The SBME site is at the heart of the UBC campus, on University Boulevard, the principal entrance to campus. To the south lies the Health Sciences precinct, comprising primarily of medical learning and research facilities. To the north lies the University Boulevard precinct, with housing, services, and the campus bus loop. Being on the threshold between these two urban conditions is a key factor in the urban design of the building.

The Health Sciences precinct is characterized by human-scaled walks, courtyards, and landscape. Service spaces are carefully screened and separated. The existing courtyard south of the SBME site is well-defined by a beautiful row of London Plane trees. This tree-lined and sunny space has the potential to be a tremendous complement to the SBME and its broader community. The trees have been evaluated by an arbourist, who has found them healthy and having high retention value.

Our proposal for siting the SBME (and its future neighbour) therefore begins with redefining the Plane Courtyard with a quiet but definitive building face, reinforcing and enhancing the historic and well-used walks and courtyards that characterize the Health Sciences precinct.

University Boulevard is an active urban “high street” on campus. A key planning objective is a five-story street wall defining the edge of the boulevard. The SBME reinforces the street wall in its five-storey massing, as well as by providing generous weather protection for pedestrians, a commercial retail unit, and views into the active SBME design studios and maker spaces.

Adjacent to the commercial retail unit is a grand oak tree, which, in addition to new landscape planting, will form the basis of a pocket park ringed by retail in both the SBME and Strangway building.

Across University Boulevard, Athlete’s Way is a major pedestrian route connecting student residences, student services, recreation buildings, the bus loop, and other amenities. Extending Athlete’s Way across University Boulevard to the Plane Courtyard provides a valuable new connection enabling pedestrian movement between the SBME site and future development to the west. A large existing Atlas Cedar provides an urban marker to demarcate the new pedestrian route.

A natural consequence of the two-sided nature of the site is that there are two primary entrances to the building. The principal public entrance is on the corner of Athlete’s Way and University Boulevard, where it can connect to both major pedestrian routes. The south entrance connects to the Plane Courtyard and broader Health Sciences community to which the SBME is strongly affiliated. Both entrances are characterized by generous overhangs to mediate the scale of the building and provide weather protection.

Servicing the SBME is through the service court on the east side of the building, which provides vehicular access to the SBME separated from pedestrians. The SBME massing, combined with landscape development, will further screen the service courts from the campus pedestrian ways.

The result of these strategies is an urban approach that reconciles the historic courtyard structure of the Health Science precinct with the newer, axial conditions of University Boulevard and Athlete’s Way.

The SBME program combines both research and learning functions within a single building. Key program components include laboratories, offices, administration, lecture halls, and an assortment of design-project related spaces.

The research functions are located in the upper floors of the building. The laboratories are located on the north side of the building, where they can benefit from diffuse north light, the ideal daylight condition for long research hours. From the exterior, this consolidated block of research space will have a strong presence on University Boulevard, representing the SBME to the broader community. Offices are located on the south side of the building, where they will benefit from the generous canopies of the London Plane trees and relate to the smaller scale of the Health Sciences precinct. For long-term flexibility, both office spaces and laboratory spaces have been planned modularly, with the labs following a 3.5m x 3.5m module and offices a 3.2m x 4.05m module.

Between the offices and laboratories is a toplit common space interconnecting the research floors and forming the social heart of the research area. Within this volume are open graduate workspaces along with various types of casual and formal meeting spaces. Generous daylit stairs at each end of the space provide vertical circulation between the research floors and to floors below. On the third floor, a lunchroom opens onto an outdoor terrace on the south side of the building, creating a place for informal meetings or larger gatherings. As the primary circulation route between offices, laboratories, and meeting places, the research common space will help engender the serendipitous interactions essential to academic community and research.

The second floor of the building, at the base of the research common space, has mixed functions including a teaching lab, shared research facilities, project rooms, and administration. The common space and adjacent project rooms work together to create a space for collaboration for graduate, undergraduate, and interdisciplinary research projects. The project rooms that line the common space are fully glazed, providing common space occupants with serene views of the Plane Tree canopy beyond.

The remaining learning functions are located in the lower floors of the building, allowing the larger undergraduate population to circulate to and from the building separately from the research areas above. At grade, the north and south building entrances open on to a two-story learning common space with a spectacular linear view of the Plane Trees and courtyard beyond. Opening directly onto this space at grade are design studios, maker spaces, and a classroom. Two lecture halls are below grade, where they can take full advantage of the generous adjacent floor area as a between-class foyer and informal gathering space. This two-storey common space, its grand stair, and the adjacent large rooms also provide the SBME with an ideal space for large-scale gatherings such as conferences or open-houses.

Service functions, such as a vivarium, are located in the lower floors of the east wing of the project, where they have direct access to the both the exterior service court and the service elevator which interconnects all floors within a secure biosafety zone.
Exterior Envelope

As the principal visual interface between the broader community and the SBME, the building envelope plays a key role in the visual identity of the SBME. Its design must transcend function to communicate the spirit and vision of the new school.

The design approach seeks synergies with the natural and constructed environment while enhancing the experience of the building occupants.

A key goal of the north façade is to present the activities within the building to the broader community. This is accomplished with floor-to-ceiling glazing on all levels, providing visibility into the labs on the upper floors and the makerspaces and design studios at grade. The upper floors, including the mechanical penthouse are unified with 305 mm deep fins which carry from the top of the building, down the façade, and horizontally to the edge of the canopy. Constructed simply with curtain wall glazing caps, these fins will also protect the façade from the late afternoon sun, and will provide illuminated texture on the façade.

On the south façade, a layer of delicate screens brings lightness and elegance to the exterior. These filigree elements provide a neutral backdrop for the sinuous Plane Trees and a calm, coherent expression to the building. As filters to the sun, the screens assist with protecting the building from solar radiation and glare while bringing an atmosphere of delight with the unexpected interplay of dappled sunlight and shadow.

The remainder of the exterior is characterized by opaque walls with glazed openings. Opaque walls are ground-faced brick, a timeless and durable material that is consistent with the campus character.

Crime Prevention Through Environmental Design

These Crime Prevention Through Environmental Design (CPTED) strategies have been employed in the design:

- The project is sited adjacent three major pedestrianways.
- There are large windows overlooking all sides of the building. In addition, the stairs provide views along the building to the north. This has the benefit of providing public eyes and a sense of security to the exterior.
- Outdoor areas on site are visible from either the interior of the building or from the adjacent pedestrianways creating an aura of natural surveillance.
- Outdoor locations are lit with pole lights, illuminated bollards, or soffit lighting. The generous exterior glazing of the building will also illuminate the exterior with spilled interior light.
- Walkways, lighting, and signage direct visitors to appropriate entrances.
- Except for the landscape screens blocking views from the public to service areas of the site, no fences or landscape barriers limit views into the site.
- There are no dead-end passageways on site.
The SBME site is at the heart of UBC
Existing London Plane trees...
...define the south side of the site.
University Boulevard defines the north side of the site.
A new extension to Athlete’s Way partitions the site and defines the west side of the SBME.
Existing specimen trees activate the surrounding outdoor spaces.
Together these spaces form the learning and research core of the SBME!
PROJECT NAME: UBC School of Biomedical Engineering

PROJECT ADDRESS: 6088 University Boulevard

CLIENT: UBC Properties Trust

PROJECT STATUS: DEVELOPMENT PERMIT

TOTAL SITE AREA: 9121.29 m²
SITE COVERAGE: 36.98%

PARKING:
1 VEHICLE PARKING SPACES (BUILDING OPERATIONS)
1 LOADING SPACE
44 BICYCLE PARKING EXTERIOR SPACES
20 BICYCLE PARKING INTERIOR SPACES

DWELLING UNITS:
0 TOTAL NUMBER OF DWELLING UNITS
1 CRU: 86.93 m²

BUILDING HEIGHT: 32.3m

FLOOR SPACE RATIO: N/A

AREAS:
GROSS BUILDING AREA: 14,530 SQM
OFFICE NET AREA: 7,700 SQM
RETAIL NET AREA: 90 SQM
ASSEMBLY NET AREA: 2,400 SQM

VARIANCES REQUESTED: NONE
1. 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.

2. 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. The trees diameter was added to the graphical tree protection circles to accommodate the survey point being in the center of the tree.

3. No work is permitted within the Tree Protection Zone with the exception of swales. Swale construction is only permitted under the direct supervision of an arborist.

4. The 1.5m area No Build Zone does not allow for any building foundation wall encroachment. Excavation is permitted within this area under the direct supervision of an arborist.

5. Drainage works such as lawn basins, associated piping or services are permitted within the No Build Zone under the direct supervision of an arborist.

6. This plan is based on a topographic and tree location survey provided by the owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provided by the owners' Engineer (P.Eng).

7. 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.

8. 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.

9. The owners' Registered British Columbia Land Surveyor (BCLS) and layout drawings provided by the owners' Engineer (P.Eng).

10. 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.
Winter Solstice 10am (PST - GMT -8)

Winter Solstice Midday

Winter Solstice 2pm
Key

1. Corridor
2. 250-Seat Theatre
3. Accessible Corridor
4. Storage or AV
5. 120-Seat Theatre
6. Water Entry / District Energy
7. Corridor
8. Vestibule
9. Vestibule
10. Projector Room
11. Vestibule (126b)
12. Projector Room
13. Control Room
14. Vestibule
15. Passenger Elevators
16. Control Room
17. Vestibule
18. Service Elevator
19. Exit / Convenience Stair
20. Common Space
21. Convenience Stair
22. Waste Alcove
23. Bar / Reception Servery
24. Exit / Convenience Stair
25. Custodian
26. Electrical
27. Storage
28. Communications
29. Catering Back of House

Vivarium Zone:
See A49 detailed plans for more info.
Key
1. Electrical
2. Exit / Convenience Stair
3. Lockers
4. Entrance to Teaching Labs / Core Services
5. Waste Alcove
6. Passenger Elevator
7. Communications
8. Electrical
9. Service Elevator
10. Electrical
11. Custodian
12. Exit / Convenience Stair
13. Undergrad Club Room / Office
14. Common Space
15. Grad Club Room / Office
16. Project Alcove
17. Project Rooms
18. Student Services
19. Administration Lobby
20. 6-Seat Meeting Room
21. Sanctuary
22. 24-Seat Meeting Room
23. Printing / Kitchenette / Mail
24. File Storage
25. Office (10)
26. Director’s Office
27. Long Table (alt: 4 offices)
28. 6-Seat Meeting Room
29. Informal Meeting Area

Teaching Lab / Core Services Zone:
See A49 detailed plans for more info.
Key
1. 6-seat Breakout Space
2. 8-Seat Work / 12-Seat Meeting Space
3. Chair Storage
4. Custodian
5. Electrical
6. Waste Alcove
7. Passenger Elevator
8. Communications
9. Electrical
10. Service Elevator
11. Electrical
12. Exit / Convenience Stair
13. Informal Working Area
14. Open to Below
15. Grad Student Bridge (19 spaces)
16. 9-Seat Meeting Room
17. Office (16)
18. Lunch Area
19. Roof Terrace

Research Zone:
See A49 detailed plans for more info.
Key

1. 6-seat Breakout Space
2. 8-Seat Work / 12-Seat Meeting Space
3. Chair Storage
4. Custodian
5. Electrical
6. Waste Alcove
7. Passenger Elevator
8. Communications
9. Electrical
10. Service Elevator
11. Electrical
12. Exit / Convenience Stair
13. Informal Working Area
14. Open to Below
15. Grad Student Bridge (42 spaces)
16. 9-Seat Meeting Room
17. Office (19)
18. 16-seat Meeting Room

Research Zone:
See A49 detailed plans for more info.
Materials Key

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR-1</td>
<td>Brick White</td>
</tr>
<tr>
<td>CN-1</td>
<td>Exposed Concrete Finish</td>
</tr>
<tr>
<td>GL-1</td>
<td>Glazing Clear</td>
</tr>
<tr>
<td>GL-2</td>
<td>Glass Fronted Spandrel Panel</td>
</tr>
<tr>
<td>MT-1</td>
<td>White Powder Coated Aluminium</td>
</tr>
<tr>
<td></td>
<td>Mullion Caps</td>
</tr>
<tr>
<td>MT-3</td>
<td>Black Powder Coated Aluminium</td>
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<tr>
<td></td>
<td>Mullions</td>
</tr>
<tr>
<td>MT-4</td>
<td>White Powder Coated Aluminium</td>
</tr>
<tr>
<td></td>
<td>Louvres</td>
</tr>
<tr>
<td>ST-1</td>
<td>Black Granite Panels</td>
</tr>
</tbody>
</table>

Key

1. Strangway Building
2. New SBME
3. Roof monitors beyond
4. Metal fin facade
5. Metal fin canopy
6. Commercial retail unit
7. SBME Entrance
8. Atlas Cedar

North Elevation
School of Biomedical Engineering / University of British Columbia
Patkau Architects
1:400
issued: 2021-02-03
Key
1. Rental Housing
2. University Boulevard
3. Glass and steel fin canopy
4. Metal Fins
5. Mechanical Penthouse
6. Labs
7. Teaching labs
8. Design studio
9. 250 seat lecture theatre
10. Vivarium staff
11. Lower atrium
12. Upper atrium
13. Project rooms
14. Staff offices
15. Grad student work space
16. Roof monitors
17. Existing London Plane Tree
18. Roof terrace
19. South wing
20. Existing pine tree
21. Freidman Building
22. Strangway Building Height

Section AA
School of Biomedical Engineering / University of British Columbia
Patkau Architects
Key

1. Future chemistry building
2. Athlete's Walk
3. Exit and Convenience Stair
4. Roof monitors
5. Grad workspace
6. Lightwell
7. Common space/Informal learning
8. Lower atrium
9. 250 seat lecture theatre beyond
10. Common space/Informal learning
11. Elevator
12. End of trip
13. Vivarium
14. Back of house
15. Meeting room
16. Strangway Building
1. Rental Housing
2. University Boulevard
3. Glass and steel fin canopy
4. Metal Fins
5. Mechanical Penthouse
6. Labs
7. Teaching labs
8. Design studio
9. Mechanical Space
10. Vivarium
11. Vivarium Interstitial Space
12. Upper atrium
13. Meeting room
14. Lunch space
15. Office
16. Roof monitors
17. Admin workspace
18. Roof terrace
19. South wing
20. Existing pine tree
21. Freidman Building
SCHOOL OF BIOMEDICAL ENGINEERING
University Boulevard, Vancouver, BC

Issued for Development Permit - February 3rd, 2021
CIRCULATION AND FLOW
Connect the site to the existing circulation network to strengthen accessible pedestrian routes and facilitate student movement and accessibility.

INDIGENOUS AND POST-SETTLEMENT LANDSCAPE
Recognize SBME’s role in supporting U Blvd’s mission to layer nuanced Indigenous storytelling in a cultural landscape representative of both Indigenous and post-settlement histories at the gateway of campus.

PLEAT AND PLANE
Mould landscape terrain to answer grading constraints, creating an accessible environment for all.

INDOOR AND OUTDOOR
Foster fluid and flexible movement from inside to outside, particularly around CRIIs and building entrances. As well as, have moments that punctuate the space and allow for visual and physical transitions vertically and horizontally.

FIXED AND FLEXIBLE PROGRAMME
Create both permanent and flexible spaces that take future development into consideration.

PORCH AND BACKYARD
Seamlessly integrate streetscape landscape design into the existing landscape treatment at University Boulevard’s formal gateway entry, while creating a more informal social space in the “backyard” of SBME.

STORMWATER
Collect and filter stormwater by directing run-off to permeable surfaces for plant use.

PROTECT AND ENHANCE TREES
Protect mature existing trees and integrate them into a new overall design.
ENHANCE EXISTING CONDITIONS
Introduce new planting below the London Plane trees and mega benches around them to enhance existing mature trees and give the existing lawn a new meaning as an extension of the proposed mega bench.

COMFORT
Provide a range of seating and lounging options sheltered from the elements, in the sun and shade and at varying scales that invite people to linger.

CLARITY
Provide legible and clear connections across campus through a defined hierarchy of paths that makes the public space easy to identify and memorable.

INVITATION
Animate the public realm by accommodating visible activities that attract people (food, performances, special events).

GATEWAY
Design a signature gateway landscape that incorporates nuanced indigenous storytelling through native planting, Musqueam woodworking details, colors, and lighting.

ACCESSIBILITY
Pleat the landscape terrain to answer grading constraints, creating an accessible environment for all.
**Tree Management Plan Notes**

1. Refer to Arborist's Inventory/Assessment report prepared by Project Arborist for tree species and general conditions.
2. Root protection zones are as noted by Project Arborist.
3. Trenching for utility connections to be coordinated with Engineering to ensure safe root zones of retained trees.
4. Limit of work is an estimate only; final limit of work to be confirmed by the University of British Columbia.

**Tree Management Plan**

- **Existing Trees to Be Retained**: 20
- **Existing Trees to Be Removed**: 14

**Tree Management Plan Legend**

- **Existing Tree to Be Retained**: 
- **Existing Tree to Be Removed**: 

**General Legend**

- **Detail Number**: 
- **Low Line**: 
- **Extended Scope of Work Line**: 
- **X**: 
- **Low Line**: 

**Tree Management Plan**

---

**Tree Management Plan**

**Existing Trees to Be Retained**: 20
**Existing Trees to Be Removed**: 14

---

**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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**Tree in Conflict with Proposed Site Services**:

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---
EXISTING PATHWAY THROUGH LAWN
EXISTING CONCRETE STAIRS WITH EXISTING MATURE TREE TO BE PLATFORMS AT BASE OF CONCRETE PAVING, SAW EXISTING MATURE TREES TO EXTENDED SCOPE OF WORK, CUSTOM LARGE CEDAR EXTENT TO BE REVIEWED.

PAVING TYPE 2 - CIP HYDRO-SEEDED LAWN IN CUTS AS SHOWN

MANAGEMENT PLAN

LX.X

CONDITION. SEE IMAGE 1. DO NOT REINSTALL EXISTING MATERIAL AND PATHWAY WIDTH TO MATCH EXISTING REALIGN PATHWAYS IN LAWN AS SHOWN. PAVING MAY BE REUSED IF IN ACCEPTABLE CONDITION.

APPROX. LOCATION OF EXISTING PATHWAYS TO BE REPLACED

+(87.00) +(87.62)

PAVING TYPE 1 - UNIVERSITY BOULEVARD METAL HANDRAILS RETAINING WALL CIP CONCRETE POTENTIAL NEW CROSSWALK ALIGNED EXTENDED SCOPE OF WORK EXISTING STREETLIGHT STANDARD STANDARD SPECIALTY PAVING SHOWN FOR DISCUSSION ONLY AND BUS POLES TO REMAIN

4.2%

SCHOOL OF BIOMEDICAL ENGINEERING UNIVERSITY BOULEVARD

3.6%

5 STEPS @ 375 X 136

8.5%

2.6%

2.0%

2.2%

3000

6500

2.0%

15278 FROM BUS STOP

2145

5855

10280 CUSTOM CEDAR BENCH

Vivarium

Civil

Electrical

Arch. Climbing Plants

Generator

1800

3.6%

UNIVERSITY BLVD.

ENGINEERING

FRIEDMAN BUILDING

COMM.

3000

3.6%

4500

4.9%

2.6%

LX.X TREE PLANTING

10280 CUSTOM CEDAR BENCH

3

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### PLANT SCHEDULE

**TREES**

<table>
<thead>
<tr>
<th>CODE</th>
<th>QTY</th>
<th>BOTANICAL / COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>11</td>
<td>Acer circinatum / Vine Maple</td>
<td>2.4m ht</td>
<td>As Shown</td>
<td>B&amp;B, Multi-Stemmed, Dense Tree</td>
</tr>
<tr>
<td>PA</td>
<td>4</td>
<td>Prunus amanogawa / Cherry</td>
<td>8cm cal.</td>
<td>As Shown</td>
<td>B&amp;B, Specimen, Densely Branched</td>
</tr>
<tr>
<td>ST</td>
<td>3</td>
<td>Street Tree / Street Tree</td>
<td>4.0m ht</td>
<td>As Shown</td>
<td>B&amp;B, Straight Trunk, Uniform Branching, 1.5m std. Species to be determined</td>
</tr>
</tbody>
</table>

**SHRUB AREAS**

<table>
<thead>
<tr>
<th>PLANTING AREA 1</th>
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</thead>
<tbody>
<tr>
<td>CODE</td>
</tr>
<tr>
<td>Bs</td>
</tr>
<tr>
<td>Gs</td>
</tr>
<tr>
<td>Sa</td>
</tr>
<tr>
<td>Vp</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLANTING AREA 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
</tr>
<tr>
<td>Gs</td>
</tr>
<tr>
<td>Mn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PLANTING AREA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
</tr>
<tr>
<td>Lp</td>
</tr>
</tbody>
</table>

### PLANT SCHEDULE - GROUND LEVEL

<table>
<thead>
<tr>
<th>PLANT SCHEDULE</th>
<th>CODE</th>
<th>QTY</th>
<th>BOTANICAL / COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>603.5 ft²</td>
<td>6x</td>
<td>1.407</td>
<td>Acer circinatum / Vine Maple</td>
<td>#2 Pot</td>
<td>40cm</td>
</tr>
<tr>
<td>212.3 ft²</td>
<td>6x</td>
<td>1.407</td>
<td>Gaultheria shallon / Salal</td>
<td>#2 Pot</td>
<td>40cm</td>
</tr>
<tr>
<td>271.0 ft²</td>
<td>Lp</td>
<td>1.764</td>
<td>Lonicera pileata / Privet Honeysuckle</td>
<td>#2 Pot</td>
<td>40cm</td>
</tr>
</tbody>
</table>

### PLANTING NOTES

1. ALL PLANT MATERIAL TO CLASS STANDARDS. REFER TO THE BCSLA LANDSCAPE STANDARDS, LATEST EDITION.
2. AREA OF SEARCH FOR PLANT MATERIAL: PACIFIC NORTHWEST INCLUDING BRITISH COLUMBIA, WASHINGTON AND OREGON.
3. REFER TO SPECIFICATION FOR GENERAL CONDITIONS, MATERIALS AND INSTALLATION REQUIREMENTS.
4. ALL ONSITE PLANTED AREAS TO HAVE AUTOMATIC IRRIGATION.
5. FINAL LOCATION, QUANTITY, TREE SPECIES TO THE SATISFACTION OF THE GENERAL MANAGER OF ENGINEERING. NEW TREE MUST BE OF GOOD STANDARD, MINIMUM 6 CM CALLIPER AND INSTALLED WITH APPROVED ROOT BARRIERS, TREE GUARDS AND APPROPRIATE SOIL. ROOT BARRIERS SHALL BE 8 FEET LONG AND 18 INCHES DEEP. PLANTING DEPTH OF ROOT BALL MUST BE BELOW SIDEWALK GRADE. NEW STREET TREES TO BE CONFIRMED PRIOR TO ISSUANCE OF THE BUILDING PERMIT. CALL PARK BOARD AT 311 FOR TREE SPECIES SELECTION AND PLANTING REQUIREMENTS. PARK BOARD TO INSPECT AND APPROVE AFTER TREE PLANTING COMPLETION.
PLANTING AREA 1 (136 m²)
(924) Lonicera pileata

PLANTING AREA 3 (142 m²)
(924) Lonicera pileata

PLANTING AREA 4 - LAWN (981 m²)
PLANTING AREA 4 - LAWN (167 m²)
PLANTING AREA 3 (21.7 m²)
(141) Lonicera pileata
PLANTING AREA 3 (43.6 m²)
(284) Lonicera pileata
PLANTING AREA 3 (64.0 m²)
(416) Lonicera pileata
PLANTING AREA 4 - LAWN (619 m²)
PLANTING AREA 1 (66.6 m²)
(173) Blechnum spicant
(231) Gaultheria shallon
(29) Symphoricarpos albus
(29) Vaccinium parvifolium

PLANTING AREA 1 (136 m²)
(355) Blechnum spicant
(473) Gaultheria shallon
(60) Symphoricarpos albus
(60) Vaccinium parvifolium

PLANTING AREA 1 (165 m²)
(429) Blechnum spicant
(572) Gaultheria shallon
(72) Symphoricarpos albus
(72) Vaccinium parvifolium

PLANTING AREA 1 (80.9 m²)
(211) Blechnum spicant
(281) Gaultheria shallon
(36) Symphoricarpos albus
(36) Vaccinium parvifolium

PLANTING AREA 1 (57.5 m²)
(150) Blechnum spicant
(200) Gaultheria shallon
(25) Symphoricarpos albus
(25) Vaccinium parvifolium

INFILL DISTURBED PLANTING AREAS, APPROXIMATE AREA AS SHOWN, EXTENT TO BE CONFIRMED ON SITE

PLANTING AREA 3 (13.8 m²)
(230) Gaultheria shallon
(230) Mahonia nervosa

PLANTING AREA 2 (210 m²)
(684) Gaultheria shallon
(684) Mahonia nervosa

PLANTING AREA 1 (112 m²)
(291) Blechnum spicant
(388) Gaultheria shallon
(49) Symphoricarpos albus
(49) Vaccinium parvifolium

PLANTING AREA 1 (165 m²)
(429) Blechnum spicant
(572) Gaultheria shallon
(72) Symphoricarpos albus
(72) Vaccinium parvifolium

PLANTING AREA 1 (108 m²)
(218) Blechnum spicant
(278) Gaultheria shallon
(34) Symphoricarpos albus
(34) Vaccinium parvifolium

PLANTING AREA 1 (108 m²)
(218) Blechnum spicant
(278) Gaultheria shallon
(34) Symphoricarpos albus
(34) Vaccinium parvifolium

PLANTING AREA 1 (165 m²)
(429) Blechnum spicant
(572) Gaultheria shallon
(72) Symphoricarpos albus
(72) Vaccinium parvifolium

PLANTING AREA 1 (68.5 m²)
(236) Blechnum spicant
(296) Gaultheria shallon
(39) Symphoricarpos albus
(39) Vaccinium parvifolium

PLANTING AREA 1 (66.6 m²)
(173) Blechnum spicant
(231) Gaultheria shallon
(29) Symphoricarpos albus
(29) Vaccinium parvifolium

PLANTING AREA 1 (136 m²)
(924) Lonicera pileata

PLANTING AREA 1 (112 m²)
(291) Blechnum spicant
(388) Gaultheria shallon
(49) Symphoricarpos albus
(49) Vaccinium parvifolium

PLANTING AREA 1 (66.6 m²)
(173) Blechnum spicant
(231) Gaultheria shallon
(29) Symphoricarpos albus
(29) Vaccinium parvifolium

PLANTING AREA 1 (165 m²)
(429) Blechnum spicant
(572) Gaultheria shallon
(72) Symphoricarpos albus
(72) Vaccinium parvifolium

PLANTING AREA 1 (108 m²)
(218) Blechnum spicant
(278) Gaultheria shallon
(34) Symphoricarpos albus
(34) Vaccinium parvifolium

PLANTING AREA 1 (108 m²)
(218) Blechnum spicant
(278) Gaultheria shallon
(34) Symphoricarpos albus
(34) Vaccinium parvifolium
**PLANT SCHEDULE**

<table>
<thead>
<tr>
<th>CODE</th>
<th>QTY</th>
<th>BOTANICAL / COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
<th>COMMENTS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>3</td>
<td>Acer circinatum / Vine Maple</td>
<td>2.4m ht</td>
<td>As Shown</td>
<td>B&amp;B, Multi-Stemmed, Dense Tree</td>
<td></td>
</tr>
<tr>
<td>Bs</td>
<td>375</td>
<td>Blechnum spicant / Deer Fern</td>
<td>#2 Pot 40cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gs</td>
<td>500</td>
<td>Gaultheria shallon / Salal</td>
<td>#2 Pot 30cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sa</td>
<td>63</td>
<td>Symphoricarpos albus / Common White Snowberry</td>
<td>#3 Pot 60cm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vp</td>
<td>63</td>
<td>Vaccinium parvifolium / Red Huckleberry</td>
<td>#3 Pot 60cm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SHRUB AREAS**

1. **PLANTING AREA 1 (144 m²)**

- Bs 375 Blechnum spicant / Deer Fern #2 Pot 40cm
- Gs 500 Gaultheria shallon / Salal #2 Pot 30cm
- Sa 63 Symphoricarpos albus / Common White Snowberry #3 Pot 60cm
- Vp 63 Vaccinium parvifolium / Red Huckleberry #3 Pot 60cm

**PLANTING NOTES**

1. All plant material to CLNA standards. Refer to the BCSLA Landscape Standard, latest edition.
3. Refer to specification for general conditions, materials and installation requirements.
4. Final location, quantity, tree species to the satisfaction of the General Manager of Engineering.
5. All on-site planted areas to have automatic irrigation.
6. Final planting completion to be confirmed prior to issuance of the building permit. Call park board at 311 for tree species selection and planting requirements. Park board to inspect and approve after tree planting completion.

**PLANT SCHEDULE**

1. **AC**
   - Acer circinatum / Vine Maple
   - Size: 2.4m ht
   - Spacing: As Shown
   - B&B, Multi-Stemmed, Dense Tree

2. **BH**
   - Blechnum spicant / Deer Fern
   - Size: #2 Pot 40cm
   - Spacing: |

3. **GC**
   - Gaultheria shallon / Salal
   - Size: #2 Pot 30cm
   - Spacing: |

4. **SA**
   - Symphoricarpos albus / Common White Snowberry
   - Size: #3 Pot 60cm
   - Spacing: |

5. **VP**
   - Vaccinium parvifolium / Red Huckleberry
   - Size: #3 Pot 60cm
   - Spacing: |

**PLANT SCHEDULE**

1. **AC**
   - Acer circinatum / Vine Maple
   - Size: 2.4m ht
   - Spacing: As Shown
   - B&B, Multi-Stemmed, Dense Tree

2. **BH**
   - Blechnum spicant / Deer Fern
   - Size: #2 Pot 40cm
   - Spacing: |

3. **GC**
   - Gaultheria shallon / Salal
   - Size: #2 Pot 30cm
   - Spacing: |

4. **SA**
   - Symphoricarpos albus / Common White Snowberry
   - Size: #3 Pot 60cm
   - Spacing: |

5. **VP**
   - Vaccinium parvifolium / Red Huckleberry
   - Size: #3 Pot 60cm
   - Spacing: |
LOCATION NOTES:

1. LIGHTING PLAN IS SCHEMATIC AND WILL BE COORDINATED WITH ELECTRICAL;
2. PROPOSED FIXTURES MAY BE NEW OR REUSED FROM THE SITE;
3. ALL DIMENSIONS ARE TO CENTER OF LIGHT;
4. CONFIRM ALL LIGHT LOCATIONS ON SITE WITH LANDSCAPE ARCHITECT;
5. ALL LIGHT FIXTURES AND LIGHT LEVELS TO MEET UBC DESIGN GUIDELINES AND UBC TECHNICAL GUIDELINES.

LIGHTING LEGEND:
- EXISTING STREETLIGHT TO REMAIN
- PROPOSED FEATURE TREE LIGHT
- EXISTING BOLLARD LIGHT TO REMAIN
- PROPOSED PATHWAY LIGHT
- EXISTING THEATER LIGHT TO REMAIN
- EXISTING PATHWAY LIGHT TO REMAIN
- EXISTING ADJACENT PATHWAY LIGHTING "[IMAGE B]"
- EXISTING STREET LIGHTS ALONG UNIVERSITY BOULEVARD "[IMAGE A]"
- EXISTING BOLLARD LIGHTS TO REMAIN "[IMAGE C]"
- EXISTING ADJACENT PATHWAY LIGHTING "[IMAGE B]"
- EXISTING FLOOD LIGHTS ON SOUTH AND WEST EDGE OF COURTYARD LAWN "[IMAGE E]"
- EXISTING THEATER LIGHT TO REMAIN "[IMAGE E]"
- EXISTING PATHWAY LIGHT TO REMAIN "[IMAGE D]"
- PROPOSED PATHWAY LIGHT
- PROPOSED FEATURE TREE LIGHT
- EXISTING THEATER LIGHT TO REMAIN "[IMAGE E]"

LIGHTING NOTES:

1. LIGHTING PLAN IS SCHEMATIC AND WILL BE COORDINATED WITH ELECTRICAL;
2. PROPOSED FIXTURES MAY BE NEW OR REUSED FROM THE SITE;
3. ALL DIMENSIONS ARE TO CENTER OF LIGHT;
4. CONFIRM ALL LIGHT LOCATIONS ON SITE WITH LANDSCAPE ARCHITECT;
5. ALL LIGHT FIXTURES AND LIGHT LEVELS TO MEET UBC DESIGN GUIDELINES AND UBC TECHNICAL GUIDELINES.
6. SEE ARCH. DRAWINGS FOR SOFFIT LIGHTS ON BUILDING CANOPY.

ISSUED FOR:
- Partial DD
- SD
- DP

SCALE: 1" = 20'-0"
PRECAST CONC. UNIT PAVER WITH MIXED SIZES AND COLORS AS PER THE UNIVERSITY BOULEVARD PRECINCT DESIGN GUIDELINES. HAND TIGHT WITH FINE SWEPT JOINTS TO MAX 3mm WIDTH.

BASE MATERIALS (19mm MINUS WELL GRADED CRUSHED ROCK) COMPACTED TO MIN. 95% MOD. PROCTOR.

EXISTING SUBGRADE TO BE COMPACTED TO MIN. 95% MOD. PROCTOR; PREPARED SUBGRADE TO BE REVIEWED BY GEOTECH.

NOTES:
1. ORIGIN OF PAVING PATTERN TO BE CAREFULLY CONSIDERED, CONFIRM WITH LANDSCAPE ARCHITECT BEFORE CONSTRUCTION;
2. PAVERS WILL NOT BE CUT SMALLER THAN 1/3 OF A UNIT.
150MMX200MM LARGE TIMBER MEMBERS, THREADED ROD ASSEMBLY
CIP CONCRETE FOOTING
ADJACENT PAVING VARIES, SEE MATERIAL PLAN

150MMX100MM STEEL BEAM
100MM STEEL PIPE COLUMN & BASE PLATE
150MM DRAIN PIPE

CIRCULAR OPENING FOR EXISTING OAK TREE

SEATING ISLAND

Decking Details

L3.31 As Noted

Issued for SD Nov. 06/20

Landscape Architecture
Urban Design
403 - 375 West Fifth Avenue
Vancouver BC, V5Y 1J6
604 909 4150
hapacobo.com

Drawing Number

Drawn|Checked

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No. Description Date

School of Biomedical Engineering
University Boulevard
Decking Details
**NOTES:**

- MATERIALS: ALL STEEL, ALL WOOD

- CIP CONCRETE FOOTING

- MAKE-UP SERIES

- ADJACENT PLANTER WITH METAL EDGER

- ADJACENT PLANTER WITH METAL EDGER

- CONCRETE FOOTING

- TIMBER BEAM

- STEEL "C" BEAM, BOLTED TO CIP CONCRETE BASE

- PROVIDE SIGNED AND SEALED ENGINEERED SHOP DRAWINGS FOR ALL BENCH AND TABLE CONSTRUCTION;

- CONTRACTOR RESPONSIBLE FOR REINFORCEMENT AND FOOTING DIMENSIONS;

- CONTRACTOR TO PROVIDE MOUNTING BRACKETS TO BE REVIEWED BY LA;

- ENSURE NO SHARP EDGES.

- PROVIDE 1:50 SCALE ASBUILT DRAWINGS FOR ALL BENCH AND TABLE CONSTRUCTION;

- CONTRACTOR RESPONSIBLE FOR REINFORCEMENT AND FOOTING DIMENSIONS;

- CONTRACTOR TO PROVIDE MOUNTING BRACKETS TO BE REVIEWED BY LA;

- ENSURE NO SHARP EDGES.

- PLAN

- WWW.URBANRACKS.COM

- 1-888-717-8881

- BICYCLE PARKING SYSTEMS

- URBAN RACKS

- MANUFACTURED BY

- Ø2 3/8"

- MODEL: UB1000-USX

- MATERIAL: 2" SCHEDULE 40 STEEL PIPE WITH FLAT HORIZONTAL CROSS BAR

- MOUNT: EMBEDDED INTO CONCRETE WITH 10" BELOW GRADE. INSTALL PER MANUFACTURER'S INSTRUCTION.

- FINISH: HOT-DIPPED GALVANIZED

- SUPPLIER: URBAN RACKS

- 1-888-717-8881

- WWW.URBANRACKS.COM

- BIKE RACK

- 1:10

- 1

- L3.41

- Issued for SD Nov. 06/20

- Landscape Architecture

- Urban Design

- 403 - 375 West Fifth Avenue

- Vancouver BC, V5Y 1J6

- 604 909 4150

- hapacobo.com

- Furnishing Details

- BIKE RACK

- 1:10

- 1

- L3.41

- Issued for DP Feb. 03/21

- 3

- Issued for Partial DD Feb. 05/21

- CONCRETE AND WOOD BENCH WITH BACK PLANTER

- 1:10

- 3

- L3.41

- HARVEST TABLE

- 1:20

- 4

- L3.41

- Wood Entrance Seat

- 1:10

- 2

- L3.41

- School of Biomedical Engineering

- University Boulevard

- Feb. 03/21
MIN. 450 SHRUBS; MIN. 900 TREES

LAWN PLANTING

SHRUB/TREE PLANTING

SCARIFY SURFACE OF SUBGRADE PRIOR TO GROWING MEDIUM INSTALLATION

GROWING MEDIUM

MULCH

MIN. INSULATION, ADD. VOID FILL AS REQUIRED; SLAB DRAINAGE AND WATERPROOFING; ROOT BARRIER; STRUCTURAL CONCRETE SLAB; REFER TO ARCH.

FILTER FABRIC

DRAIN ROCK

TRIANGULAR SPACING AT SPECIFIED ON-CENTRE DISTANCE, REFER TO PLANT SCHEDULE

PLANT CENTER

ROW DISTANCE FROM EDGE IS HALF THE SPECIFIED ON-CENTRE SPACING

EDGE OF GROUNDCOVER AREA, SIDEWALK EDGE

LAWN PLANTING

MULCH

GROWING MEDIUM

MULCH

GROWING MEDIUM, REFER TO SPEC.

ENSURE FULL CONTACT BETWEEN ROOTBALL AND GROWING MEDIUM

FERTILIZER TABLETS

FINISH GRADE

SET CROWN OF ROOTBALL 25mm ABOVE FINISH GRADE AND REMOVE BURLAP AND TWINE FROM TOP HALF OF ROOTBALL

(2) 4 X 4" X 4' TIMBER DEAD-MAN (ONE ON EITHER SIDE)

FINISH GRADE

MULCH

GROWING MEDIUM

STYROFOAM VOIDING BUILDUP TO PROPOSED FINISH GRADE - REFER TO GRADING PLAN. ALLOW FOR SOIL DEPTHS AS PER SOIL DETAIL AND PROVIDE REQUIRED SOIL VOLUME FOR EACH TREE.

MIN. INSULATION, ADD. VOID FILL AS REQUIRED; SLAB DRAINAGE AND WATERPROOFING; ROOT BARRIER; STRUCTURAL CONCRETE SLAB; REFER TO ARCH.

Planting Details

SOIL PROFILES ON GRADE

SOIL PROFILES ON SLAB

GROUND COVER PLANTING

SHRUB PLANTING

TREE PLANTING - ON SLAB

L3.51 As Noted

Issued for SD Nov. 06/20

Landscape Architecture

Urban Design

403 - 375 West Fifth Avenue

Vancouver BC, V5Y 1J6

604 909 4150

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Drawing Number

Drawn|Checked

Project No.

Scale

Date

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North Elevation looking South West
North Elevation looking South West from North Side of University Blvd.
CRU looking South from University Blvd.
South Elevation from South side of Courtyard
South Elevation from South side of Courtyard
Materials

- White metal fins
- White brick
- White Powder Coated Metal Grating (Sample shown is unpainted)
- Glass and Curtain Wall System