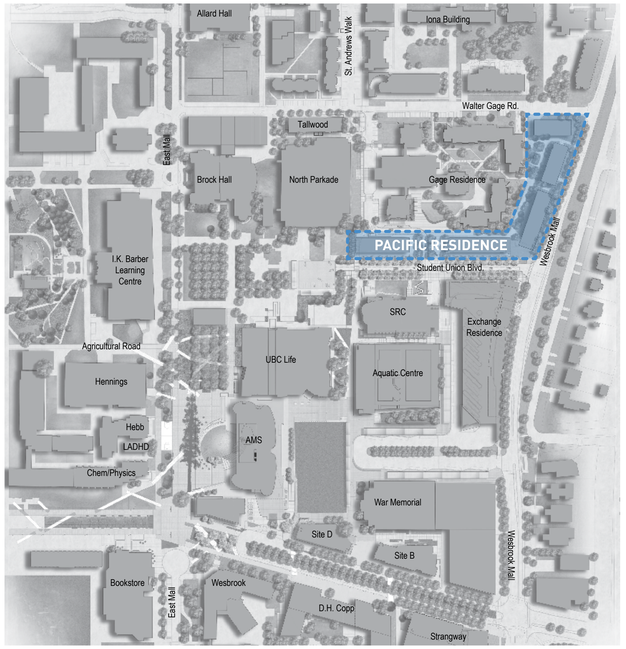
CONTEXT

The Pacific Residence student housing project is one component of a campus-wide program to increase the number of beds available to students enrolled at UBC. The specific mandate of the project is to create approximately 1,000 new beds for upper year students.

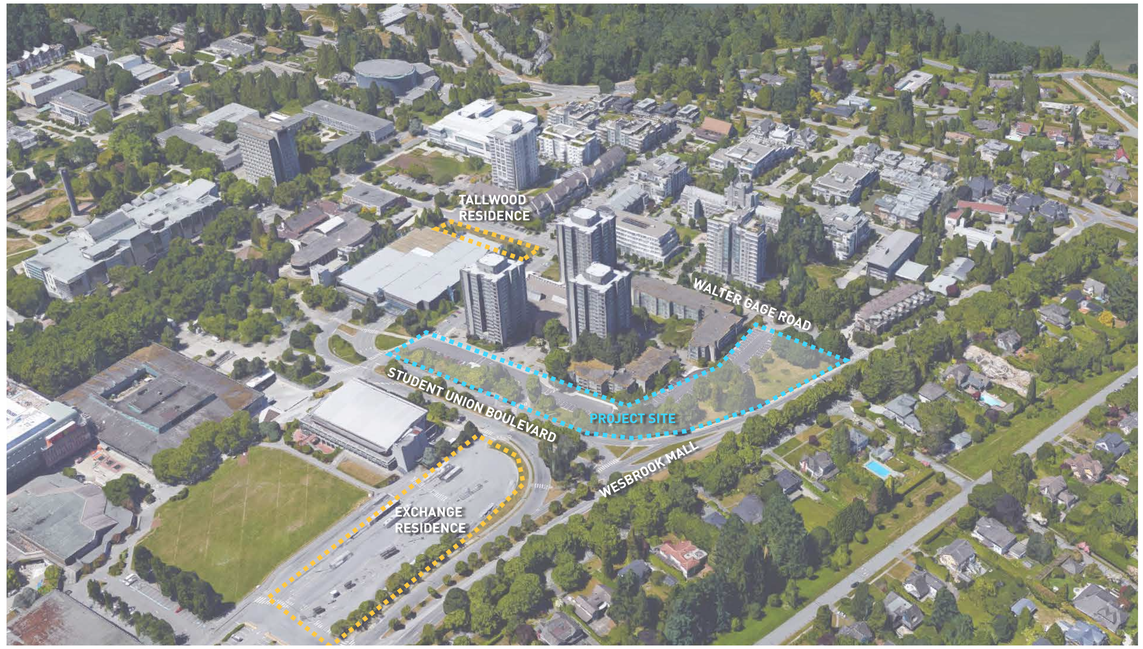
Located around the perimeter of the existing Gage Residence precinct, the site is bounded by Student Union Boulevard to the south, Wesbrook Mall to the east, and Walter Gage Road to the north.

KEY PROJECT DATES:

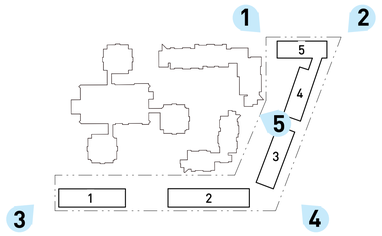
Construction Start: June 2019
Anticipated Completion: August 2021



Context Plan



Bird's Eye View of Site



1. View from Walter Gage looking East

2. View from Wesbrook Boulevard looking South

5. Existing Gage Residence Courtyard

3. View from Student Union Boulevard looking North

4. View from Wesbrook Boulevard looking West

PLANNING PRINCIPLES

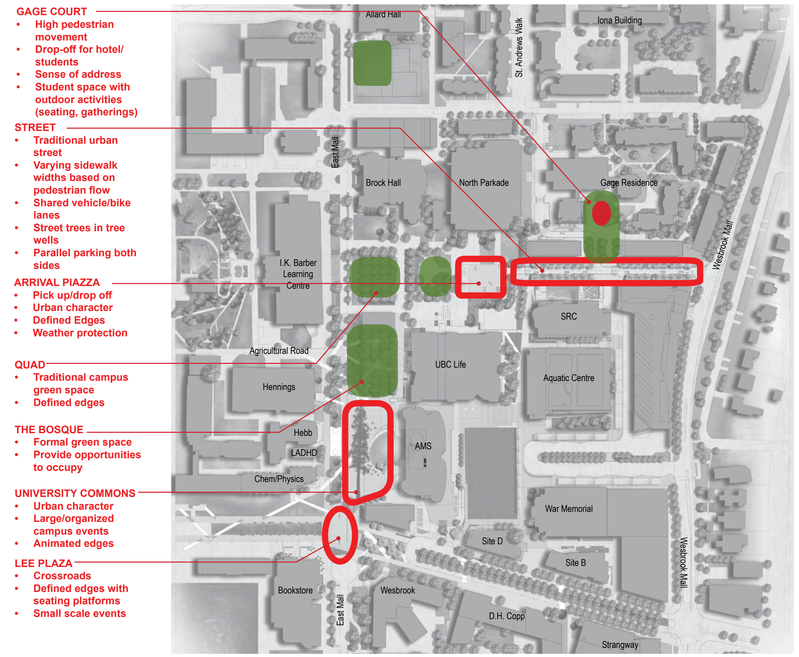
The strategy for accommodating the project's program is to build a consistent form around the south and east perimeter of the existing Walter Gage precinct, where surface parking lots are currently located. This linear arrangement allows for a variety of building heights, located to best fit into the varying neighbourhood context, while accommodating the density of the project within the narrow project site.

KEY PROJECT STATISTICS:

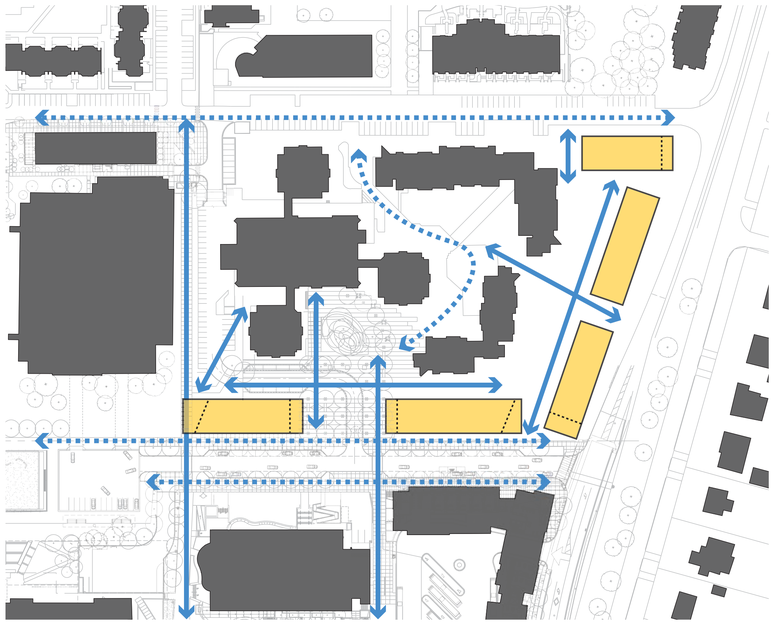
Number of Beds:	935
Gross Floor Area:	30,990 m^2 (333,575 ft^2)
Below-Grade Parking:	200 spaces
GHG Reduction:	70% (compared to baseline building)

KEY PROJECT GOALS:

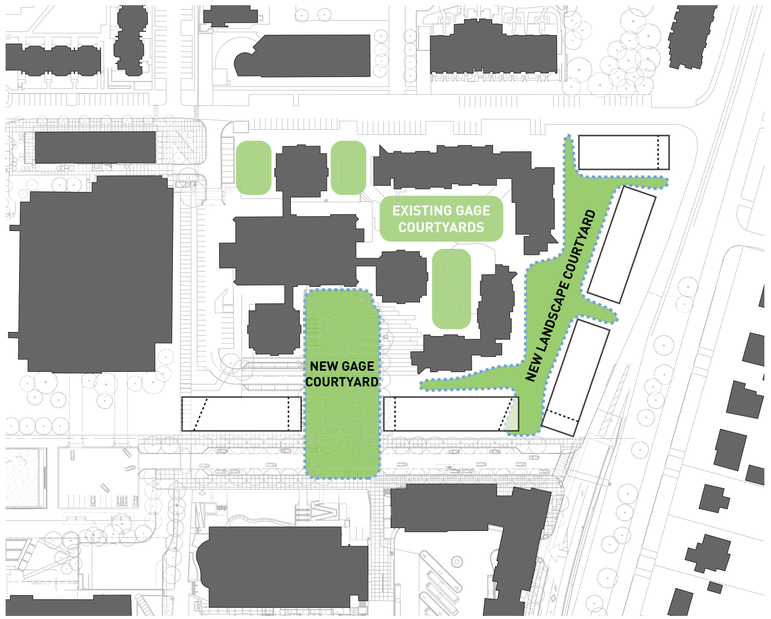
- Ensure that the project respects the context of the neighbourhood, particularly the residential areas of the UEL and the Theology precinct.
- Put "the zipper" on Student Union Boulevard, where development defines and unifies this important campus street.
- Establish a "gateway" at the intersection of Westbrook Mall and Student Union Boulevard, relating to the recent Exchange Residence to the south, and signaling arrival at the campus.
- Provide ground level animation along Student Union Boulevard through the selection and placement of programmatic uses and activities.
- Establish a pedestrian circulation framework that ties into the preferred movement routes both within the Walter Gage precinct and to linkages to the broader campus to the south and west.
- Include underground parking to replace lost surface parking, and to add to the campus inventory for new uses located on site.



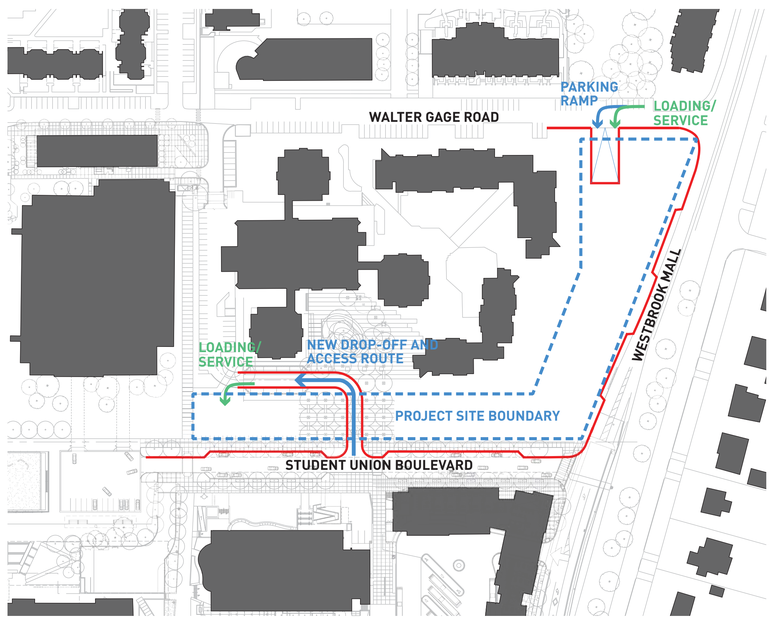
Massing and Public Space Sequence



Campus Connections to Create Site Porosity

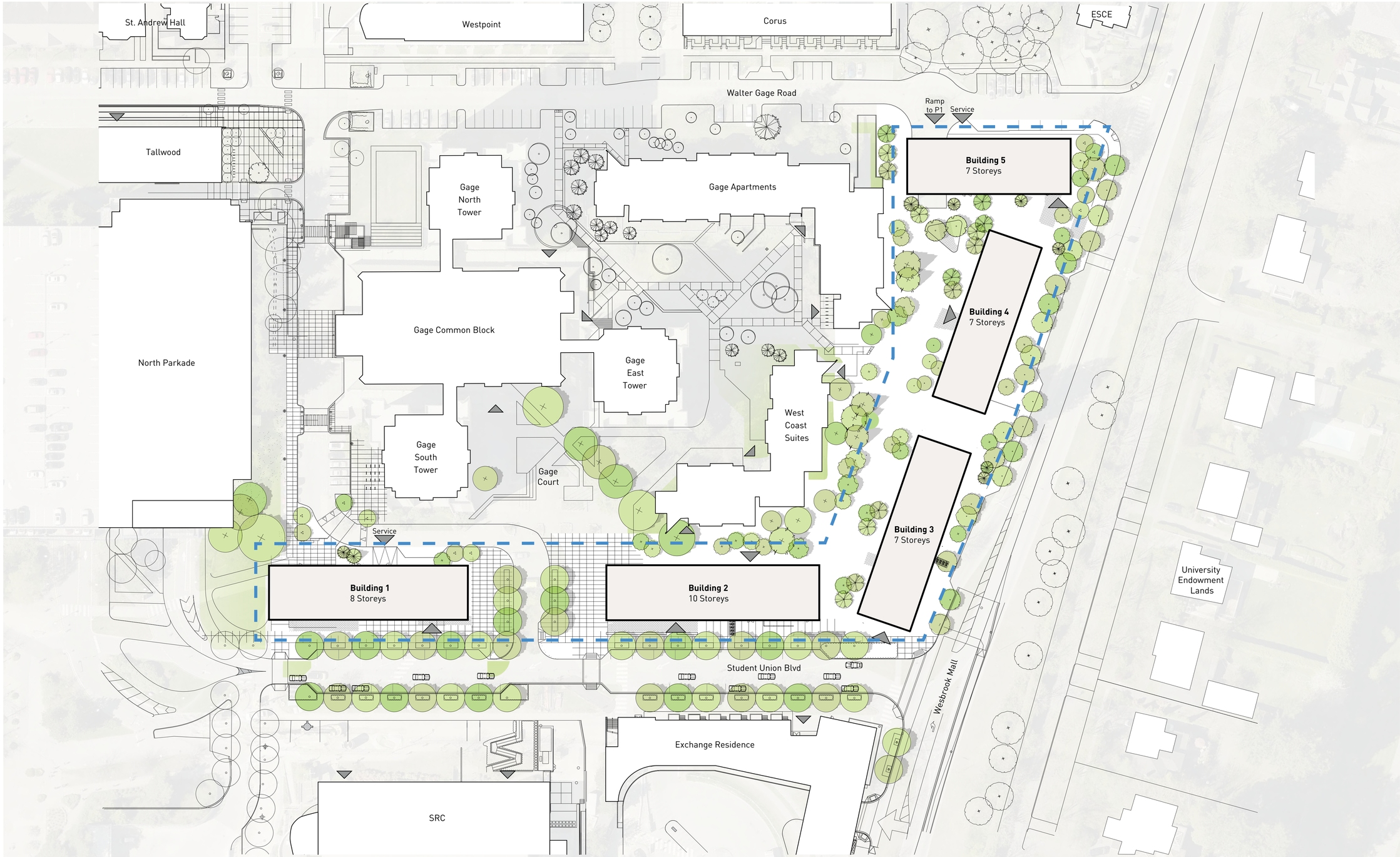


Courtyards and Plazas



Re-Align Student Union Blvd. and Proposed Site Access

SITE PLAN



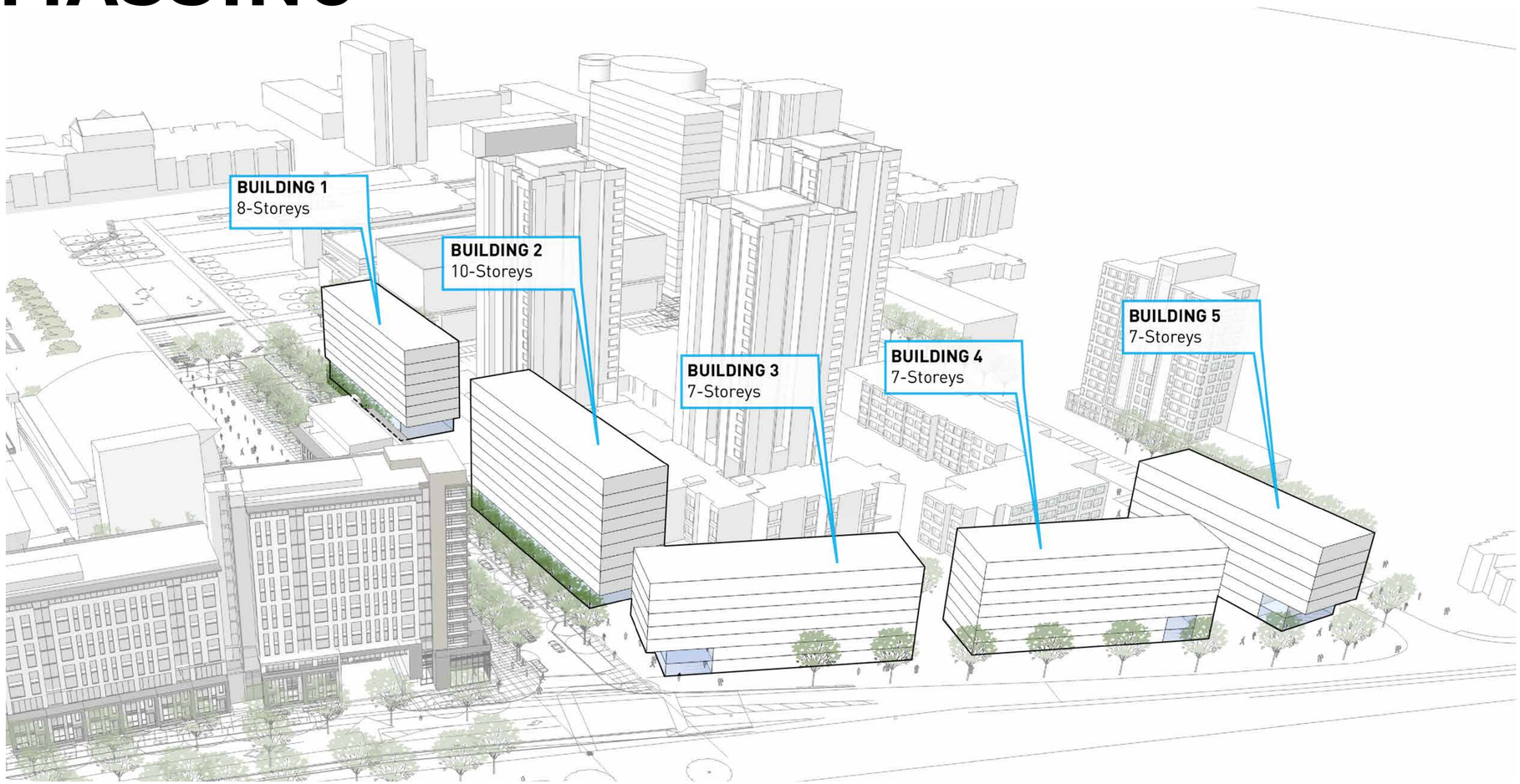
HOTSON | Ryder

0 10 50m

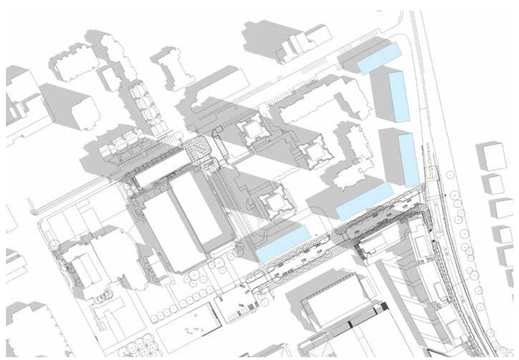
SCALE 1:500

UBC Pacific Residence

MASSING

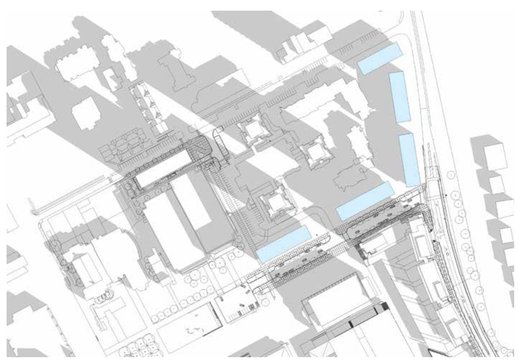


Proposed Building Massing

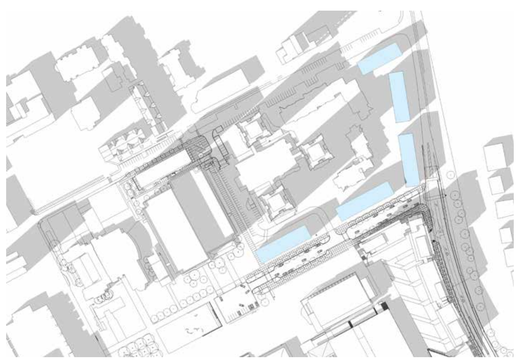


June 21 10am

June 21 2pm



March 21 10am



March 21 2pm

Shadow Studies

The project is organized in a slender arrangement of buildings which wrap the perimeter of the site. Gaps are introduced between buildings to ensure physical and visual porosity throughout the site, and also relating to existing and desired pedestrian connections. The proposed massing seeks to mediate the density on Wesbrook Mall as a transition from the lower scale residential contexts to the north and east, with the taller scale of the recent Exchange Residence to the south, and the existing Gage Residence towers to the west.

The proposed massing on Student Union Blvd. responds to the 10-storey portion of the Exchange Residence to the south, to create a consistent streetwall condition for this urban public realm.

The proposed massing on Wesbrook Mall seeks to balance with the various neighbourhood adjacencies with a mid-rise residential scale.

BUILDING DESIGN

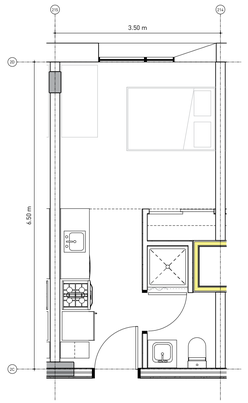
This project seeks to create a new architectural addition to the varied typologies found within the Gage Precinct, while also building upon the recent Exchange Residence to the south, and Tallwood Residence to the northwest. Key goals for the project include creating a sense of depth to the facades, through the use of recessed windows, and to also create a sense of variation - through the use of repetition, alternating patterning, and perceived movement. Vertical circulation (staircases) will be made evident on the facade through the use of glazed areas.

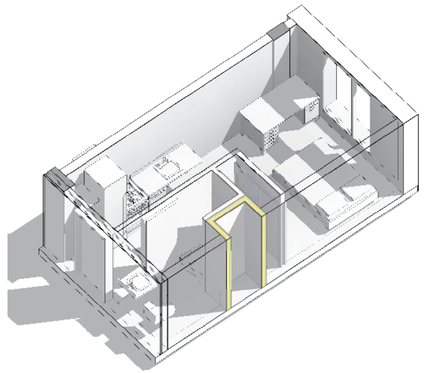
A series of initial concepts explored the scale and repetition of the typical window modules. These concepts have tested window sizes, repetition, and patterning.

The preferred design for the facades achieves a unique patterning through an alternating use of faceted metal panels, which appear “carved” from the building faces. These facets angle into the 4 sides of the windows in an alternating pattern, creating a sense of variety and movement to the facades. The faceted window surrounds will be formed in metal, in a finish that is complementary to the facade material tones.

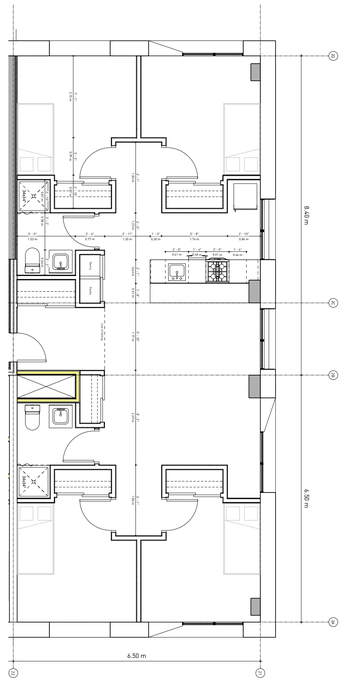
Perspective View Looking West from Intersection of Student Union Blvd. and Wesbrook Mall

BUILDING DESIGN

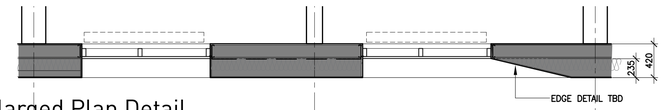




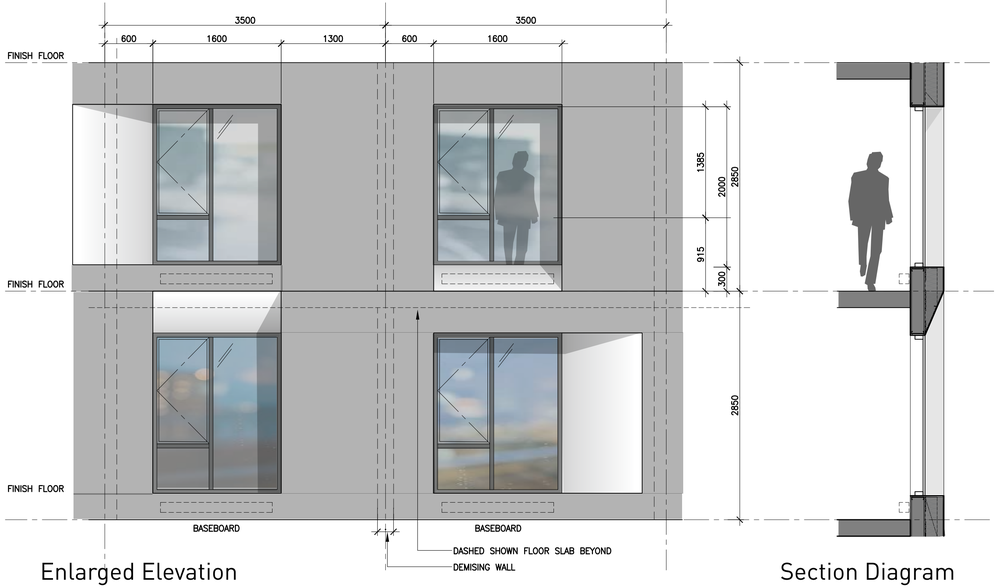
Typical Studio Unit Layout



Typical Quad Unit Layout



Enlarged Plan Detail



Enlarged Elevation

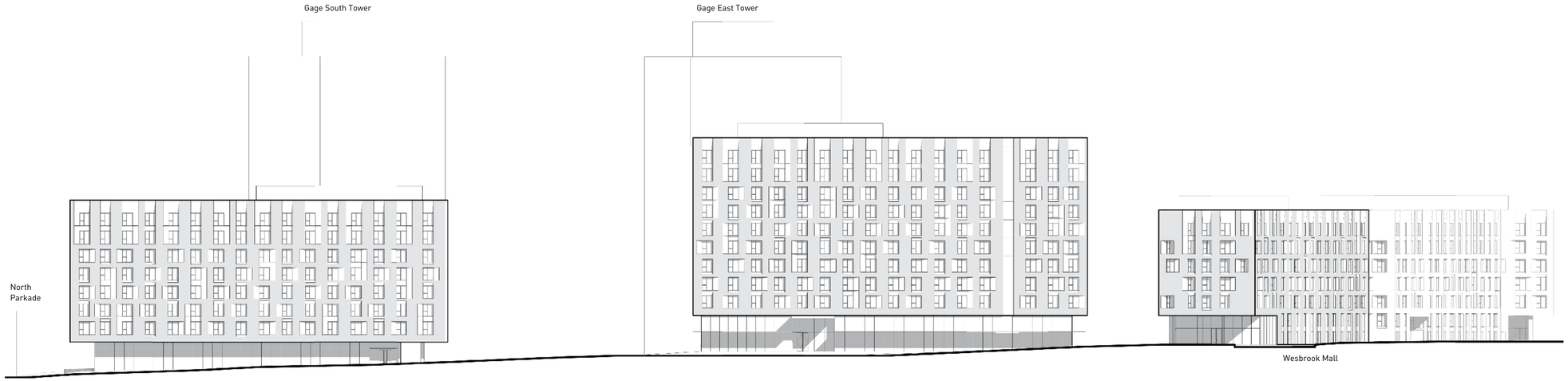
Section Diagram

Perspective View Looking South from Wesbrook Mall and Walter Gage Rd.

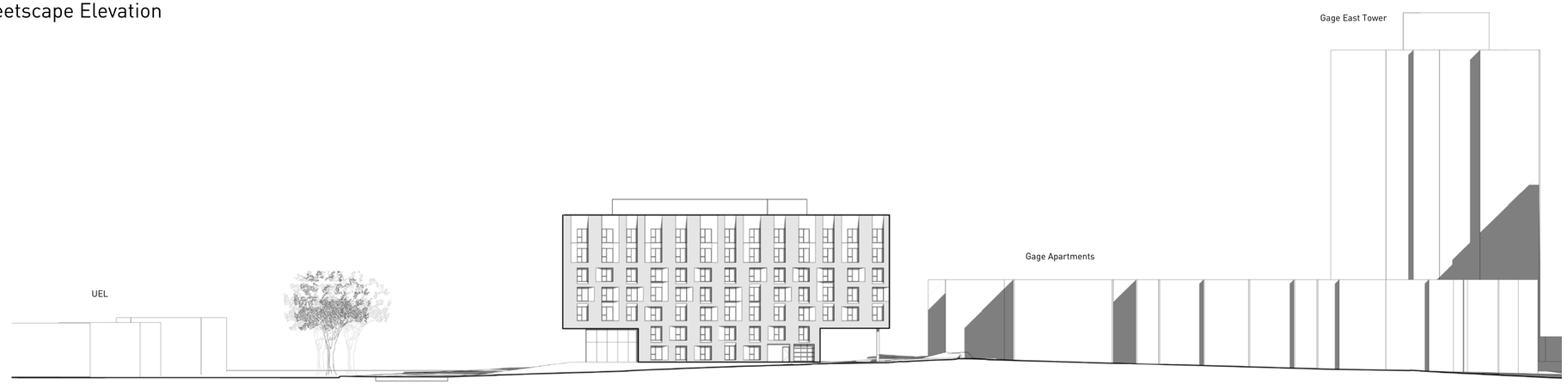
Perspective View Looking East on Student Union Blvd.

STREETSCAPE ELEVATIONS

Wesbrook Mall Streetscape Elevation

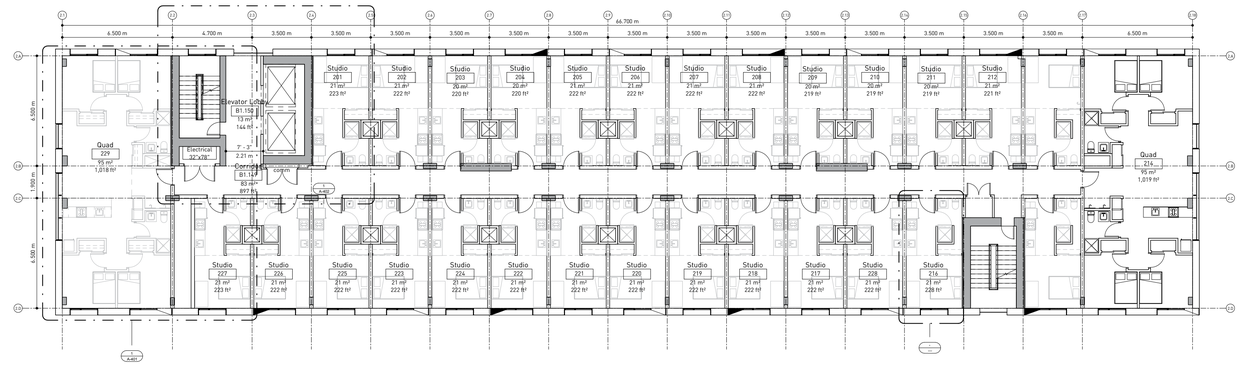


Student Union Blvd. Streetscape Elevation

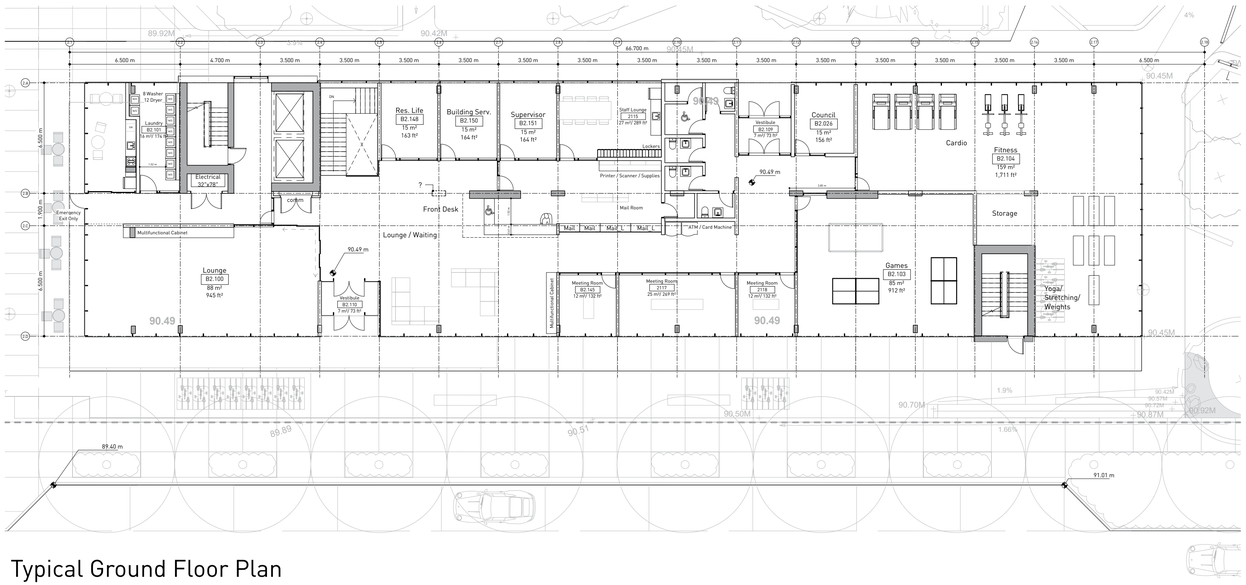


Walter Gage Rd. Streetscape Elevation

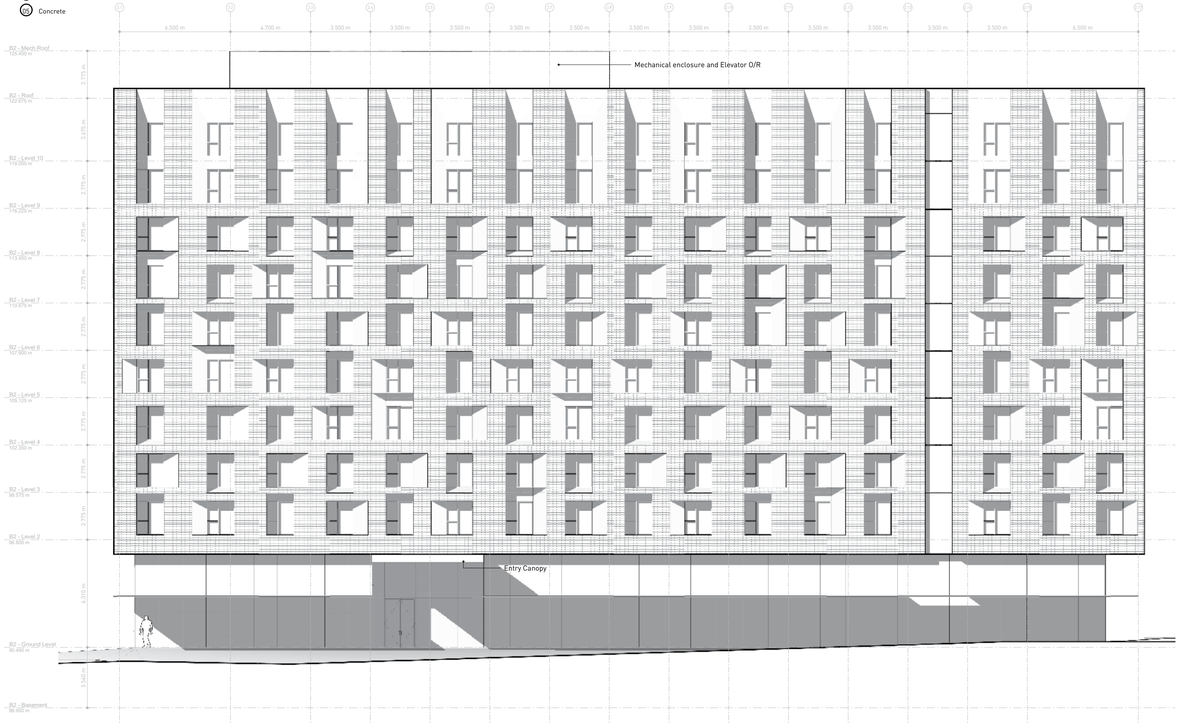
BUILDING PLANS



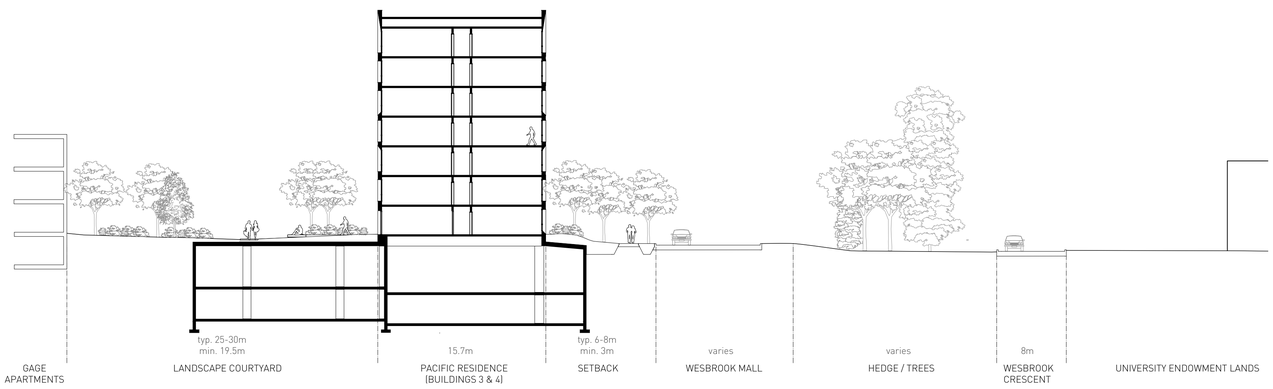
Typical Residential Floor Plan



Typical Ground Floor Plan



Typical Elevation



Building Section at Wesbrook Mall

MATERIAL PALETTE

Dark Grey Ironspot Brick

“Dark Anodized” Metal

White Brick

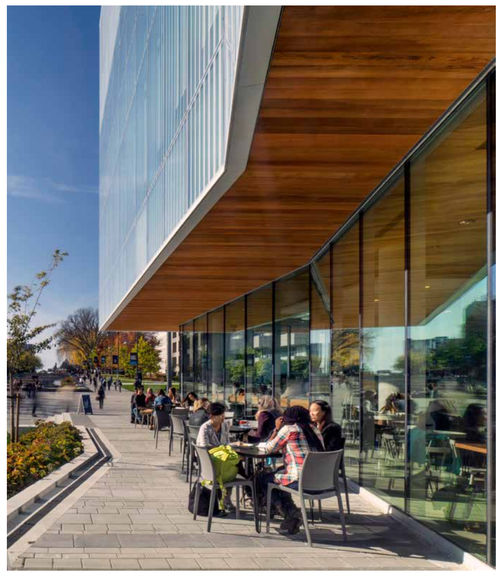
“Clear Anodized” Metal

Grey Speck Brick

“Dark Anodized” Metal

Concrete

Cedar Soffits



SSG Curtain Wall (with Cedar Soffits)

To provide diversity to this large project of five buildings, the buildings are proposed to be clad in two or three tones of masonry brick, creating an alternating pattern between the different buildings. This will help to break up the overall reading of the project, while the detailing and facade expression will tie the buildings together into a cohesive whole.

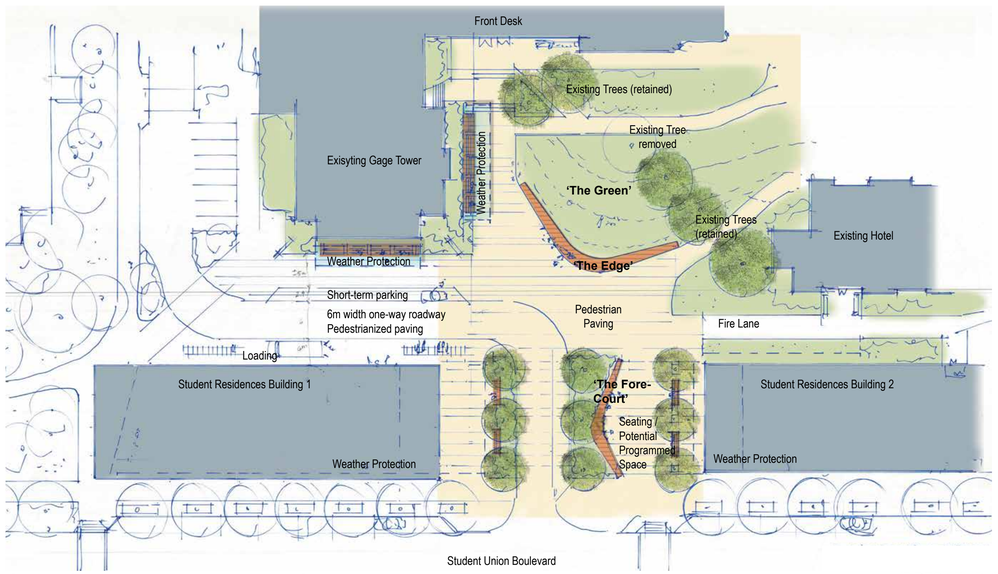
Masonry (especially white brick) was used extensively at UBC in the mid- to late- 20th Century, and more recently, in a number of the contemporary buildings on campus. At the Exchange Residence to the south, a dark grey ironspot brick has also been used in combination with white brick. By applying a consistency of materials such as brick, as part of the design of this complex, greater campus clarity can be achieved.

Ground levels will be predominantly glazed with a high-performance SSG curtain wall system at all entries, program areas and lobbies, to create a sense of transparency and activity at the “base” of the project. This also emphasizes openness and engagement with the streets. These areas also appear “carved” from the building masses, through the use of recessed entries and cantilevers at the ground floor levels. Soffit areas are proposed to be wood.

LANDSCAPE CONCEPTS

Enlarged Landscape Plan

connect
LANDSCAPE ARCHITECTURE



Gage Courtyard Landscape Concept Plan

PFS STUDIO
URBAN DESIGN + LANDSCAPE ARCHITECTURE

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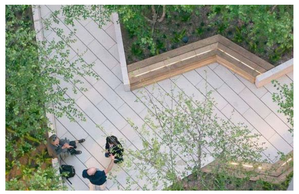
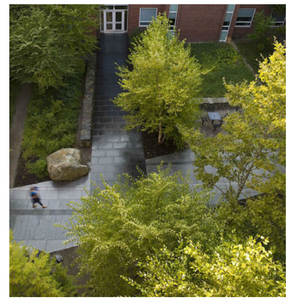
PATHWAYS AND NODES

FORM AND CHARACTER, GREENWAY QUALITIES

PATHWAY FLOW, CAMPUS GEOMETRY



SEAT WALLS, SMALL SEATING NOOKS

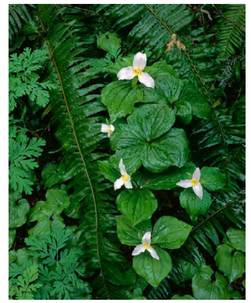


TREE CANOPY, SCALE OF GREENERY, VISIBILITY

FEATURE SPACES WITH SEAT WALLS

SEATING EDGES AS RETAINING

Landscape Concepts



EVERGREEN AND SHADE

Dicentra formosa
Bleeding Heart

Hosta sieboldianai
Hosta

Pachysandra terminalis
Japanese Spurge

Polystichum munitum
Western Sword Fern

LAYERED PLANTINGS

Lavandula angustifolia
English Lavender

Lonicera pileata
Box-Leaf Honeysuckle

Ceanothus 'Victoria'
California Lilac

Taxus baccata 'Fastigiata'
Irish Yew

PLANT LIST

TREES

QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
10	Abies grandis	Grand Fir	4.5m ht., B&B	as shown
28	Acer circinatum	Vine Maple	5cm cal., B&B	as shown
14	Acer griseum	Paper Bark Maple	5cm cal., B&B	as shown
5	Acer palmatum 'Osakazuki'	Osakazuki Japanese Maple	3m ht., B&B	as shown
23	Acer platinoides	Norway Maple	6cm cal., B&B	as shown
1	Cercis canadensis	Eastern Redbud	5cm cal., B&B	as shown
2	Gingko biloba	Ginkgo Tree	6cm cal., B&B	as shown
8	Picea breweriana	Brewers Spruce	3.5m ht., B&B	as shown
12	Stewartia pseudocamellia	Japanese Stewartia	5cm cal., B&B	as shown
6	Styrax japonica	Japanese Styrax	6cm cal., B&B	as shown

SHRUBS

Buxus microphylla	Little Leaf Boxwood	#5 pot	18" o.c
Ceanothus thyrsiflorus 'Victoria'	Victoria California Lilac	#5 pot	36" o.c
Cornus stolonifera	Red Osier Dogwood	#5 pot	36" o.c
Forsythia x intermedia	Forsythia	#5 pot	48" o.c
Ilex crenata 'Convexa'	Japanese Holly	#3 pot	30" o.c
Lonicera pilata	Box-Leaf Honeysuckle	#3 pot	30" o.c
Polystichum munitum	Western Sword Fern	#1 pot	24" o.c
Rhododendron 'Crete'	Pink Rhododendron	#5 pot	36" o.c
Rhododendron 'Hotei'	Yellow Rhododendron	#5 pot	36" o.c
Rhododendron 'Ken Janeck'	Pink Yaku Rhododendron	#3 pot	24" o.c
Sarcococca hookerana 'Humilis'	Himalayan Sweet Box	#2 pot	24" o.c
Skimmia japonica	Japanese Skimmia	#2 pot	24" o.c
Spiraea x bumulda 'Goldflame'	Goldflame Spiraea	#2 pot	24" o.c
Taxus baccata 'Fastigiata'	Irish Yew	1.2m ht., B&B	24" o.c

GROUND COVERS AND VINES

Fragaria chiloensis	Beach Strawberry	4"(10cm) pot	15" o.c
Rubus calycinoides	Emerald Carpet	4"(10cm) pot	15" o.c
Oxalis crassipes	Redwood Spurge	4"(10cm) pot	15" o.c
Pachysandra terminalis	Japanese Spurge	4"(10cm) pot	15" o.c

PERENNIALS, GRASSES, BULBS, AND ANNUALS

Dicentra formosa	Western Bleeding Heart	#1 pot	18" o.c
Echinacea purpurea	Purple Coneflower	#1 pot	18" o.c
Hemerocallis 'Stella D'Oro'	Day Lily	#1 pot	18" o.c
Hosta sieboldiana	Hosta	#1 pot	18" o.c
Lavandula angustifolia	English Lavender	#1 pot	18" o.c
Liriope muscari	Lily-turf	#1 pot	18" o.c
Stipa tenuissima	Mexican Feather Grass	#1 pot	24" o.c

Plant Materials

UBC Pacific Residence

LEED

Building Certification
The project must follow the UBC LEED Implementation Guide (LEED v4), which aims to align the LEED Building Design + Construction (LEED BD+C) v4 rating systems and UBC campus policy to facilitate a high-performance built environment on campus. It supports the provincial requirement for all publicly funded new construction and major renovation projects to achieve LEED Gold certification.

The design brief also emphasizes the following strategies:

- Smart commissioning and monitoring based commissioning, which aligns with the approach to commissioning in LEED v4.
- Passive design strategies to achieve the energy targets before considering traditional mechanical solutions.
- Design for a well-sealed building, to be verified through airtightness testing (ASTM E779 or USACE Version 3).
- Planning for sewage heat recovery and solar PV.
- Comfort modeling to ensure thermally comfortable spaces.

The brief also identifies priorities and opportunities for water conservation and material resources.

LEED v4 for BD+C: New Construction and Major Renovation
Preliminary LEED Scorecard

Project Name: Gage Student Residence Infill
Date: 17 Dec 2018

Y	?	N				
1			Credit	Integrative Process	1	
13	0	19	**Location and Transportation**		32	
		16	Credit	LEED for Neighborhood Development Location	16	
1			Credit	Sensitive Land Protection	1	
		2	Credit	High Priority Site	2	
5			Credit	Surrounding Density and Diverse Uses	5	
5			Credit	Access to Quality Transit	5	
1			Credit	Bicycle Facilities	1	
		1	Credit	Reduced Parking Footprint	1	
1			Credit	Green Vehicles	1	
3	7	0	**Sustainable Sites**		10	
Y			Prereq	Construction Activity Pollution Prevention	Required	
	1		Credit	Site Assessment	1	
	2		Credit	Site Development - Protect or Restore Habitat	2	
	1		Credit	Open Space	1	
	3		Credit	Rainwater Management	3	
2			Credit	Heat Island Reduction	2	
1			Credit	Light Pollution Reduction	1	
8	0	3	**Water Efficiency**		11	
Y			Prereq	Outdoor Water Use Reduction	Required	
Y			Prereq	Indoor Water Use Reduction	Required	
Y			Prereq	Building-Level Water Metering	Required	
1		1	Credit	Outdoor Water Use Reduction	2	
6			Credit	Indoor Water Use Reduction	6	
		2	Credit	Cooling Tower Water Use	2	
1			Credit	Water Metering	1	
21	6	6	**Energy and Atmosphere**		33	
Y			Prereq	Fundamental Commissioning and Verification	Required	
Y			Prereq	Minimum Energy Performance	Required	
Y			Prereq	Building-Level Energy Metering	Required	
Y			Prereq	Fundamental Refrigerant Management	Required	
6			Credit	Enhanced Commissioning	6	
14	2	2	Credit	Optimize Energy Performance	18	
1			Credit	Advanced Energy Metering	1	
		2	Credit	Demand Response	2	
	3		Credit	Renewable Energy Production	3	
	1		Credit	Enhanced Refrigerant Management	1	
		2	Credit	Green Power and Carbon Offsets	2	
6	3	4	**Materials and Resources**		13	
Y			Prereq	Storage and Collection of Recyclables	Required	
Y			Prereq	Construction and Demolition Waste Management Planning	Required	
	3	2	Credit	Building Life-Cycle Impact Reduction	5	
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2	
2			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2	
1		1	Credit	Building Product Disclosure and Optimization - Material Ingredients	2	
2			Credit	Construction and Demolition Waste Management	2	
7	6	3	**Indoor Environmental Quality**		16	
Y			Prereq	Minimum Indoor Air Quality Performance	Required	
Y			Prereq	Environmental Tobacco Smoke Control	Required	
2			Credit	Enhanced Indoor Air Quality Strategies	2	
3			Credit	Low-Emitting Materials	3	
1			Credit	Construction Indoor Air Quality Management Plan	1	
	2		Credit	Indoor Air Quality Assessment	2	
		1	Credit	Thermal Comfort	1	
		2	Credit	Interior Lighting	2	
	3		Credit	Daylight	3	
1			Credit	Quality Views	1	
	1		Credit	Acoustic Performance	1	
4	2	0	**Innovation**		6	
3	2		Credit	Innovation	5	
1			Credit	LEED Accredited Professional	1	
4	0	0	**Regional Priority**		4	
1			Credit	Regional Priority: Enhanced Commissioning	1	
1			Credit	Regional Priority: Indoor Water Use Reduction	1	
1			Credit	Regional Priority: Optimize Energy Performance	1	
1			Credit	Regional Priority: Building Life Cycle Impact Reduction	1	
67	24	35	**TOTALS**	Possible Points:	126	

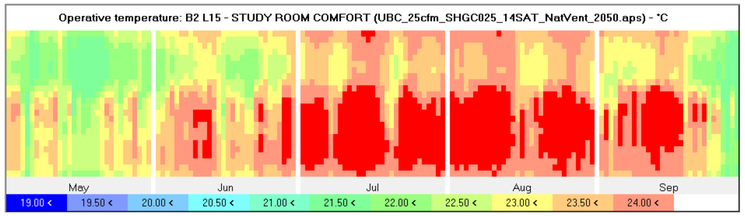
Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

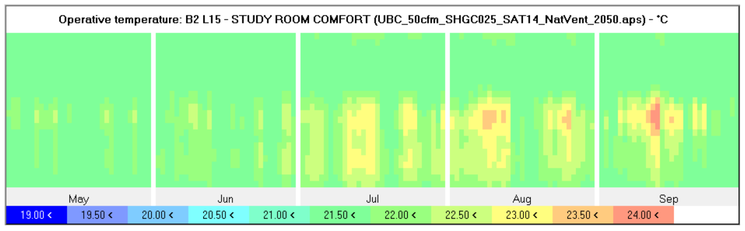
LEED Scorecard

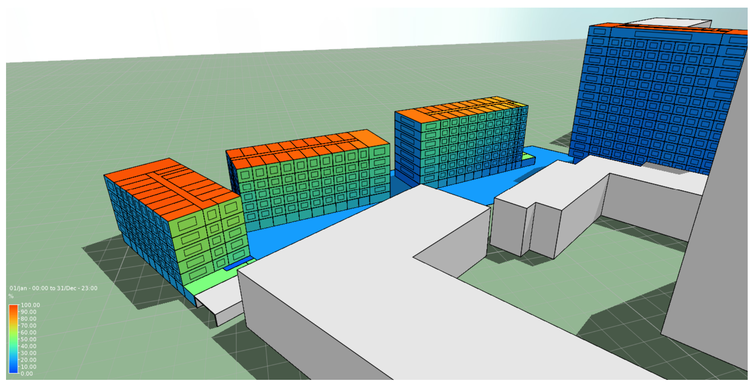
ENERGY

Building Performance
Specific greenhouse gas emission and energy use reduction targets are set for the project in the Design Brief. They may be refined with the project team as the design progresses and must be tracked through to building occupancy.

Metric	Definition	Target	Design
TEUI	Total Energy Use Intensity (includes all energy end-uses in the building, including all plug-loads and process loads).	130	110
TEDI	Thermal Energy Demand Intensity (including envelope heat loss and ventilation load).	40	30
DHW	Domestic Hot Water (maximum DHW energy use).	29	16
Plug Loads	Plug Loads (maximum plug-load energy).	30	12
	Units: kWh/m²		







Thermal Comfort Modeling Analysis

TRANSPORTATION/ RECYCLING

Bike Parking
The majority of bike parking will be provided within student bedrooms with a wall-mounted bike hook. At Building 1, due to its hotel function during summer months, bikes will not be stored within individual rooms, therefore secure bike spaces will be provided in the basement. Short-term bike parking will be provided at all building entrances and at the café location.

Car Parking
Approximately 200 car parking spaces will be provided in a two-storey underground parkade.

Garbage/Recycling
Students will bring waste from their rooms to storage locations below-grade in each building. Waste will be moved by staff to centralized garbage rooms, adjacent to receiving areas on the north side of the Building 1 and Building 5.

Deliveries/Loading
Deliveries, including linen for summer hotel operation, will be made to the receiving areas located on the north side of the Building 1 and Building 5. Supplies will be transferred to P1 via freight elevator, where they will be distributed through the parkade to the buildings. Connections to the existing West Coast Suites and Walter Gage Apartments will be made below-grade.

1. UBC Energy Target Per Design Brief

PER DESIGN BREIF	TARGET	DESIGN	
TEUI (max)	130	110	kWh/m²
TEDI (max)	40	30	kWh/m²
DHW (max)	29	16	kWh/m²
Plug Loads (max)	30	12	kWh/m²

2. LEEDv4 Energy Target
   - Target: 10 (of 18) points, 25% reduction over baseline
   - Path: Alternate Performance Metric – GHG
   - **Design Performance: 16 points – 45% reduction (GHG)**

3. Climate Adaptation Modeling
   - Year 2018 and 2050 comparison
   - UBC weather file
   - Comfort Criteria: UBC Technical Guidelines

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