
2	25976.9	25090.0		643.6	68.2	**24378.2**
1	26099.9	25211.3	757.7	547.3	68.2	**23838.1**
TOTAL	**151,588.6**	**146,439.3**	**757.7**	**3,845.9**	**409.2**	**141,426.5**

RESIDENTIAL AREA SUMMARY - BUILDING C-MID-RISE (FACULTY & STAFF)

LEVEL	GFA	BA	AMENITY	STORAGE	MECH./ELEC.	FSR AREA
Rooftop						**0.0**
6	20227.9	19521.7	292.9	467.2	68.2	**18693.4**
5	23642.2	22839.0	292.9	467.2	68.2	**22010.7**
4	23642.2	22839.0	292.9	467.2	68.2	**22010.7**
3	23642.2	22839.0	292.9	467.2	68.2	**22010.7**
2	23642.2	22839.0	292.9	467.2	68.2	**22010.7**
1	17317.8	16556.9	911.4	277.9	68.2	**15299.4**
TOTAL	**132,114.5**	**127,434.6**	**2,375.9**	**2,613.9**	**409.2**	**122,035.6**

SUBTOTAL	**403,438.7**
FSR	**3.50**

PROJECT STATISTICS
A220488 - UBC PROPERTIES TRUST - BC RESEARCH LOT 5&6

UNIT SUMMARY -BLDG A: TOWER (MARKET RENTAL)

LEVEL	STUDIO (MICRO)	1-BED	2-BED	3-BED	CITY HOME	TOTAL
Rooftop						
18	8	2	1	2		13
17	8	2	1	2		13
16	8	2	1	2		13
15	8	2	1	2		13
14	8	2	1	2		13
13	8	2	1	2		13
12	8	2	1	2		13
11	8	2	1	2		13
10	8	2	1	2		13
9	8	2	1	2		13
8	8	2	1	2		13
7	8	2	1	2		13
6	8	2	1	2		13
5	8	2	1	2		13
4	8	2	1	2		13
3	8	2	1	2		13
2	8	2	1	2		13
1	0	0	0	0		0
TOTAL	**136**	**34**	**17**	**34**		**221**
PERCENTAGE	62%	15%	8%	15%		
TARGET	30%	22%	21%	18%	9%	

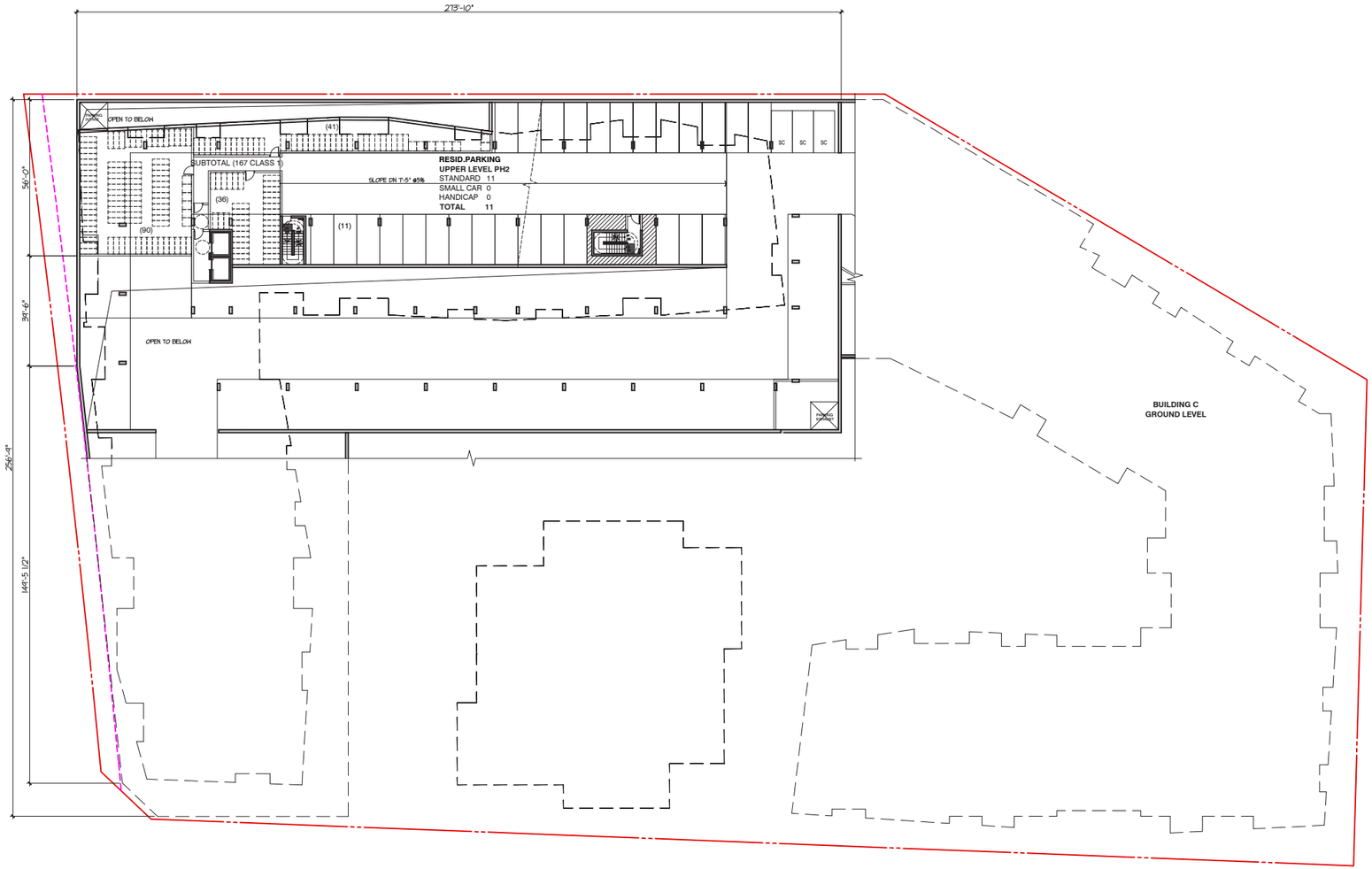
UNIT SUMMARY - BLDG B: MID-RISE (FACULTY & STAFF) **ORIGINAL**

LEVEL	STUDIO	1-BED+D	2-BED	2-BED+D	3-BED	4-BED	TOTAL
Rooftop							
6	1	8	2	6	4	3	24
5	1	8	2	6	4	3	24
4	2	9	2	7	5	3	28
3	2	9	2	7	5	3	28
2	2	8	2	7	5	3	27
1	3	8	0	7	5	3	26
TOTAL	**11**	**50**	**10**	**40**	**28**	**18**	**157**
PERCENTAGE	7.0%	31.8%	6.4%	25.5%	17.8%	11.5%	
TARGET	7%	28%	13%	19%	19%	13%	

UNIT SUMMARY - BLDG C: MID-RISE (FACULTY & STAFF) **ORIGINAL**

LEVEL	STUDIO	1-BED+D	2-BED	2-BED+D	3-BED	4-BED	TOTAL
Rooftop							
6	1	6	3	6	4	1	21
5	2	6	5	6	4	2	25
4	2	6	5	6	4	2	25
3	2	6	5	6	4	2	25
2	2	6	5	6	4	2	25
1	1	5	0	6	3	1	16
TOTAL	**10**	**35**	**23**	**36**	**23**	**10**	**137**
PERCENTAGE	7.3%	25.5%	16.8%	26.3%	16.8%	7.3%	
TARGET	7%	28%	13%	19%	19%	13%	

SUBTOTAL	**515**



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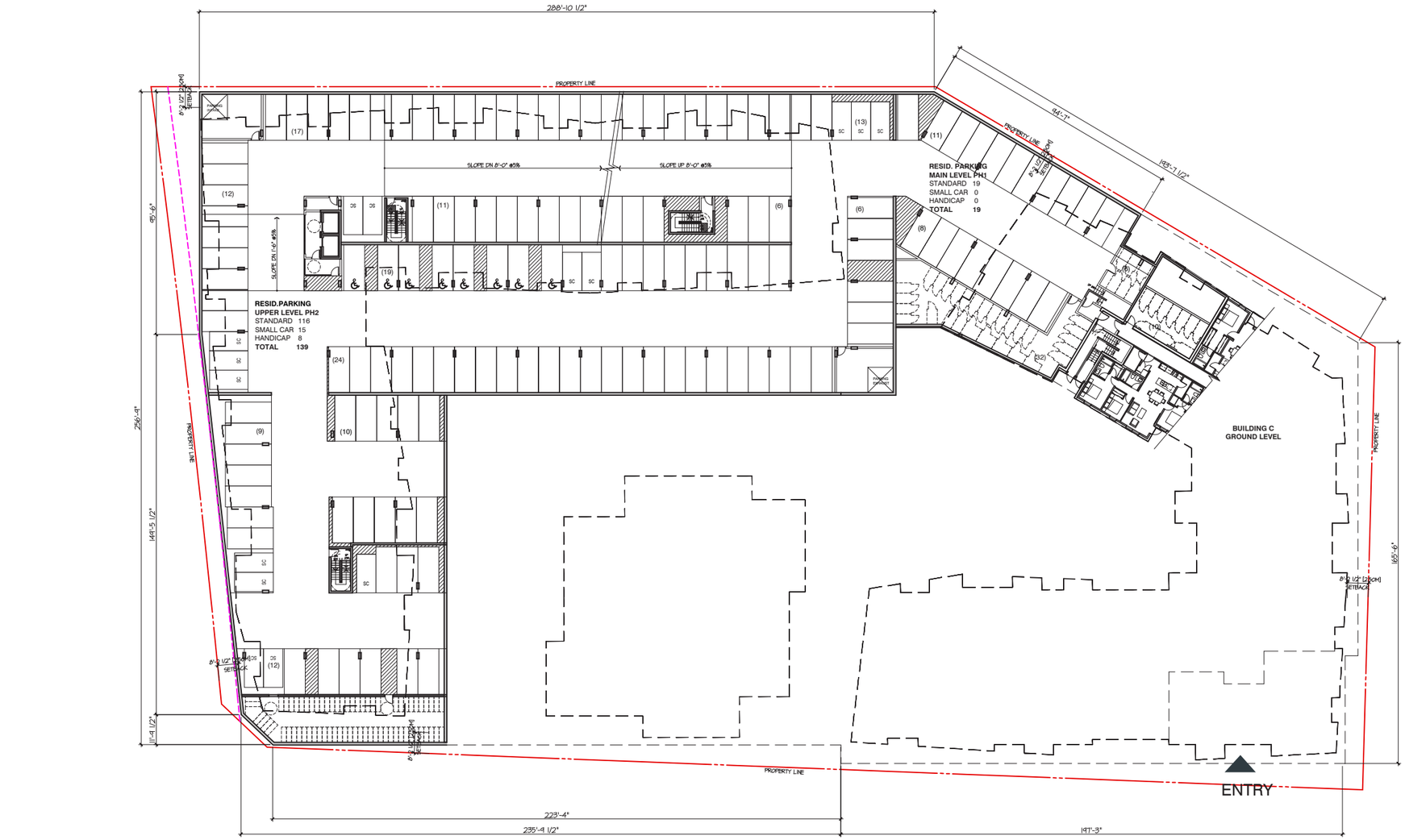
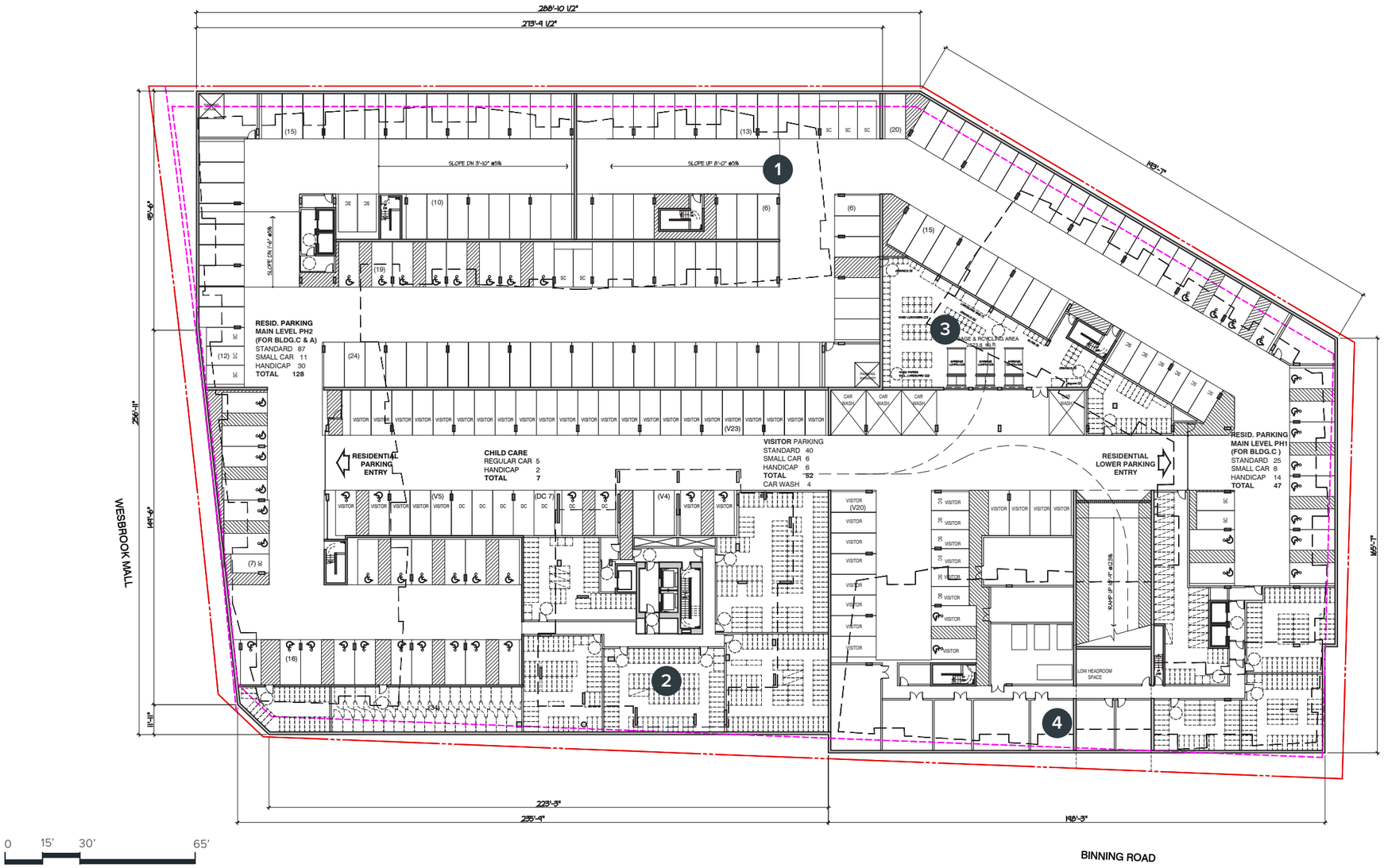
P0 MEZZANINE PARKING PLAN



P0 PARK ING PLAN & LEVEL 1 BUILDING



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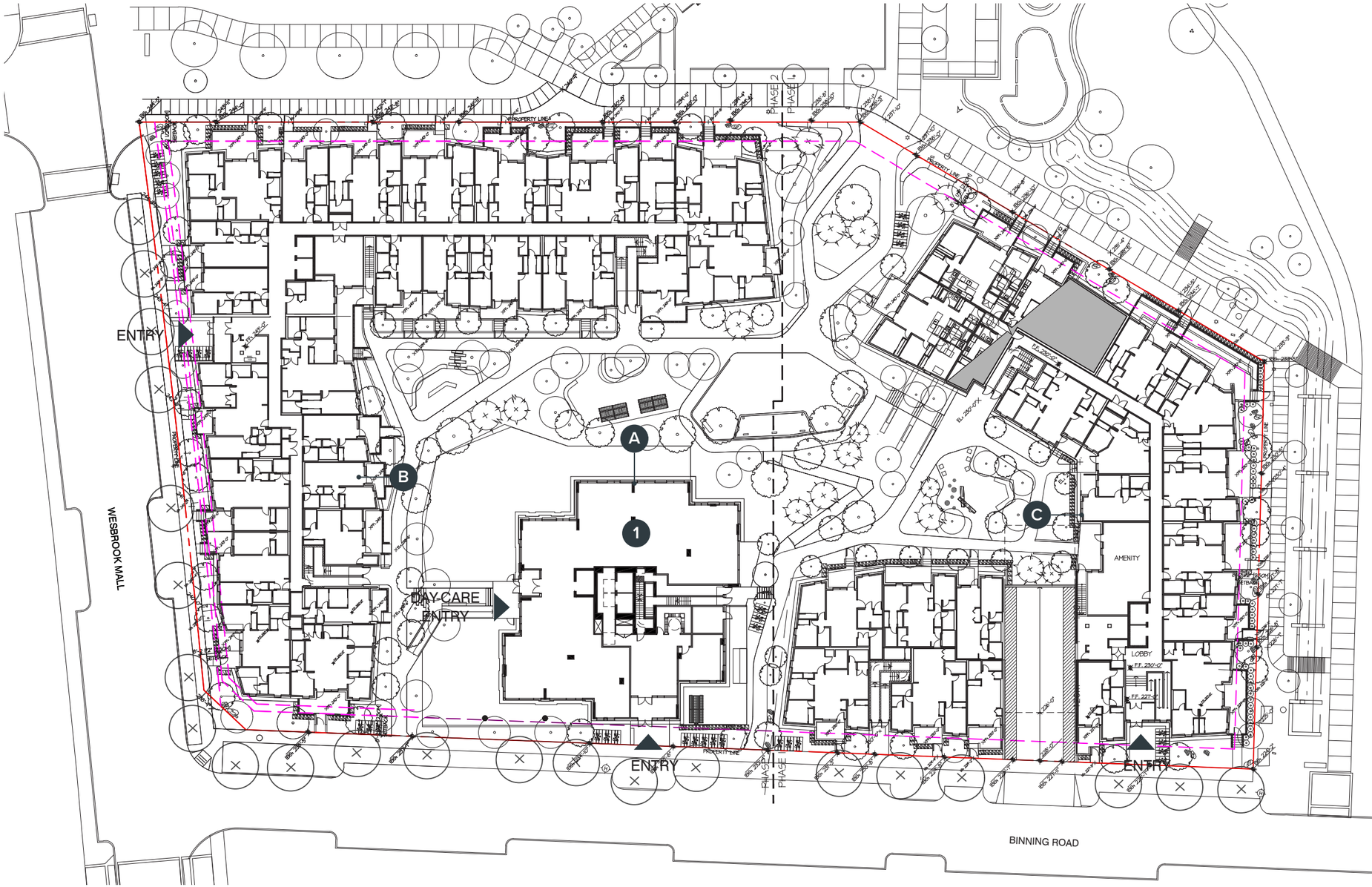
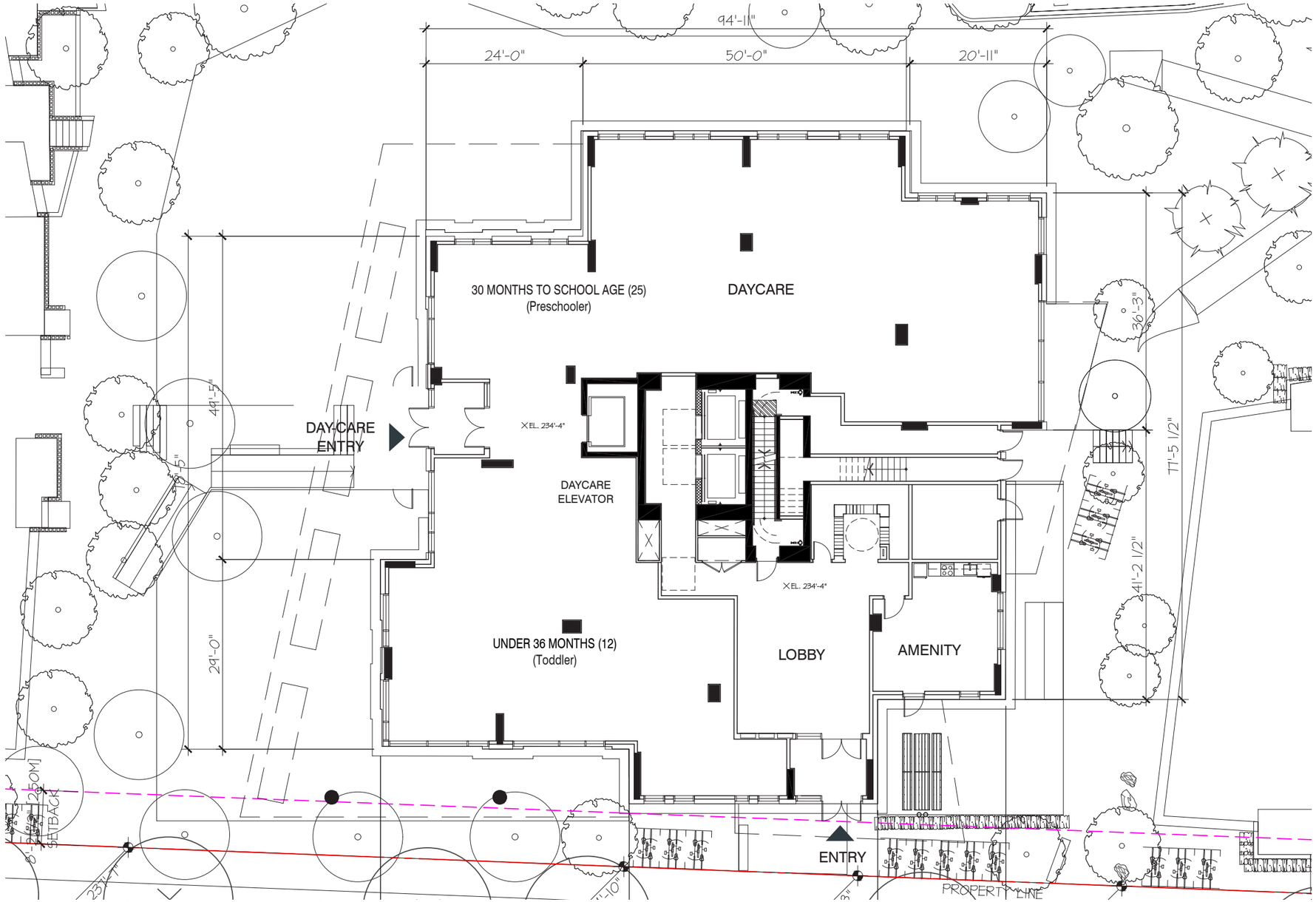
P1 PARKING PLAN

1. *Residents Upper Parking*
2. *Combined Bike Storage Rooms*
3.. *Combined Garbage & Recycling*
4. *Service Rooms*

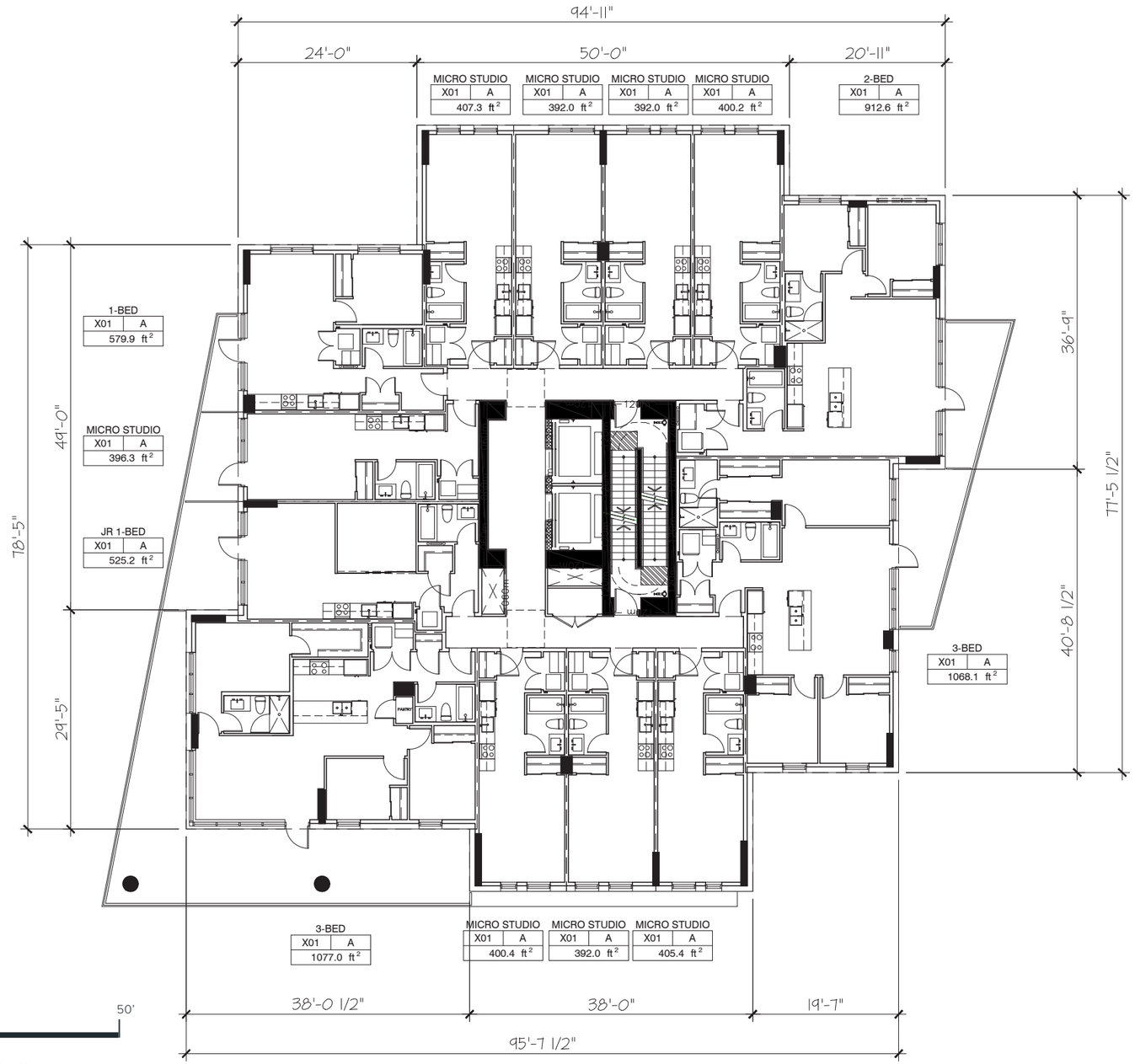


A. *Market rental*
B. *Faculty & Staff Housing*
C. *Faculty & Staff Housing*
D. *Childrens Day-care*

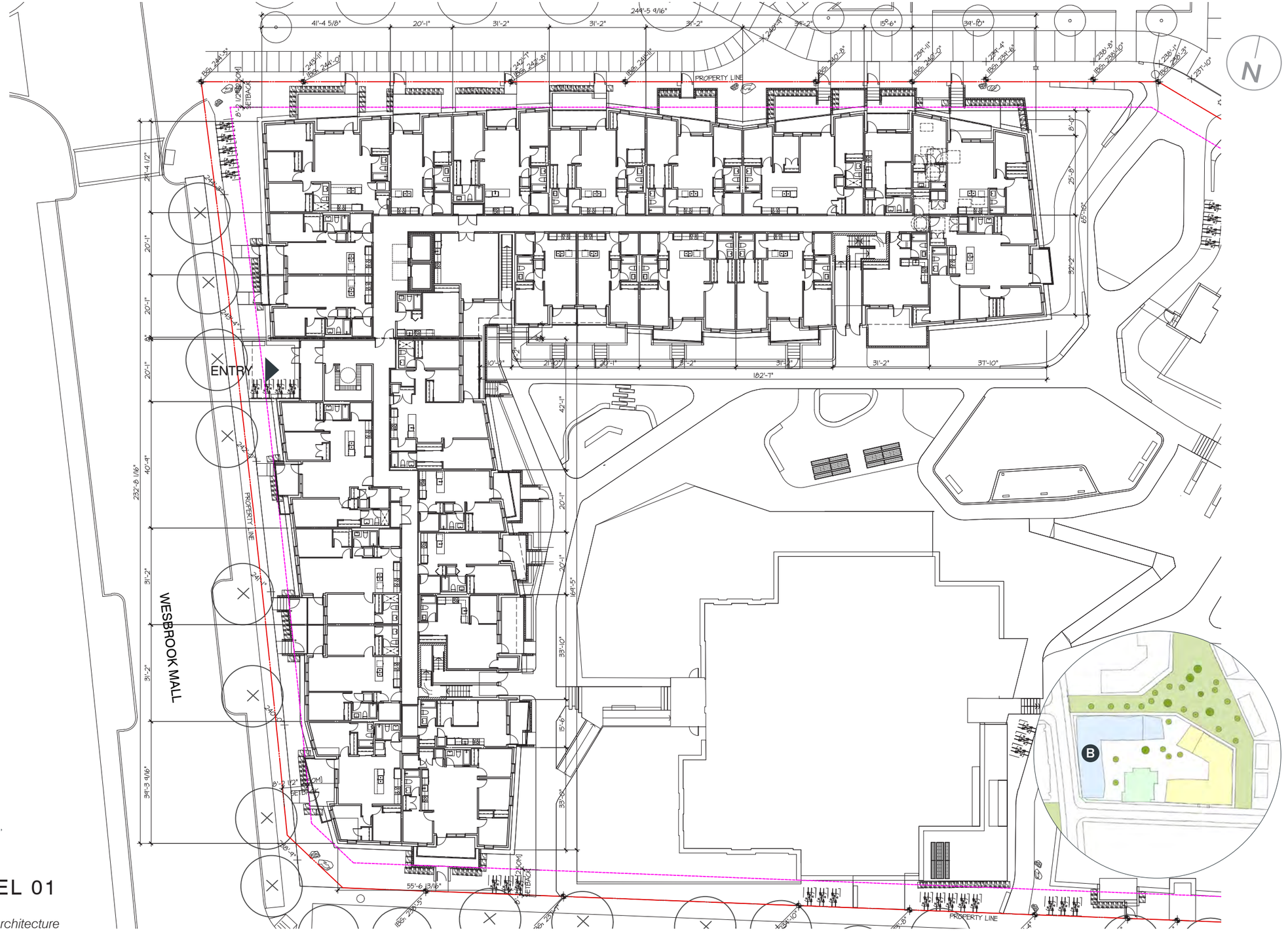
LEVEL 01 SITE PLAN



BUILDING A LEVELS 01



BUILDING A LEVELS 02-18



0 10' 20' 50'

BUILDING B - LEVEL 01

0 10' 20' 50'

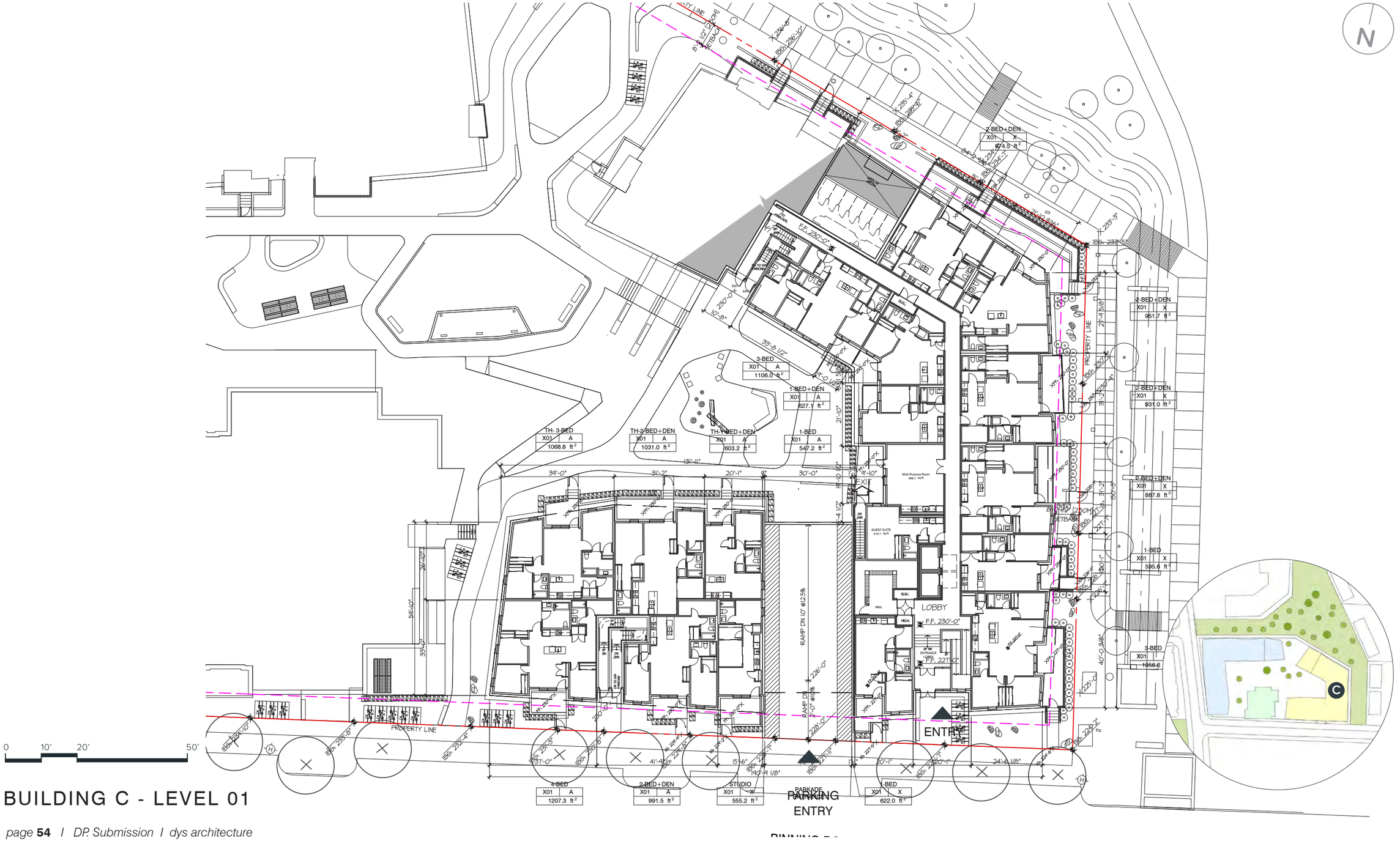
BUILDING B - LEVEL 02

0 10' 20' 50'

BUILDING B - LEVEL 03-04

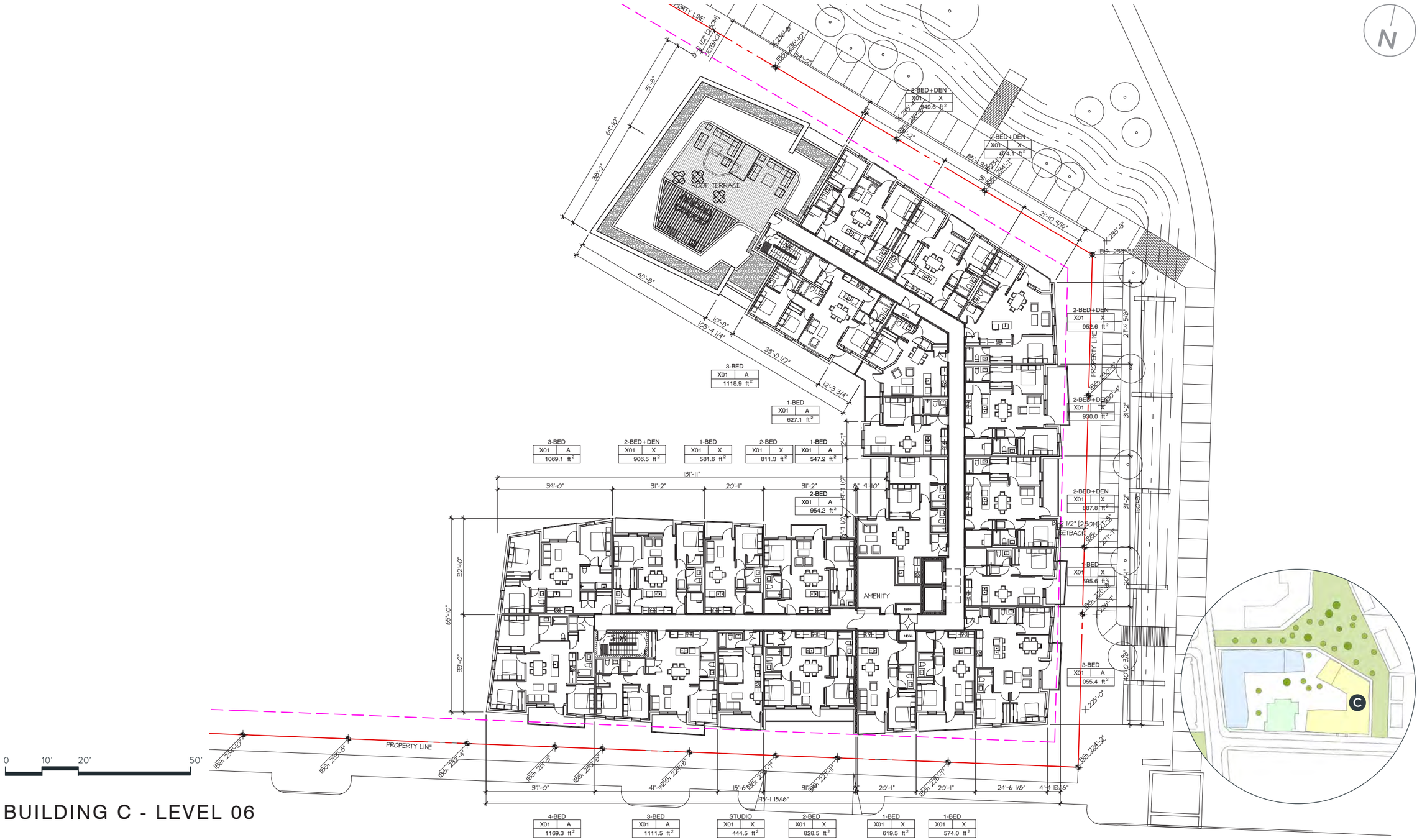
0 10' 20' 50'

BUILDING B - LEVEL 05-06

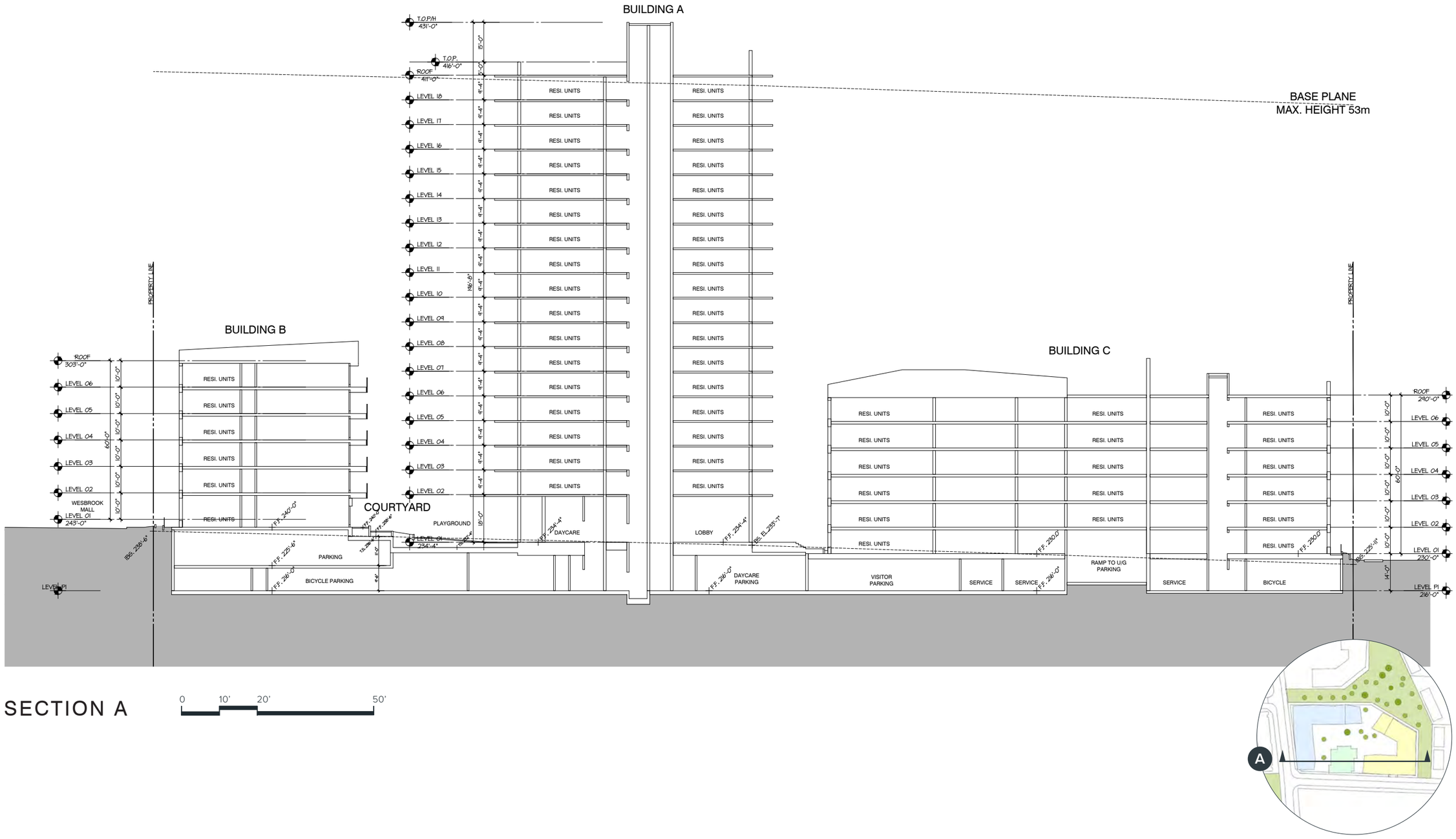


BUILDING C - LEVEL 01

BUILDING C - LEVEL 02-05

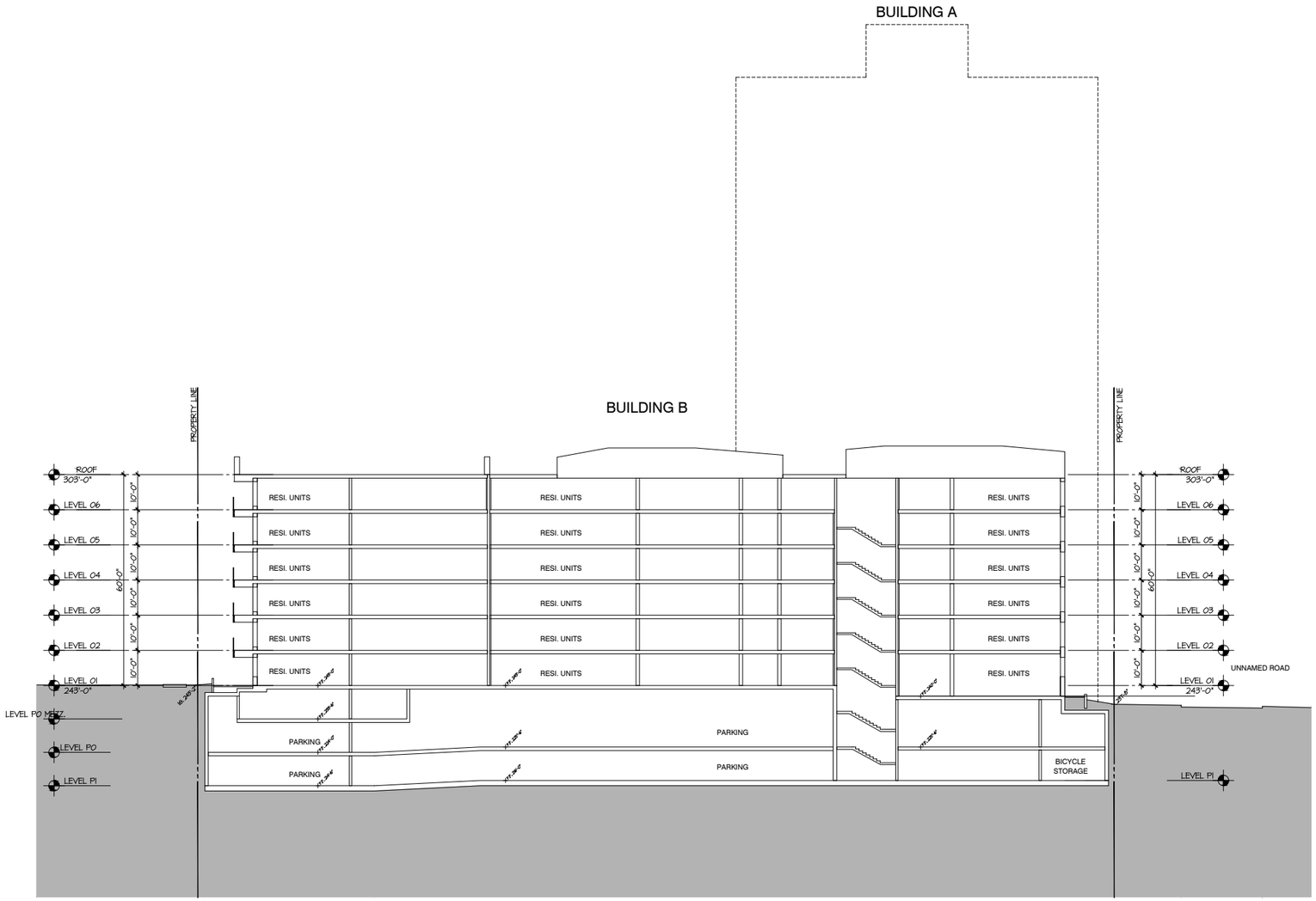


BUILDING C - LEVEL 06



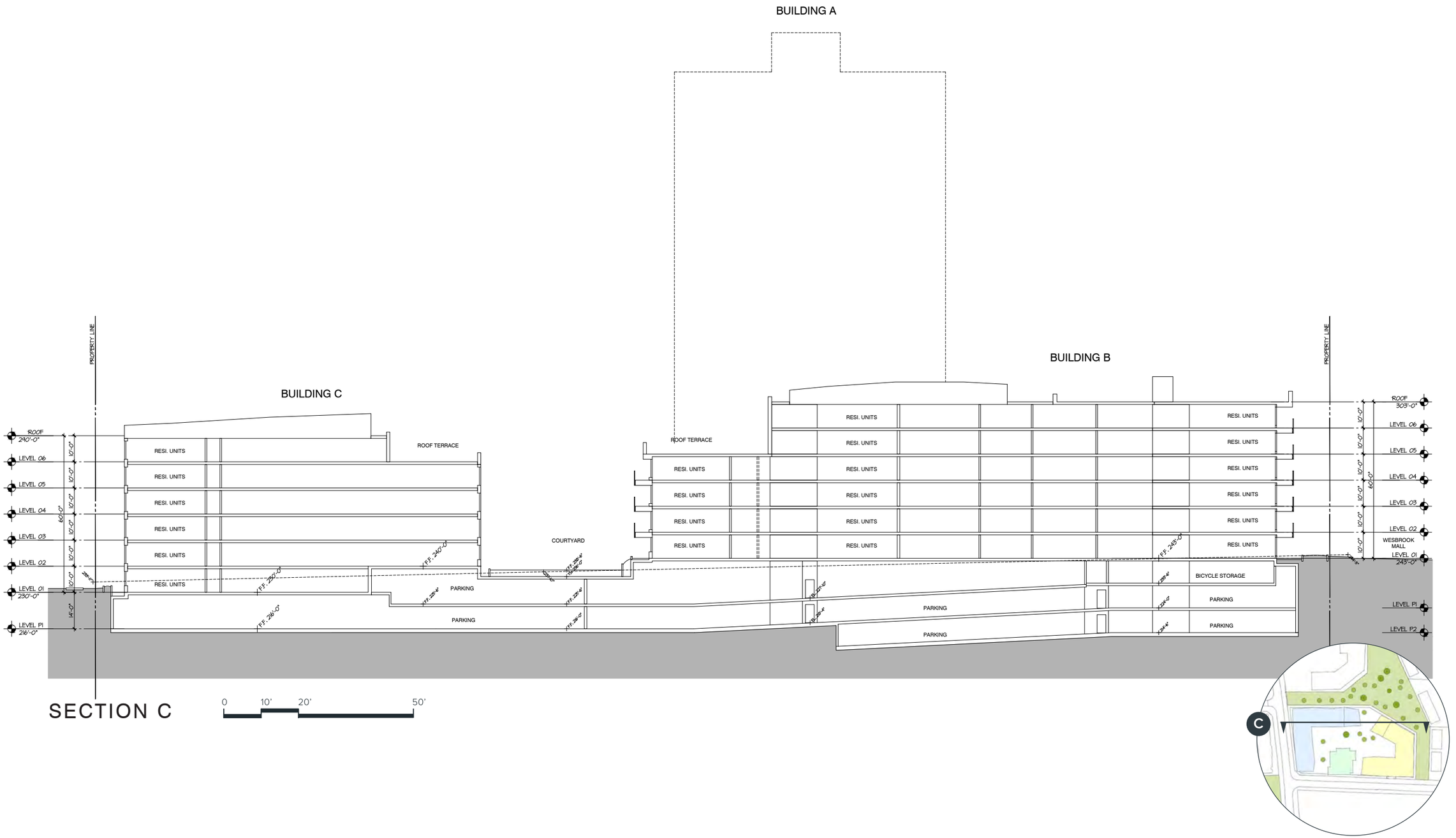
SECTION A

0 10' 20' 50'


BUILDING A
BUILDING B
PROPERTY LINE
PROPERTY LINE
ROOF
303'-0"
LEVEL 06
LEVEL 05
LEVEL 04
LEVEL 03
LEVEL 02
LEVEL 01
243'-0"
LEVEL P0 MEZZ.
LEVEL P0
LEVEL P1
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
60'-0"
RESI. UNITS
PARKING
PARKING
PARKING
PARKING
BICYCLE STORAGE
UNNAMED ROAD
LEVEL P1
0
10'
20'
50'

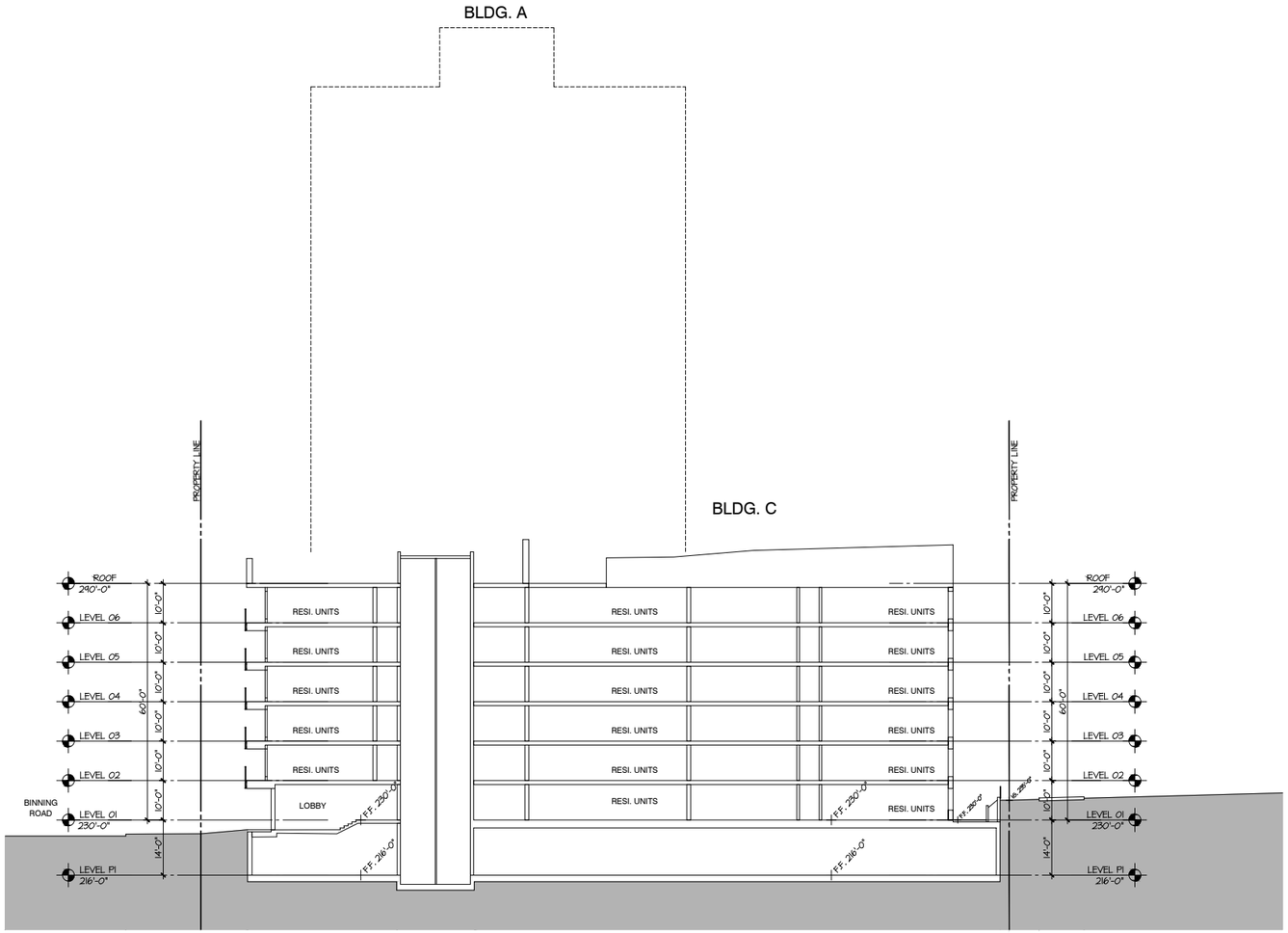
SECTION B


B



SECTION C

0 10' 20' 50'



SECTION D

0 10' 20' 50'

WESBROOK

LOT 5+6

LANDSCAPE ARCHITECTURAL DRAWING SET
ISSUED FOR DP

22.03.29

INSPIRATION

"Health is an attitude, a philosophy – an affirmation of life, really.
At Wesbrook Village, healthy living comes naturally.
And that is very much by design.

1 IMMERSE
BREATH

Get a breath of fresh air away from campus in a peaceful, contemporary landscape connected to the surrounding forest, riparian and wildlife habitats.
A place to reconnect with nature.

2 EXPERIENCE
UNIVERSITY & RESIDENTIAL LIFE

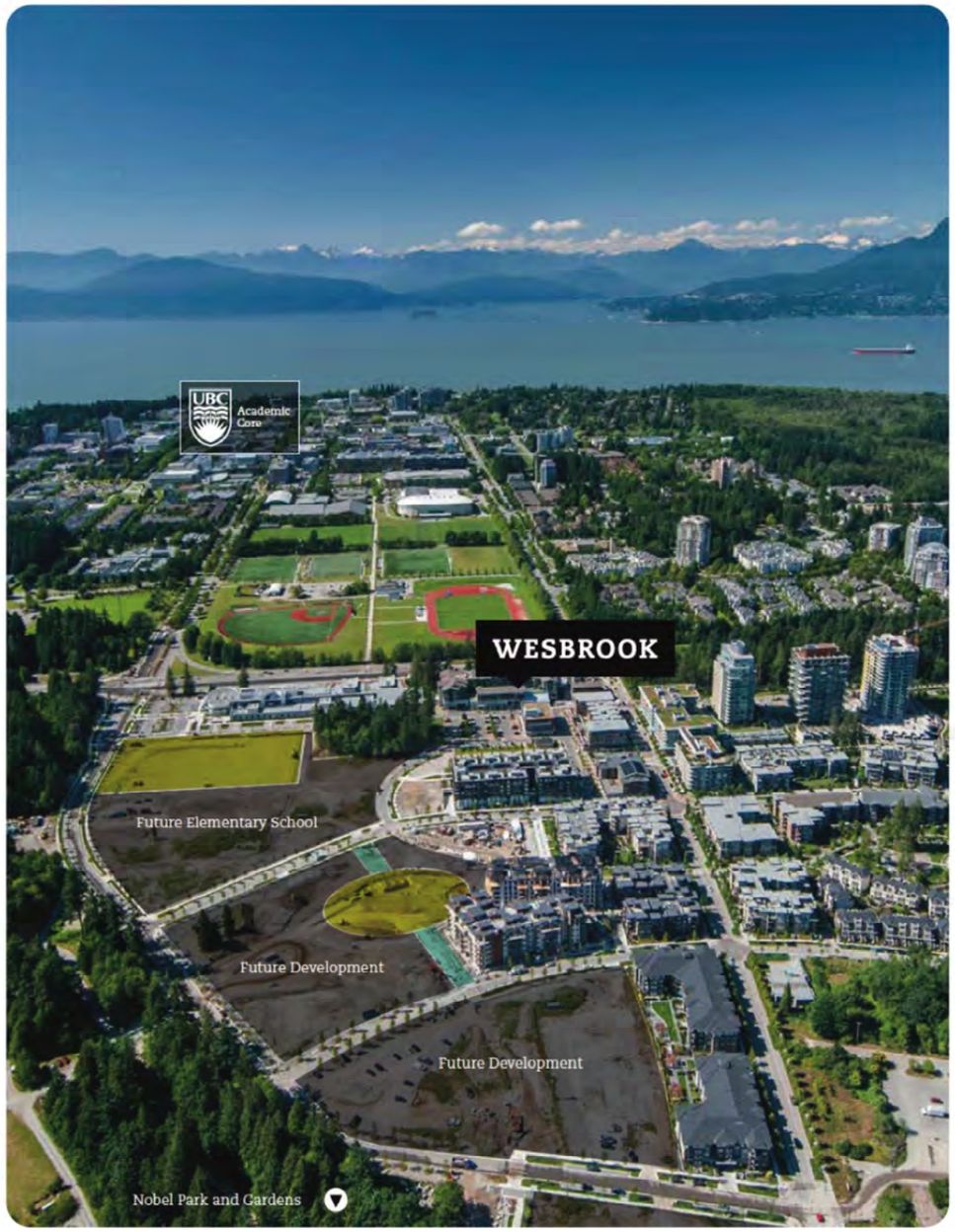
Create, work, play, reflect, and rest the mind. Contemplation, activity, and places of learning for residents, students, and faculty.

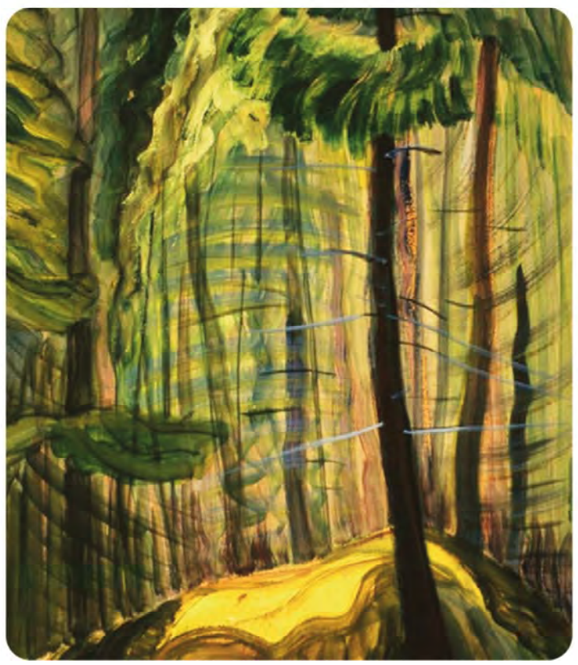
3 GATHER
SOCIAL INTERACTION

Spontaneous and planned social and communal places encourage interaction with classmates, neighbors, families and friends. Flexible outdoor spaces with daylight and shade to enhance residential and university life.

CONTEXT


xʷəṅiwən ce:p kʷθəθ nəẇeyəɬ
ʔəmi ce:p kʷətxʷiləm ʔi ʔə tə ṅa sxʷməθkʷəyəmaʔɬ
təməxʷ, tə sxʷʔaməts tə shənqəmiṅəmqən.
Remember your teachings
Welcome to the ancestral homeland of the
hən̓q̓əmiṅəm speaking Musqueam people.


UBC
Academic
Core
WESBROOK
Future Elementary School
Future Development
Future Development
Nobel Park and Gardens



STATS

Extract from:

Wesbrook Life, Volume One
Summer issue, 2021

WESBROOK PLACE
A case study in sustainable neighbourhood design
2015

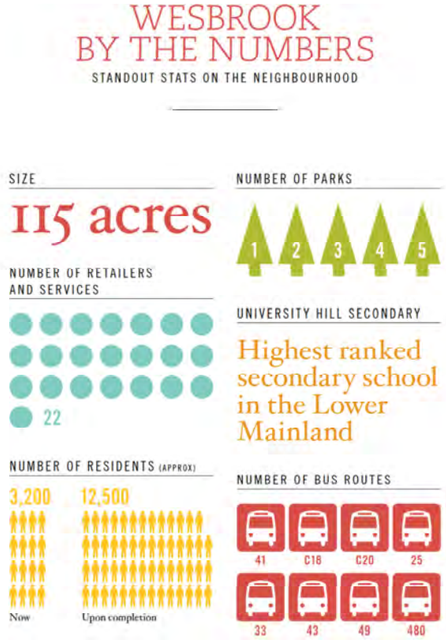


Figure 3.7 5- and 10-minute walking distances to village plaza

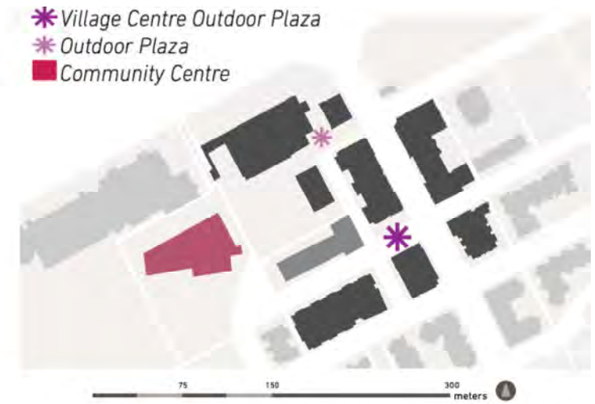


Figure 2.7 Wesbrook Commercial Centre Plaza

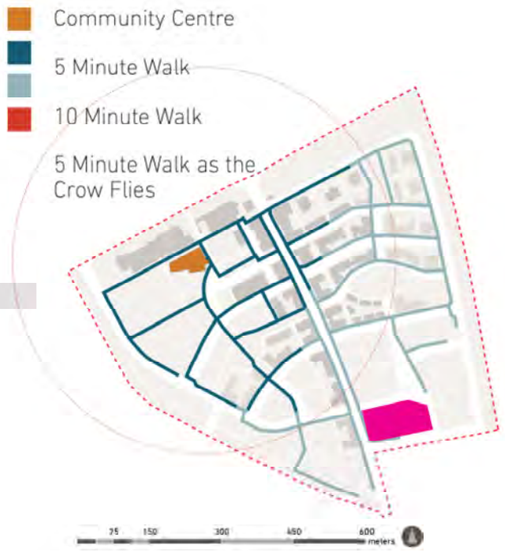


Figure 2.12 Open Space Diagram

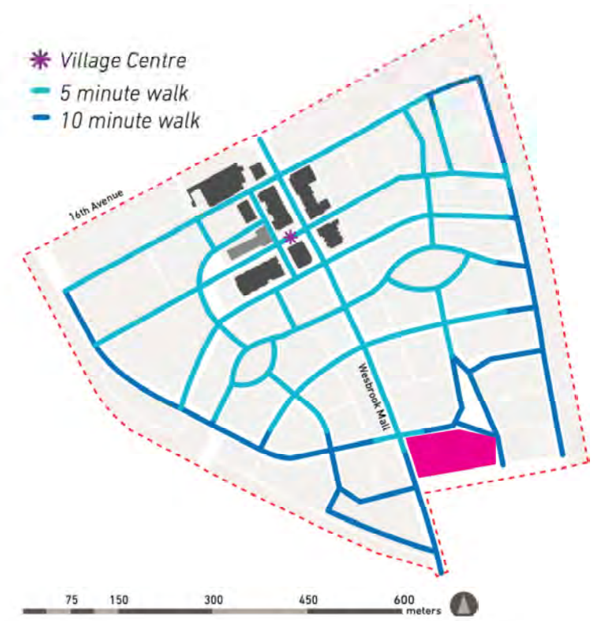
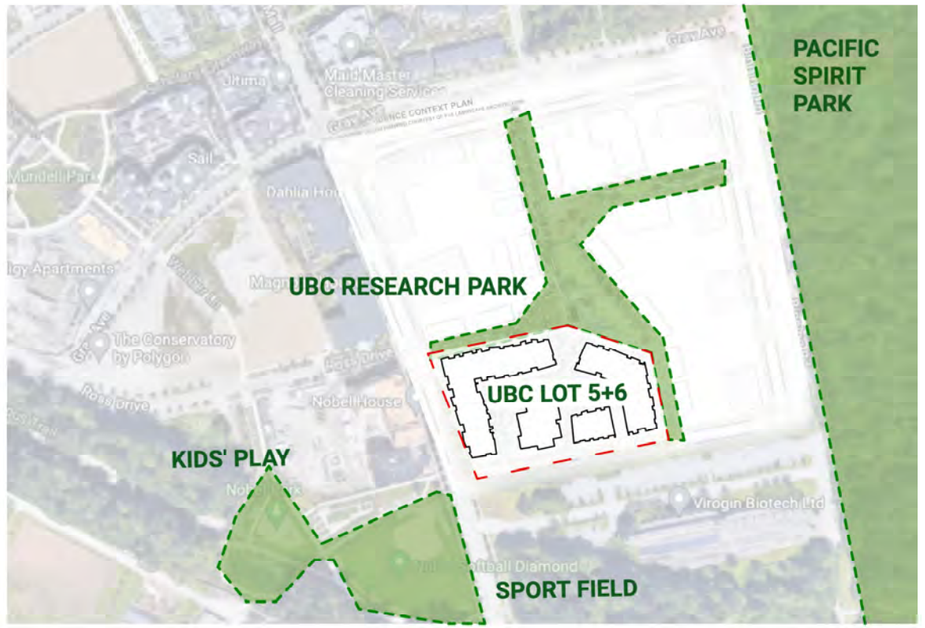


Figure 2.8 Walking distances from the Village Centre to residences

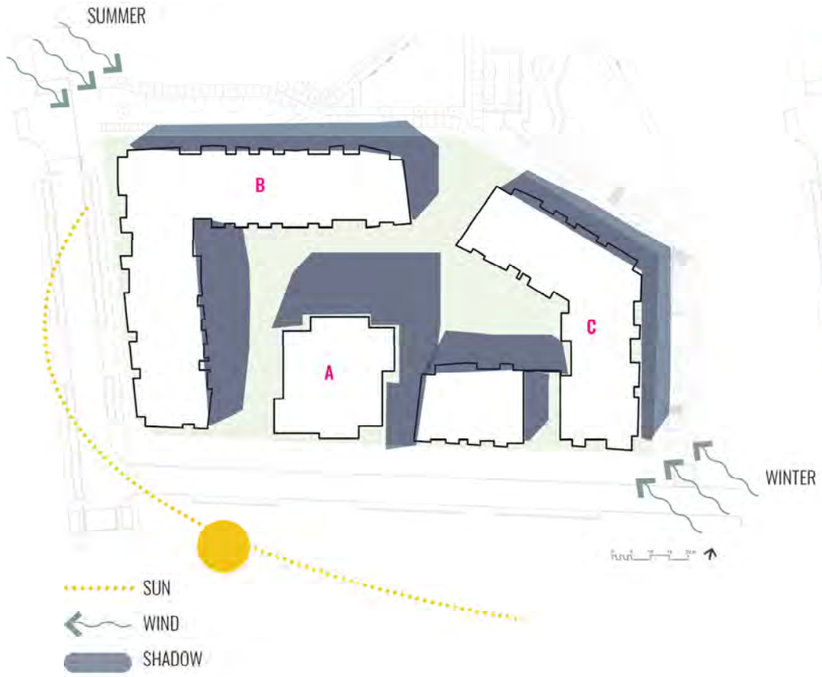
ANALYSIS

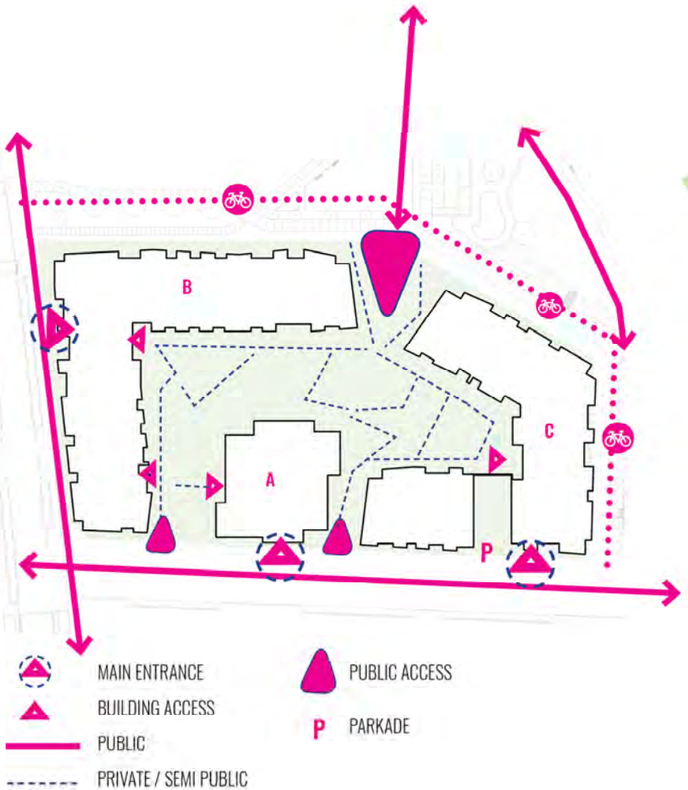
ADJACENT PARKS

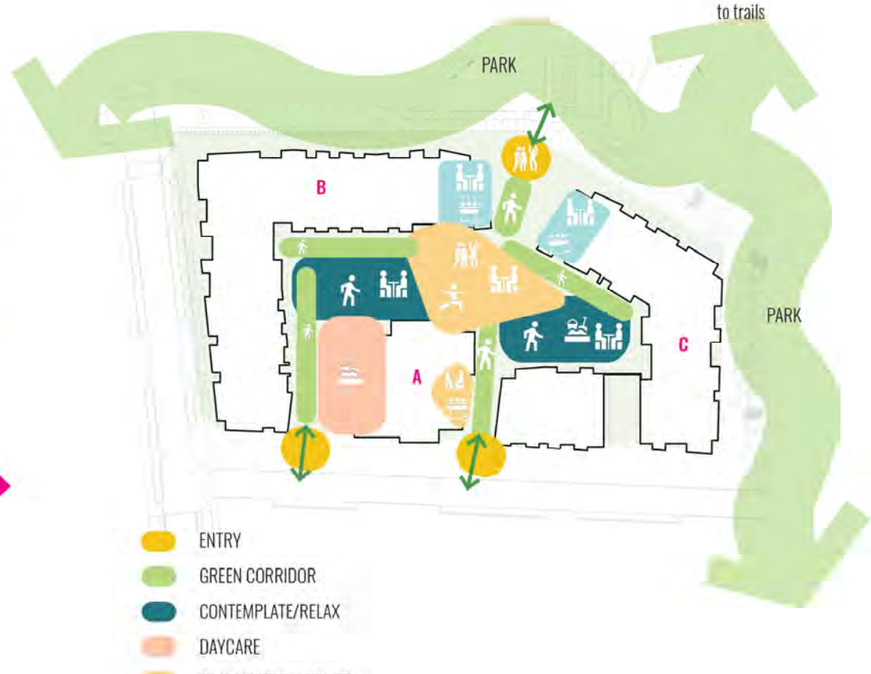


UBC RESEARCH PARK DESIGN DRAWING COURTESY OF P+A LANDSCAPE ARCHITECTURE

SITE







MICROCLIMATE

COMFORT & RESILIENCE

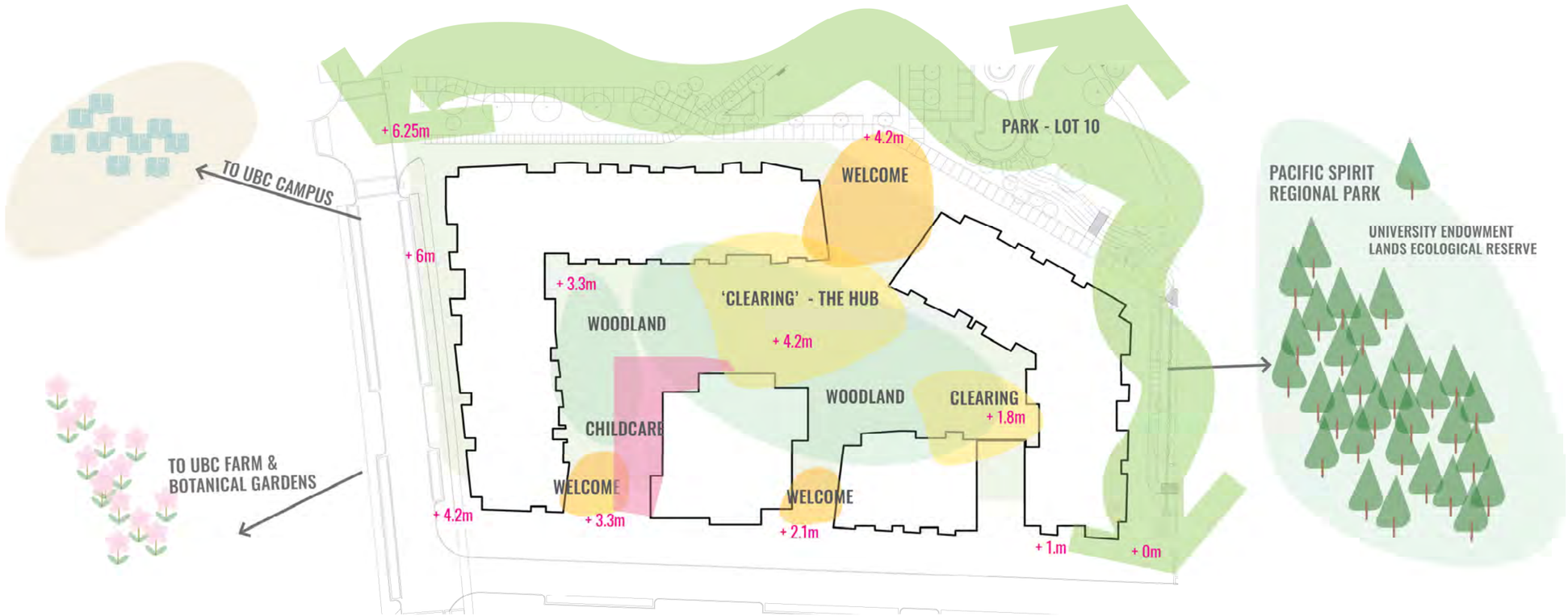
EQUITY

ACCESS & CONNECTIVITY

HEALTH

SOCIAL WELLBEING

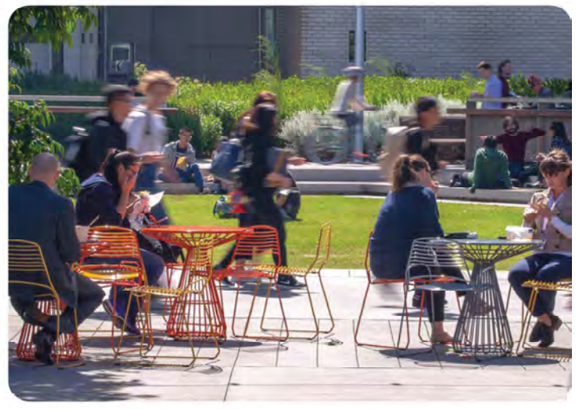
CONCEPT



1 WELCOME

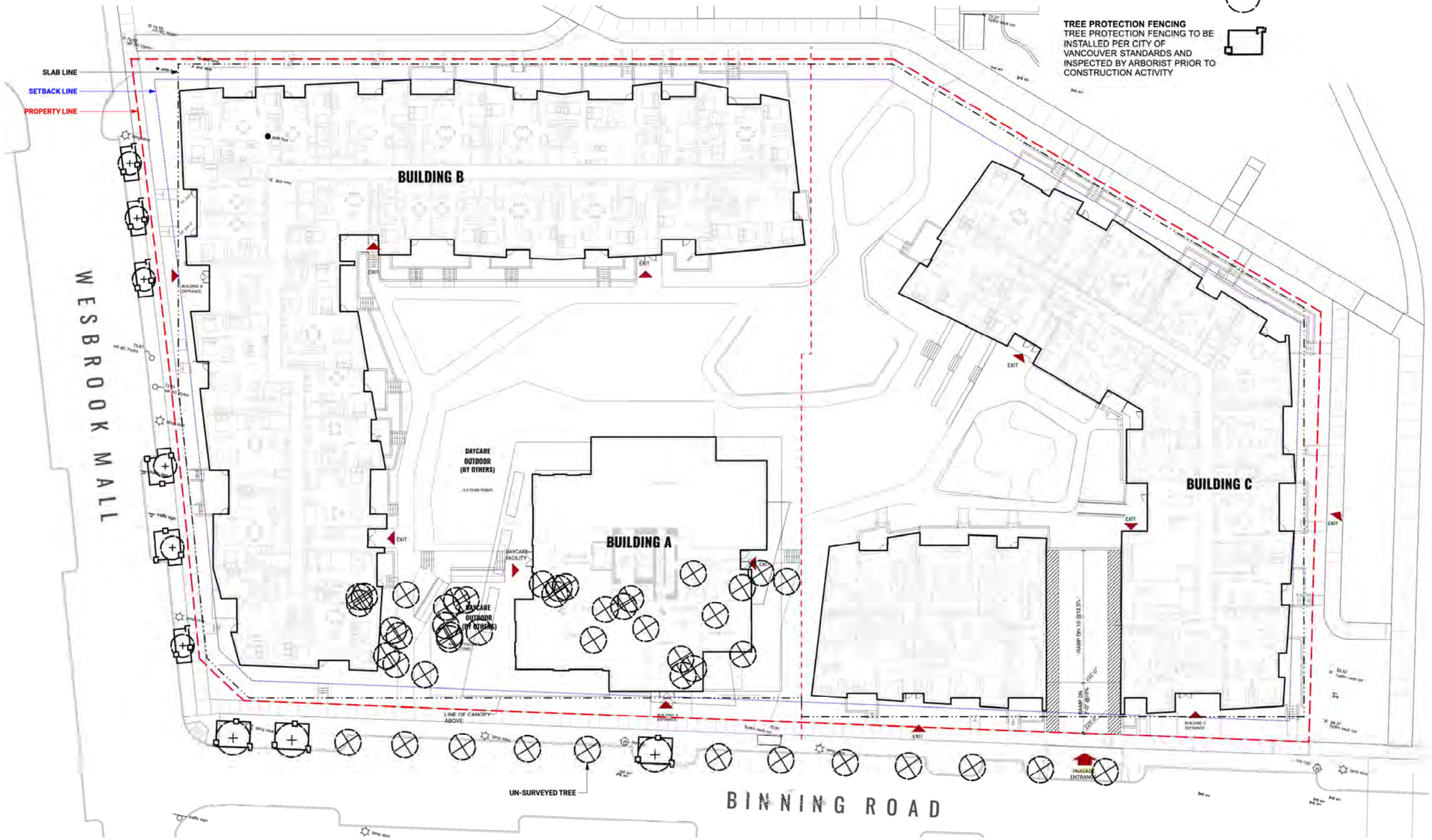
2 WOODLAND GARDENS

3 "CLEARING" - SOCIAL HUBS



TREE MANAGEMENT PLAN

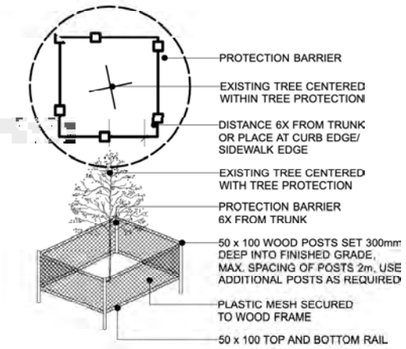
FOR TREE SPECIES, COMMON NAME, BOTANICAL NAMES, SIZE AND OTHER INFORMATION, REFER TO ARBORIST REPORT.



0 5 10 15 20 m

TREE RETENTION / REMOVAL LEGEND

DESCRIPTION	SYMBOL
EXISTING TREE TO BE REMOVED TO BE CONFIRMED PER ARBORIST ON-SITE WITH CITY OF VANCOUVER ARBORIST PRIOR TO REMOVAL	
EXISTING TREE TO BE RETAINED	
TREE PROTECTION FENCING TREE PROTECTION FENCING TO BE INSTALLED PER CITY OF VANCOUVER STANDARDS AND INSPECTED BY ARBORIST PRIOR TO CONSTRUCTION ACTIVITY	



TREE PROTECTION NOTES

1. REFER TO CERTIFIED ARBORIST REPORT TO VERIFY INFORMATION REGARDING EXISTING TREES TO BE RETAINED/REMOVED AND TREE RETENTION VIABILITY

2. INSTALL TREE PROTECTION BARRIER AROUND ALL TREES TO BE PRESERVED TO UBC STANDARDS AND SPECIFICATIONS, SUBJECT TO REVIEW BY PROJECT ARBORIST AND LANDSCAPE ARCHITECT.

3. INFORM ARBORIST WHEN ALL TREE BARRIERS HAVE BEEN INSTALLED. ARBORIST TO PROVIDE WRITTEN INSPECTION AND APPROVAL OF ALL BARRIERS AND SUBMIT INSPECTION REPORT TO UBC STAFF FOR REVIEW AND APPROVAL PRIOR TO DEMOLITION / MOBILIZATION CONSTRUCTION ACTIVITY.

4. DO NOT REMOVE OR RELOCATE ANY TREE, EXCEPT AS INDICATED ON PLANS.

5. DO NOT ALTER EXISTING GRADE OR STORE MATERIALS UNDER THE DRIP LINE OR WITHIN TREE PROTECTION ZONE. EXCAVATION WITHIN DRIP LINES OF TREES ONLY WHERE INDICATED ON PLANS.

6. ALL RETAINED TREES ARE TO BE PRUNED AND PROTECTED BY CITY OF VANCOUVER TREE PROTECTION BY-LAWS AND UBC STANDARDS.

7. FOR CARE AND PROTECTION OF EXPOSED ROOTS AND ROOT CURTAIN SYSTEM CONSULT PROJECT ARBORIST.

8. TUNNEL UNDER AND AROUND ALL SIGNIFICANT ROOTS BY HAND DIGGING OR AIR SPADE. DO NOT CUT MAIN LATERAL ROOTS.

9. TRENCHING FOR UTILITY CONNECTIONS TO BE COORDINATED WITH ENGINEERS TO ENSURE SAFE ROOT ZONES OF RETAINED TREES.

10. CONTRACTOR TO CONTACT PROJECT ARBORIST, UBC ARBORIST AND/OR LANDSCAPE ARCHITECT 48 HOURS PRIOR TO ANY CONSTRUCTION WORK AFFECTING THE DRIP LINE OF TREES.

11. MITIGATE ANY HAZARDS IDENTIFIED ON EXISTING TREES PRIOR TO ANY WORK ACTIVITY ON SITE. ANY MITIGATION IS TO BE PERFORMED BY AN EXPERIENCED ISA CERTIFIED ARBORIST.

NOTE: ANY TREES WITHIN TREE PROTECTION BARRIERS MUST BE ADEQUATELY CARED FOR DURING THE CONSTRUCTION PROCESS. WATER TREES ADEQUATELY DURING DRY WEATHER. USE ONLY CLEAN, SHARP TOOLS TO CUT ROOTS. ANY DAMAGE TO EXISTING TREES DURING CONSTRUCTION MUST BE IMMEDIATELY REPORTED AND DAMAGE ASSESSED BY AN ISA CERTIFIED ARBORIST.

SITE PLAN

PROGRAM LEGEND

1. WELCOME
2. CENTRAL LAWN
3. NATURAL PLAY
4. OUTDOOR GATHERING

LAYOUT & MATERIALS LEGEND

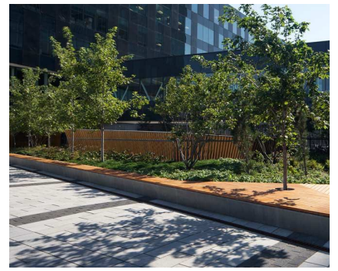
- CIP CONCRETE W/ SAW CUTS
- UNIT PAVER TYPE 1 NATURAL GREY
- UNIT PAVER TYPE 2 CHARCOAL
- LINEAR PAVER TYPE 3
- 2'X2' PATIO PAVERS
- FLAGSTONE
- GRAVEL
- PLANTING
- SOD LAWN
- FIBER SURFACING
- METAL GUARDRAIL/FENCE AND GATE
- 1.2M HT METAL FENCE WITH GATE
- TABLE AND CHAIRS
- LOUNGE CHAIR
- TIMBER BENCH
- CUSTOM CONCRETE SEAT WALL W/TIMBER SEAT
- SHELTER (COVER)
- TIMBER DECK
- BIKE RACK (2 CLASS B EA)
- TIMBER SEATING
- 8" CONCRETE RETAINING WALL
- UNIT BLOCK RETAINING WALL
- PICNIC TABLE
- BOULDER
- LOG
- STUMP

0 5 10 15 20 m

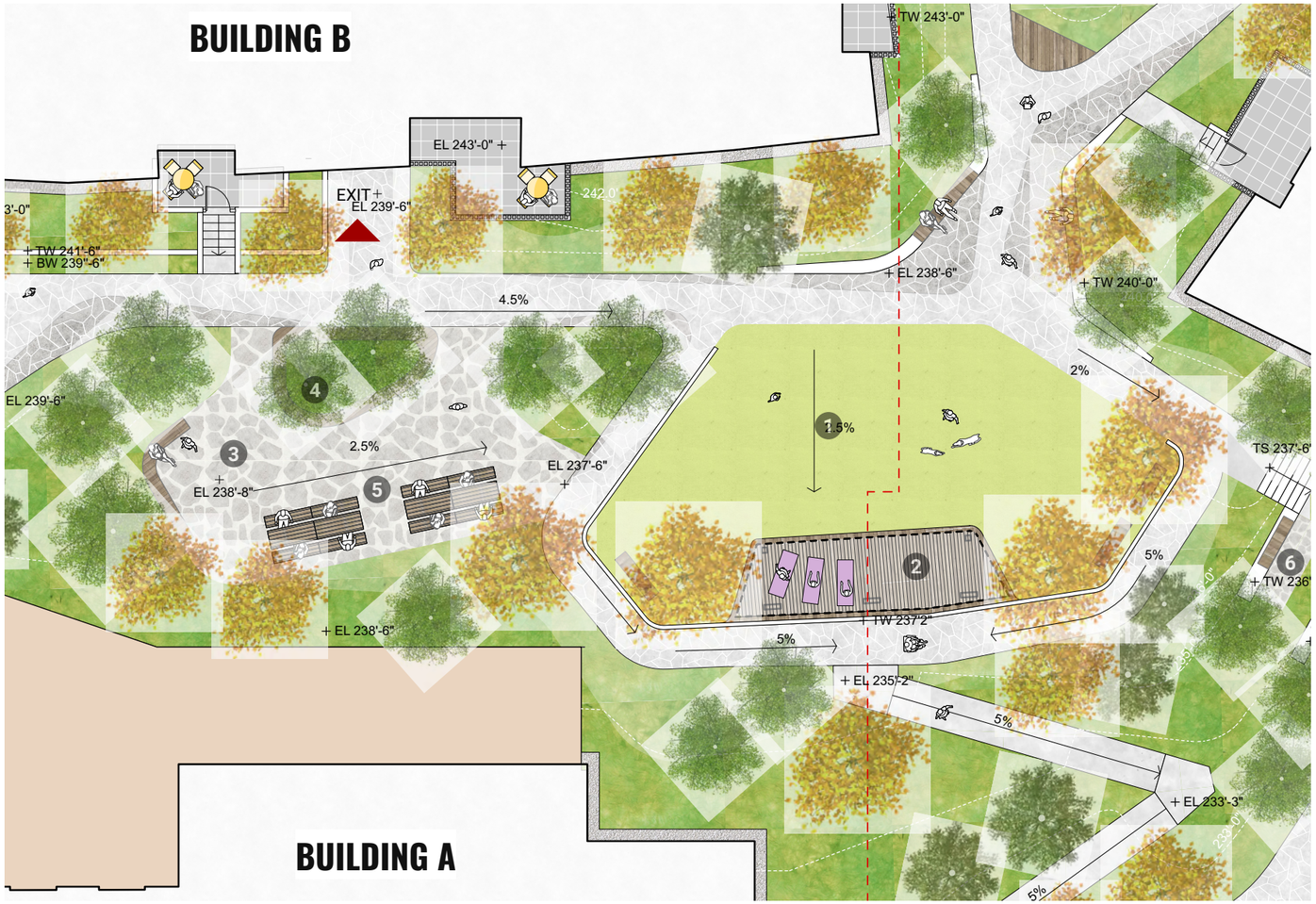
ENLARGEMENT

PROGRAM LEGEND

1. LAWN & SEAT WALL
2. TERRACED PLANTING
3. WOOD DECK
4. SEAT WALL



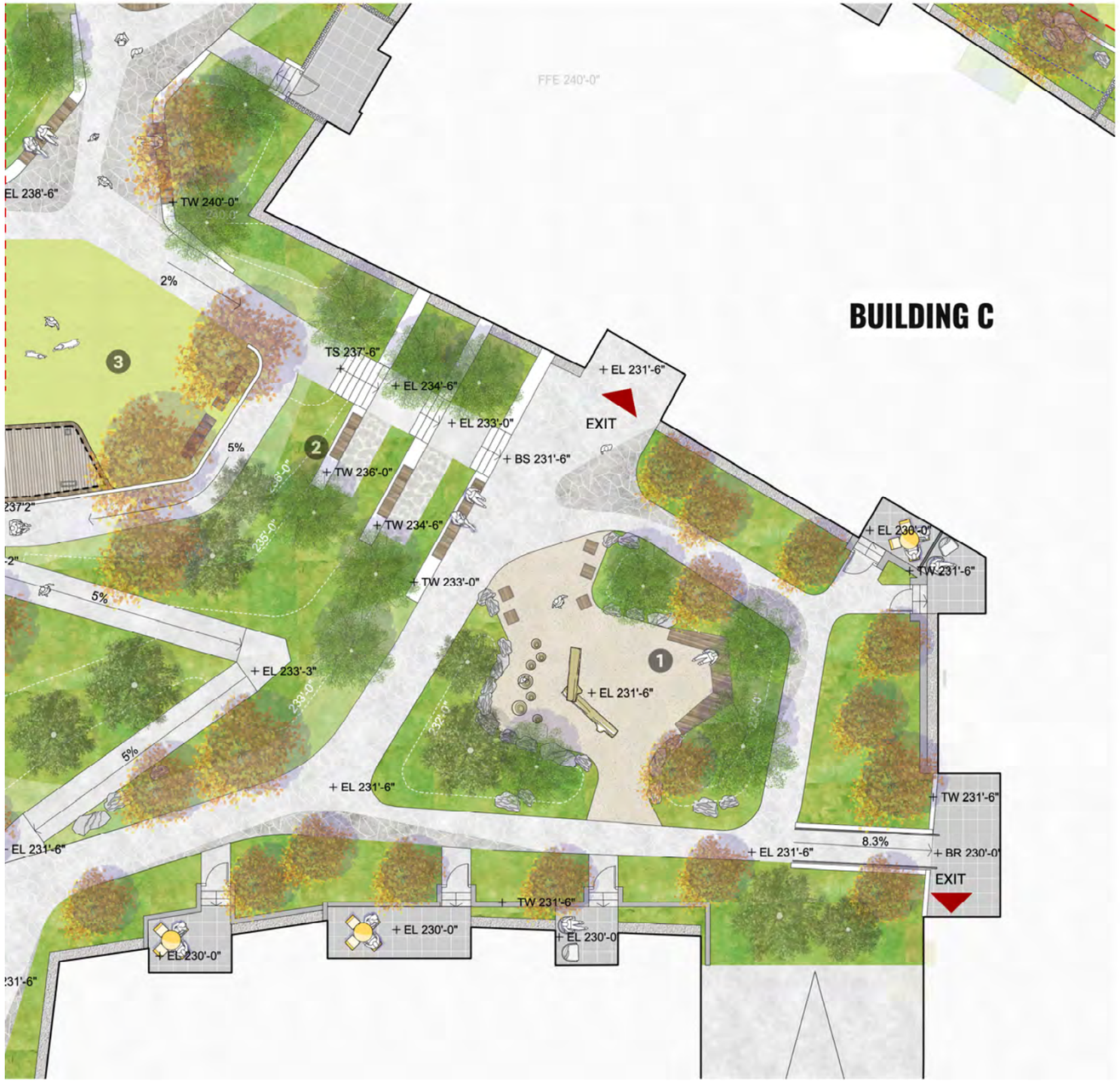
ENLARGEMENT



PROGRAM LEGEND

1. CENTRAL LAWN
2. WOOD DECK W/ COVER
3. FLAGSTONE PAVING
4. PLANTER BENCH
5. PICNIC TABLE
6. TERRACE

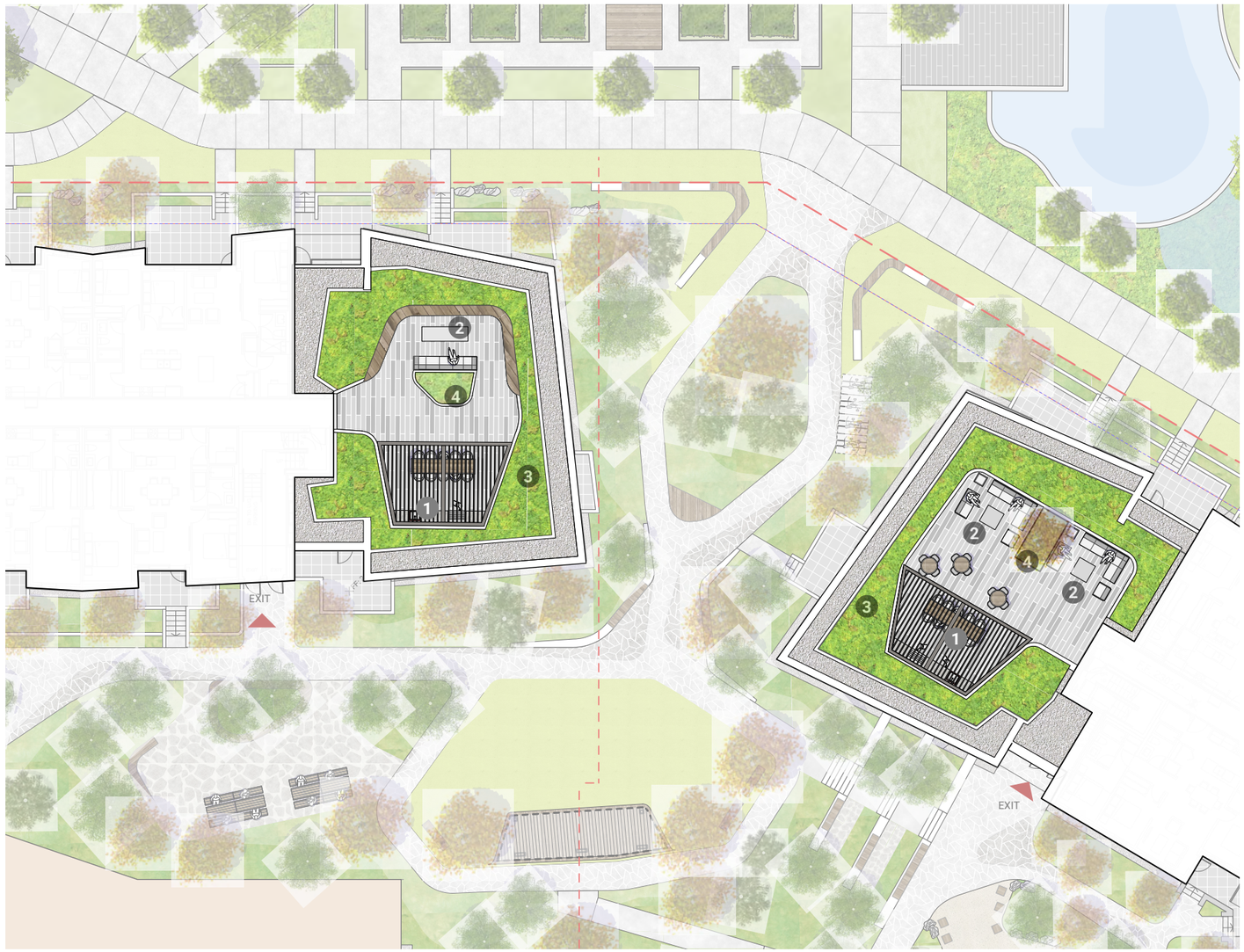
ENLARGEMENT



PROGRAM LEGEND

1. NATURE PLAY
2. TERRACE
3. CENTRAL LAWN

ROOF PLAN



1 **ROOF PLAN LEVEL 5&6 ROOF DECKS**
Scale: 1:150

0 5 10 m

PROGRAM LEGEND

1. OUTDOOR KITCHEN AND DINING
2. LOUNGE AREA WITH FIRE TABLE
3. EXTENSIVE GREEN ROOF
4. RAISED PLANTERS

LAYOUT & MATERIALS LEGEND - ROOF

- PORCELAIN TILE PAVING
- 2'X2' PATIO PAVERS
- GRAVEL
- EXTENSIVE GREEN ROOF PLANTING
- SHRUB PLANTING
- 6" CONCRETE PLANTER
- BBQ WITH COUNTER AND SINK
- SEAT WALL WITH WOOD TOP
- HARVEST TABLE
- TABLE AND CHAIRS
- LOUNGE AREA
- METAL TRELLIS

PLANT MATERIAL

CORRIDOOR

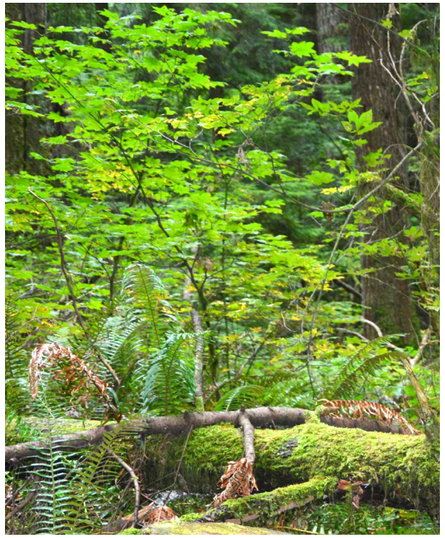






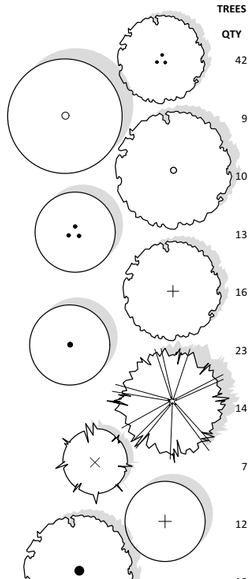
WOODLAND



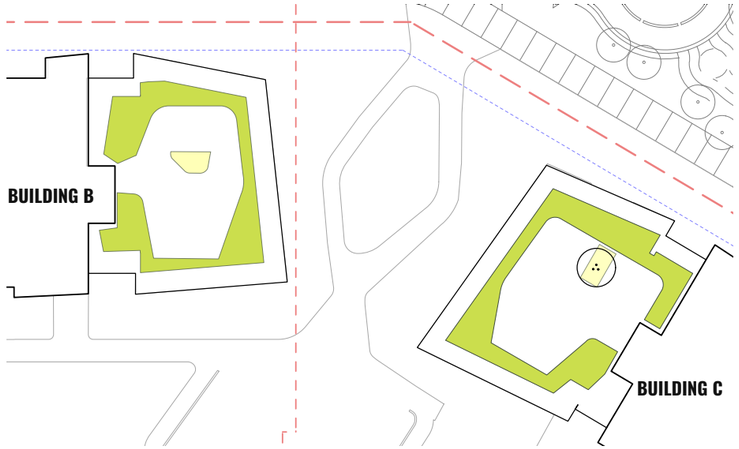



PLANT LIST



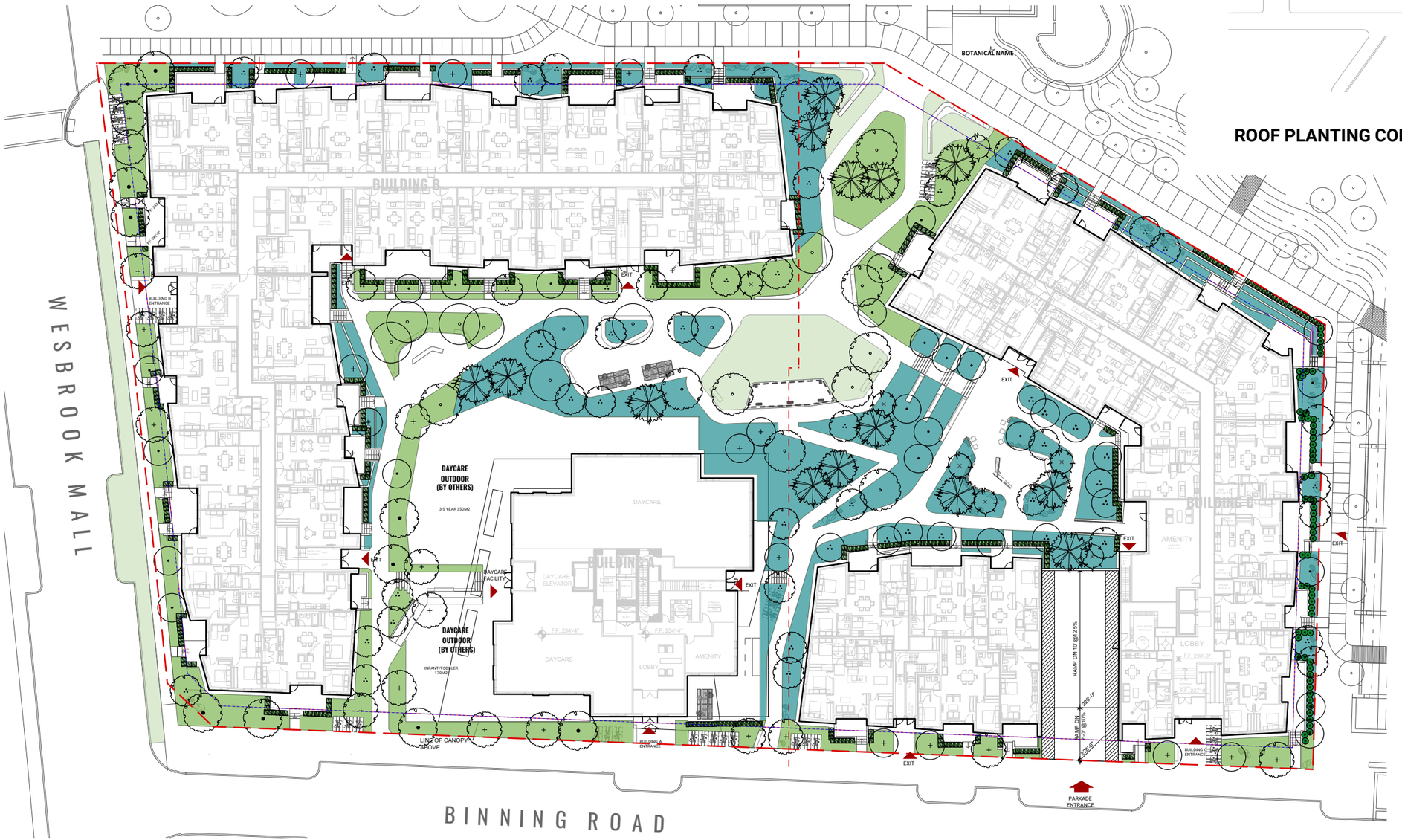
	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
TREES					
QTY					
42	Acer circinatum	Vine Maple	2.5m-3m Ht.	per plan	Multi-Stem Specimen
9	Acer griseum	Paperbark Maple	6-7cm Cal.	per plan	B&B
10	Acer rubrum 'Redpointe'	Redpointe Maple	7cm Cal.	per plan	B&B
13	Acer palmatum 'Sangukaku'	Coralbark Japanese Maple	2.5m-3m Ht.	per plan	Multi-Stem Specimen
16	Cercis canadensis	Eastern Redbud	6cm Cal.	per plan	B&B
23	Cornus kousa x nuttallii 'Starlight'	Starlight Dogwood	2.5m-3m Ht.	per plan	Multi-Stem Specimen
14	Pseudotsuga menziesii	Douglas-fir	3-4m Ht.	per plan	B&B
7	Picea omorika	Serbian Spruce	2.5-3m Ht.	per plan	B&B
12	Stewartia pseudocamellia	Japanese Stewartia	3m Ht.	per plan	Multi-Stem Specimen
10	Styrax japonicus	Japanese Snowbell tree	6cm Cal.	per plan	B&B
WOODLAND PLANTING (SHADE)					
1241	Asarum canadense	Wild Ginger	#1 POT	250mm o.c.	
547	Blechnum spicant	Deer Fern	#2 POT	450mm o.c.	
1277	Cornus canadensis	Bunchberry	#1 POT	250mm o.c.	
886	Cornus sericea 'Kelseyi'	Kelsey Dwarf Red Osier Dogwood	#2 POT	600mm o.c.	
547	Epimedium grandiflorum	Barrenwort	#1 POT	450mm o.c.	
310	Gaultheria shallon	Salal	#1 POT	300mm o.c.	
665	Polystichum munitum	Western Sword Fern	#2 POT	600mm o.c.	
1241	Polygonatum biflorum	Solomon's Seal	#1 POT	300mm o.c.	
283	Rhododendron 'Ken Janek'	Ken Janek Rhododendron	#3 POT	750mm o.c.	
310	Sarcococca hookeriana humilis	Sweet Box	#2 POT	600mm o.c.	
283	Vaccinium ovatum	Evergreen Huckleberry	#3POT	750mm o.c.	
310	Vaccinium parvifolium	Red Huckleberry	#1 POT	600mm o.c.	
532	Tellima grandiflora	Fringecup	#1 POT	300mm o.c.	
532	Trillium ovatum	Pacific Trillium	#1 POT	300mm o.c.	
CORRIDOR PLANTING (SUN- PART SHADE)					
194	Arbutus unedo 'Compacta'	Dwarf Strawberry tree	#5 POT	900mm o.c.	
281	Achillea millefolium	White yarrow	#1 POT	380mm o.c.	
1126	Arctostaphylos uva-ursi	Kinnikinnick	#1 POT	380mm o.c.	
330	Cornus sericea 'Kelseyi'	Kelsey Dwarf Red Osier Dogwood	#2 POT	600mm o.c.	
220	Mahonia nervosa	Low Oregon Grape	#2 POT	600mm o.c.	
220	Mahonia repens	Creeping Oregon Grape	#2 POT	600mm o.c.	
141	Philadelphus lewisii	Mock orange	#2 POT	750mm o.c.	
141	Ribes sanguineum	Red-flowering Currant	#2 POT	750mm o.c.	
220	Rosa nutkana	Nootka Rose	#2 POT	600mm o.c.	
330	Rhododendron occidentale	Western azalea	#2 POT	600mm o.c.	
220	Symphoricarpus albus	Snowberry	#2 POT	600mm o.c.	
SCREEN PLANTING					
496	Taxus x media 'Hicksii'	Hicks Yew	4' Ht.	450mm o.c.	Bushy and fully established
64	Osmanthus burwoodii	Burwood Osmanthus	#5 POT	750mm o.c.	Bushy and fully established
EXTENSIVE GREEN ROOF					
158m2	Sedum and Grass Sun Mix	6" Liveroof Trays			
ROOF PLANTER SUN SHRUBS, GRASSES & PERENNIALS					
9	Achillea millefolium 'Terra Cotta'	Terra Cotta yarrow	#1 POT	380mm o.c.	
22	Arctostaphylos uva-ursi	Kinnikinnick	#1 POT	380mm o.c.	
8	Carex testacea 'Prairy Fire'	Prairy Fire Carex sedge	#1 POT	450mm o.c.	
8	Gaillardia grandiflora Arizona Red	Blanket Flower	#1 POT	450mm o.c.	
9	Ilex glabra Gembox	Gembox Inkberry	#2 POT	600mm o.c.	

PLANTING CONCEPT



ROOF PLANTING CONCEPT L5&6 ROOF DECKS

0 5 10 m



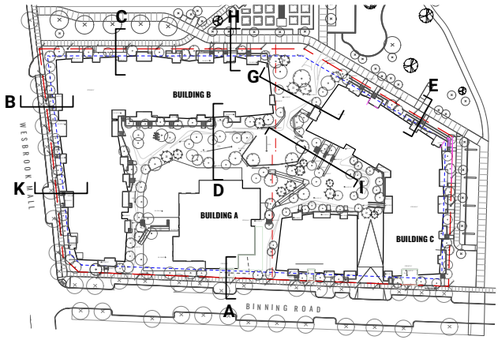
0 5 10 15 20 m

PLANTING CONCEPT PLAN (GROUND LEVEL)

PATIO CONDITION

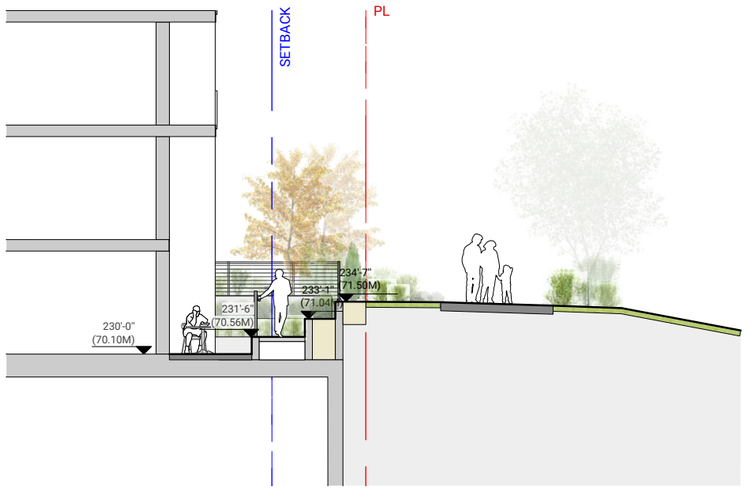
BUILDING C PARK EDGE

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
TREES				
	Acer circinatum	Vine Maple	2.5m-3m Ht.	per plan
	Cornus kousa x nuttallii 'Starlight'	Starlight Dogwood	2.5m-3m Ht.	per plan
SHRUB PLANTING				
	Arctostaphylos uva-ursi	Kinnikinnick	#1 POT	380mm o.c.
	Gaultheria shallon	Salal	#1 POT	300mm o.c.
	Polystichum munitum	Western Sword Fern	#2 POT	600mm o.c.
	Rhododendron 'Ken Janek'	Ken Janek Rhododendron	#3 POT	750mm o.c.
	Sarcococca hookeriana humilis	Sweet Box	#2 POT	600mm o.c.
	Vaccinium ovatum	Evergreen Hucklebery	#3POT	750mm o.c.
	Mahonia nervosa	Low Oregon Grape	#2 POT	600mm o.c.
	Philadelphus lewisii	Mock orange	#2 POT	750mm o.c.
SCREEN PLANTING				
	Taxus x media 'Hicksii'	Hicks Yew	4' Ht.	450mm o.c.
	Osmanthus burwoodii	Burwood Osmanthus	#5 POT	750mm o.c.



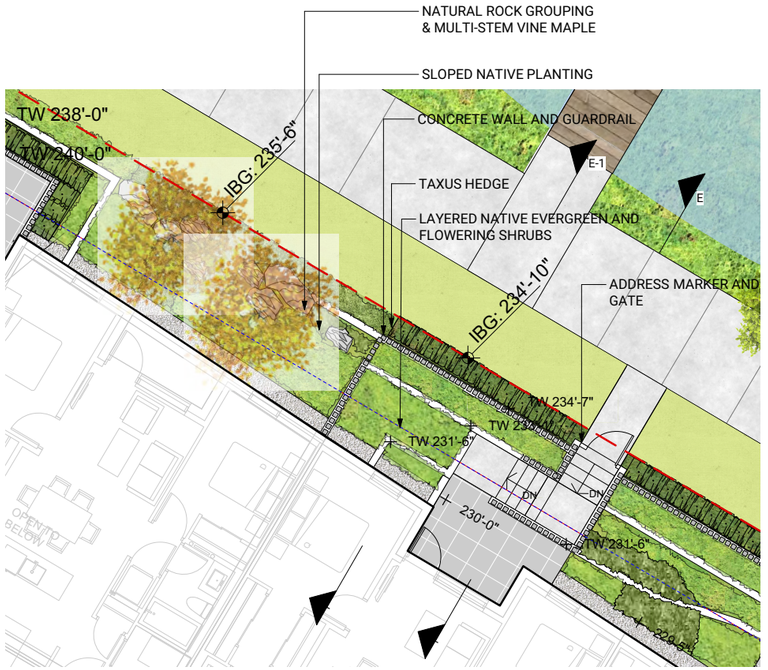
KEY PLAN

0 10 30 m



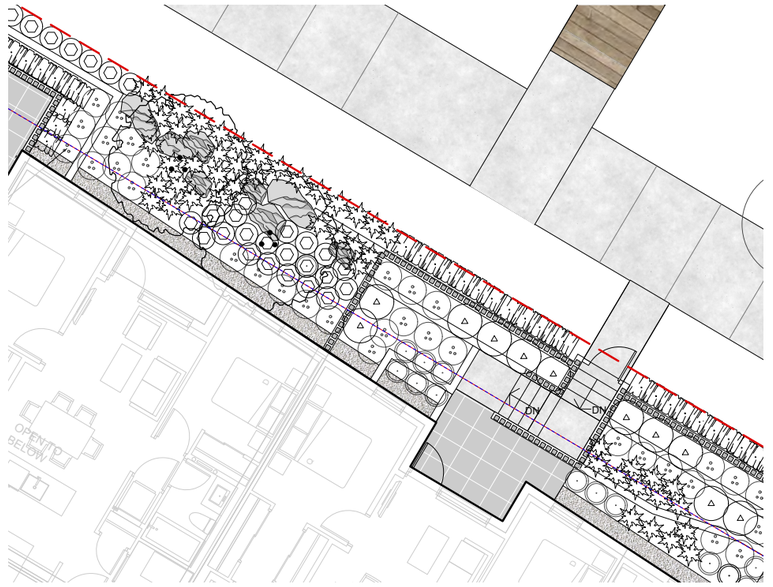
SECTION E

0 5 m



PLAN VIEW

0 5 m



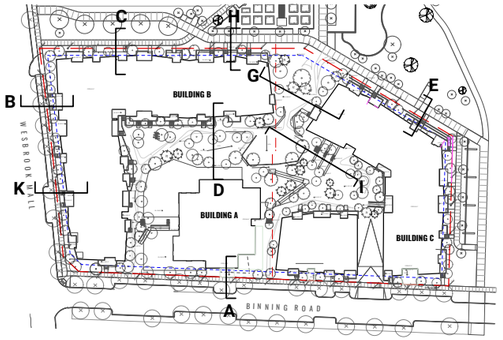
PLANTING PLAN

0 5 m

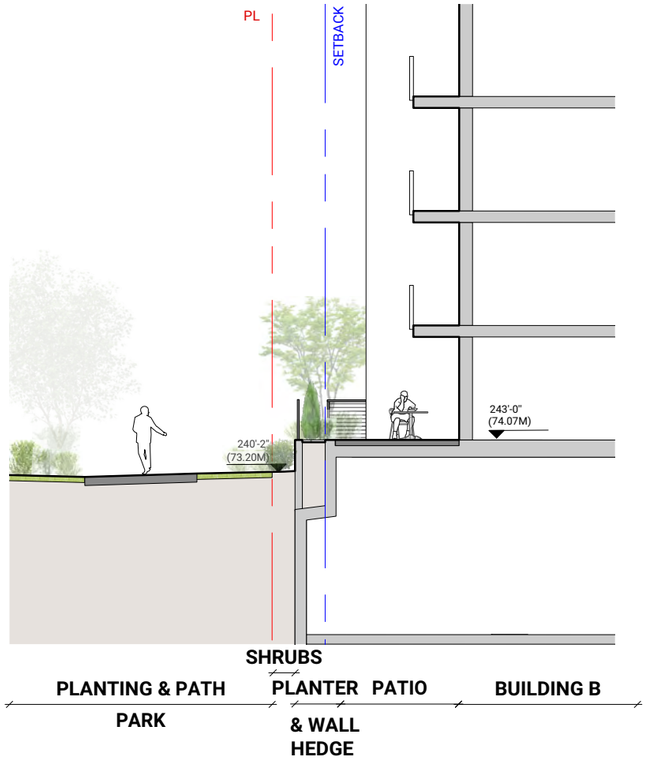
PATIO CONDITION

BUILDING B PARK EDGE

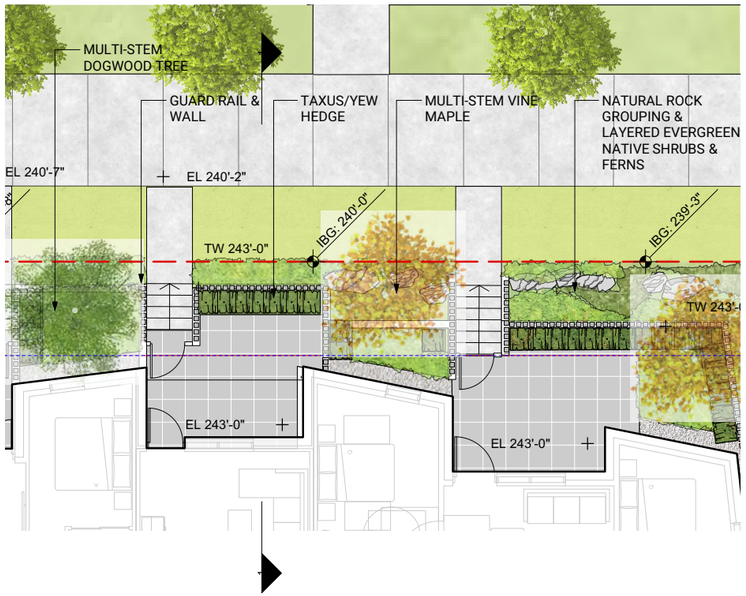
	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
TREES				
	Acer circinatum	Vine Maple	2.5m-3m Ht.	per plan
	Cornus kousa x nuttallii 'Starlight'	Starlight Dogwood	2.5m-3m Ht.	per plan
SHRUB PLANTING				
	Arctostaphylos uva-ursi	Kinnikinnick	#1 POT	380mm o.c.
	Gaultheria shallon	Salal	#1 POT	300mm o.c.
	Polystichum munitum	Western Sword Fern	#2 POT	600mm o.c.
	Rhododendron 'Ken Janek'	Ken Janek Rhododendron	#3 POT	750mm o.c.
	Sarcococca hookeriana humilis	Sweet Box	#2 POT	600mm o.c.
	Vaccinium ovatum	Evergreen Hucklebery	#3POT	750mm o.c.
	Mahonia nervosa	Low Oregon Grape	#2 POT	600mm o.c.
	Philadelphus lewisii	Mock orange	#2 POT	750mm o.c.
SCREEN PLANTING				
	Taxus x media 'Hicksii'	Hicks Yew	4' Ht.	450mm o.c.
	Osmanthus burwoodii	Burwood Osmanthus	#5 POT	750mm o.c.



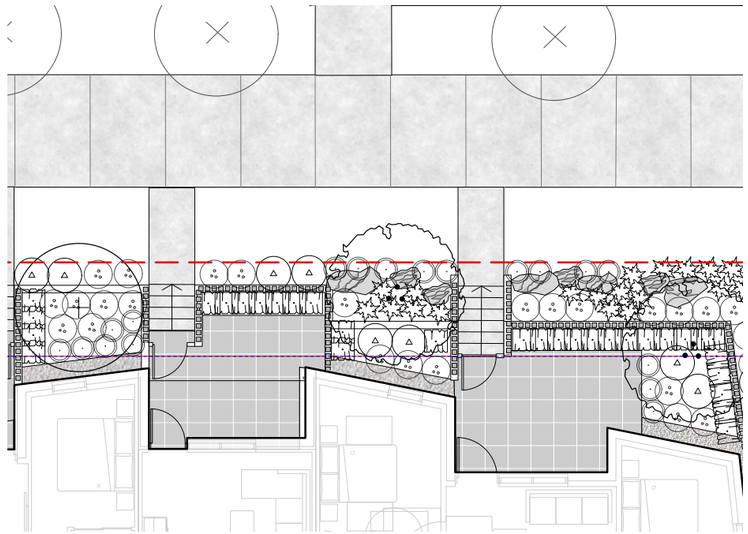
KEY PLAN 0 10 30 m



SECTION H 0 5 m



PLAN VIEW 0 5 m

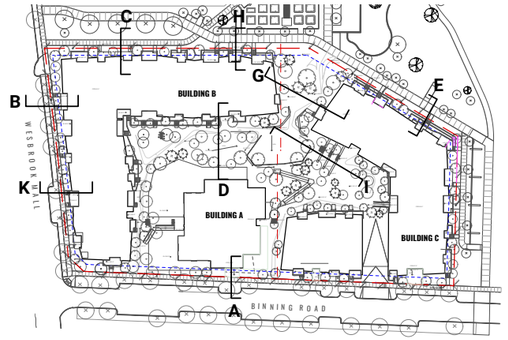


PLANTING PLAN 0 5 m

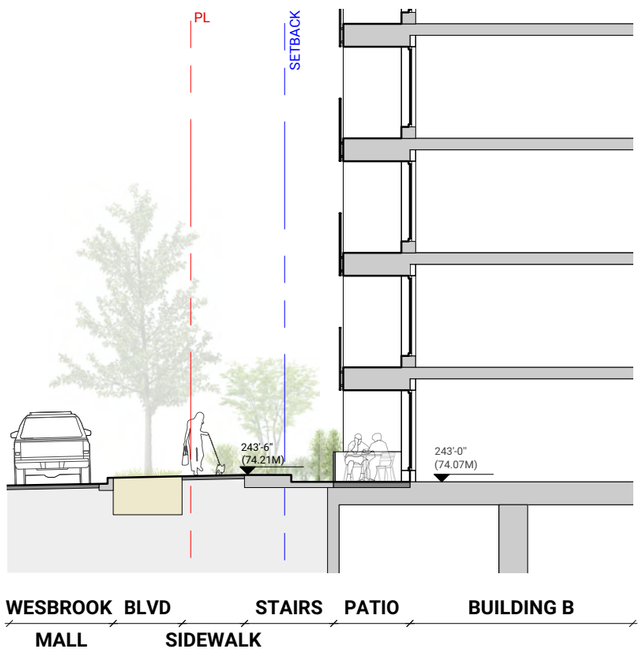
PATIO CONDITION

BUILDING B WESBROOK EDGE

	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
TREES				
	Acer circinatum	Vine Maple	2.5m-3m Ht.	per plan
	Cornus kousa x nuttallii 'Starlight'	Starlight Dogwood	2.5m-3m Ht.	per plan
SHRUB PLANTING				
	Arctostaphylos uva-ursi	Kinnikinnick	#1 POT	380mm o.c.
	Gaultheria shallon	Salal	#1 POT	300mm o.c.
	Polystichum munitum	Western Sword Fern	#2 POT	600mm o.c.
	Rhododendron 'Ken Janek'	Ken Janek Rhododendron	#3 POT	750mm o.c.
	Sarcococca hookeriana humilis	Sweet Box	#2 POT	600mm o.c.
	Vaccinium ovatum	Evergreen Hucklebery	#3POT	750mm o.c.
	Mahonia nervosa	Low Oregon Grape	#2 POT	600mm o.c.
	Philadelphus lewisii	Mock orange	#2 POT	750mm o.c.
SCREEN PLANTING				
	Taxus x media 'Hicksii'	Hicks Yew	4' Ht.	450mm o.c.
	Osmanthus burwoodii	Burwood Osmanthus	#5 POT	750mm o.c.



KEY PLAN 0 10 30 m

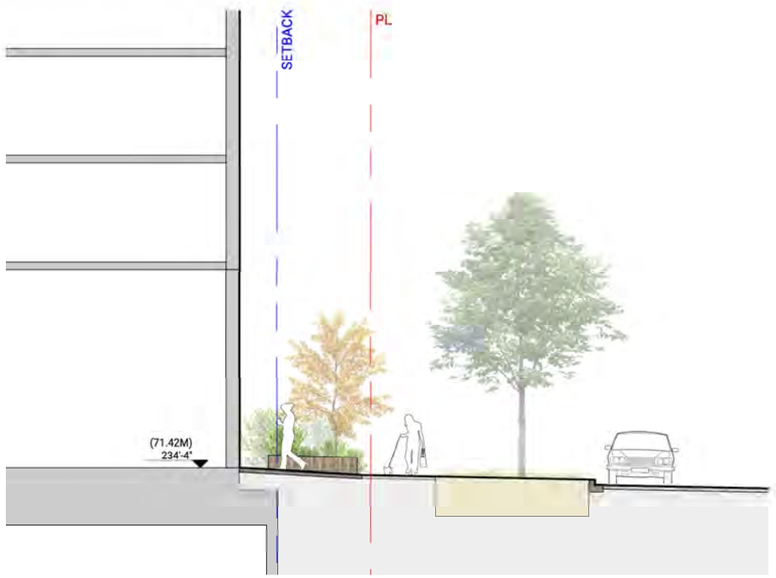


SECTION B (WESBROOK MALL) 0 5 m

PLAN VIEW 0 5 m

PLANTING PLAN 0 5 m

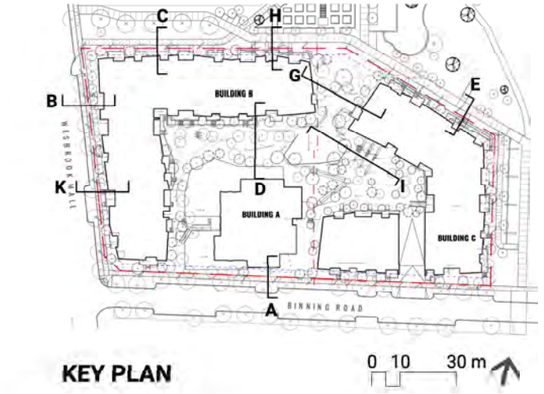
SECTION



BUILDING A | ENTRANCE | SIDEWALK | BOULEVARD | BINNING ROAD

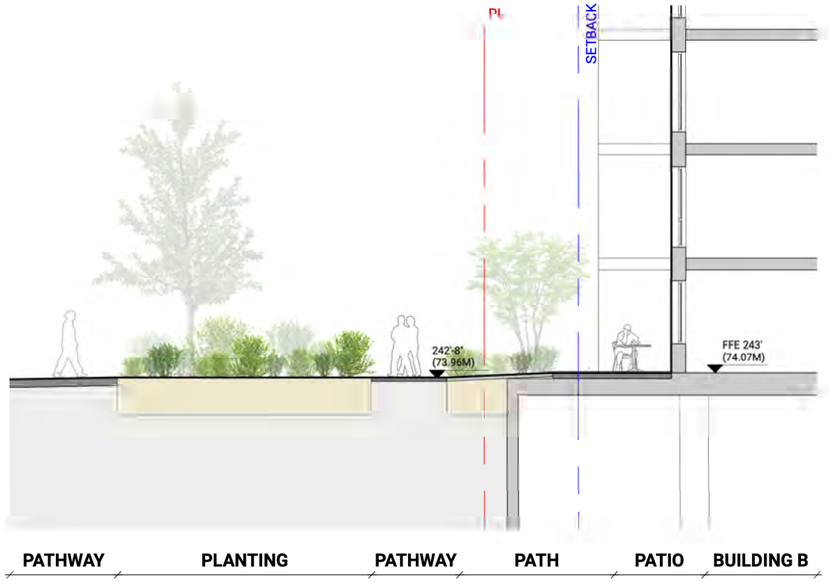
0 5 m

SECTION A



KEY PLAN

0 10 30 m



PATHWAY | PLANTING | PATHWAY | PATH | PATIO | BUILDING B

SECTION C

0 5 m

BUILDING B | PATIO | STAIRS | PATH | OUTDOOR GATHERING | DAYCARE | BUILDING A

PLANTER & SEATING | BY OTHERS

SECTION D

0 5 m

LIGHTING PLAN

0 5 10 15 20 m

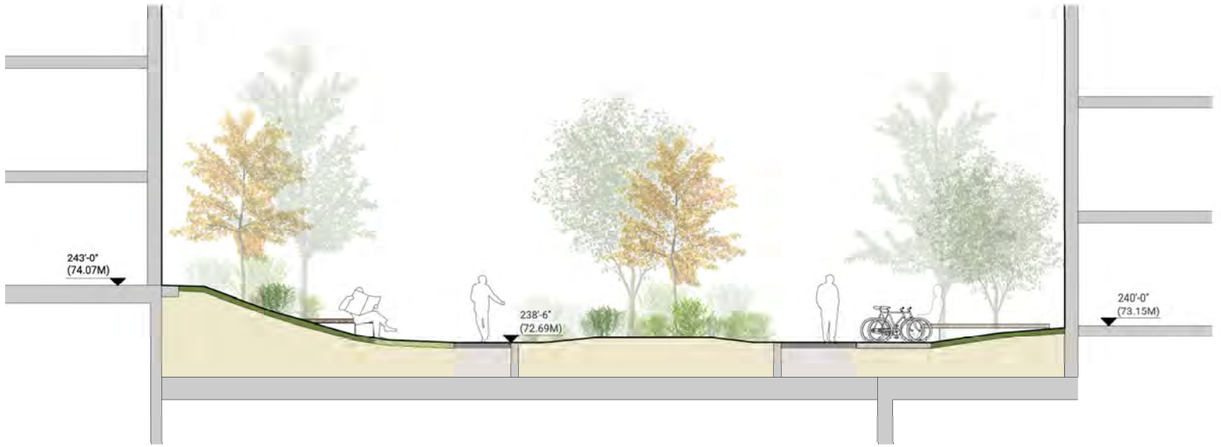
LIGHTING LEGEND

- WALL/STEP
- LIGHT
- BOLLARD LIGHT
- ENTRY ADDRESS LIGHT
- STRIP LIGHT
- ARCHITECTURAL BUILDING LIGHT
- STREET LIGHT

LIGHTING NOTES

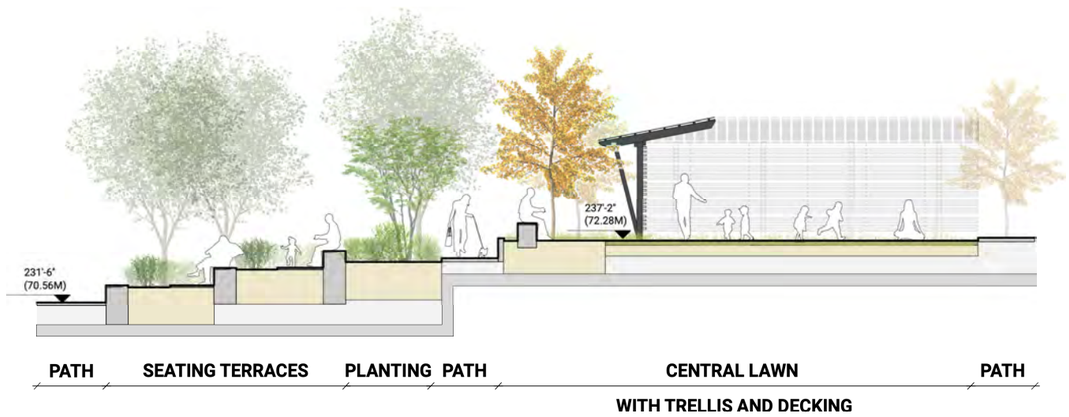
LIGHTING PLAN PROVIDED FOR INFORMATION ONLY. ELECTRICAL ENGINEER TO DESIGN SITE LIGHTING AND PROVIDE SPECS AND QUANTITIES DURING BUILDING PERMIT APPLICATION.

SECTION



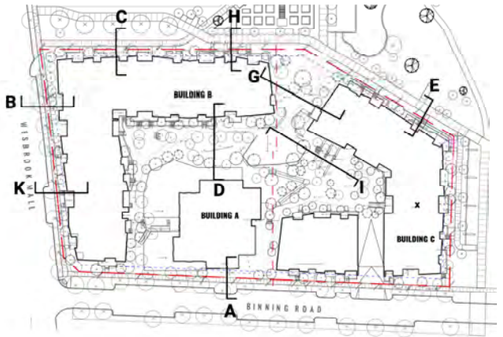
SECTION G

0 5 m



SECTION I

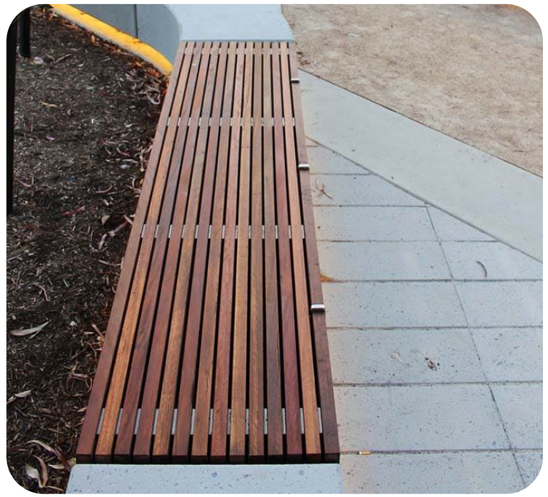
0 5 m



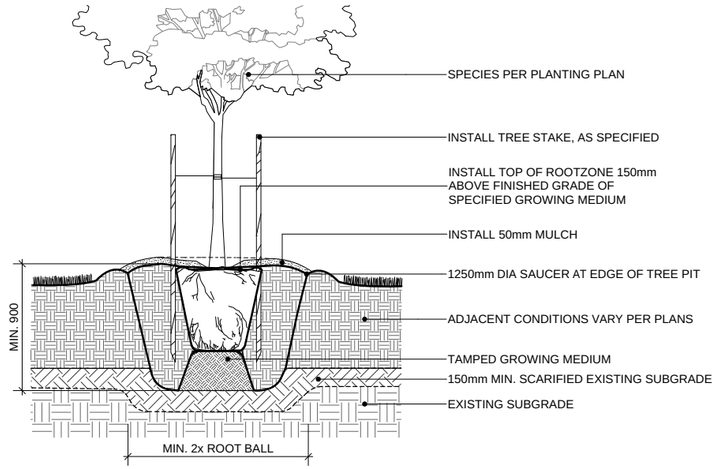
KEY PLAN

0 10 30 m

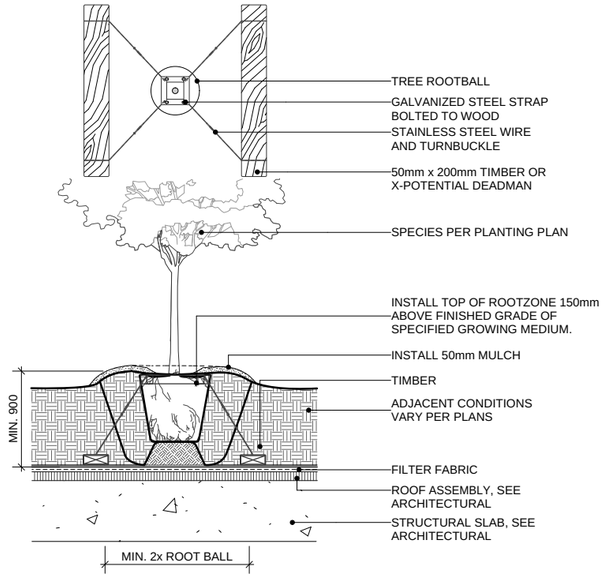
MATERIAL PALETTE



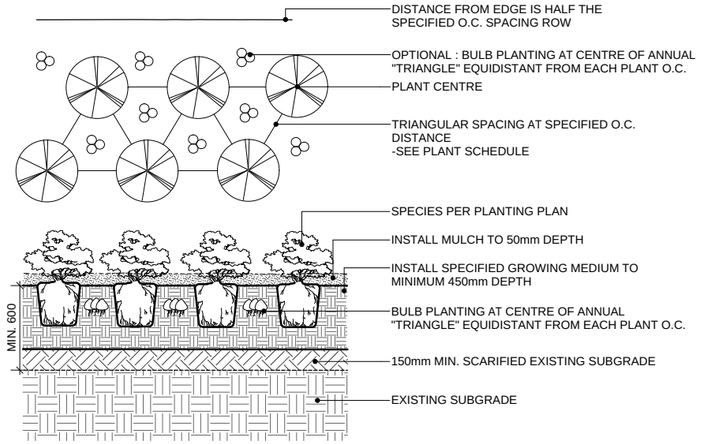
DETAILS



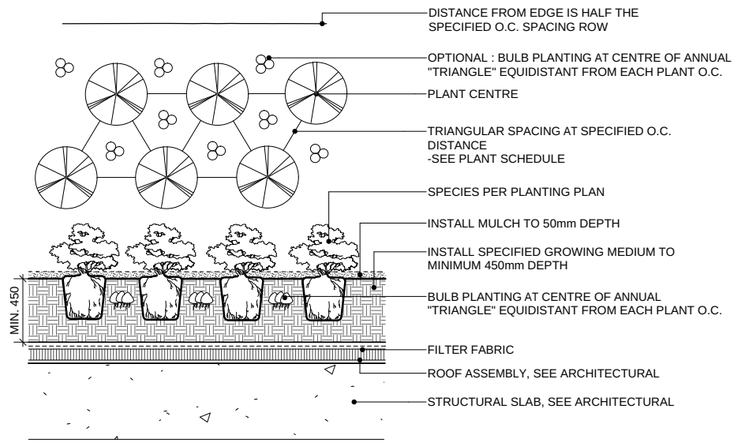
1 DECIDUOUS TREE PLANTING ON GRADE (TYPICAL)
Scale: 1:20



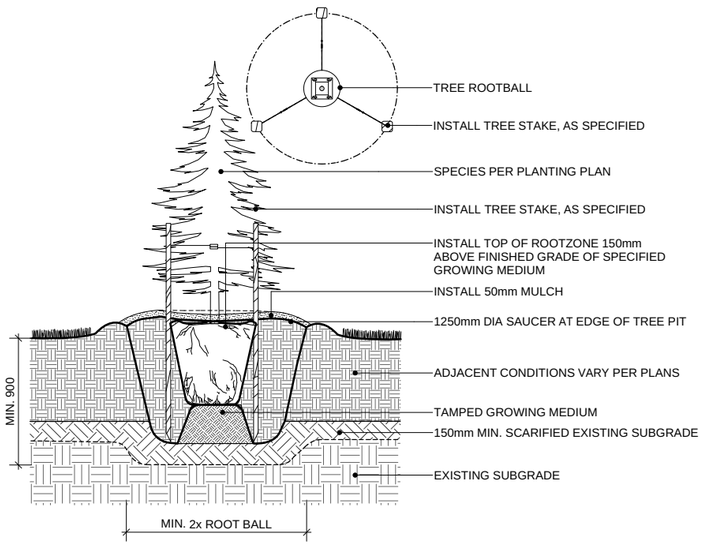
3 DECIDUOUS TREE PLANTING ON SLAB (TYPICAL)
Scale: 1:25



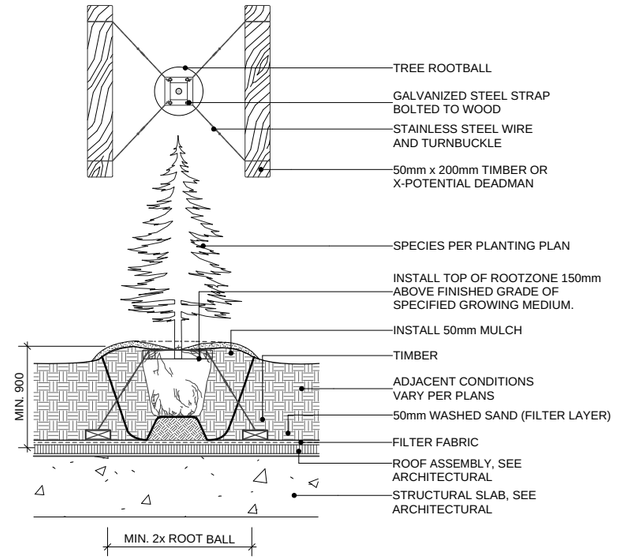
5 PLANTING ON GRADE (TYPICAL)
Scale: 1:20



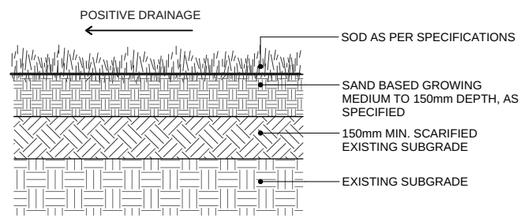
6 PLANTING ON SLAB (TYPICAL)
Scale: 1:20



2 CONIFEROUS TREE PLANTING ON GRADE (TYPICAL)
Scale: 1:20

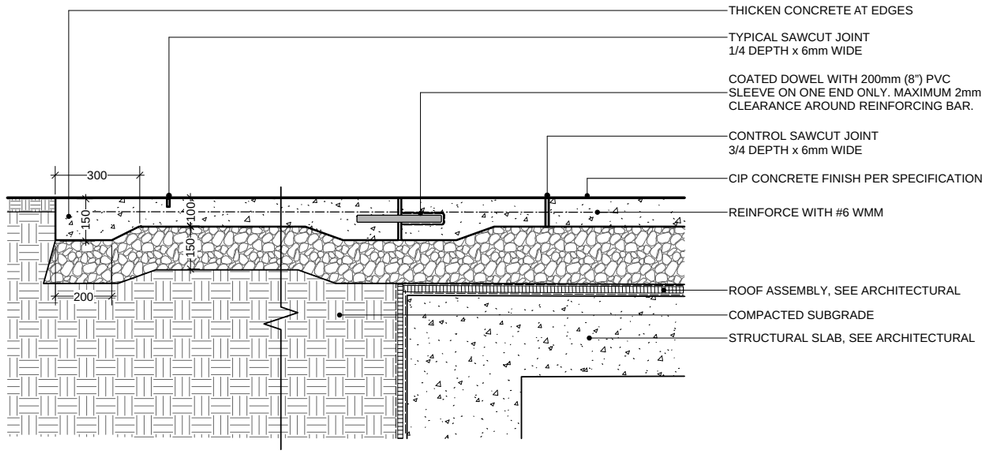


4 CONIFEROUS TREE PLANTING ON SLAB (TYPICAL)
Scale: 1:25

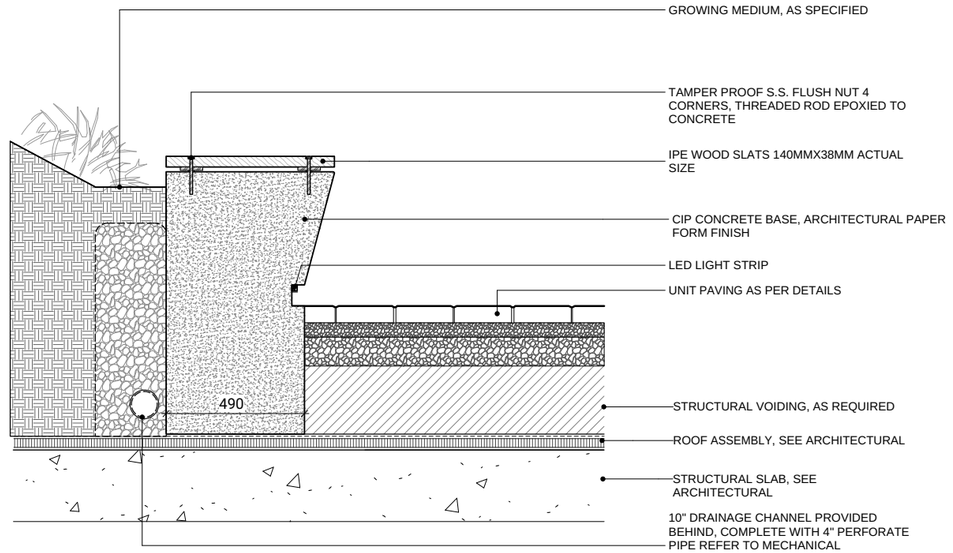


7 SOD LAWN (TYPICAL)
Scale: 1:10

DETAILS



1 CIP CONCRETE ON GRADE / ON SLAB, TYP.
Scale: 1:10

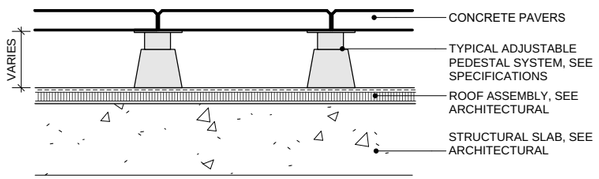


NOTES:
1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION
2. REFER TO ELECTRICAL FOR LED LIGHTING

0 1 M

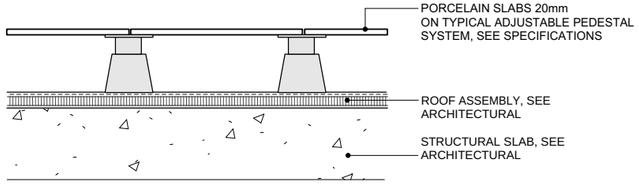
2 CUSTOM SEAT WALL WITH WOOD
Scale: 1:10

TEXADA SERIES
SIZE: 610mm x 610mm x 50mm
COLOUR: NATURAL
BY: ABBOTSFORD CONCRETE PRODUCTS
(1.800.663.4091)

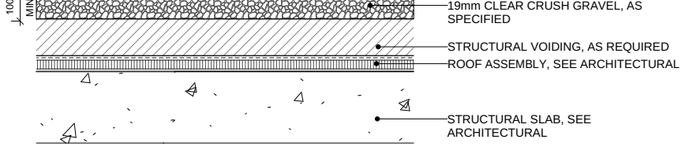


3 HYDRAPRESSED CONCRETE PAVERS ON PEDESTALS
Scale: 1:10

ARISTOCRAT SERIES
SIZE: 598mm x 598mm x 20mm
COLOUR: DOVER GREY
BY: ABBOTSFORD CONCRETE PRODUCTS
(1.800.663.4091)

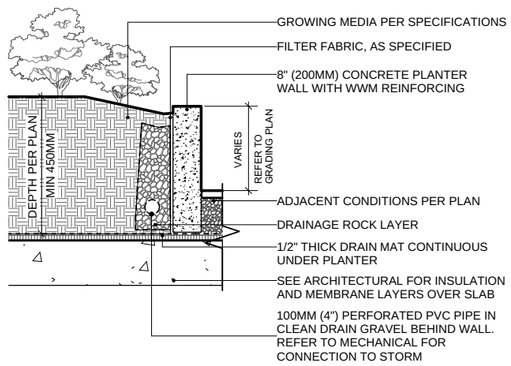


4 PORCELAIN SLABS ON PEDESTALS
Scale: 1:10

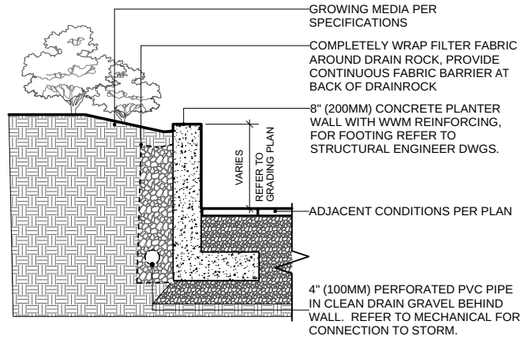


NOTE:
USE CONCRETE HIDDEN EDGE RESTRAINT WHEN PAVERS ARE NOT ADJACENT TO A SOLID EDGE CONDITION.

5 PEDESTRIAN UNIT PAVERS ON SLAB (TYPICAL)
Scale: 1:10



6 TYPICAL CIP CONCRETE RETAINING ON SLAB
Scale: 1:20



0 1 2 M

7 TYPICAL CIP CONCRETE RETAINING ON GRADE
Scale: 1:20

Arboricultural Inventory and Report

For: UBC Properties Trust

Site Location: BCR Lots 5 and 6, UBC

To be submitted with Tree Management Plan dated February 24, 2022.

Submitted to:
Sean Ang
UBC Properties Trust
Suite 200 – 3313 Shrum Lane
Vancouver, BC
Email: sang@ubcproperties.com

Date: February 24, 2022

Submitted by:

DIAMOND HEAD
3559 Commercial Street
Vancouver, BC 604.733.4886

The following Diamond Head Consulting staff conducted the on-site tree inventory and prepared or reviewed the report.

All general and professional liability insurance and staff accreditations are provided below for reference.

Project Arborist:

Dean Bernasch, BLA
ISA Certified Arborist (PN-8676A)
ISA Tree Risk Assessment Qualified (TRAQ)

Supervisor:

Trevor Cox, RPP, MCIP
ISA Certified Arborist (PN-1920A)
ISA Tree Risk Assessment Qualified (TRAQ)
BC Wildlife and Danger Tree Assessor

Please contact us if there are any questions or concerns about the contents of this report.

Contact Information:

Phone: 604-733-4886
Fax: 604-733-4879
Email: trevor@diamondheadconsulting.com
Website: www.diamondheadconsulting.com

Insurance Information:

WCB: # 657906 AQ (003)
General Liability: Northbridge General Insurance Corporation - Policy #CBC1935506, $10,000,000
Errors and Omissions: Lloyds Underwriters – Policy #1010615D, $1,000,000

Scope of Assignment:
Diamond Head Consulting Ltd. (DHC) was retained to complete an arboricultural assessment to supplement the proposed development application for BCR Lots 5 and 6, UBC, Vancouver. This report contains an inventory of protected on and off-site trees and summarizes management recommendations with respect to future development plans and construction activities. Off-site trees are included because pursuant to municipal bylaws, site owners must include the management of off-site trees that are within the scope of the development. This report is produced with the following primary limitations, detailed limitations specified in Appendix 7:

1) Our investigation is based solely on visual inspection of the trees during our last site visit. This inspection is conducted from ground level. We do not conduct aerial inspections, soil tests or below grade root examinations to assess the condition of tree root systems unless specifically contracted to do so.

2) Unless otherwise stated, tree risk assessments in this report are limited to trees with a *high* or *extreme* risk rating in their current condition, and in context of their surrounding land use at the time of assessment.

3) The scope of work is primarily determined by site boundaries and local tree-related bylaws. Only trees specified in the scope of work were assessed.

4) Beyond six months from the date of this report, the client must contact DHC to confirm its validity because site base plans and tree conditions may change beyond the original report's scope. Additional site visits and report revisions may be required after this point to ensure report accuracy for the municipality's development permit application process. Site visits and reporting required after the first submission are not included within the original proposal fee and will be charged to the client at an additional cost.

The client is responsible for:

- Reviewing this report to understand and implement all tree **risk**, removal and protection requirements related to the project.
- Understanding that we did not assess trees off the subject property and therefore cannot be held liable for actions you or your contractors may undertake in developing this property which may affect the trees on neighboring properties.
- Obtaining a tree removal permit from the relevant municipal authority prior to any tree cutting.
- Obtaining relevant permission from adjacent property owners before removing off-site trees and vegetation.
- Obtaining a timber mark if logs are being transported offsite.
- Ensuring the project is compliant with the tree permit conditions.
- Constructing and maintaining tree protection fencing.
- Ensuring an arborist is present onsite to supervise any works in or near tree protection zones.

Table of Contents

List of Photographs

1.0 Introduction

1.1 Site Overview

The subject site consists of two (2) lots with an approximate total area of 1.07 ha. The subject site has some gravel parking areas and one (1) tree stand, but otherwise is barren. The topography varies throughout the subject site. Red Alder (*Alnus rubra*) is the main tree species found on the subject site.

1.2 Proposed Land Use Changes

The proposed consists of a residential development. In preparing this report, we reviewed the following information:

1. Base Survey by Murray & Associates dated February 6, 2020.
2. U/G Parking Level P1 Plan (Main Level) by dys architecture dated January 27, 2022.

1.3 Report Objective

This report has been prepared to ensure the proposed development is compliant with UBC Technical Guidelines Section 32 01 93.01 for Tree and Shrub Preservation in relation to development. Protected trees identified on the subject site and documented in this report have a dimeter at breast height of 15 cm or greater.

This report outlines the existing condition of trees adjacent to the subject site that have a drip line or critical root zone that extends on to the subject site, summarizes the proposed off-site tree retention and removal, and suggests guidelines for protecting retained trees during the construction process.

2.0 Process and Methods

Dean Bernasch of DHC visited the site on February 14th, 2022. The following methods and standards are used throughout this report.

2.1 Tree Inventory

Trees on site and trees shared with adjacent properties were marked with a numbered tag and assessed for attributes including: species; height measured to the nearest meter; and, diameter at breast height (DBH) measured to the nearest centimeter at 1.4 m above grade. Off-site trees were inventoried, but not tagged. The general health and structural integrity of each tree was assessed visually and assigned to one of five categories: *excellent; good; moderate; poor; or dying/dead*. Descriptions of the health and structure rating criteria are given in Appendix 3.

Tree retention value, categorized as *high, medium, low, or nil,* was assigned to each tree or group of trees based on their health and structure rating, and potential longevity in a developed environment. Descriptions of the retention value ratings are given in Appendix 4. Recommendations for tree retention or removal were determined by taking in to account a tree's retention value rating, its location in relation to proposed building envelopes and development infrastructure.

2.2 Tree Risk Assessment

Tree risk assessments were completed following methods of the ISA Tree Risk Assessment Manual[1] published in 2013 by the International Society of Arboriculture, which is the current industry standard for assessing tree risk. This methodology assigns risk based on the likelihood of failure, the likelihood of impact and the severity of consequence if a failure occurs. Only on-site hazard trees that had *high* or *extreme* risk ratings in their current condition and in context of their surrounding land use were identified and reported in section 3.2. Appendix 5 gives the likelihood and risk rating matrices used to categorize tree risk. DHC recommends that on-site trees be re-assessed for risk after the site conditions change (e.g. after damaging weather events, site disturbance from construction, creation of new targets during construction or in the final developed landscape).

2.3 Tree Protection

Tree Protection Zones were calculated to be the six-times the diameter of each tree, but may be modified based on professional judgement of the project arborist to accommodate species specific tolerances and site specific growing conditions.

[1] Dunster, J.A., Smiley, E.T., Matheny, N. and Lilly, S. (2013). Tree Risk Assessment Manual. *International Society of Arboriculture*. Champaign, Illinois.

3.0 Findings: Tree Inventory and Risk Assessment

3.1 Tree Inventory

One (1) on-site tree stand was found, consisting of twenty-eight (28) trees. Of these trees, twelve (12) had poor and eleven (11) had moderate health and structure. Three (3) of these trees (#'s 94, 99, 797) were found to be dying and two (#'s 91 and Snag01) were dead.

All the above trees are recommended for removal as part of this project, due to conflicts with the proposed underground parkade.

Twenty-one (21) trees were found growing along Wesbrook Mall and Binning Road along the perimeters of Lots BCR 5 and BCR 6. All these trees had good health. Nine (9) of these trees are recommended for protection and retention as per our accompanying Tree Management Plan. The remaining twelve (12) are recommended for removal, due to conflicts with proposed roadworks.

3.2 Tree Risk Assessment

There were no trees on this site that posed a *high* or *extreme* risk at the time of assessment.

Appendix 1 Tree Inventory Table

The tree inventory below contains information on tree attributes and recommendations for removal or retention (it only includes the additional trees required for removal in this second arborist report amendment. Tree ownership in this inventory table is not definitive, its determination here is based on information available from the legal site survey, GPS locations, and field assessment during site visits. Tree Protection Zones are measured from the outer edge of a tree's stem. If using these measurements for mapping the tree protection zone, ½ the tree's diameter must be added to the distance to accommodate a survey point at the tree's center. Where tree protection fencing is proposed to vary from the minimum municipal TPZ, comments will be included in the Retention/TPZ comments and shown on the Tree Management Plan.

*TPZ is the tree protection zone size required by the relevant municipal bylaw or, if not defined, the project arborist.

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
86	On Site	Red Alder	Alnus rubra	16	9		3	Poor	Tree growing in tight group of three. Lean SW.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
87	On Site	Red Alder	Alnus rubra	25	12		3	Poor	DBH approximate. Edge of stand. Fruiting bodies seen along base of trunk on south side. Dead top. Lean SE.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
88	On Site	Red Alder	Alnus rubra	20	10		2	Poor	DBH approximate. At edge of stand. Dead and broken top. Lean SE.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
89	On Site	Red Alder	Alnus rubra	19	9		5	Poor	At edge of stand. Lean south.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
90	On Site	Red Alder	Alnus rubra	25	12		3	Poor	DBH approximate. Within stand. Dead top. Lean SW.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
91	On Site	Red Alder	Alnus rubra	25	10		1	Dead	DBH approximate. Within stand. Beside 91. Lean SW.	Nil	Remove	Tree conflicts with proposed underground parkade.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
92	On Site	Red Alder	Alnus rubra	30	11		7	Poor	DBH approximate. At edge of stand. Lean SW. Top appears dead/dying.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
93	On Site	Red Alder	Alnus rubra	25	10		3	Poor	DBH approximate. Growing at edge of stand. Fruiting bodies seen on south side of trunk near base.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
94	On Site	Red Alder	Alnus rubra	15	6		3	Dying	Tree growing on south side at base of tree 95. Good lean south. Appears to be dying.	Nil	Remove	Tree conflicts with proposed underground parkade.	2.0
95	On Site	Western Red Cedar	Thuja plicata	35	9		4	Moderate	DBH approximate. Within stand. Crown somewhat thin from around 3m to top of tree. Two stems arise at 8m. Acute union with inclusion.	Medium	Remove	Tree conflicts with proposed underground parkade.	2.1
96	On Site	Big-Leaf Maple	Acer macrophyllum	40	7			Poor	Tree growing within stand. Three stems approximately 15, 15 and 10cm DBH each. One stem has broken top. One is growing along ground until leader arises 3m from union. Tree overall appears to be in decline.	Low	Remove	Tree conflicts with proposed underground parkade.	2.4

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
97	On Site	Red Alder	Alnus rubra	25	11		6	Poor	DBH approximate. Growing at edge of stand. Good lean north. Deadwood and decay throughout crown.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
98	On Site	Red Alder	Alnus rubra	35	14		7	Poor	DBH approximate. Tree growing at edge of stand. Lean north.	Low	Remove	Tree conflicts with proposed underground parkade.	2.1
99	On Site	Red Alder	Alnus rubra	35	9		2	Dying	DBH approximate. Growing within stand. Lean NE. Appears almost completely dead.	Nil	Remove	Tree conflicts with proposed underground parkade.	2.1
100	On Site	Big-Leaf Maple	Acer macrophyllum	35	8		5	Moderate	DBH approximate. Growing at edge of stand. History of previous branch failures in crown. Lean northwest.	Low	Remove	Tree conflicts with proposed underground parkade.	2.1
790	On Site	Red Alder	Alnus rubra	35	10		7	Moderate	DBH approximate. Growing at edge of stand. Crown fully asymmetric and lean to NE.	Low	Remove	Tree conflicts with proposed underground parkade.	2.1
791	On Site	Bitter Cherry	Prunus emarginata	15	11		8	Moderate	In stand. Good Phototropic lean to south. Deadwood in crown. Note dormant time for tree.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
792	On Site	Big-Leaf Maple	Acer macrophyllum	30	9		4	Moderate	In stand. Two stems from base. Approximately 10 and 20cm DBH each. Suppressed by 973.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
793	On Site	Big-Leaf Maple	Acer macrophyllum	25	12		6	Moderate	Likely now exposed in stand due to recent adjacent tree removals. Two stems from base. 10 and 15cm DBH approximately. Somewhat suppressed by adjacent 973.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
794	On Site	Western Red Cedar	Thuja plicata	15	8		2	Moderate	Likely recently exposed due to adjacent tree removals. Now open grown. Growing in low area of stand. Single stem.	Medium	Remove	Tree conflicts with proposed underground parkade.	2.0
795	On Site	Big-Leaf Maple	Acer macrophyllum	20	10		3	Moderate	DBH approximate. Growing in stand. Recently exposed in stand position due to adjacent tree removals. Crown asymmetric to north.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
796	On Site	Honey Locust	Gleditsia triacanthos	25	10		3	Moderate	DBH approximate. Growing in stand at bottom of slopes in wet area. Surrounded by blackberry.	Medium	Remove	Tree conflicts with proposed underground parkade.	2.0
797	On Site	Douglas-Fir	Pseudotsuga menziesii	15	10		3	Dying	No foliage left in crown. Some cone crop still seen within crown.	Nil	Remove	Tree conflicts with proposed underground parkade.	2.0
969	On Site	Red Alder	Alnus rubra	34	10		7	Poor	Tree growing at edge of stand in tight group of three trees. Lean SW.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
971	On Site	Big-Leaf Maple	Acer macrophyllum	27	10		3	Moderate	DBH approximate. Tree growing at edge of stand. Slight lean NE.	Low	Remove	Tree conflicts with proposed underground parkade.	2.0
972	On Site	Western Red Cedar	Thuja plicata	65	12		5	Poor	Edge of stand. 3 stems from base. 35 20 10cm DBH each approximately. Dead tops.	Low	Remove	Tree conflicts with proposed underground parkade.	3.9
973	On Site	Douglas-Fir	Pseudotsuga menziesii	106	25		6	Moderate	In stand. Dominant. Appears might have lost top in past. Crown starts about half way up tree and appears quite stressed.	Medium	Remove	Tree conflicts with proposed underground parkade.	6.4
Snag01	On Site	Red Alder	Alnus rubra	40	6			Dead	Dead snag growing at edge of stand behind 971. Lean north.	Nil	Remove	Tree conflicts with proposed underground parkade.	2.4
UBC01	On Site	Red Maple	Acer rubrum	20	10		2	Good	Start of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC02	On Site	Red Maple	Acer rubrum	20	10		2	Good	Middle of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC03	On Site	Red Maple	Acer rubrum	20	10		2	Good	End of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
UBC04	On Site	Red Maple	Acer rubrum	20	10		2	Good	Start of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC05	On Site	Red Maple	Acer rubrum	20	10		2	Good	Middle of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC06	On Site	Red Maple	Acer rubrum	20	10		2	Good	End of row. Tree growing in narrow lawned boulevard between Wesbrook Mall and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC07	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing at beginning of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Retain	TPZ to dripline will provide tree with adequate protection. Protect and retain as per TMP.	To Dripline
UBC08	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Retain	Protect and retain as per TMP.	2.0
UBC09	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
UBC10	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC11	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC12	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC13	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC14	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Retain	TPZ to dripline will provide tree with adequate protection. Protect and retain as per TMP.	To Dripline
UBC15	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0

Tag #	Location	Species Common Name	Botanical Name	DBH (cm)	Height (m)	LCR	Dripline Radius (m)	Health and Structure Rating	Comments	Retention Value Rating	Retain/ Remove	Retention/TPZ Comments	*TPZ (m)
UBC16	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC17	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC18	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC19	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC20	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing as part of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0
UBC21	On Site	Red Maple	Acer rubrum	10	3		1	Good	Somewhat recently planted. Growing at end of evenly spaced row. Tree growing in lawned boulevard between road and sidewalk.	High	Remove	Tree conflicts with proposed roadworks.	2.0

Appendix 2 Site Photographs

Photo 1. Overview of trees (from right to left) UBC07 to UBC21.

Photo 2. Overview of on-site stand.

Photo 3. Overview of trees (from left to right) UBC01 to UBC06.

Appendix 3 Tree Health and Structure Rating Criteria

The tree health and structure ratings used by Diamond Head Consulting summarize each tree based on both positive and negative attributes using five stratified categories. These ratings indicate health and structural conditions that influence a tree's ability to withstand local site disturbance during the construction process (assuming appropriate tree protection) and benefit a future urban landscape.

Excellent: Tree of possible specimen quality, unique species or size with no discernible defects.

Good: Tree has no significant structural defects or health concerns, considering its growing environment and species.

Moderate: Tree has noted health and/or minor to moderate structural defects. This tree can be retained, but may need mitigation (e.g., pruning or bracing) and monitoring post-development. A moderate tree may be suitable for retention within a stand or group, but not suitable on its own.

Poor: Tree is in serious decline from previous growth habit or stature, has multiple defined health or structural weaknesses. It is unlikely to acclimate to future site use change. This tree is not suitable for retention within striking distance of most targets.

Dying/Dead: Tree is in severe decline, has severe defects or was found to be dead.

Appendix 4 Tree Retention Value Rating Criteria

The tree retention value ratings used by Diamond Head Consulting provide guidance for tree retention planning. Each tree in an inventory is assigned to one of four stratified categories that reflect its value as a future amenity and environmental asset in a developed landscape. Tree retention value ratings take in to account the health and structure rating, species profile*, growing conditions and potential longevity assuming a tree's growing environment is not compromised from its current state.

High: Tree suitable for retention. Has a good or excellent health and structure rating. Tree is open grown, an anchor tree on the edge of a stand or dominant within a stand or group. Species of *Populus, Alnus* and *Betula* are excluded from this category.

Medium: Tree suitable for retention with some caveats or suitable within a group**. Tree has moderate health and structure rating, but is likely to require remedial work to mitigate minor health or structural defects. Includes trees that are recently exposed, but wind firm, and trees grown on sites with poor rooting environments that may be ameliorated.

Low: Tree has marginal suitability for retention. Health and structure rating is moderate or poor; remedial work is unlikely to be viable. Trees within striking distance of a future site developments should be removed.

Nil: Tree is unsuitable for retention. It has a dying/dead or poor health and structure rating. It is likely that the tree will not survive, or it poses and unacceptable hazard in the context of future site developments.

* The species profile is based upon mature age and height/spread of the species, adaptability to land use changes and tree species susceptibility to diseases, pathogen and insect infestation.

** Trees that are 'suitable as a group' have grown in groups or stands that have a single, closed canopy. They have not developed the necessary trunk taper, branch and root structure that would allow then to be retained individually. These trees should only be retained in groups.

Appendix 5 Risk Rating Matrices

Trees with a *probable* or *imminent* likelihood of failure, a *medium* or *high* likelihood of impacting a specified target, and a *significant* or *severe* consequence of failure have been assessed for risk and included in this report (Section 3.2). These two risk rating matrices showing the categories used to assign risk are taken without modification to their content from the International Society of Arboriculture Tree Risk Assessment Qualification Manual.

Matrix 1: Likelihood

Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	**Low**	**Medium**	**High**
Imminent	Unlikely	Somewhat Likely	Likely	Very Likely
Probable	Unlikely	Unlikely	Somewhat Likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat Likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Matrix 2: Risk Rating

Likelihood of Failure and Impact	Consequences of Failure			
	Negligible	**Minor**	**Significant**	**Severe**
Very Likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat Likely	Low	Low	Moderate	Moderate
Unlikely	Low	Low	Low	Low

Appendix 6 Construction Guidelines

Tree management recommendations in this report are made under the expectation that the following guidelines for risk mitigation and proper tree protection will be adhered to during construction.

Respecting these guidelines will prevent changes to the soil and rooting conditions, contamination due to spills and waste, or physical wounding of the trees. Any plans for construction work and activities that deviate from or contradict these guidelines should be discussed with the project arborist so that mitigation measures can be implemented.

Tree Protection Zones

A Tree protection zone (TPZ) is determined using either dripline or a DBH multiplier to define a radius measured in all directions from the outside of a tree's trunk. It is typically determined according to local municipal bylaw specifications and may be modified based on professional judgement of the project arborist to accommodate species specific tolerances and site specific growing conditions. For retained trees, the TPZ and fencing indicated in this report are proposed as suitable in relation to the level of disturbance proposed on the site plan provided to the project arborist. Arborist consultation is required if any additional work beyond the scope of the plans provided is proposed near the tree. Work done in addition to the proposed impacts discussed in this report may cause the tree to decline and die.

Tree Protection Fencing: Tree protection zones (TPZs) will be protected by Tree Protection Fencing except where site features constrict roots (e.g., retaining walls or roads), where continual access is required (e.g., sidewalks), or when an acceptable encroachment into the TPZ is proposed, in which case the fencing will be modified. Tree Protection Fencing is shown on the Tree Protection Plan and, where it varies from the TPZ, the rationale is described in the inventory table in Section 3.1.

Within a TPZ, no construction activity, including materials storage, grading or landscaping, may occur without project arborist approval. Within the TPZ, the following are tree preservation guidelines based on industry standards for best practice and local municipal requirements:

- No soil disturbance or stripping.
- Maintain the natural grade.
- No storage, dumping of materials, parking, underground utilities or fires within TPZs or tree driplines.
- Any planned construction and landscaping activities affecting trees should be reviewed and approved by a consulting arborist.
- Install specially designed foundations and paving when these structures are required within TPZs.
- Route utilities around TPZs.
- Excavation within the TPZs should be supervised by a consultant arborist.
- Surface drainage should not be altered in such a way that water is directed in or out of the TPZ.

- Site drainage improvements should be designed to maintain the natural water table levels within the TPZ.

Prior to any construction activity, Tree Protection Fencing must be constructed as shown on the Tree Protection Plan. The protection barrier or temporary fencing must be at least 1.2 m in height and constructed of 2" by 4" lumber with orange plastic mesh screening. Tree Protection Fencing must be constructed prior to tree removal, excavation or construction and remain intact for the entire duration of construction.

Tree Crown Protection and Pruning

All heavy machinery (excavators, cranes, dump trucks, etc.) working within five meters of a tree's crown should be made aware of their proximity to the tree. If there is to be a sustained period of machinery working within five meters of a tree's crown, a of line of colored flags should be suspended at eye-level of the machinery operator for the length of the protected tree area. Any concerns regarding the clearance required for machinery and workers within or immediately outside tree protection zones should be referred to the project arborist so that a zone surrounding the crowns can be established or pruning measures undertaken. Any wounds incurred to protected trees during construction should be reported to the project arborist immediately.

Unsurveyed Trees

Unsurveyed trees identified by DHC in the Tree Retention Plan have been hand plotted for approximate location only using GPS coordinates and field observations. The location and ownership of unsurveyed trees cannot be confirmed without a legal surveyed. The property owner or project developer must ensure that all relevant on- and off-site trees are surveyed by a legally registered surveyor, whether they are identified by DHC or not.

Removal of logs from sites

Private timber marks are required to transport logs from privately-owned land in BC. It is property owner's responsibility to apply for a timber mark prior to removing any merchantable timber from the site. Additional information can be found at: http://www.for.gov.bc.ca/hth/private-timber-marks.htm

Regulation of Soil Moisture and Drainage

Excavation and construction activities adjacent to TPZs can influence the availability of moisture to protected trees. This is due to a reduction in the total root mass, changes in local drainage conditions, and changes in exposure including reflected heat from adjacent hard surfaces. To mitigate these concerns the following guidelines should be followed:

- Soil moisture conditions within the tree root protection zones should be monitored during hot and dry weather. When soil moisture is inadequate, supplemental irrigation should be provided that penetrates soil to the depth of the root system or a minimum of 30 cm.
- Any planned changes to surface grades within the TPZs, including the placement of mulch, should be designed so that any water will flow away from tree trunks.

- Excavations adjacent to trees can alter local soil hydrology by draining water more rapidly from TPZs more rapidly than it would prior to site changes. It is recommended that when excavating within 6 m of any tree, the site be irrigated more frequently to account for this.

Root Zone Enhancements and Fertilization

Root zone enhancements such as mulch, and fertilizer treatments may be recommended by the project arborist during any phase of the project if they deem it necessary to maintain tree health and future survival.

Paving Within and Adjacent to TPZs

If development plans propose the construction of paved areas and/or retaining walls close to TPZs, measures should be taken to minimize impacts. Construction of these features would raise concerns for proper soil aeration, drainage, irrigation and the available soil volume for adequate root growth. The following design and construction guidelines for paving and retaining walls are recommended to minimize the long-term impacts of construction on protected trees:

- Any excavation activities near or within the TPZ should be monitored by a certified arborist. Structures should be designed, and excavation activities undertaken to remove and disturb as little of the rooting zone as possible. All roots greater than 2 cm in diameter should be hand pruned by a Certified Arborist.
- The natural grade of a TPZ should be maintained. Any retaining walls should be designed at heights that maintain the existing grade within 20 cm of its current level. If the grade is altered, it should be raised not reduced in height.
- Compaction of sub grade materials can cause trees to develop shallow rooting systems. This can contribute to long-term pavement damage as roots grow. Minimizing the compaction of subgrade materials by using structural soils or other engineered solutions and increasing the strength of the pavement reduces reliance on the sub-grade for strength.
- If it is not possible to minimize the compaction of sub-grade materials, subsurface barriers should be considered to help direct roots downward into the soil and prevent them from growing directly under the paved surfaces.

Plantings within TPZs

Any plans to landscape the ground within the TPZ should implement measures to minimize negative impacts on the above or below ground parts of a tree. Existing grass layer in TPZs should not be stripped because this will damage surface tree roots. Grass layer should be covered with mulch at the start of the project, which will gradually kill the grass while moderating soil moisture and temperatures. Topsoil should be mixed with the mulch prior to planting of shrubs, but new topsoil layer should not be greater than 20 cm deep on top of the original grade. Planting should take place within the newly placed topsoil mixture and should not disturb the original rooting zone of the trees. A two-meter radius around the base of each tree should be left unplanted and covered in mulch; a tree's root collar should remain free from any amendments that raise the surface grade.

Monitoring during construction

Ongoing monitoring by a consultant arborist should occur for the duration of a development project. Site visits should be more frequent during activities that are higher risk, including the first stages of construction when excavation occurs adjacent to the trees. Site visits will ensure contractors are respecting the recommended tree protection measures and will allow the arborist to identify any new concerns that may arise.

During each site visit the following measures will be assessed and reported on by a consulting arborist:

- Health and condition of protected trees, including damage to branches, trunks and roots that may have resulted from construction activities, as will the health of. Recommendations for remediation will follow.
- Integrity of the TPZ and fencing.
- Changes to TPZ conditions including overall maintenance, parking on roots, and storing or dumping of materials within TPZ. If failures to maintain and respect the TPZ are observed, suggestions will be made to ensure tree protection measures are remediated and upheld.
- Review and confirmation of recommended tree maintenance including root pruning, irrigation, mulching and branch pruning.
- Changes to soil moisture levels and drainage patterns; and
- Factors that may be detrimentally impact the trees.

Appendix 7 Report Assumptions and Limiting Conditions

1) Unless expressly set out in this report or these Assumptions and Limiting Conditions, Diamond Head Consulting Ltd. ("Diamond Head") makes no guarantee, representation or warranty (express or implied) regarding this report, its findings, conclusions or recommendations contained herein, or the work referred to herein.

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Removal of existing curbs and installations of proposed curbs within 1.5m of TPZ of trees UBC06 must occur under arborist supervision.

Any proposed sidewalk or road works within 1.5m of TPZs of trees UBC07, UBC08 and UBC14 must occur under arborist supervision.

LEGEND

- CRITICAL ROOT ZONE
- TREE PROTECTION FENCING
- SURVEYED TREE TO BE RETAINED
- UN-SURVEYED TREE TO BE RETAINED
- TREE TO BE REMOVED

NOTES

1. The location of un-surveyed trees on this plan is approximate. Their location and ownership cannot be confirmed without being surveyed by a Registered BC Land Surveyor.
2. All tree protection fencing must be built to the relevant municipal bylaw specifications.The dimensions shown are from the outer edge of the stem of the tree.
3. The tree protection zone shown is a graphical representation of the critical root zone, measured from the outer edge of the stem of the tree. (½ the trees diameter was added to the graphical tree protection circles to accommodate the survey point being in the center of the tree)
4. Any construction activities or grade changes within the Root Protection Zone must be approved by the project arborist.
5. This plan is based on a topographic and tree location survey provided by the owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provide by the owners' Engineer (P Eng).
6. This plan is provided for context only, and is not certified as to the accuracy of the location of features or dimensions that are shown on this plan. Please refer to the original survey plan and engineering plans.

REFERENCE DRAWINGS

1. Base Survey by Murray & Associates dated February 6, 2020.
2. U/G Parking Level P1 Plan (Main Level) by dys architecture dated January 27, 2022.

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Drawing title: Tree Management Plan
Project address: Lots BCR 5 and 6, UBC
Client: UBC Properties Trust

Drawing No: 01
Date: 2021/02/24
Drawn by: DBE
Page Size: TABLOID 11"x17"

PUBLIC CONSULTATION SUMMARY

File: DP22010 Wesbrook Place Lots BCR5 & BCR6
Date: April 28, 2022

Virtual Public Open House

Date & Time: Wednesday April 21, 2022 from 7:00 – 8:30 PM
Location: Zoom meeting

The details of the event were posted on-site on the Development Permit notification sign and the Campus and Community Planning website. An advertisement was posted online in the Ubyssey running from April 7 to 21, 2022. Notifications were emailed to the University Neighbourhood Association (UNA), the Alma Mater Society (AMS), and Graduate Student Society (GSS). Notification letters for residents within 30 m of the site were emailed to Village Gate Homes for distribution to residents of the Nobel, Magnolia, and Dalia Houses.

Campus & Community Planning staff introduced the project and representatives from UBC Properties Trust, the project architecture consultant, and landscape architecture consultant presented the project plans. Staff and the applicant team responded to questions about the project.

The meeting was accessible via a Zoom meeting link emailed out to registrants on the day of the event and also posted on the project website. Prior to the event, 4 registrants signed up using the online registration form. 2 participants attended the meeting.

Online Comment Form

Comment Period: April 7 – April 28, 2022

During the comment period 7 responses were collected via the online feedback form.
The primary affiliation provided by the respondents:

Staff	3
Faculty	3
Resident	1
TOTAL:	7

100% of the respondents reported living at UBC. Of the 7 respondents, 1 respondent expressed support for the project, 2 commented but did not explicitly express support or non-support, and 4 expressed non-support.

The primary reasons for non-support seemed to be due to concerns over the height of the tower, which was perceived as out of scale with surrounding developments; the future construction noise and traffic impacts; and the impact of the loss of the remaining trees on the lots to eagles sighted.

The respondent who supported the project commented that there is a need for additional faculty and staff housing.

Respondents expressed a desire to see ground floor commercial space in the development and in Wesbrook Place more generally, a higher number of 3-bedroom apartment units, and the addition or enlargement of roads to facilitate movement in and out of Wesbrook Village.

THE UNIVERSITY OF BRITISH COLUMBIA
Campus + Community Planning

Draft Minutes

Advisory Urban Design Panel

Date:	April 7, 2022
Time:	4:03 PM
Location:	BC Hydro Theatre, CIRS, 2260 West Mall
Attendees:	MEMBERS OF THE ADVISORY URBAN DESIGN PANEL: Jennifer Cutbill (Chair), Jim Huffman (Vice Chair), Matt Dolf, David Jacobson, Bob Lilly, Sarah Siegel *Item 6.2*
Regrets:	Nick Sully, Matthew Soules
Staff:	Matthew Roddis, Linda Nielsen (Recorder)
Presenters:	Brian Wakelin, Public: Architecture + Communication Shane O'Neill, Public: Architecture + Communication Joseph Fry, Hapa Collaborative Chris McBride, Hapa Collaborative Norm Chin, DYS Architecture Ken Larsson, Connect Landscape Architecture

---

1.0 The meeting was called to order at 4:03 PM. A quorum was noted.

2.0 Welcome incoming member Matt Dolf.

3.0 Thank you and appreciation to outgoing members Jennifer Cutbill (Chair) and Jim Huffman (Vice Chair).

4.0 Approval of the agenda and previous meeting minutes

- The April 7, 2022, agenda was approved.
- The March 3, 2022, meeting minutes were approved.

5.0 Land acknowledgement

UBC Point Grey (Vancouver) campus, sits on the traditional, ancestral, unceded territory of the xʷməθkʷəy̓əm (Musqueam) First Nation.

6.0 Applications:

6.1 **Beaty Biodiversity Centre Addition**

Application status:	Development application
Location:	2212 Main Mall
Applicants:	Public: Architecture + Communication Hapa Collaborative UBC Properties Trust

RESOLUTION: SUPPORT [5-0].

Architects Brian Wakelin and Shane O'Neill (Public: Architecture + Communication) and landscape architects Joseph Fry and Chris McBride (Hapa Collaborative) presented and responded to questions from the panel. Project manager Shawn Rodgers (UBC Properties Trust) was also in attendance.

Associate Director, Campus Design Matthew Roddis (C+CP) introduced the project

In addition to general comments advice was sought on the following:

- The resolution of the elevations in respecting and responding to the original design of the Beaty Centre, and specifically, whether the west elevation is successful in allowing the addition to recede and be secondary to both the pavilion and the architecture of the original building;
- The landscape plan with feedback on pedestrian movement and the general arrangement of social space and garden;
- The interface between Fairview Grove and the addition and opportunities to improve the habitat and ecology of the site.

Panel Commentary:

The drawings were easy to read and elegant, especially the landscape.

BUILDING
Elevations & Massing

- The elevations are successful. The west elevation is elegant and sits well with the existing building. A panel member had initial concern the west elevation might compete but this was tempered by the renderings – the high level of refinement quiets the composition.
- The extra height is successful given the scale and context.

Facades

- Mixed commentary regarding the fins. Dark-coloured fins would offset materials and read stronger in sunlight. Light-coloured fins would blend in/calm down.
- The south face has a lot of brick – careful attention to detailing is needed. Carefully consider control joint locations and proportions.
- Appreciation for refined details.

LANDSCAPE

- A recommendation to leverage the opportunity for a skylight to space below: a visual connection with the space below would be impactful and interesting in the garden.
- Some concern that the sunken courtyard "shade garden" will be mossy and damp; but general appreciation for the concept of a fern understory.
- Consider more height in the contouring – i.e. bolder grade changes, if viable.
- Large woody debris in pollinator garden would add character in keeping with the forest vernacular.
- Support for bringing the learning outside and emphasizing the biodiversity-pollinator story. Consider opportunities to push even further with celebration of Musqueam values, knowledges and engagement.
- Consider CPTED to have 'eyes' on the sunken courtyard during non-working hours.
- Consider opportunities for more outdoor covered spaces.

Interface with Fairview Grove

- A panel member would like to have seen more engagement with the grove, but appreciated the programmatic and envelope constraints for not having more visual connectivity to the grove noting the direct access from each west-facing space.

- The interface with Fairview Grove could be something different, the south facade is an important face of the building, especially with no glazing.
- The green connector is an important piece and can bring net positive change by having more greenway along the pathway.

Chair Summary:

Overall, the consensus of the panel is that the project offers an elegant solution – especially given the challenges of fitting such a dense program on a tightly constrained sight.

In terms of the success of the elevations:
- While the vertical orientation of the west elevation is less muted than the north facade of the existing gallery, the panel felt the thoughtfully restrained detailing keeps it from competing.
- The additional height was not felt to be a concern given the larger context and constraints.

In terms of the landscape scheme:
- While a concern was raised about the dark and wet nature of the Shade Garden, the understory concept was generally appreciated, and the landscape scheme was felt to be successful overall.
- Encouragement was provided by the panel to push some elements even further during design development, including: bringing the museum outside through both experiential engagement with landscape and respectful celebration of Musqueam values and knowledges; pushing the height of the contouring in the Pollinator Garden to the extent viable; and providing outdoor covered space.

In terms of the interface with Fairview Grove:
- While unfortunate that greater (visual and physical) connection to the Grove was ultimately deemed non-viable as a result of programmatic and performance constraints; engagement opportunities from the west-facing common spaces, east connector, and investments in restoration provide positives to offset this deficit.
- Continued thoughtful attention through detailing of the south facade is recommended to bring some nuance to the otherwise undifferentiated mass.

Given the primarily fine grain nature of suggestions provided, it was moved and seconded and was the decision of the Advisory Urban Design Panel:

THAT the panel SUPPORT the development application.

6.2 **Lot BCR 6, Wesbrook Place**

Application Status:	Development application
Location:	The corner of Wesbrook Mall and Binning Road
Applicants:	DYS Architecture Connect Landscape Architecture UBC Properties Trust

RESOLUTION: SUPPORT WITH RECOMMENDATIONS [6-0].

Architect Norm Chin (DYS Architecture) and landscape architect Ken Larsson (Connect Landscape Architecture) presented and responded to questions from the panel. Architect Colin Shrub (DYS Architecture) and project manager Sean Ang (UBC Properties Trust) were also in attendance and available to answer questions.

Associate Director, Campus Design Matthew Roddis (C+CP) introduced the project

In addition to general comments advice was sought on the following:

- Expression of the tower in relation to the simple form and massing of the mid-rise buildings and its response to solar gain; and
- The success of the materiality of the mid-rise buildings, and in particular selected colours.

Panel Commentary:

BUILDINGS

General

- Overall, the panel appreciated the revised big moves: removing the podium, simplifying the tower, shifting the daycare and reconfiguring the parkade ramp for safety.
- Positive evolution of tower massing from the previous scheme to the current iteration.
- A couple panel members thought the overall layout of site and access had improved.
- A few panel members were skeptical of the mid-rise angled grooves.
- Appreciation for the “shaped by forces of nature story.”

Tower

- More thought in development needed. Simplify / push further for a better fit on the site and surrounding context (it is not relating to site). The tower feels generic and could be anywhere.
- A panel member noted the mid-rises feel “squishy” next to the tower – not criticizing the architectural moves; there is just a lot of density on this site – and looks it. A challenge to fit.
- One panel member was not too concerned with the tower expression.
- Appreciate the revisiting and the use of balconies for shading but the current proposal feels a bit heavy. Further refinement is needed.

Mid-rise Materiality

- A panel member thought the massing of the mid-rises were successful and unique.
- Mixed support on the proposed warm color palette. A panel member thought the earth tones felt more fitting to Arizona not Vancouver. A couple panel members thought the color palette was not distinct enough; consider a stronger colour with more contrast.
- A panel member suggested previously proposed reveals may have been better, while acknowledging the changes were driven by budget. Might the varied reveals be re-introduced?
- There was skepticism expressed as to whether the mid-rise bent roofs would be successful as proposed; though the parapet strategy used on roofs with RTUs seems a viable fallback.
- Appreciation for the wood (-colored) soffits.
- Exposed concrete walls on north and south elevations will need screening.
- The west elevation feels a bit monotonous.
- One panel member found it a little severe to have flashings align with balconies. Others took no issue with this.

Daycare

- Appreciated big reconfiguration moves; however more thought is required regarding functionality of the daycare design; including: revisiting the entry sequence (do not split in half); avoiding L-shaped spaces and blind areas (like the north landscape space) as daycare providers/operators find them problematic.

Other

- A number of panel members recommended working hard to preserve indoor social spaces and to make functional rather than merely gestural (i.e. more than just large lobbies).

LANDSCAPE

- The variety of typologies and covered wood decks are nice design moves.

- The play space for children was thought to be largely successful. However nature-play needs more refinement. Consider opportunities for more natural landscape expression, i.e.: add nurse logs, boulders, etc. to invite exploration and "rambling" in the landscape; consider changing the base to sand for the children's play space to increase the play value.
- A panel member suggested to play with the grade of the zig zag in path to feel more like others which are more curved.

Chair Summary:

- The panel greatly appreciated the many big moves made since the pre-application, i.e.: the removal of the podium; and the reconfiguration of the tower, daycare, daycare parking and drop off, and the parkade access and site connectivity.
- The "shaped by forces of nature" story has led to interesting forms for the mid-rise massing. The mid-rises feel successful (even if sloped SBS roofs become sloped parapets). Reviews regarding their colour palette was mixed – some felt the warm colours shown were okay, while others (including the chair) strongly recommend more contrast.
- Though the panel appreciated the efforts made to rethink the tower and to address solar gain through differential treatment of facades and synergistic use of balconies for shading on high gain elevations; on the whole, the panel felt the tower needs further design development in both massing and materiality.
- The panel found the evolution of the landscape design successful; however recommended pushing a nature-play approach, including considering a sand base for the dedicated children's area, as well as integrating more natural elements throughout to leverage sense of discovery.
- Strong encouragement to work with the UNA to enable an integrated approach to the development of the daycare.

Having reviewed the project proposal, it was moved and seconded and was the decision of the Advisory Urban Design Panel:

THAT the panel SUPPORT the development application with the following recommendations:

1. Further refinement of tower elevations – massing and materiality.
2. Work with UBC PT and UNA to sync timing of onboarding daycare provider to leverage efficiencies and potentials of base building design for better returns on investment.
3. Further develop the nature-play concept throughout the courtyard design.

7.0 Adjournment

There being no further business the meeting adjourned at 6:34 PM.

Attachment E: Evaluation Matrix
Application #: DP 22010
Project Name: Wesbrook BCR6 Market and Faculty/Staff Housing

Development Control Policy / Regulation	Requirement	Proposed Project	Conforms Y/N	Comments
Land Use Plan				
4.1.5 b)	50% UBC employee/student housing	Market & faculty/staff rental; 57% faculty and staff units	Y	*Campus wide objective*
4.1.6.1 b)	20% rental housing overall 10% non-market rental housing	Market & faculty/staff rental; 57% faculty and staff units	Y	*Campus wide objective*
4.1.6.1 c)	No density of individual site greater than 3.5 FSR	3.5 FSR	Y	
4.1.6.1 d)	Generally min. of 6 storeys with a maximum height of 53m and it may be increased to 65m for certain sites subject to the Neighbourhood Plan process.	18 storey high-rise 6 storey mid-rises (potion adjacent future park steps down to 4-storeys) 54.18 m height	Y Y N	*Variance requested for an additional 1.18 m in height on a portion of high-rise roof*
4.1.6.1 e)	Diversity of housing types; include ground floor street-oriented units; human scale; underground parking; 150 units max except where design can mitigate scale	515 total units: 221 in high-rise (Building A), and 294 in mid-rises (Buildings B & C)	Y	
4.1.2.3 b)	Any viable mature trees over 15cm caliper dbh (diameter at breast height) that must be removed during the course of residential development in neighbourhoods will be replaced on campus at a ratio of 1:1, using species appropriate to the setting, and allowing trees to be sited as appropriate through the campus.	34 removals 156 trees to be planted 9 trees to be retained	Y	*Trees to be removed to allow construction of laybys on Binning Road, parkade ramp access, and high-rise (Building A)*

Development Control Policy / Regulation	Requirement	Proposed Project	Conforms Y/N	Comments
Wesbrook Place Neighbourhood Plan (WPNP)				
1.4.1 a)	Provide a range of housing types, unit sizes, and densities with a variety of prices and tenures suited to faculty and staff	Dwelling units (515): 157 x studio 34 x 1 bed 85 x 1 bed + den 50 x 2 bed 76 X 2 bed + den 85 x 3 BR 28 x 4 BR	Y	
1.4.2 a) & d)	Create a more complete community on UBC Campus and a choice of transportation options.	Provides cycling storage and daycare facility	Y	*Walking distance to commercial area and high school, adjacent future research park*
1.4.2 i)	Housing units to have strong orientation to streets/greenways	Building B & C ground floor units have patios and entrances at grade; Development has access to surrounding streets, greenways, and Research Park; Ground floor of Building A is a daycare facility	Y	
2.2.2 n) & 3.5.15	Green building design using the UBC Residential Environmental Assessment Program (REAP 3.2) - Gold minimum	REAP Gold Plus – 61 points Zero Waste Ready (P1) prerequisite not achieved	Y N	*Gold Plus is 60-69 points.*
3.5	Design Guidelines for Buildings	Responds to guidelines related to general character, siting and orientation, massing, style, materials	Y	
4.6	Maximum Site Coverage 55%	50.8%	Y	
Plan P-10	Maximum FSR: 3.5 Maximum Storeys: 18 storey and 4-6 storeys	3.5 FSR 18 storey high-rise and two 6-storey mid-rise (portion adjacent park is 4-storeys)	Y Y	*Project is situated on 2 lots that will be consolidated*
Development Handbook				
Section SC3C.2	Permitted Uses: Apartment housing; townhousing	Apartment housing	Y	
Section SC3C.4	Minimum site area is 4,000 m^2.	10,710.6 m^2	Y	*Project is situated on 2 consolidated lots*
Section SC3C.5 a), b), & c)	Minimum Setbacks Sides: 2.5 m (8.2 ft.) Rear: 2.5 m (8.2 ft.) Front 2.5 m (8.2 ft.)	 Sides: 2.5 m (8.2 ft.) Rear: 2.5 m (8.2 ft.) Front 2.5 m (8.2 ft.)	 Y Y Y	

Development Control Policy / Regulation	Requirement	Proposed Project	Conforms Y/N	Comments
Section SC3C.5 d)	Maximum Building Height: 18 storeys Height not to exceed: 53 m	18 storeys 54.18 m	Y N	*Variance requested for a portion of the 18th storey of Building A to floor to ceiling height requirements for ground floor daycare and the sloped base plane.*
Section SC3C.5 e)	Maximum FSR: 3.5	3.5	Y	
Section SC3C.5 f)	Maximum Site Coverage: 50%	50.8%	N	*Variance requested*
Section 7.5	**Vehicle Parking:** Market apts – max. 1.8 per dwelling unit: 398 F/S rental – max. 1 space per unit: 294 **Total max. permitted: 692** Small stalls – max. 25% total Commercial Parking – 2.0 required per business Visitor - min. 0.1 per unit: 52 Accessible - min. 0.1 per unit: 52	**Total: 344** Small stalls: 40 (11.4%) Daycare: 2 Visitor: 52 Accessible: 60	Y Y Y Y Y	 *Included in residential total*
Section 7.6	**Bicycle Parking:** Class I (Resident) - min. 1.5-3 per unit: 1068 Class II (Visitor) - min. 0.5 per unit: 258	 Class I: 842 Class II: 72	 N N	 *Variance requested* *Variance requested*

PROJECT INFORMATION

Developer	UBC Properties Trust
Architect	DYS Architecture
REAP Consultant	E3 Eco Group
Project Name	BCR 5+6 Residential Development
Neighbourhood	Lot 5 and Lot 6 District Lot 6494, Group 1, N.W.D Plan EPP86530
Lot No.	BCR 5+6
Street Address	Wesbrook Mall and Binning Road
Gross Floor Area	416,214 sq ft
Project Stage	DP Application
UBC DP Reference No.	
Date of Review	
Date of Submission	
Date of Complete Submission	

UBC REAP 3.2 - Draft Scorecard for BCR 5+6

Y	?	N	Energy & Emissions (E&E)		16/35
precondition			P1	Energy Step Code Compliance (Step 2)	-
precondition			P2	Greenhouse Gas Intensity Reporting	-
precondition			P3	Building Level Energy Metering and Reporting	-
precondition			P4	Domestic Hot Water Energy Use Sub-metering and Reporting	-
precondition			P5	Overall R-Value	-
precondition			P6	Energy Star Appliances	-
precondition			P7	Electric Vehicle Charging Infrastructure	-
precondition			P8	Commissioning	-
precondition			P9	Energy Modeling Workshop	-
precondition			P10	Contribution to Low Carbon Transportation	-
precondition			P11	Refrigerant Emission Reporting	-
precondition			P12	Programmable Thermostats	-
8		13	1.1	Optimized Energy Performance (Step Code 3/4/PH)	21
0		6	2.1	Renewable Energy	6
5		0	3.1	Enhanced Energy Submetering and Reporting	5
3		0	4.1	Electric Vehicle Charging Stations	3

Y	?	N	Water (W)		10/15
precondition			P1	Low-Flow Plumbing Fixtures	-
precondition			P2	Outdoor Water Use Reduction	-
precondition			P3	Water Efficient Appliances	-
precondition			P4	Rainwater Management	-
2		5	1.1	Total Water Use Reduction	7
4		0	2.1	On-Site Rainwater Management	4
4		0	3.1	Domestic Hot Water Metering	4

Y	?	N	Biodiversity (B)		5/8
precondition			P1	Ecological Planting	-
precondition			P2	Light Pollution Reduction	-
precondition			P3	Bird Friendly Design - Basic	-
3		0	1.1	Planting for Biodiversity and Ecosystem Health	3
1		0	2.1	Site Green Space	1
0		3	3.1	Bird Friendly Design - Enhanced	3
1		0	4.1	Food Growing Opportunity	1

Y	?	N	Materials & Resources (M&R)		4/8
precondition			P1	Zero Waste Ready	-
precondition			P2	Embodied Carbon Reporting	-
precondition			P3	Construction and Demolition Waste	-
2		2.0	1.1	Environmentally Responsible Materials	4.0
2		0	1.2	Local Materials	2
0		1	1.3	Mass Timber Superstructure	1
0		1	1.4	Healthy Building Materials	1

Y	?	N	Climate Adaptation (CA)		6/13
precondition			P1	2050 Climate Ready Thermal Comfort Modelling	-
3		4	1.1	2050 Climate Ready Energy Efficient Design	7
0		3	1.2	Enhanced Resiliency	3
3		0	1.3	On Site Backup Power	3

Y	?	N	Place & Experience (P&E)		5/5
precondition			P1	Project Community Amenity Spaces	-
5		0	1.1	Project Exemplary Community Amenity Spaces	5

Y	?	N	Health & Wellbeing (H&W)		7/8
precondition			P1	Bicycle Parking & Storage Room(s)	-
precondition			P2	Low-Emitting Products	-
precondition			P3	Construction Indoor Air Quality Management	-
1		0	1.1	IAQ Assessment	1
2		0	2.1	Additional Bicycle Facilities	2
2		0	3.1	Low-Emitting Products	2
1		0	4.1	Connection to Nature	1
1		0	5.1	Daylight Access	1
0		1	6.1	Active Living	1

Y	?	N	Quality (Q)		6/8
precondition			P1	Sustainability Statement	-
precondition			P2	Educate the Homeowner	-
precondition			P3	Educate the Sales & Leasing Staff	-
precondition			P4	Green Building Specialist	-
precondition			P5	Design for Security and Crime Prevention	-
4		0	1.1	Integrated Design	4
0		2	2.1	Durable Building	2
2		0	3.1	Education and Awareness	2

Y	?	N	Innovation & Research (I&R)		2/10
2		0	1.1	Exemplary Performance	2
0		3	1.2	Innovation or Pilot	3
0		5	2.1	Research	5

Total				61 /100+10
Y	?	N		
59	0	41.0	Total Credits	100
2	0	8	Additional Innovation & Research Credits	10
Gold				50
Gold Plus				60
Platinum				70
Platinum Plus				80

ENERGY & EMISSIONS

Green Building Action Plan Goals

UBC buildings will advance the campus towards net-positive energy use and greenhouse gas neutrality by reducing energy demand and focusing on site-specific
UBC buildings will have indoor thermal environments that are comfortable and enhance health and wellbeing
UBC will integrate lessons learned to improve building energy performance.

E&E	Precondition	Submission BP	Submission OP	Comments
P1	**Energy Step Code Compliance (Step 2)** Design and construct buildings to conform to the following performance requirements: Energy Step Code, Step 2: 130 kWh/m2-yr (TEUI) and 45 kWh/ m2-yr (TEDI). Complete an airtightness test meeting the ASTM E779 or USACE Version 3 standard as specified by the Energy Step Code Regulation.	Required	Required	
P2	**Greenhouse Gas Intensity Reporting** Report building greenhouse gas intensity (GHGI) of emissions.	Required	Required	
P3	**Building Level Energy Metering and Reporting** Support UBC in establishing an ENERGY STAR Portfolio Manager (ESPM) account and reporting building utility consumption by: • Providing completed auto upload permission forms where required; or • Sharing ESPM account(s) with UBC Sustainability and Engineering that have been established by a qualified service provider. For mixed-use developments, establish utility metering for each major use class (e.g., residential, commercial or retail) and building typology (e.g., high rise or townhouse).	Required	Required	
P4	**Domestic Hot Water Energy Use Sub-metering and Reporting** Install energy metering for domestic hot water energy use for each major use class (e.g., residential, commercial or retail) and building typology (e.g., high rise or townhouse) and report energy use to UBC Sustainability and Engineering.	Required		
P5	**Overall R-Value** Achieve an overall R-value target for each major building typology in a project (e.g., high rise, low rise or townhouse): 5.4 hr-ft2-f/BTU for high rise or 6.9 hr-ft2-f/BTU for low rise. This precondition credit is not required for projects that achieve the E&E 1.1: Optimized Energy Performance credit.	Required	Required	
P6	**Energy Star Appliances** Specify and install Energy Star-labelled, or equivalent performance, driers and refrigerators in each unit		Required	
P7	**Electric Vehicle Charging Infrastructure** Provide a minimum of one energized level 2 outlet per residential unit for non-rental developments or provide energized outlets for 50% of resident parking stalls for rental developments. Level 2 charging capacity that provides a minimum of 40A service and a minimum performance level of 12 kWh per stall, over an eight (8) hour period must be provided. Load sharing (up to four-way) and load management systems may be utilized. Exceptions may be granted in cases where utility mandated transformer upgrades are required.	Required	Required	
P8	**Commissioning** Contract a third party Commissioning Authority to develop and implement a commissioning plan for all major building energy systems, in accordance with CSA Z5000-18, and verify that they are installed, calibrated, and perform according to design intent.	Required	Required	
P9	**Energy Modeling Workshop** Model the energy performance of the building and hold a workshop with the design team, a representative from UBC Sustainability and Engineering, and contractor to evaluate the results and optimize the design of the building.	Required		
P10	**Contribution to Low Carbon Transportation** Contribute to the development of low-carbon transportation options or infrastructure by funding the equivalent of one community vehicle per 100 residential units.		Required	
P11	**Refrigerant Emission Reporting** Determine and report the life cycle equivalent annual carbon dioxide emissions of refrigerants in buildings in kgCO2.	Required	Required	
P12	**Programmable Thermostats** Specify and install programmable thermostats for at least the largest heating zone in each unit.	Required		

E&E	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
	Optimized Energy Performance (Step Code 3/4/PH)	8	21	Required	Required	
1.1	Design and construct the buildings to meet the following Energy Step Code Regulation performance requirements: • **Step 3**: 120 kWh/m2-yr (TEUI) and 30 kWh/ m2-yr (TEDI). **– 8 points** • **Step 4**: 100 kWh/m2-yr (TEUI) and 15 kWh/ m2-yr (TEDI). **– 8 points** • **Passive House Performance**: Design and construct the building to conform to the Passive House Planning Package, version 9 or newer, meeting the requirements of Section 10.2.3.3 (3) of the Energy Step Code Regulation. **– 5 points**					
	Renewable Energy		6	Required		
1.2	Use on site renewable energy systems to offset all or a portion of the building's annual electricity consumption as follows: • 4% **– 2 points** • 8% **– 4 points** • 12% **– 6 points**					
	Enhanced Energy Submetering and Reporting	5	5	Required	Required	
3.1	Install energy metering for the following: All major energy end uses (representing 10% or more of total energy consumption) for each major use class (e.g., residential, commercial or retail) and building typology (e.g., high rise or townhouse) and/or suite level thermal energy consumption. • Major end and space use submetering. **– 2 points** • Suite level thermal energy submetering. **– 3 points**					
	Electric Vehicle Charging Stations	3	3	Required		
4.1	Install Level 2 charging stations for visitor or shared use and/or the following percentage of owners'/residents' parking. • 1 visitor and/or shared station per 100 units. **– 1 point** • 5% of owners'/residents' parking. **– 1 point** • 10% of owners'/residents' parking. **– 1 point**					
	Total Optimization Points	**16**	**35**			

WATER

Green Building Action Plan Goals

UBC will practice responsible water management and use at the building and site scale by: advancing water conservation and efficiency, exploring alternative water supply and treatment solutions, and building water supply resiliency.

UBC will use a low-impact development approach to rainwater management at the site scale to mitigate risk and respect the natural hydrology of the campus.

W	Precondition	Submission BP	Submission OP	Comments
P1	**Low-flow Plumbing Fixtures** Specify and install: • Water-saving showerheads with a maximum flow rate of 5.7 L per minute in each shower. • Low flow faucets with aerators in all bathroom sinks with a maximum flow of 3.8 L per minute. • Low flow faucets with aerators in all kitchen sinks with a maximum flow of 6.8 L per minute.	Required		
P2	**Outdoor Water Use Reduction** **Option 1:** Design and install a water-efficient irrigation system that includes an automated controller, rain or soil sensors and pressure regulator; for non-grass areas, use a micro- or drip-feed irrigation. Reduce the project's landscape water use by at least 30% from the site's calculated baseline of the peak watering month through plant selection and irrigation efficiency. **Option 2:** Install a temporary irrigation system.	Required		
P3	**Water Efficient Appliances** Specify and install: • Energy Star labelled, or equivalent performance, clothes washers; if washers are available only as an option, specify and offer only models complying to this standard. • Energy Star labelled dishwashers,or equivalent performance; if dishwashers are available only as an option, specify and offer only models complying with this credit.		Required	
P4	**Rainwater Management** Detain the 10-year, 24-hour storm volume and discharge at the 2-year, 40-hour pre- development rate on site or at a designated central facility using low-impact development and green infrastructure as far as possible.	Required		

W	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Total Water Use Reduction** Reduce the total indoor and outdoor potable water use from the calculated code baseline using efficient fixtures, efficient landscaping practices and/or alternative water sources. • 35% reduction from baseline. **– 1 points** • 40% reduction from baseline. **– 2 points** • 45% reduction from baseline. **– 3 points** • 50% reduction from baseline. **– 4 points** • 55% reduction from baseline. **– 7 points**	2	7		Required	
2.1	**On-Site Rainwater Management** **Part 1:** Provide permeable surfaces for low impact rainwater management for a percentage of areas of the site. The following surfaces are eligible: grass with 12" topsoil, planting areas with 24" topsoil, rain gardens, extensive vegetated roofs, swale, and pervious paving. • Permeable surfaces on 30% of the site. **– 1 point** • Permeable surfaces on 50% of the site. **– 1 point** **Part 2:** Detain the 10-year, 24-hour storm volume and discharge at the 1-year, 40-hour pre-development rate on site using low impact development techniques (scoring at least 1 point in part 1) and detention facility. **– 2 points**	4	4	Required	Required	
3.1	**Domestic Hot Water Metering** In units with central domestic hot water consumption, provide building level or individual suite hot water submetering. • Provide submetering of hot water consumption at the building level. – **1 point** • Provide submetering of hot water consumption at the suite level. **– 3 points**	4	4	Required		
	Total Optimization Points	**10**	**15**			

BIODIVERSITY

Green Building Action Plan Goals

UBC will develop highly functioning landscapes at the building and site scale to contribute to biodiversity and natural ecosystem processes.
UBC will engage campus teaching and research opportunities to enhance biodiversity management capacity.

B	Precondition	Submission BP	Submission OP	Comments
P1	**Ecological Planting**	Required		
	Select native or adaptive plant species that are appropriate for the ecoregion, suitable for the site conditions and climate (including changing conditions); and fulfill the design intent. Mature plant height, spread and form must be considered in plant selection as a means to reduce maintenance. Select plants that are suited to the sun and shade conditions of the site and are drought tolerant. Include plants that are pollinators and provide a food source for birds.			
P2	**Light Pollution Reduction**	Required		
	Do not exceed the current Illuminating Engineering Society (IES) illuminance requirements as stated in Lighting for Exterior Environments.			
P3	**Bird Friendly Design - Basic**	Required		
	In compliance with the UBC Bird Friendly Design Guidelines for Buildings and CSA A460:19 Bird-friendly Building Design Standards, -identify the bird collision risks in building and landscape design and apply the identified strategies to create bird friendly environments. -Apply appropriate strategies to treat and/or avoid the construction of: glass corners without mullions, parallel glass (spaced 5m apart or less), transparent skywalks, glass guards or guardrails, and glass parapets.			

B	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Planting for Biodiversity and Ecosystem Health**	3	3	Required		
	Enhance biodiversity and ecosystem health by achieving the following: **Develop a Landscape Maintenance Plan — 1 point** Develop a landscape maintenance plan that instructs maintenance contractors on the sustainable care of plants over the lifetime of the building and landscape. **Maximize Native Planting — 1 point** Provide a plant list that demonstrates that 70% of the plantings (by number of plants) are native. **Pollinator Gardens — 1 point** Provide a plant list that demonstrates that 20% of planting choices (by number of plants) and landscape design support pollinators such as hummingbirds, native bees, butterflies, moths, and bats.					
2.1	**Site Green Space**	1	1	Required		
	Dedicate 30% of the total site area (including the building footprint) to green space. Eligible spaces include: grass, areas with plants, vegetated roofs, living walls, balcony greenery, areas dedicated to food production (excluding paving).					

3.1	In compliance with the UBC Bird Friendly Design Guidelines for Buildings and CSA A460:19 Bird-friendly Building Design Standards, identify the bird collision risks in building and landscape design and apply appropriate strategies to create bird friendly environments. **Part 1 — 2 point** Apply strategies from the UBC Bird Friendly Design Guidelines for Buildings to treat a minimum of 55% of all glazed surfaces of the building up to the height specified. Surfaces posing the highest risk, including courtyards, glass guardrails, windbreaks, glass adjacent to water features or vegetation, should be prioritized. **Part 2 — 3 point** In accordance with CSA A460:19, apply strategies from the UBC Bird Friendly Design Guidelines for Buildings to treat 90% of all glazed surfaces and surrounding glass structures (e.g., glass guardrails and windbreaks) of the building up to the 4th floor or mature tree height, whichever is taller. Surfaces posing the highest risk, including courtyards, glass guardrails, windbreaks, glass adjacent to water features or vegetation, should be prioritized.					
	Food Growing Opportunity	1	1	Required		
4.1	Provide food gardening spaces of at least 2.4 m2 for 30% of residential units which do not have access to a private outdoor space of more than 9.3 m2. Food gardens can be provided in raised common area garden plots on grade and/or on rooftops in planters or communal gardens.					
	Total Optimization Points	**5**	**8**			

MATERIAL AND RESOURCES

Green Building Action Plan Goals

UBC will prioritize the use of building materials that have net positive environmental impacts
UBC will support marketplace transformation by designing buildings with materials that are not harmful to human and ecological healtl
UBC will support the development of the circular economy by promoting the adaptation, reuse and recycling of materials and products during a building's lifetime.

M&R	Precondition	Submission BP	Submission OP	Comments
P1	**Zero Waste Ready** 1. Design buildings to be zero waste ready by providing dedicated areas for the collection and storage of recyclable materials and organics from the entire building. Areas must be accessible to waste haulers and conveniently located for building occupants. • Recycling storage space shall be designed to promote recycling in accordance with the current version of the Metro Vancouver Technical Specifications of Recycling and Garbage Amenities in Multi-family and Commercial Developments. • Co-locate organics, recycling and garbage at collection points to provide equal convenience. • Provide clear visual cues and signage for recycling and organics. 2. Provide convenient and accessible recycling and organics collection locations to residents: where appropriate, this may include dedicated in-unit storage and/or multiple collection points within the building. 3. Provide a recycling and organics collection guide in the homeowners guide and in the storage area. **AND** 4. Provide for the adequate collection of the following by contracting with a waste management company for the service: • Mixed paper, cardboard, mixed containers and glass. • Food scraps. • Optional collection: soft plastics, styrofoam and other specialty items.	Required	Required	
P2	**Embodied Carbon Reporting** Perform a LCA (life cycle assessment) of the project's foundation, structure and enclosure and report the embodied carbon. Use Athena Impact Estimator or an approved LCA software and include all envelope and structural elements including the parking structure. Assume a 60-year lifetime for the building and include cradle-to-grave impacts using a bill of materials methodology and building permit or issued for construction drawings. Operational impacts should not be included.		Required	
P3	**Construction and Demolition Waste** Prepare and implement a Waste Management Plan that diverts 85% (by weight) of construction and demolition waste from landfill.		Required	

M&R	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Environmentally Responsible Materials** Specify and use environmentally responsible materials for at least 90% of a building component*, by weight or volume. Materials must meet one of the following requirements: • Contain at least 25% reclaimed material • Contain at least 25% post-consumer or 50% pre-consumer recycled content • Wood products that are certified Forest Stewardship Council, (FSC) or CSA Z809 • Bio-based material • Concrete mixes optimized to an average of 20% reduction in embodied carbon • Manufacturer participates in an extended producer responsibility program • No finish material used (eg. concrete floor) ***Building components for 1 point:** Floor covering, insulation, sheathing, framing, drywall (interior), concrete cement or concrete aggregate, roofing, siding. **Building components for 0.5 point**: Pedestrian doors, cabinets, counters, interior trim, deck material, windows.	2	4.0		Required	
1.2	**Local Materials** Specify and use products that were extracted, processed, and manufactured locally within 200km from project site for the following building components: • Minimum 50% of aggregate for concrete by value. **— 1 point** • Minmum 50% of drywall or interior sheathing by value.**— 1 point**	2	2		Required	
1.3	**Mass Timber Superstructure** Specify and install a building superstructure consisting of at least 50% mass timber manufactured in BC (by value of the total superstructure). — 1 point		1			
1.4	**Healthy Building Materials** Install ten different building products from at least three different manufacturers which meet the ingredient transparency criteria of a program specified below. The chemical inventory of the products must be disclosed to an accuracy of 0.1% (1000 ppm). • Declare Label (International Living Future Institute): Red List Free, Declared; or LBC Compliant if at least 99.9% of the ingredients are disclosed; **or** • Health Product Declaration (HPD); **or** • Manufacturers Inventory of all ingredients by Chemical Abstract Service Registry Number (CASRN).		1		Required	
	Total Optimization Points	**4**	**8.0**			

CLIMATE ADAPTATION

Green Building Action Plan Goals

UBC buildings and landscapes will have the resilience to respond to both anticipated and unpredictable changes in climate.
UBC will engage with researchers in a meaningful and ongoing way to inform building policy and guidelines around climate adaptability.

CA	Precondition	Submission BP	Submission OP	Comments
	2050 Climate Ready Thermal Comfort Modelling	Required	Required	
P1	Perform thermal comfort modelling for buildings using PCIC future climate files for the 2020's and 2050's (RCP 8.5 scenario) with attention to the warmest spaces in the building for the months of May to September inclusive. The building design should meet thermal comfort requirements for 2020s and have a design strategy to meet 2050 requirements. Passively cooled buildings must meet City of Vancouver Energy Modelling Guideline requirements for passively cooled buildings using 2020s weather files and have design strategies for meeting these requirements using 2050 weather files.			

CA	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
	2050 Climate Ready Energy Efficient Design	3	7	Required	Required	
1.1	Using 2050 RCP 8.5 weather files, achieve a reduction in Cooling Energy Demand Intensity (CEDI) over a base case 2050 ready design that meets REAP EE and CA preconditions, with passive design measures (e.g., fixed or operable shading, reduced SHGC windows or reduced window to wall ratio). Passive measures must be established at building occupancy. • 5% reduction. **– 3 points** • 10% reduction. **– 5 points** • 15% reduction. **– 7 points**					
	Enhanced Resiliency		3	Required		
1.2	Achieve appropriate design strategies from the Mobilizing Building Adaptation and Resilience (MBAR) discussion papers on "Air Quality", "Fire", "Heat waves" and "Power outages and emergencies". • 10 different design strategies with at least 1 from each paper. **— 1 point** • 15 different design strategies with at least 1 from each paper. **— 2 points** • 20 different design strategies with at least 2 from each paper. **— 3 points**					
	On Site Backup Power	3	3	Required		
1.3	Design for protection from power outages from the grid, through strategies including permanent back-up power, switching gear and/or power hook-ups, and infrastructure for temporary generators to provide power for critical utilities such as HVAC and the electrical component of heating systems, potable water supply and security. Back up power must be provided for a duration of four consecutive days, 24 hours a day.					
	Total Optimization Points	**6**	**13**			

PLACE AND EXPERIENCE

Green Building Action Plan Goals

UBC buildings and landscapes will provide opportunities for collaboration, innovation and community development to reflect the social and environmental sustainability aspirations of the University.

P&E	Precondition	Submission BP	Submission OP	Comments
P1	**Project Community Amenity Spaces** Provide community amenity spaces for residents including: • Outdoor spaces for residents which allow for opportunities for both quiet and social gathering activities, minimum one area for each activity; **AND** • A multi-purpose indoor space designed to support community activities and meeting the following requirements: located on the ground floor with direct access to the outdoors; includes an accessible washroom;and has a minimum floor area of 37.16 m² (400 sq ft).	Required		

P&E	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Project Exemplary Community Amenity Spaces**	5	5	Required		
	Install indoor and outdoor community amenities from the list below. Each listed amenity is awarded 1 or 2 points, for up to 5 points in total. If more than 2 points are targeted, a minimum of one indoor amenity and one outdoor amenity is required.					
	Indoor Amenities					
	Family friendly community spaces (additional to PE P1) within or adjacent to enhanced lobbies or multi-purpose rooms such as a community play area or youth friendly space. The total area should be minimum 91.44 m² (300 sq ft).		2	0 or 2		
	A shared utilitarian multi-purpose space for messy or noisy activities such as a workshop space, pet wash, community mudroom, or small kitchen area etc.		1			
	A secure community storage area on the ground floor for baby strollers with a minimum of one storage space per ten units. Strollers are used by young families on a daily basis and are often bulky to keep in the home.		1			
	Small-scale gathering spaces within circulation routes or the end of corridors on different floors to increase opportunities for relaxing, studying, and meetings or social activities. The total area should be minimum 91.44 m² (300 sq ft).		2			
	Designate a bookable guest suite within the building near the lobby.		1			
	A community space for secure package delivery (in response to online shopping and food delivery services)		1			
	A new innovative community indoor amenity (additional to PE P1) that supports a range of intergenerational social and recreational opportunities.		1			
	Pet friendly washable flooring finishes installed for indoor common spaces.		1			
	Outdoor amenities					
	One accessible outdoor wash station for bikes and pets with a concrete pad, water source and good drainage.		1			
	A variety of outdoor spaces for small quiet gatherings to increase recreational choices and activities such as a BBQ area, fireplace, and comfortable seating and picnic tables etc. There must be a minimum of two defined spaces.		1			
	Roof top social spaces outfitted with comfortable seating and planters. The space would be able to comfortably accommodate a minimum of 10 people.		2			
	A small child friendly play area with complementary seating for adults.		1			
	A new innovative community outdoor amenity that supports a range of intergenerational social and recreational opportunities.		1			
	Total Optimization Points	5	5			

HEALTH & WELLBEING

Green Building Action Plan Goals

UBC will enhance the mental, physical and social dimensions of wellbeing by making them integral to building and landscape design decision
UBC researchers, community stakeholders and building occupants will be engaged in a meaningful and ongoing way to inform building design decisions around health and wellbeir
UBC will become a leader in enhancing wellbeing through the built environment within the context of higher education in Canada.

H&W	Precondition	Submission BP	Submission OP	Comments
P1	**Bicycle Parking & Storage Room(s)** Provide the bicycle storage and facilities below: • Provide Class 1 bicycle storage facilities at a rate of: 1.5 spaces per studio or one bedroom unit; 2.5 spaces per 2 bedroom unit; and 3 spaces per 3 or 4 bedroom units. (Requirements include 10% oversize spaces, and one electrical outlet per two spaces); **and** • An in building bicycle repair station; **and** • 0.5 Class 2 bicycle storage spaces per dwelling unit; **and** • A 2 x 3 m concrete pad outside the building, close to the building entrance, with a standard outlet or condui for electrified bike share. All bicycle parking and storage to be provided in accordance with the UBC Development Handbook.	Required		
P2	**Low-Emitting Products** Specify and use: • Adhesives, sealants and sealant primers that have been tested and found compliant with the California Department of Public Health Standard Method V1.1–2010, using CA Section 01350, Appendix B, New Single Family Residence Scenario, for emissions testing guidance. • Paints and coatings rated at a minimum GPS-2 by the Master Painter's Institute on the interior of the building. • Carpet and carpet cushion that are certified by the Carpet and Rug Institute Green Label Plus, or use products that have been tested and demonstrate compliance with the California Department of Public Health (CDPH) Standard Method v1.2–2017 and comply with the VOC limits in Table 4-1 of the method.		Required	
P3	**Construction Indoor Air Quality Management** Prepare and implement an Indoor Air Quality (IAQ) Management Plan for the construction and pre-occupancy phases of the building. During construction, meet or exceed all applicable recommended control measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd edition, 2007, ANSI/SMACNA 008–2008, Chapte 3.		Required	

H&W	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**IAQ Assessment** After construction has ended and the building has been completely cleaned, prior to occupancy, complete one of the following: • Install new filtration media and flush out the building by supplying an outside air volume of 4,267,14 litres per square metre of gross floor area; **or** • Conduct a Baseline Indoor Air Quality Test.	1	1		Required	
2.1	**Additional Bicycle Facilities** In addition to the requirements for bicycle parking in HW P1, provide one of the following: • Provide an additional 0.25 Class I bicycle storage per bedroom; **or** • Provide an at grade, Class I bicycle storage room for at least 50% of the Class I spaces with a bike specific entrance; **or** • Provide points for giving each unit an on-campus bike share membership for the duration of their stay in the building.	2	2	Required		
3.1	**Low-Emitting Products** Specify and install products that meet the following requirements: • Carpets and carpet cushions: Carpet and Rug Institute Green Label Plus or has been tested according to California Department of Public Health (CDPH) Standard Method v1.2–2017 and can demonstrate compliance with the VOC limits in Table 4-1 of the method.**— 1 point** • Interior composite wood products, such as cabinetry doors and boxes, flooring, doors, trim, etc.: CARB ultra low emitting or have no added urea formaldehyde.**— 1 point**	2	2		Required	

	Connection to Nature	1	1	Required		
4.1	Demonstrate connections to nature through direct visual connections to plants, sunlight, and views of nature and/or, indirect connections to nature through the use of natural materials, patterns, colours, or images. Ensure connections to nature in: • 95% of units, with nature visible from the living room and at least one bedroom. • All occupied amenity spaces and lobbies; and 90% of building corridors.					
	Daylight Access	1	1	Required		
5.1	Ensure adequate levels of daylight within each unit by achieving the following requirements: • Transparent envelope glazing area is a minimum of 7% of the unit floor area. • Visible light transmittance (VLT) of envelope glazing is greater than 40%. • 30% of the area is within 6 m (20 ft) of transparent envelope glazing.					
	Active Living		1	Required		
6.1	Design a secondary staircase that is safe, visually appealing, and invites regular use through the following strategies: • Ensure the staircase services all floors of the project, excluding the parking garage, and can be accessed by all regular building occupants. • Locate the staircase so that it is visible from the building entrance. • Install transparent fire-rated glazing to each floor level of the staircase. The area of glazing must span at least 0.93 square meters (10 square feet) in order to increase visibility of the staircase and provide views to the interior, from inside the staircase. • Use appealing materials and finishes. • Install visible signage at elevators and the entrance to the staircase to encourage stair use.					
	Total Optimization Points	**7**	**8**			

QUALITY

Green Building Action Plan Goals

UBC buildings and landscapes will be durable, reliable and resilient.

Q	Precondition	Submission DP	Submission BP	Submission OP	Comments
P1	**Sustainability Statement** Submit a "Sustainability Statement" that describes how the development will be designed to achieve high environmental standards related to UBC's Green building Action Plan and the university's sustainability policies in the eight component areas.	Required			
P2	**Educate the Homeowner** Provide a homeowners' manual to educate homeowners on the features of the building as well as the proper use and maintenance of facilities and equipment. Include the following details in the homeowners' manual: • A completed checklist of REAP credits, including product manufacturers' manuals for all equipment, fixtures, and appliances with Energy Star details; **and** • Guidance on how to minimize energy, water, and resource use in everyday activities and choices throughout the home to promote sustainable behavior; **and** • Information on sorting and recycling in the building; **And** • Ensure the manual is incorporated into record drawings or some form that will be accessible beyond the first generation of owners/residents; **and** • Conduct a one-hour walkthrough with the occupants and building manager(s) to educate them on all sustainable equipment and features.			Required	
P3	**Educate the Sales & Leasing Staff** Develop marketing materials based on the environmental performance of the project and ensure the sales or leasing staff is knowledgeable about the green building features.			Required	
P4	**Green Building Specialist** Engage a Green Building Specialist who is an expert in green buildings and sustainable construction practices to provide advice on effective green building strategies to the design team.		Required		
P5	**Design for Security and Crime Prevention** Demonstrate that the design has been reviewed by an expert in Crime Prevention Through Environmental Design (CPTED) and that recommendations have been followed.		Required		

Q	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Integrated Design** Beginning in pre-design and continuing throughout the design phases: • Identify and use opportunities to achieve synergies across disciplines and building systems; **and** • Hold a preliminary energy and water workshop during schematic design. Use the analyses described below to inform the design. ***See the reference guide for full wording on energy and water workshop requirements.**	4	**4**			

	Durable Building		2	Required		
2.1	Develop and implement a Building Durability Plan in accordance with the principles in CSA S478:19 - Durability in Buildings. Include: Structure, building cladding assemblies, glazing assemblies and roofing assemblies. • Design service life is 60 years. • Where component and assembly design service lives are shorter than the design service life, design so they can be readily replaced. • Develop and manage a quality management program in accordance with CSA S478. • Categories of failure are 6,7, or in table 3 use a design service life equal to the design service life. • Categories of failure 4 or 5 in table 3 use a design service life quality to at least half of the design service life of the building. • Qualified building science professional to develop and deliver the Building Durability Plan.					
	Education and Awareness	2	**2**			
3.1	Develop the following programs to educate occupants and visitors about the benefits of the green building and the sustainable features of the project: • A script for a guided tour of the building describing the sustainable features of the project; **and** • A case-study highlighting the sustainable features of the project to inform the UBC community and future buildings of the successes of the project.					
	Total Optimization Points	**6**	**8**			

INNOVATION & RESEARCH

GREEN BUILDING ACTION PLAN GOALS

UBC buildings and landscapes will be durable, reliable and resilient.

I&R	Optimization	Attempted Points	Total Points	Submission BP	Submission OP	Comments
1.1	**Exemplary Performance** Demonstrate exceptional performance above the requirements set by an existing credit, to reach the next performance level.	2	2		Required	
1.2	**Innovation or Pilot** Achieve significant, measurable sustainable building performance using a strategy not addressed in REAP; **or** Pilot specific a significant, measurable strategy or strategies from UBC's Green Building Action Plan.		3	Required	Required	
2.1	**Research** Collaborate with UBC SEEDs or the CLL program in a research project. Project topic must be either: • Based on the Green Building Action Plan's residential section or current priority area for the university; **or** • A current topic relevant to the project which has been submitted for prior approval.	5	5	Required	Required	
	Total Optimization Points	7	10			