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UBC OKANAGAN HOUSING COMMONS

DEVELOPMENT APPLICATION PACKAGE | FEBRUARY 21, 2018



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Please Note: Full-scale copies of all enclosed drawings and documents can be provided upon request.



OKANAGAN



UBC PROPERTIES TRUST



Submission Requirements

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a. Application Form



THE UNIVERSITY OF BRITISH COLUMBIA
Campus Planning and Development
 1138 Alumni Avenue, Room 100C · Kelowna, B.C. · V1V 1V7
 ☎ 250.807.9647
 abigail.riley@ubc.ca

DA # _____

UBCO Development Application Form

Project Address and Building Name: Housing Commons - 1255 International Mews, Kelowna, BC V1V 1V8
Description of Area: The proposed project is located on future Building Site 13 identified in the UBC Okanagan Campus Plan, north of the University Centre at the south end of The Commons field and fronting onto International Mews to the west and University Walk to the east.
Description of Project: The project is expected to be a 6-storey (5 storeys + lower level), approx. 137,000 s.f. building, incorporating a 220 bed residence together with full "Commonsblock" program, including 500-seat dining hall, resident lounge, study, amenity and support spaces, and administrative spaces.

Applicant (authorized agent): UBC Properties Trust		
Contact name: Michael Beza, Development Manager		
Mailing address: Suite 200 - 3313 Shrum Lane	Email: mbeza@ubcproperties.com	
City: Vancouver, BC	Postal Code: V6S 0C8	Phone: 604-788-0350
Architect: Sahuri + Associates Architecture in association with Teeple Architects		
Contact name: Tim Sahuri, Principal		
Mailing address: 106 - 1289 Ellis Street	Email: tim.sahuri@sahuri.com	
City: Kelowna, BC	Postal Code: V1Y 9X6	Phone: 778-478-1479
Landscape Architect:		
Contact name: TBD		
Mailing address:	Email:	
City:	Postal Code:	Phone:

I, THE AUTHORIZED AGENT, GIVE CONSENT FOR CAMPUS PLANNING & DEVELOPMENT TO POST DIGITAL DRAWINGS AND SUPPORTING TEXT FOR PUBLIC VIEWING ON THEIR WEBSITE.

I HEREBY AGREE THAT I WILL COMPLY WITH ALL RULES, BYLAWS, REGULATIONS AND POLICIES OF THE UNIVERSITY OF BRITISH COLUMBIA AND ALL OTHER STATUTES, RULES, BYLAWS, POLICIES AND REGULATIONS OF OTHER AUTHORITIES IN FORCE AT THE UNIVERSITY OF BRITISH COLUMBIA RELATING TO THE WORK, UNDERTAKING OR PERMISSION IN RESPECT OF WHICH THIS APPLICATION IS MADE AND THAT I WILL INDEMNIFY AND SAVE HARMLESS THE UNIVERSITY OF BRITISH COLUMBIA, ITS OFFICIALS, EMPLOYEES AND AGENTS FROM ALL CLAIMS, LIABILITIES, JUDGEMENTS, COSTS OR EXPENSES OF EVERY KIND, INCLUDING NEGLIGENCE, IN RESPECT OF ANYTHING DONE OR NOT DONE IN CONSEQUENCE OF ANY PERMISSION, PERMIT OR LICENSE ISSUED AS A RESULT OF THE APPLICATION OR THE FAILURE TO OBSERVE COMPLETELY ALL STATUTES, RULES, BYLAWS, POLICIES AND REGULATIONS RELATING TO ANY WORK OR UNDERTAKING IN RESPECT OF WHICH THIS APPLICATION IS MADE.

SIGNED AT KELOWNA, B.C. THIS 21st DAY OF February 2018

SIGNATURE OF AUTHORIZED AGENT:
 MICHAEL BEZA, DEVELOPMENT MANAGER

JANUARY 2018

UBC OKANAGAN

Development Application Checklist & Submission Requirements

Submission Requirements		
<p>The complete Development Application Submission is to be submitted to: Campus Planning & Development (CP&D), c/o Abigail Riley, Associate Director, Campus Planning, at #100C - 1138 Alumni Avenue, Kelowna, BC, V1V 1V7; email: abigail.riley@ubc.ca; phone: (250) 807-9647</p>		
		Comments
<input checked="" type="checkbox"/>	Application Form	<ul style="list-style-type: none"> Application Form to be completed and signed at time of application.
<input checked="" type="checkbox"/>	Written Description	<ul style="list-style-type: none"> A description of the project, outlining the use, site context and rationale.
<input checked="" type="checkbox"/>	Design Rationale and Policy Compliance	<ul style="list-style-type: none"> A brief written outline on how the project complies with the Campus Plan and accompanying Design Guidelines.
<input checked="" type="checkbox"/>	Registered Easements and Right of Ways (SRWs)	<ul style="list-style-type: none"> Copies of all easement and SRW agreements registered on title and located on and/or adjacent to the building site.
<input type="checkbox"/>	Tree Survey	<ul style="list-style-type: none"> Location and identification of all existing trees and other significant plan material on-site. <p><i>Refer to Site Plan for existing / preliminary proposed tree locations; tree survey to be requested pending confirmation of landscape design req'ts</i></p>
<input checked="" type="checkbox"/>	Green Building Certification	<ul style="list-style-type: none"> Skeena Residence project to submit PassivHaus certification update / documentation Otherwise: Residential: Submit REAP checklist; min. REAP Gold; and Academic: Submit LEED checklist; min. LEED Gold;
<input checked="" type="checkbox"/>	Geotechnical Report	<ul style="list-style-type: none"> Prepared by a Geotechnical Engineer for potentially hazardous or unstable areas.
<input checked="" type="checkbox"/>	Photos	<ul style="list-style-type: none"> Pre-construction digital photos of site and surrounding context
<input checked="" type="checkbox"/>	Project Notification Sign	<ul style="list-style-type: none"> See UBC Wayfinding: Exterior Signage Standards and Guidelines for sign template <p><i>To be provided following confirmation of full consultant team.</i></p>
<input checked="" type="checkbox"/>	Building Signage	<ul style="list-style-type: none"> See UBC Wayfinding: Exterior Signage Standards and Guidelines <p><i>Refer to Site Plan / Elevations for proposed signage locations; Signage to be developed in detail as part of forthcoming landscape design & architectural design dev't.</i></p>
Drawing Requirements		
<p>One (1) hardcopy set (11" x 17" and stapled only) and one (1) digital set (email or jump drive in PDF format)</p>		
<input checked="" type="checkbox"/>	Cover Sheet with Project Statistics (Data Sheet), provided relative to City of Kelowna Zoning Bylaw Requirements	<ul style="list-style-type: none"> Building Footprint / Site Coverage Net and Gross Floor Area by Use Building Height(s) Setbacks (from property lines, adjacent public/private streets, walkways, buildings, as relevant) Parking, Loading and Bicycle Parking Spaces Number of Residence Beds, Bedrooms, Unit Sizes Summary of Floor Areas by Level and Exclusions List of Any Variances from City Zoning Bylaw and Rationale
<input checked="" type="checkbox"/>	Context Plan	<ul style="list-style-type: none"> Plan showing the relationship of the proposed buildings to surrounding developments at front, rear and sides
<input checked="" type="checkbox"/>	Site Plan	<ul style="list-style-type: none"> Address (if available) and street name (s) Dimensions of development site Location and dimensions of all buildings with north arrow Required yards, setbacks and building lines <p><i>Site Plan to be developed further / directions confirmed as part of forthcoming landscape/civil design.</i></p>

<input checked="" type="checkbox"/>		<ul style="list-style-type: none"> Size and location of all off street parking and loading Access to parking and loading Existing and finished grade levels Treatment of open areas, courtyards, pedestrian areas, etc. Location of garbage facilities Location of all registered road reserves, easements and SRWs Location of fire hydrants and their distance from the subject building Fire access routes or lanes Area of proposed work if adding to an existing building (highlight) 	
<input checked="" type="checkbox"/>	Utilities	<ul style="list-style-type: none"> Site plan showing the adjacent existing utility lines, boxes, vaults, etc. and clearances between the building and existing utility lines and preliminary service connections to the existing utility systems. Location of all registered road reserves, easements, and SRWs, existing and proposed 	<p><i>Existing locations of utility lines and easements/SRWs provided; service connections to be determined as part of forthcoming landscape/civil design, all existing utility locations to be confirmed on site.</i></p>
<input checked="" type="checkbox"/>	Survey Plan	<ul style="list-style-type: none"> Street address; street name(s) and location Dimensions of site and site area, including north arrow Location and dimensions of all existing buildings on site Property line, if proximate Road reserves, registered easements, encroachments and SRWs Above ground utilities Location of existing street crossings Existing grades at each of the four corners of the site Existing grades at each corner of the existing and/or proposed principle building envelope 	<p><i>Existing grades at each corner of the proposed building envelope to be confirmed during forthcoming Site/Landscape design and Architectural Design Development.</i></p>
<input checked="" type="checkbox"/>	Shadow Analysis	<ul style="list-style-type: none"> Spring / Summer at 10 am, 12 pm and 2 pm 	
<input checked="" type="checkbox"/>	Floor Plans	<ul style="list-style-type: none"> All storeys including all levels of underground parking and loading All door, window and skylight locations Location of all vents, bay or box windows, AC units and/or condensing units 	
<input checked="" type="checkbox"/>	Roof Plan	<ul style="list-style-type: none"> Dimensions Elevations of roof parapet, mechanical, elevator/stair housing, amenity areas 	
<input checked="" type="checkbox"/>	Elevations	<ul style="list-style-type: none"> Elevation of front, rear, two sides and courtyard (if applicable) Floor levels and height above and below finished grades Exterior finishing details and materials Elevation on each floor level, peak of pitched roof or parapet wall or flat roof Door and window details and sizes Weather protection Accessory building details Night lighting plan Sign location(s) 	
<input checked="" type="checkbox"/>	Sections	<ul style="list-style-type: none"> Longitudinal and cross sections Details of vaulted areas and adjacent attic spaces Envelope or height protrusions Bay window, window seats and window well details 	
<input checked="" type="checkbox"/>	Landscape Plans	<ul style="list-style-type: none"> Full Landscape Plan illustrating both common and 	<p><i>See over...</i></p>

		botanical names, sizes, and quantity of all proposed plant material <ul style="list-style-type: none"> Proposed plant material, paved surfaces and materials, other landscape elements and existing/proposed trees must be shown on Landscape Plan Existing site contours, landscaping and material to be removed, include size, common name and locations All landscape elements and details, including new/existing surfaces to be retained, enclosures, site furniture, fences and structures. Existing and proposed site grading Rainwater Management Plan / Civil Details, to comply with the UBCO Integrated Rainwater Management Plan Irrigation Plan 	Landscape / site design to be developed following confirmation of landscape and civil consultants. See Site Plan for preliminary landscape design.
<input checked="" type="checkbox"/>	Lighting	<ul style="list-style-type: none"> Proposed Lighting Plan is to comply with UBCO Lighting Guidelines. 	Preliminary work provided for information; full Lighting Plan to be developed as part of forthcoming landscape design and site design development.
<input checked="" type="checkbox"/>	CPTED	<ul style="list-style-type: none"> Short description of CPTED strategies 	
<input checked="" type="checkbox"/>	Context Drawings	<ul style="list-style-type: none"> Schematic elevations and sections showing how the proposed development relates to surrounding buildings and fits into the surrounding context 	
<input checked="" type="checkbox"/>	Coloured Perspective Renderings	<ul style="list-style-type: none"> Axonometric or isometric drawing(s) 	
<input checked="" type="checkbox"/>	Materials	<ul style="list-style-type: none"> Illustrated list of exterior building and landscape materials, and supporting rationale 	
<input checked="" type="checkbox"/>	Material Palette Board		Physical Material Palette Board to be provided at Design Review Meeting.
<input checked="" type="checkbox"/>	Working Massing Model	<ul style="list-style-type: none"> If appropriate given proposed massing and adjacencies, and requested by CPD 	Not requested.

b. Written Description

Use



UBCO's new Housing Commons will be an approximately 137,000 s.f., 6-storey (5-storey + lower level) showpiece facility, housing a 220-bed residence and associated support and social spaces, together with a comprehensive Commonsblock program providing social, study and administrative support and facilities to the residents of this and other existing and planned residences on campus as well as seasonal hotel and conference guests. The building will accommodate a 500-seat dining hall and associated support spaces, which will serve approximately 1500 meal plan holders in the residence community. The facility will be the new home to Student Housing and Hospitality Services (SHHS) staff on campus.

Site context



The new Housing Commons will be situated at a key transition point between the Okanagan campus' residence cluster and its academic and social heart. The site is bounded on the north by the Commons field, on the west by International Mews, facing the existing Kalamalka Residence; on the south by the existing University Centre (UNC) and terraced pedestrian walk-way and plaza; and on the east by University Walk, facing the current Parking Lot 'F,' which is expected in the future to be the site of a mixed-use building. The north face of the building will align with the extension of Mid-Campus Connector pedestrian route outlined in the 2015 Campus Plan. A key feature of the site is its topography – sloping approximately 1 storey down from International Mews on the west to University Walk on the east.

Key views from the project will be the activities of the Commons field to the north, the sweeping valley landscape to the east, envisioned pedestrian plaza space at the junction of University Walk and University Way to the southeast, and, from upper storeys, nearly the full extent of campus. University Walk and International Mews are primary pedestrian spines, and the former is a key component in an envisioned ceremonial route; shaping the pedestrian experience – including assuring natural and inclusive accessible routes – are critical design drivers. A key design consideration has been to integrate all loading, utilities, garbage required by the building's programs inside the building's form and architecture with a view to minimizing impact on the circulation, safety and urban experience of the busy surrounding areas.

Design Rationale Summary



The proposed Housing Commons has been imagined as a simple 4-storey linear residential bar perched above the dynamic form of two levels of public space. The residential bar consists of efficient, yet accommodating residence rooms that frame the Commons to the north and compliment the massing of the existing residence buildings surrounding the Commons. The shared spaces of the residential bar link upward, joining the project into a single whole. The two-storey base accommodates the shared Housing Commons "Commonblock" program, administrative offices and Dining Hall, which have been conceived to interact with and animate the campus spaces around them. The dining hall is located on the lower level – with a highly visible direct entrance off of University Walk, while the Housing Commons program is located on the first floor, with student entrances off both International Mews and University Walk. These entrances and key program areas naturally tie into pedestrian routes and are signalled and animated by façade transparency.

c. Design Rationale & Policy Compliance

Urban Design Rationale Summary



The new Housing Commons is intended to be an inspired and vibrant facility that will further the goals of the UBCO Campus Plan (2015) by framing and animating the Commons to the north, animating and enhancing connectivity along University Walk and International Mews, and extending the existing east-west Mid-Campus Connection. The building will frame the outdoor space in the area identified in the Plan as University Centre Plaza, and will relate to the planned pedestrianization of University Way and new building development on the site of current Parking Lot 'F' and on the north and west extremes of the campus.

Situated at a key transition point between the campus' residence cluster and its academic and social heart, the building will serve as an architectural transition point between these two core modes of campus life. Building materiality, colour and massing will respect and complement the existing UBCO fabric and the concurrent Skeena Residence project, and be in keeping with the newly updated UBCO Design Guidelines (2016-ongoing).

Compliance with the Campus Plan



By bringing together student housing with social, study, amenity and administrative spaces, the Housing Commons promises to be an important component in realizing the vision for the campus expressed in the Campus Plan and the University's strategic plan and academic mission; its core goal will be to foster an engaged campus and resident community and support student well-being. The architecture of the Housing Commons has been conceived to directly serve this vision: to bring students together in an accessible, intimate and welcoming environment, and to do so as part of a positive and sustainable relationship with the rest of the campus and the Okanagan Valley's ecology and beautiful landscape.

Context

The Housing Commons site is a key "Place" in the Campus Plan and engages both directly and indirectly several other identified key Places and Pedestrian Spines. The Plan identifies the site as the "Okanagan Commons Building," though we understand the program has been developed beyond that originally envisioned to include a residence and exclude active academic uses. In the Plan, the project site bridges between the newly-levelled Commons field and University Centre Plaza – though we understand that the centre of gravity of the latter is now envisioned to be located further to the south, as part of a pedestrianized University Way. The building is framed on the west by International Mews, on the east by University Walk, and on the north by the envisioned Mid-Campus Green Connector – and in turn the project will define and enhance each of these paths. The plaza space and circulation route between the building and the UNC to the south will be important in tying together the immediate context and engaging with the reimagined University Way "Main Street" as part of a larger 'Main Street Precinct.'

In addition to the levelled Commons Field (2017) and pedestrianization of University Way (2018-onward), the project must also anticipate changes to campus flow and make-up that are happening or anticipated to happen with the completion of the new Transit Exchange (2017), the new Teaching and Learning Centre (2018), and new John Hindle Drive Extension and West Campus Access (2018), and anticipated Innovation Precinct (future) to the north and on the lower bench east of the site. The planned extension and realignment of Alumni Avenue (future) will likely have a direct impact on the project site and will be taken into consideration as part of site and loading design. Concurrent with the Housing Commons, the New Skeena Residence is being designed and executed, and it is recommended that Design Development include efforts to ensure the buildings' exterior expression work together to dynamically and appropriately complete the Commons frame.

Campus Plan Principles

In addition to a holistic commitment to following the Campus Plan vision, the project directly addresses the key planning principles set out in the document by:

Creating a Welcoming and Connected Campus:

The design prioritizes the pedestrian experience of the campus, creating welcoming and accessible indoor and outdoor routes through and alongside the building. A key focus of the design process has been to minimize the impact of the sizeable loading required by the program; to this end, it has been proposed to elevate University Walk above the loading bay and through the introduction of stairs and a ramp, creating a safe, natural and accessible pedestrian passage for Housing Commons visitors, those travelling to existing and planned buildings in the “Purcell Courts” and “Innovation Precinct” areas, and participants in athletic, social, cultural and ceremonial events in the Commons field. The spaces and amenities provided by the Housing Commons will directly enhance the University’s capacity to host major campus and community events, both within the building and in the adjacent Commons. Within, social and informal learning spaces will be tied closely to natural circulation paths in order to maximize opportunities for student connection and engagement. Landscape development (forthcoming) will include a close focus on accessible exterior circulation. Together these will work together to create a vibrant, social hub.

Celebrating Place:

The Housing Commons is intended, fundamentally, to be a place-making project. It will mark the transition between the campus’ residential and academic clusters with a state-of-the-art facility that at once enhances the visual identity of the campus through strategic massing and a dynamic but appropriate envelope expression; strengthens the cohesiveness and pedestrian navigability of the campus core; frames important campus spaces; and connects to the Okanagan Valley context via framed views and sensitive landscape design. The massing has been arranged to complement the existing residence architecture and complete the Commons field frame as well as to strategically “reach out” to emphasize views, capture key points of circulation, and define new gathering spaces. Key shared spaces – the Housing Commons “Hub” and Dining Hall – have been arranged to capture panoramic views of the valley to the east, as well as, for the former, the Commons field. In turn, by way of strategic transparency and expressive interior design, those spaces will animate the public areas around them. Landscape development (forthcoming) will prioritize connection with the landscape and with indigenous landscape integration.

Enhancing Campus Vitality

Providing a 500-seat dining hall and comprehensive Common program will significantly enhance the liveability of the campus, in particular for those in the residence community, but also for the larger student and staff population. Both ground floors of the Housing Commons have been conceived to naturally arrange social, study and amenity spaces along natural indoor and outdoor paths of travel, and in so doing, will encourage maximum visibility of and engagement with all the building’s key programmatic offerings. Most importantly, through the course of their daily travel, students will be encouraged to meet each other. Key building entrances will connect directly to important new campus nodes, such as the pedestrianized “Main Street” and associated plazas along University Way. The building and associated landscape design (forthcoming) will enhance existing pedestrian routes as well as define inviting new outdoor gathering areas – in particular the currently under-used plaza space north of the UNC.

Embracing Whole Systems Infrastructure

The Housing Commons will be a LEED Gold facility that embodies meaningful and holistic sustainability through the strategic integration of systems. These systems will prioritize minimizing energy and water consumption and environmental impact (both source and on-site), balancing initial with long-term costs, and creating welcoming spaces that enhance the social and physical connectedness of the campus. Key areas of focus will be efficient active building systems, a high-performance envelope, and maximizing passive opportunities. Wherever possible, innovative, local technologies will be employed and sustainable measures will be put on display, furthering UBCO’s goal of creating a campus-wide “Living Lab.” Landscape and site design (forthcoming) will prioritize connection with the natural McKinley Escarpment and Okanagan Very Dry Hot Ponderosa Pine zone ecology, and will comply with the newly developed Integrated Rainwater Management Plan. Wherever possible, the building and landscape design will acknowledge the project’s place on the traditional territory of the Syilx (Okanagan) people.

Compliance with UBCO Design Guidelines

The Housing Commons design has been conceived and will be developed in accordance with the Draft UBC Okanagan Design Guidelines (2016-ongoing) being developed to further the realization of the goals and directions articulated by the Campus Plan. In instances in which draft guidelines are not available, the project team will refer to the existing 2008 Design Guidelines, the broad Design Guidelines set out in Section 5 of the Campus Plan, as well as to the guidance of the Working Group and applicable stakeholder groups to ensure project decisions fully comply with the most up-to-date institutional directions and standards.

The design responds directly to the Design Guidelines, as summarized in the Campus Plan and expanded in the Draft Design Guidelines, through:

Building Design as Good Urban and Campus Design

- **Orientation and massing:** that both strengthens campus cohesion and defines and animates outdoor spaces: The building respects the build-to lines intended to help frame the Commons Field and University Walk; shapes the interstitial space between it and the UNC to maximize day-lit space between the buildings and in adjacent interior spaces; and maximizes transparency at key junctures both to strengthen student safety as well as to put the activities of the building on display.
- **Interior Spaces that contribute to Community Well-being:** Judicious use of transparency will balance natural daylighting, visual interconnectedness, thermal comfort and thermal performance. The commonsblock programs in the lower two levels are intended to create a single, inter-connected multi-use space that naturally creates synergies between programs.
- **Preservation and prioritization of key views:** The massing of the building, including a linear bar along the Commons field, will allow residents of the adjacent Kalamalka Residence to maintain their valley views. The Dining Hall and “Hub” spaces are arranged to offer views of the Commons and capture an expansive valley view. It is recommended that future development on Site “F” consider massing strategies that allow this view to be preserved.

- **Creation of a new focal point:** The new Housing Commons will be visible both from many different points on campus, as well as from the eastern campus vehicle entry and to planes landing at or taking off from the south end of the Kelowna International Airport runway. Up close, areas of transparency will signal key entry points and areas of activity. From afar, the strong vertical rhythm being proposed for the envelope will help to create a striking image, while a focus on keeping roofs as clear as possible of services will create a clean but bold expression, heightened by proposed peaked roof areas in the Podium.
- **Appropriate materiality and use of colour:** Key / Complimentary colour palettes will be manifest in the building design for both the exterior and interior of the new Housing Commons (each conceived in reference to the Draft Colour Guidelines (2016)). Preliminary direction for the exterior expression is primarily via the “Earth” + white Primary Colour Palette -with soffits of the podium and selective shading/ shadow elements of the residence bar employing complimentary highlight colours. Consideration will be given to colours within both the Primary “Grassland” and “Ochre” colour range as well as the identified Secondary Colour Palette, and/or in accordance and coordination with the final colour selection for the concurrent Skeena Residence project. Given the generally cool palette of the exterior, the interior provides an opportunity for more bold expression, which will be visible to the exterior via large areas of transparent glass. Proposed mass-timber feature peaked roofs, will give the Grassland palette a strong representation in key public areas. Grassland, Ochre and the bolder secondary palette colours will be considered for feature walls and interior furnishings.

Public Realm / Landscape Design / Ecology & Stormwater *(forthcoming)*

Landscape, exterior lighting and site civil design will be developed in detail following the retention of the project landscape and civil engineering consultants and will follow the directions outlined in the DRAFT Public Realm Guidelines and Draft Lighting Guidelines (2017) provided to the project team. It can be expected that the design will prioritize:

- **Creating a welcoming and distinctive public realm** that reinforces a cohesive and legible campus identity.
- **Barrier-free paths, courtyards and plazas** that are welcoming, easily navigable, and provide equitable access that maximizes shared means of access by all users.
- **Unifying paving** providing a safe, easily navigable path of travel, employing materials and patterns that ties integrally into adjacent paved areas and circulation routes.
- **Site furnishings** prioritizing year-round comfort, supporting and reflecting institutional character and cohesion (including via colours as set out in the Draft Colour Guidelines), and actively discouraging skateboarding.
- **Lighting design** that facilitates active, safe, year-round and round-the-clock use of the campus, excellent operational performance, and minimal environmental impact, including exceptional energy performance and LEED and “Dark Sky” compliance. Fixtures and luminaires will be selected to reflect the building’s place on both Primary and Secondary Ceremonial Routes as well as the new form of the UNC plaza space. The final strategy will follow and comply with the design and performance specifications set out in the Draft Lighting Guidelines (2017).

- **Appropriate landscape and plant materials**, supporting both a strong and cohesive sense of place and the extension of natural local and regional ecological systems. It is understood that indigenous materials and species should be used wherever possible, that drought tolerant (non-invasive) species should be selected, with careful consideration of appearance in all four seasons – in particular during the academic year. It is understood that an increase in tree cover of 10-25% is a goal for the campus core. Landscape design will follow the Draft Public Realm Design Guidelines (2017), Wildland Fire Management Plan (2006), Whole Systems Infrastructure Plan (2015), UBC Technical Guidelines, and where not otherwise specified, the Canadian Landscape Standard.
- **On-site rainwater and stormwater management:** As mandated by the Integrated Rainwater Management Plan (2017) run-off should be handled on-site, prioritizing natural infiltration and runoff that replicates wherever possible natural hydrological conditions. Consideration will be given to designing rainwater features that can serve as landscape amenities, and that help minimize demand for external water sources.

A focus on Universal Accessibility

A key focus of the design has been to create natural, accessible routes inside and outside of the building, including integrating a ramp structure as part of a raised University Walk. Development of these features will prioritize inclusivity – allowing all users to substantially follow the same path of travel – ensuring ample provision of accessible entrances, washrooms and parking, and a general adherence to the principles of Universal Design. Guidance will continue to be sought, wherever possible, from UBCO’s Disability Resource Centre.

Sustainable Design

As generally outlined above, the preliminary project sustainable and LEED strategies have been developed to achieve LEED Gold in compliance with UBC’s LEED Implementation Guidelines, the UBC Sustainability Process for Major Capital Projects, and UBCO’s Whole Systems Infrastructure Plan (2017), and to satisfy the project specific design objectives set out in the project design brief, including a maximum Energy Use Intensity (EUI) of 130 kWh/m²/yr, and peak Thermal Energy Demand Intensity (TEDI) of 30W/m² for space heating. Avenues for making the building both Photovoltaic (PV) and Recycled Water (“Purple Pipe”) “ready” are being considered as integral elements in the design process.

d. Registered Easements & Right of Ways

14 MAY 2018 11 02

LB385241

LAND TITLE ACT
FORM C
(Section 233)
Province of British Columbia

GENERAL INSTRUMENT - PART I (This area for Land Title Office use) Page 1 of 9 pages

1. APPLICATION: (Name, address, phone number and signature of applicant, applicant's solicitor or agent)
Jacqui Johnson, Land Assistant for
FORTISBC INC.
1290 Esplanade, PO Box 130, Trail, BC V1R 4L4
Phone: (250) 368-0434
(Client #11140)

Land File: KEL-577 (Utility)
65150942

Jacqui Johnson
signature of applicant, applicant's solicitor or agent

C
PLAN
X(5)

2. PARCEL IDENTIFIER(S) AND LEGAL DESCRIPTION(S) OF LAND*
(PID) (LEGAL DESCRIPTION)

SEE SCHEDULE SEE SCHEDULE

3. NATURE OF INTEREST:*
DESCRIPTION

DOCUMENT REFERENCE
(page and paragraph)

PERSON ENTITLED TO INTEREST

SEE SCHEDULE SEE SCHEDULE

The Transfer Charge 1 \$73.40
FILE 5/14/2010 11:07:43 AM 1 3

4. TERMS: Part 2 of this instrument consists of (select one only)
(a) Filed Standard Charge Terms D.E. No.
(b) Express Charge Terms Annexed as Part 2
(c) Release There is no Part 2 of this instrument

A selection of (a) includes any additional or modified terms referred to in Item 7 or in a schedule annexed to this instrument. If (c) is selected, the charge described in Item 3 is released or discharged as a charge on the land described in Item 2.

FILE 5/14/2010 11:07:50 AM 1 3

5. TRANSFEROR(S):*
THE UNIVERSITY OF BRITISH COLUMBIA

Plans 5 \$300.75

6. TRANSFEREE(S): (including postal address(es) and postal code(s))*
FORTISBC INC. a public utility, incorporated by Special Act of the Legislature of the Province of British Columbia, having its head office at #100 - 1975 Springfield Road, Kelowna, BC V1Y 7V7

7. ADDITIONAL OR MODIFIED TERMS:*
None

8. EXECUTION(S): **This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

Execution Date

SIGNED on behalf of THE UNIVERSITY OF BRITISH COLUMBIA by its duly authorized signatories:

K. Beck

K. BECK
BARRISTER & SOLICITOR
6328 MEMORIAL ROAD
VANCOUVER, B.C. V6T 1Z2
TEL (604) 822-1897

Y	M	D
10	04	12

Ian Burgess

Ian Burgess, Comptroller
The University of British Columbia

Hubert Lai

Hubert Lai
University Counsel

OFFICER CERTIFICATION: (as to all signatures)

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, R.S.B.C. 1996, c. 124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

* If space insufficient, enter "SEE SCHEDULE" and attach schedule in Form E.

** If space insufficient, continue executions on additional page(s) in Form D.



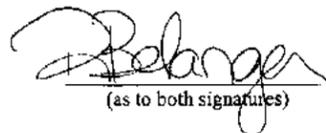
LAND TITLE ACT
FORM D

EXECUTIONS CONTINUED

Officer Signature(s)

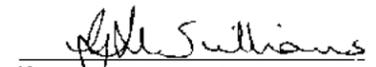
Execution Date

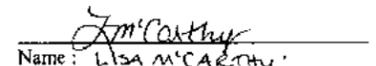
Transferee(s) Signature(s)


(as to both signatories)

Y	M	D
10	4	13

FORTISBC INC. by its authorized signatories:


Name: GARY WILLIAMS


Name: LISA MCCARTHY

Romae Carol Belanger
Commissioner for Taking Affidavits
in British Columbia
Exp. 2012/09/30
FortisBC Inc.
2850 Benvoulin Rd., Kelowna, BC V1W 2E3

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, R.S.B.C. 1996, c. 124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

LAND TITLE ACT
FORM E

SCHEDULE

ENTER THE REQUIRED INFORMATION IN THE SAME ORDER AS THE INFORMATION MUST APPEAR ON THE FREEHOLD TRANSFER FORM, MORTGAGE FORM OR GENERAL DOCUMENT FORM

2. PARCEL IDENTIFIER(S) AND LEGAL DESCRIPTION(S) OF LAND:

027-594-564

Lot A Sections 10 and 11 Township 23 Osoyoos Division
Yale District Plan KAP87188

3. NATURE OF INTEREST:
DESCRIPTION:

DOCUMENT REFERENCE:
(page and paragraph)

PERSON ENTITLED TO INTEREST:

Statutory Right of Way
over that part on Plans
KAP 90790
KAP 90791
KAP 90792
KAP 90793
and
KAP 90794

Entire Instrument

The Transferee

PART 2 - TERMS OF INSTRUMENT
LAND FILE: KEL-577

STATUTORY RIGHT OF WAY

THIS INDENTURE made this _____ day of _____, 2010.

BETWEEN:

THE UNIVERSITY OF BRITISH COLUMBIA
107 – 6328 MEMORIAL ROAD
VANCOUVER, BC V6T 1Z2

(hereinafter called the "Transferor")

OF THE FIRST PART

AND:

FORTISBC INC., a public utility incorporated by Special Act
of the Legislature of the Province of British Columbia, having its
head office at #100 – 1975 Springfield Road, Kelowna, BC V1Y 7V7

(hereinafter called the "Company")

OF THE SECOND PART

WHEREAS:

- A. The Transferor is or is entitled to become the registered owner in fee simple of the lands and premises (hereinafter called the "Lands") described in Part 1 of Schedule "A" attached hereto;
 - B. The Transferor has agreed to grant to the Company a statutory right of way over a portion of the Lands;
 - C. All those portions of the Lands described in part 2 of Schedule "A" attached hereto are hereinafter collectively called the "Right of Way Area", and all those portions of the Lands that are from time to time not included in the Right of Way Area (including portions of the Lands from which the statutory right of way hereby granted may from time to time be discharged) are hereinafter collectively called the "Remaining Lands";
 - D. The statutory right of way herein granted is necessary for the operation and maintenance of the Company's undertaking;
1. NOW THEREFORE in consideration of the sum of ONE (\$1.00) DOLLAR and other good and valuable consideration, now paid by the Company, (the receipt of which is hereby acknowledged by the Transferor), the Transferor hereby grants and conveys unto the Company a

Statutory Right of Way on and under those parts of the Lands contained within the Right of Way Area to install, construct and maintain thereon facilities and such equipment as the Company considers necessary or beneficial (hereinafter called "the Facilities") for the operation and maintenance of an overhead and underground electrical distribution system and communication facilities together with the right to dig up the soil and rock thereof for the installation of the Facilities, and from time to time to inspect, repair, remove, alter, renew and replace the same or any part or parts thereof, and to clear the Right of Way Area of such growth and material that in the Company's reasonable opinion might interfere with or damage the Facilities.

2. Notwithstanding any rule of law or equity, the Facilities shall at all times remain the property of the Company notwithstanding that the same may be annexed or fixed to the freehold, and shall at any time and from time to time be removable in whole or in part by the Company, its successors and assigns.

3. RESERVING HOWEVER to the Transferor the right to cultivate or otherwise use the Right of Way Area so long as it does not interfere with the operation and maintenance of the Facilities, and the right to compensation for any damage done by the Company to crops thereon.

4. **Plantings and Interference** - The Transferor may plant trees and shrubs on the Right of Way Area provided that such trees or shrubs do not jeopardize or interfere with the operation and maintenance of the Facilities. If the Company is required to remove such trees or shrubs on the Right of Way Area in order to access its Facilities or prevent them from interfering with the operations and maintenance of the Facilities, the Transferor acknowledges that the Company has no obligation to compensate the Transferor for such trees or shrubs. Without express written consent the Transferor covenants to not at any time do any act either on the Right of Way Area or on that part of the Lands adjacent to it that will jeopardize or interfere with the operation or maintenance of the Facilities or the rights granted herein, to erect thereon any buildings or structures on the Right of Way Area, or to cause damage to or interfere with the Facilities.

5. The Transferor may plant the Right of Way Area to lawn or may pave it with asphalt or concrete. PROVIDED THAT, the Transferor will not, without the written consent of the Company, diminish or substantially add to the ground cover over such of the Facilities as may be from time to time installed, operated or maintained below the surface of the Right of Way Area and in particular, and without in any way limiting the generality of the foregoing, will not construct open drains or ditches across any of the Facilities which may at any time be installed on the Right of Way Area.

6. The Transferor may install a fence within the Right of Way Area provided it does not interfere with the operation or maintenance of the Facilities and, if a fence is installed by the Transferor, the Company may at its expense install gates for its purposes. The Company will not be liable for any costs of repair to the fence if it is damaged during the installation or maintenance of the Facilities. Subject to the foregoing, the Company will be liable for any damage caused by its agents, servants, licensees or workmen to the Lands and will, each time it disturbs the Lands, restore the same as near as is reasonably practicable to the same conditions as before the disturbance.

7. The Transferor agrees that the Company may provide a communications and/or cable company with all the rights granted to the Company under this Statutory Right of Way to install and maintain communications and/or cable facilities within the Right of Way Area either together with the Company, or in such other conduits or facilities as may be installed by such communications company with full right of ingress or egress as herein granted to the Company.
8. The rights, privileges and easement hereby granted are and shall be of the same force and effect as a covenant running with the land, and this Statutory Right of Way shall enure to the benefit of and be binding upon the parties hereto, their heirs, administrators, successors and assigns, and wherever the singular or masculine is used herein, it shall be construed as if the feminine, plural or neuter, as the case may be, had been used wherever the context or the parties hereto so require.
9. Notwithstanding any other term of this Agreement, the Company covenants to and agrees with the Transferor as follows:
- (a) **Service the Lands for University Purposes** – The rights granted to the Company hereunder are for Facilities which are required for the provision of utility services for university purposes on the Lands. For the purposes of this paragraph 9(a) “utility services” means:
 - (i) the service, including the use and accommodation, provided by the Company on the Lands,
 - (ii) a product or commodity provided by the Company on the Lands, or
 - (iii) the plant, equipment, apparatus, appliances, property and facilities employed by or in connection with the Company in providing service or a product or commodity in accordance with subparagraphs 9(a)(i) or (ii) above.
 - (b) **Non-Exclusive Right of Way** - The Company agrees that the rights granted herein are not exclusive to the Company and that other utility providers, including communications and/or cable companies (the “Other Utility Providers”) may be allowed the use of the Right of Way Area by the Transferor provided that such rights do not interfere with the rights granted to the Company under this Agreement. The Company further agrees it will fully co-operate with the Other Utility Providers in sharing the Right of Way Area subject to good utility practice and applicable standards and regulations.
 - (c) **Piggyback Services** – If any Other Utility Providers wishes to utilize the Right of Way Area or Facilities on reasonable commercial terms then, the Company shall provide such Other Utility Providers (the “Permitted Licensee”) a license as necessary for the Permitted Licensee to provide its services, provided it does not interfere with the expansion, alteration, replacement, operation or maintenance of the Company’s Facilities, subject to good utility practice and applicable standards

- and regulation, and provided that the Permitted Licensee complies with the terms and conditions herein.
- (d) **Above Ground Construction Consultation** –Notwithstanding that the Company has the right to alter, maintain, replace and add to Facilities consistent with the terms herein, the Company shall consult the Transferor regarding the location and aesthetics of additional above ground Facilities, and, if commercially and operationally practical, accommodate the Transferor’s requests, when installing or constructing such additional above ground Facilities on the Right of Way Area.
 - (e) **Relocation of Facilities** - If at any time the existing location of the Facilities interferes with the development of the Lands, construction of a building or other improvement on the Lands, or the Transferor’s use or intended use of the Lands, the Transferor may request in writing that the Company relocate the Facilities, or any part of them, at the Transferor’s sole cost, reasonably assessed. The Company shall promptly, using reasonable dispatch, move the Facilities after receiving the written notice from the Transferor.
 - (f) **Registration Following Relocation of Facilities** - Once the Facilities have been relocated in accordance with paragraph 9(e) above, the Transferor agrees to grant the Company a statutory right of way on the same terms and conditions as this Statutory Right of Way Agreement for the new location of the Facilities and upon registration of the new statutory right of way, the Company shall provide the Transferor with a registerable discharge of this Statutory Right of Way Agreement, at the Transferor’s sole cost.
 - (g) **Unneeded Area That Interferes** - If at any time the Right of Way Area or a segment of its length is no longer required for the purposes of the grant hereunder and the Right of Way Area or such segment interferes with the Transferor’s use or intended use of the Lands, the Transferor may request by written notice that the Company provide the Transferor with a registerable discharge with respect to such portion of the Right of Way Area, or in the alternative, amend or replace this Agreement in such a manner to remove or discharge such portion, whereupon the Company shall do so at the Transferor’s sole cost, reasonably assessed, the Company shall do so promptly, using reasonable dispatch upon, receiving the written notice from the Transferor.
10. **General Access License** – For the term of this statutory right of way the Transferor irrevocably licenses to the Company, its employees, agents, successors and licensees the power and authority to enter onto and cross over the Remaining Lands that are not occupied by buildings or structures, for the purpose of accessing the Right of Way Area. Provided however, that whenever possible the Company shall limit its use of the Lands to utilizing existing public roadways or internal, private access roadways (“Roadways”) to access the Right of Way Area. If access to the Right of Way Area is not available over the Roadways, the Company agrees to make reasonable efforts to minimize disruption of the Transferor’s activities on the Lands and to the environment and the landscaping on the Lands when crossing the Remaining Lands to access the right of Way Area.

SCHEDULE "A"

PART 1 - DESCRIPTION OF THE LANDS

PID: 027-594-564

Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188
In the City of Kelowna and Glenmore-Elftison Improvement District

PART 2 - DESCRIPTION OF THE RIGHT OF WAY AREA

The Right of Way Area consists of the following:

Those portions of Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188 shown outlined in bold as Parcels A, B, C, D, E, F, G, H, AND I inclusive on a Plan of Statutory Right of Way completed and checked by Douglas A. Goddard, B.C.L.S., and the checklist filed under #96449, on the 20th day of May, 2009 and deposited in the Kamloops Land Title Office under Plan No. ~~KAI~~ **90790**, and

That part of Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188 shown outlined in bold on a Plan of Statutory Right of Way completed and checked by Douglas A. Goddard, B.C.L.S., and the checklist filed under #105312, on the 30th day of December, 2009 and deposited in the Kamloops Land Title Office under Plan No. ~~KAI~~ **90791**, and

That part of Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188 shown outlined in bold on a Plan of Statutory Right of Way completed and checked by H. G. van Gurp, B.C.L.S., and the checklist filed under #109786, on the 3rd day of May, 2010 and deposited in the Kamloops Land Title Office under Plan No. ~~KAI~~ **90792**, and

That part of Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188 shown outlined in bold on a Plan of Statutory Right of Way completed and checked by Neil R. Denby, B.C.L.S., and the checklist filed under #92273, on the 20th day of March, 2009 and deposited in the Kamloops Land Title Office under Plan No. ~~KAI~~ **90793**, and

That part of Lot A, Sections 10 and 11, Township 23, Osoyoos Division Yale District Plan KAP87188 shown outlined in bold on a Plan of Statutory Right of Way completed and checked by Douglas A. Goddard, B.C.L.S., and the checklist filed under #104260, on the 3rd day of December, 2009 and deposited in the Kamloops Land Title Office under Plan No. ~~KAI~~ **90794**.

END OF DOCUMENT

No. 1

Land Title Act
FORM 11(a)

LB385241

(Section 99(1)(e), (j) and (k))

APPLICATION FOR DEPOSIT OF SUBDIVISION,
REFERENCE OR EXPLANATORY PLAN (CHARGE)

I, Jacqui Johnson, Land Assistant for FortisBC Inc., 1290 Esplanade, PO Box 130, Trail, BC V1R 4L4 apply to deposit a Reference plan of Statutory Right-of-Way over part of Lot A, Plan KAP87188, Sec 10 and 11, TP23, ODYD prepared and certified correct by Douglas A. Goddard, a B.C. Land Surveyor on the 20th day of May, 2009. Checklist filed under #96449 on the 20th day of May, 2009.

I enclose:

- 1. The statutory right of way plan.
- 2. The reproductions of the plan required by section 67(s) (see below).
- 3. Fees of \$ 60.15

ASSIGNED PLAN NO.
KAP 90790

DATED this 11th day of May, 2010.

Land File: KEL-577

FORTISBC INC.
PO BOX 130, 1290 ESPLANADE
TRAIL, BC V1R 4L4

- NOTE:** (i) Under section 67(s) the following reproductions of the plan must accompany this application:
- (a) one blue linen original (alternatively white linen or original transparencies).
 - (b) one duplicate transparency.
 - (c) one white print is required as a worksheet for the land title office.
- (ii) The following further requirements may be necessary:
- (a) If the parent property is in an Agricultural Land Reserve, a release is required unless the parent property is less than 2.0 acres (app. .8094 hectares) or where, for permitted uses, an approving officer has signed the plan under section 1(1)(a) and (b) of the Subdivision and Land Use Regulation (B.C. Reg. 7/81) under the *Agricultural Land Commission Act*.
 - (b) Where a notice respecting a grant under the *Home Purchase Assistance Act* is endorsed on title, an extra white print must accompany the application, unless the *Ministry of Lands, Parks and Housing* agrees otherwise in writing. This extra print must contain the following endorsement:

"The eligible residence as defined by the *Home Purchase Assistance Act* is located on lot _____ created by this plan.

B.C.L.S. or solicitor for the owner"

- (c) Controlled access approval must be evident on the plan where parent property adjoins a highway that is designated as a controlled access highway.
- (d) Where the plan refers to a restrictive covenant to be made under section 219, the instrument containing the covenant must be tendered with the plan.



No. 2

Land Title Act
FORM 11(a)

LB385241

(Section 99(1)(e), (j) and (k))

APPLICATION FOR DEPOSIT OF SUBDIVISION,
REFERENCE OR EXPLANATORY PLAN (CHARGE)

I, Jacqui Johnson, Land Assistant for FortisBC Inc., 1290 Esplanade, PO Box 130, Trail, BC V1R 4L4 apply to deposit a Reference plan of Statutory Right-of-Way over part of Lot A, Plan KAP87188, Sec 10 and 11, TP23, ODYD prepared and certified correct by Douglas A. Goddard, a B.C. Land Surveyor on the 30th day of December, 2009. Checklist filed under #105312 on the 30th day of December, 2009.

I enclose:

- 1. The statutory right of way plan.
- 2. The reproductions of the plan required by section 67(s) (see below).
- 3. Fees of \$ 60.15

ASSIGNED PLAN NO.
KAP 90791

DATED this 11th day of May, 2010.

Land File: KEL-577

FORTISBC INC.
PO BOX 130, 1290 ESPLANADE
TRAIL, BC V1R 4L4

- NOTE:** (i) Under section 67(s) the following reproductions of the plan must accompany this application:
- (a) one blue linen original (alternatively white linen or original transparencies).
 - (b) one duplicate transparency.
 - (c) one white print is required as a worksheet for the land title office.
- (ii) The following further requirements may be necessary:
- (a) If the parent property is in an Agricultural Land Reserve, a release is required unless the parent property is less than 2.0 acres (app. .8094 hectares) or where, for permitted uses, an approving officer has signed the plan under section 1(1)(a) and (b) of the Subdivision and Land Use Regulation (B.C. Reg. 7/81) under the *Agricultural Land Commission Act*.
 - (b) Where a notice respecting a grant under the *Home Purchase Assistance Act* is endorsed on title, an extra white print must accompany the application, unless the *Ministry of Lands, Parks and Housing* agrees otherwise in writing. This extra print must contain the following endorsement:

"The eligible residence as defined by the *Home Purchase Assistance Act* is located on lot _____ created by this plan.

B.C.L.S. or solicitor for the owner"

- (c) Controlled access approval must be evident on the plan where parent property adjoins a highway that is designated as a controlled access highway.
- (d) Where the plan refers to a restrictive covenant to be made under section 219, the instrument containing the covenant must be tendered with the plan.



No. 3

Land Title Act
FORM 11(a)

LB385241

(Section 99(1)(e), (f) and (k))

APPLICATION FOR DEPOSIT OF SUBDIVISION,
REFERENCE OR EXPLANATORY PLAN (CHARGE)

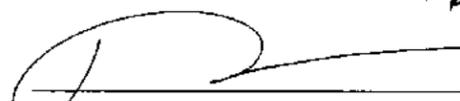
I, Jacqui Johnson, Land Assistant for FortisBC Inc., 1290 Esplanade, PO Box 130, Trail, BC V1R 4L4 apply to deposit a Reference plan of Statutory Right-of-Way over part of Lot A, Plan KAP87188, Sec 10 and 11, TP23, ODYD prepared and certified correct by H.G. van Gorp, a B.C. Land Surveyor on the 3rd day of May, 2010. Checklist filed under #109786 on the 3rd day of May, 2010.

I enclose:

1. The statutory right of way plan.
2. The reproductions of the plan required by section 67(s) (see below).
3. Fees of \$ _____

DATED this 11th day of May, 2010.

Land File: KEL-577


 FORTISBC INC.
 PO BOX 130, 1290 ESPLANADE
 TRAIL, BC V1R 4L4

ASSIGNED PLAN NO.
VAR 90792

NOTE: (i) Under section 67(s) the following reproductions of the plan must accompany this application:

- (a) one blue linen original (alternatively white linen or original transparencies).
- (b) one duplicate transparency.
- (c) one white print is required as a worksheet for the land title office.

(ii) The following further requirements may be necessary:

- (a) If the parent property is in an Agricultural Land Reserve, a release is required unless the parent property is less than 2.0 acres (app. 8094 hectares) or where, for permitted uses, an approving officer has signed the plan under section 1(1)(a) and (b) of the Subdivision and Land Use Regulation (B.C. Reg. 7/81) under the *Agricultural Land Commission Act*.
- (b) Where a notice respecting a grant under the *Home Purchase Assistance Act* is endorsed on title, an extra white print must accompany the application, unless the *Ministry of Lands, Parks and Housing* agrees otherwise in writing. This extra print must contain the following endorsement:

"The eligible residence as defined by the *Home Purchase Assistance Act* is located on lot _____ created by this plan.

B.C.L.S. or solicitor for the owner"

- (c) Controlled access approval must be evident on the plan where parent property adjoins a highway that is designated as a controlled access highway.
- (d) Where the plan refers to a restrictive covenant to be made under section 219, the instrument containing the covenant must be tendered with the plan.



→ (A)

Land Title Act
FORM 11(a)

LB385241

(Section 99(1)(e), (f) and (k))

APPLICATION FOR DEPOSIT OF SUBDIVISION,
REFERENCE OR EXPLANATORY PLAN (CHARGE)

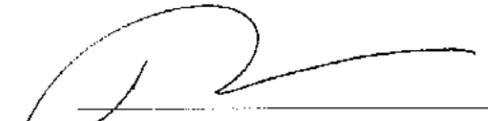
I, Jacqui Johnson, Land Assistant for FortisBC Inc., 1290 Esplanade, PO Box 130, Trail, BC V1R 4L4 apply to deposit a Reference plan of Statutory Right-of-Way over part of Lot A, Plan KAP87188, Sec 10 and 11, TP23, ODYD prepared and certified correct by Neil R. Denby, a B.C. Land Surveyor on the 20th day of March, 2009. Checklist filed under #92273 on the 20th day of March, 2009.

I enclose:

1. The statutory right of way plan.
2. The reproductions of the plan required by section 67(s) (see below).
3. Fees of \$ _____

DATED this 11th day of May, 2010.

Land File: KEL-577


 FORTISBC INC.
 PO BOX 130, 1290 ESPLANADE
 TRAIL, BC V1R 4L4

ASSIGNED PLAN NO.
VAR 90793

NOTE: (i) Under section 67(s) the following reproductions of the plan must accompany this application:

- (a) one blue linen original (alternatively white linen or original transparencies).
- (b) one duplicate transparency.
- (c) one white print is required as a worksheet for the land title office.

(ii) The following further requirements may be necessary:

- (a) If the parent property is in an Agricultural Land Reserve, a release is required unless the parent property is less than 2.0 acres (app. 8094 hectares) or where, for permitted uses, an approving officer has signed the plan under section 1(1)(a) and (b) of the Subdivision and Land Use Regulation (B.C. Reg. 7/81) under the *Agricultural Land Commission Act*.
- (b) Where a notice respecting a grant under the *Home Purchase Assistance Act* is endorsed on title, an extra white print must accompany the application, unless the *Ministry of Lands, Parks and Housing* agrees otherwise in writing. This extra print must contain the following endorsement:

"The eligible residence as defined by the *Home Purchase Assistance Act* is located on lot _____ created by this plan.

B.C.L.S. or solicitor for the owner"

- (c) Controlled access approval must be evident on the plan where parent property adjoins a highway that is designated as a controlled access highway.
- (d) Where the plan refers to a restrictive covenant to be made under section 219, the instrument containing the covenant must be tendered with the plan.



(B)

Land Title Act
FORM 11(a)

LB385241

(Section 99(1)(e), (j) and (k))

APPLICATION FOR DEPOSIT OF SUBDIVISION,
REFERENCE OR EXPLANATORY PLAN (CHARGE)

I, Jacqui Johnson, Land Assistant for FortisBC Inc., 1290 Esplanade, PO Box 130, Trail, BC
V1R 4L4 apply to deposit a Reference plan of Statutory Right-of-Way over part of Lot A, Plan
KAP87188, Sec 10 and 11, TP23, ODYD prepared and certified correct by Neil R. Denby, a
B.C. Land Surveyor on the 20th day of March, 2009. Checklist filed under #~~104760~~ on the 20th
day of March, 2009. #104760

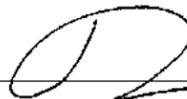
I enclose:

1. The statutory right of way plan.
2. The reproductions of the plan required by section 67(s) (see below).
3. Fees of \$ 60.15

ASSIGNED PLAN N.
K.M. 90794

DATED this 11th day of May, 2010.

Land File: KEL-577


 FORTISBC INC.
 PO BOX 130, 1290 ESPLANADE
 TRAIL, BC V1R 4L4

- NOTE:** (i) Under section 67(s) the following reproductions of the plan must accompany this application:
- (a) one blue linen original (alternatively white linen or original transparencies).
 - (b) one duplicate transparency.
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- (ii) The following further requirements may be necessary:
- (a) If the parent property is in an Agricultural Land Reserve, a release is required unless the parent property is less than 2.0 acres (app. .8094 hectares) or where, for permitted uses, an approving officer has signed the plan under section 1(1)(a) and (b) of the Subdivision and Land Use Regulation (B.C. Reg. 7/81) under the *Agricultural Land Commission Act*.
 - (b) Where a notice respecting a grant under the *Home Purchase Assistance Act* is endorsed on title, an extra white print must accompany the application, unless the *Ministry of Lands, Parks and Housing* agrees otherwise in writing. This extra print must contain the following endorsement:

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- (c) Controlled access approval must be evident on the plan where parent property adjoins a highway that is designated as a controlled access highway.
- (d) Where the plan refers to a restrictive covenant to be made under section 219, the instrument containing the covenant must be tendered with the plan.



f. Green Building Certification

Please refer to Schematic Design Report Appendix C-iv for further details on the proposed Preliminary LEED Strategy and targeted credits.



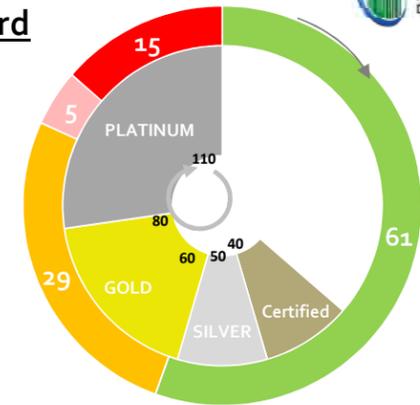
LEED v4 BD+C NC Residential Scorecard

UBCO Housing Commons

Point Summary: GOLD

Objective: GOLD

USGBC Project #: 1000105369



Targeted	Analysis	Pending	No	Integrative Process
1				IPc1 Integrative Process

4	7	2	3	Location and Transport
				LTc1 LEED Neighbourhood
1				LTc2 Sensitive Land Protection
		2		LTc3 High Priority Site
1	1		3	LTc4 Density and Diverse Uses
1	4			LTc5 Access to Quality Transit
1				LTc6 Bicycle Facilities
	1			LTc7 Reduced Parking Area
	1			LTc8 Green Vehicles

6	2	1	1	Sustainable Sites
				Prerequisite SSp1 Construction Pollution
1				SSc1 Site Assessment
		1	1	SSc2 Protect/Restore Habitat
	1			SSc3 Open Space
2	1			SSc4 Rainwater Management
2				SSc5 Heat Island Reduction
1				SSc6 Light Pollution Reduction

7	1	1	2	Water Efficiency
				Prerequisite WEp1 Outdoor Water Use
				Prerequisite WEp2 Indoor Water Use
				Prerequisite WEp3 Building Water Metering
1	1			WEc1 Outdoor Water Use
5		1		WEc2 Indoor Water Use
			2	WEc3 Cooling Tower Water Use
1				WEc4 Water Metering

21	12	0	0	Energy and Atmosphere
				Prerequisite EAp1 Fundamental Cx
				Prerequisite EAp2 Min. Energy Performance
				Prerequisite EAp3 Building Energy Metering
				Prerequisite EAp4 Refrigerant Management
6				EAc1 Enhanced Cx
10	8			EAc2 Energy Performance
1				EAc3 Energy Metering
1	1			EAc4 Demand Response
	3			EAc5 Renewable Energy
1				EAc6 Refrigerant Management
2				EAc7 Power/Carbon Offsets

4	4	0	5	Materials and Resources
				Prerequisite MRp1 Storage of Recyclables
				Prerequisite MRp2 Const. Waste Mgmt. Plan
			5	MRC1 Bldg. Life-Cycle Impact
1	1			MRC2 Enviro. Declarations
1	1			MRC3 Raw Material Sourcing
	2			MRC4 Material Ingredients
2				MRC5 Const. Waste Mgmt.

9	2	1	4	Indoor Env. Quality
				Prerequisite EQp1 Min. O/A Ventilation
				Prerequisite EQp2 Tobacco Smoke Control
2				EQc1 Air Quality Strategies
3				EQc2 Low-Emitting Materials
1				EQc3 Air Quality Mgmt. Plan
1		1		EQc4 Air Quality Assessment
1				EQc5 Thermal Comfort
1	1			EQc6 Interior Lighting
			3	EQc7 Daylighting
	1			EQc8 Quality Views
			1	EQc9 Acoustic Performance

6	0	0	0	Innovation
1				INc1 Green Building Ed.
1				INc2 Low-Mercury Lighting
1				INc3 Wastewater Mgmt
1				INc4 Occupant Comfort Survey
1				INc5 Green Cleaning/Pest Mgmt.
1				INc6 LEED AP

3	1	0	0	Regional Priority
1				RPC1 EAc2 - Optimize Energy Perform
	1			RPC2 LTc5 Quality Transit
1				RPC3 SSc6 Light Pollution
1				RPC4 WEc2 Indoor Water Use

Mission Green Buildings is the trading name of Mission Green Limited

g. Geotechnical Report



MATERIALS TESTING • SOILS
CONCRETE • ASPHALT • CORING
GEOTECHNICAL ENGINEERING

1 - 1925 KIRSCHNER ROAD
KELOWNA, B.C. V1Y 4N7
PHONE: 860-6540
FAX: 860-5027

UBC Properties Trust
Suite 101 – 555 Great Northern Way
Vancouver, BC V5T 1E2

May 3, 2017
Job 17.062C

Attention: Mr. Dave Poettcker

Dear Sir:

Re: **Geotechnical Investigation**
The Commons (North of the University Centre Building)
UBC Okanagan
Kelowna, BC

As requested, Interior Testing Services Ltd. (ITSL) has carried out a geotechnical investigation of the above noted site. Please find attached a site plan with schematic logs, four pages of auger hole logs, and a copy of our two page "Terms of Engagement", which governs our work and was previously signed and accepted.

1.0 INTRODUCTION

We understand building construction is being considered at the Commons area, and soils information and geotechnical guidance is desired at this time to aid in building planning. The Commons area is north of the University Centre Building.

We understand information with respect to the proposed building height (ie. number of stories) or main floor elevation is not available, as the building is in preliminary planning stages. However, given the gradual slope across the site, we anticipate buried basement foundation walls would be constructed at the north and west sides, transitioning to minimum depth frost walls at the southeast corner.

We have previous involvement on the UBC Okanagan campus, and reviewed the geotechnical report for the University Centre Building. Based on this, we anticipate the primary geotechnical concerns will be the presence of potentially swelling cohesive (SILT/CLAY) soils in addition to groundwater seepage at the deep foundation cuts (ie. at the northwest corner)

The purpose of our deeper investigation was to verify the soil and groundwater conditions to depth with respect to geotechnical comments for construction. Our report presents our findings and provides general recommendations for site preparation, foundation design, and drainage considerations.

2.0 SITE DESCRIPTION

As noted above, the site is located north of the existing University Centre Building, and is currently occupied by lawn and a concrete patio/courtyard. To the north of the proposed building area, additional lawn area exists, under which we understand the campus' geothermal system is installed.

The site slopes up from the southeast corner to the northwest corner, with roughly 5 m of grade separation across the building area. We anticipate the main floor level of the building would be set near geodetic elevations 445 m, to allow for level access at the southeast building corner.

3.0 FIELD WORK & RESULTS

On April 3, 2017, a truck mounted drill rig operated by Mud Bay Drill Co. Ltd. was used to advance four solid stem auger holes to depths ranging from 6.1 to 15.2 meters below surrounding grade. The auger holes were observed and logged in the field, with occasional grab samples recovered and returned to our laboratory for additional analysis.

Adjacent to three of the auger holes, Dynamic Cone Penetration Tests (DCPTs) were carried out to provide information of the relative density of the underlying soils. These tests are typically comparable to Standard Penetration Test 'N' values, which are commonly used in geotechnical design.

Locations and schematic logs of the test holes were approximately referenced to a site plan adapted from the City of Kelowna online mapping (Drawing 17.062-1). Elevations of the auger holes were approximated from the topographic plan obtained.

3.1 Soil Profile

Detailed soil descriptions are provided on the attached auger hole logs (Drawings 17.062-2 to 17.062-5), which should be used in preference to the generalized soil descriptions that follow.

The auger holes typically encountered roughly 0.3 to 0.6 m of surface topsoil and fill soils. A noted exception was AH3, which encountered 2.4 m of topsoil and unsuitable organic FILL.

Below the surface topsoil and fill, the natural soils are characterized by interlayered SILT/CLAY, silty SAND and SAND deposits to depths of roughly 3 to 8 m below surrounding grade. The underlying soils show dense, silty SAND to silty SAND and GRAVEL to the full depth of our auger holes, as much as 11 m below surrounding grade. Within the auger holes advanced at higher elevations on the site, the dense soils were encountered at shallower depths below grade. Drilling refusal was encountered within the underlying dense soils due to difficult drilling conditions.

3.2 Groundwater Conditions

During our investigation on April 3, 2017, moist or wet conditions were encountered at depths between 2 and 3 m below surrounding grade at AH2 and AH4, which may be attributed to groundwater seepage and the spring freshet conditions. Potential for seepage should be anticipated within deeper excavations required for the anticipated basement foundation walls at the north and west sides.

As a general comment, groundwater levels will vary seasonally and will be affected by drainage and infiltration conditions. Conventional perimeter drainage will be required for a proposed basement foundation, as well as positive finished grading away from the structure (see Section 7.0).

3.3 Laboratory Work

Moisture contents were determined on all recovered samples and the results are presented on the attached auger hole logs.

The natural SILT/CLAY soils ranged between 26 and 37% moisture, and the surface silty SAND and predominantly SAND soils ranged between 5 and 22% moisture. The underlying silty SAND to silty SAND and GRAVEL soils ranged between 5 and 12% moisture.

Attempts were made to obtain an undisturbed sample of the SILT/CLAY soils for swell testing; however the Shelby tube apparatus was damaged due to the granular soils and dense conditions, such that no samples were able to be recovered. Regardless, we have experience in the surrounding area which suggests the CLAY soils may have moderate to high swell potential on the order of 2 to 8%. To that end, foundation preparation for the existing surrounding buildings on the campus

included over-excavation of the SILT/CLAY soils and replacement with granular structural FILL.

4.0 FOUNDATION DESIGN

- 4.1 For site preparation, it is recommended that all vegetation, topsoil, and FILL soils be completely removed to expose the underlying natural soils. Based on our auger holes this will typically involve an excavation of roughly 0.3 to 0.6 m; although deeper FILLS were encountered at the location of AH3 to 2.4 m below grade.

Excavation for the anticipated basement would be expected to remove the deeper unsuitable FILLS encountered at the southwest corner of the site; although deeper fills could occur locally which should be completely removed from below the building footprint.

- 4.2 Based on our experience on the campus with swelling CLAY soils, it is recommended that any CLAY soils encountered at or near the proposed footing and slab grade be completely excavated and replacement granular structural FILL soils placed to reestablish the desired footing grade. This is intended to reduce potential issues with respect to swell/heave of the CLAY soils and provide a more consistent bearing surface.

Assuming a main floor elevation of roughly 445 m, we anticipate excavation for the building foundations will completely remove the surface cohesive deposits at the west side of the site. Over-excavation of the SILT/CLAY soils on the order of 1 to 2 m may be prudent at the east side of the site depending on the depth of clay encountered at footing grade.

- 4.3 Subject to a geotechnical review of the sub-excavated subgrade, structural FILL should be placed and compacted to achieve the desired foundation grades. Structural FILL should consist of a clean, 250 mm minus, granular product (less than 10% fines). Structural FILL should be placed and compacted in maximum 300 mm (1 foot) lifts to at least 98% of Standard Proctor Density (SPD) and within 2% of the optimum moisture content.

Periodic field density testing should be carried out during placement of the structural FILL to confirm adequate compaction is being achieved. As a minimum, field density testing is to be carried out on at least every second lift of fill placed (every 600 mm).

Structural FILL should extend laterally beyond the edge of the proposed building a distance at least equal to the depth of FILL placed. This is to allow for a 1 Horizontal to 1 Vertical load spread through the FILL to the natural soils below.

- 4.4 For slab-on-grade support, similar clean gravel structural FILL should be placed and compacted as outlined in 4.3 above. The final slab bearing surface should consist of a minimum 100 mm thickness of 25 mm crushed gravel compacted to at least 100% SPD. Otherwise, if radon rock is required (design and comment by others), we can review the suitability of that material for slab support.

5.0 FOUNDATION DESIGN

Foundation preparation recommendations have been provided in the previous section of this report. Subject to a geotechnical review of the natural subgrade and adequate placement and compaction of any gravel structural FILL soils required, foundations may be placed on the natural granular soils or compacted structural FILL with an allowable bearing pressure of 200 kPa (4000 psf) subject to the following conditions.

- i. Bearing surfaces be in a clean, dry, and well-compacted condition.
- ii. Footing width be a minimum of 400 mm (16 inches).
- iii. Footings be set 750 mm (30 inches) below final grade, or as per local by-law, for frost protection.

The noted allowable bearing pressure of 200 kPa (4000 psf) can be taken as the serviceability limit state (SLS) bearing pressure for limit states design. For structural design according to the 2012 BC Building Code, the factored geotechnical bearing resistance can be taken as 300 kPa (6000 psf).

Based on the results of our investigation, medium to very dense soils are generally anticipated below grade with average penetration "N" values between 25 and 50. From these results and our general experience in the area, Site Class D as taken from the 2012 BC Building Code table 4.1.8.4.A appears appropriate for seismic design purposes of the proposed building. Furthermore, the potential for liquefaction during the design earthquake is expected to be nominal.

6.0 LATERAL EARTH PRESSURES

As noted above, we anticipate that at least part of the building will include a buried basement. The foundation walls are expected to be relatively stiff and unyielding, so that at-rest conditions have been considered. We anticipate that the walls will be backfilled with

free-draining granular soils such that drained conditions exist, and that the finished backfill will be sloped away from the building.

Lateral earth pressures have been estimated based on an assumed friction angle of 35° and a unit weight of 19 kN/m³ for the expected onsite cohesive backfill material. Given the above design parameters, we assume at rest conditions and a corresponding equivalent fluid pressure, γ_{eq} , of 8.1 kN/m²/m can be used in design. To account for any surcharge pressures, a uniform lateral pressure coefficient, K_o , of 0.43 times the estimated load should also be applied to the wall for at rest conditions. If passive or active lateral earth conditions are to be considered or if soils other than clean gravels are to be used as backfill, please advise and we can provide alternative comments.

7.0 BUILDING DRAINAGE

As noted above, we anticipate the proposed building will include a buried basement at the north and west sides. Perimeter drainage should be provided and directed to a suitable disposal location. Given the potential for seasonal groundwater seepage, we recommend that the perimeter drain pipe consist of rigid, perforated PVC and not typical Big "O".

Roof drainage should also be collected and directed to a suitable disposal location, such as the campus storm system. Onsite drainage, including rock pits and drywells, do not appear to be suitable for this development, given the low permeability and potential for swell of the underlying natural soils.

In addition, all finished grades should slope away from the proposed building to reduce infiltration into the backfill zone.

8.0 CONCLUSIONS

8.1 Preliminary recommendations for site preparation and foundation design have been provided in the previous section of this report.

It is recommended that ITSL review the final proposed foundation designs prior to construction. This is to confirm our assumptions with respect to building elevations, especially with respect to our comments on potentially swelling CLAY soils.

8.2 ITSL should be given the opportunity to review the exposed subgrade soils prior to placing structural FILL or concrete foundations. This is to confirm that the exposed soils are as expected or to advise on remedial measures, if necessary. ITSL should

also be called to conduct regular field density testing within all structural FILL to confirm adequate compaction is being achieved.

We trust this will assist you. Please call if you have any questions.

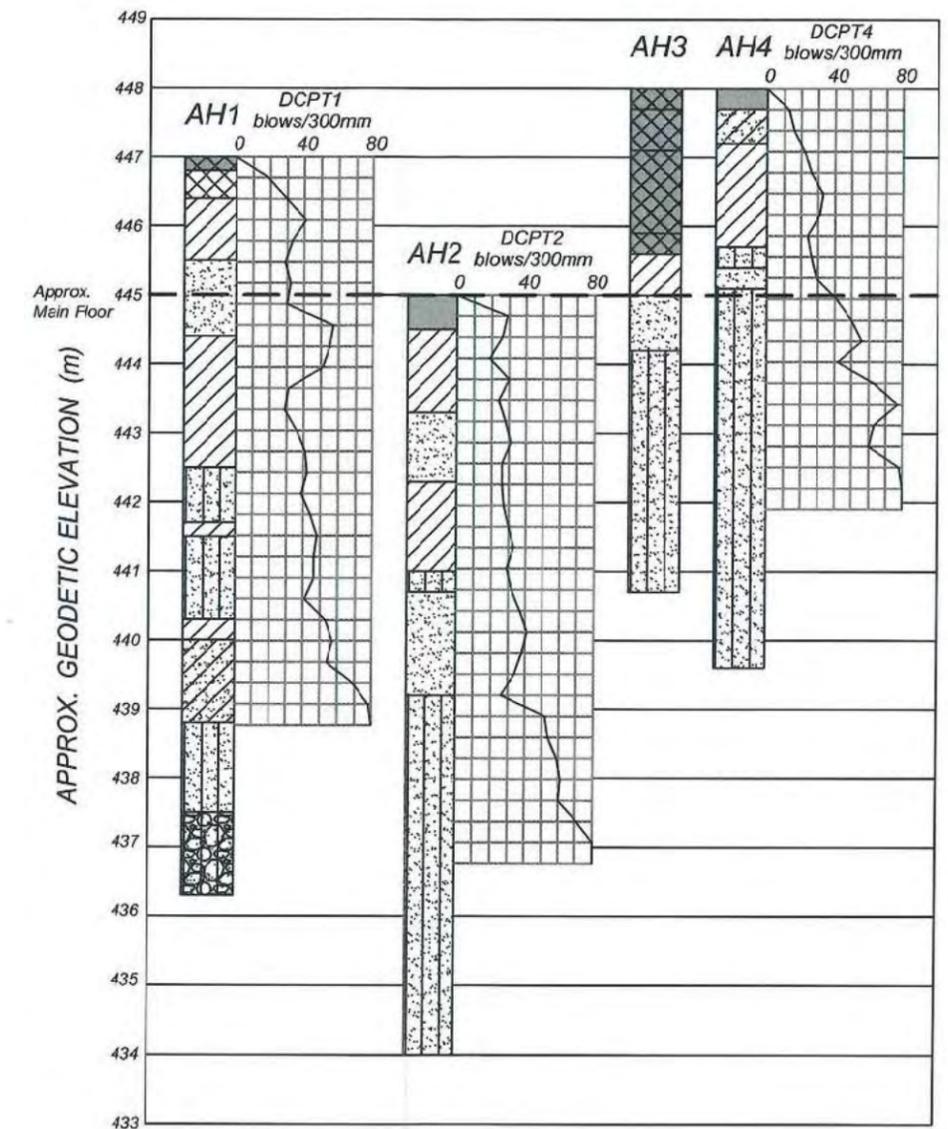
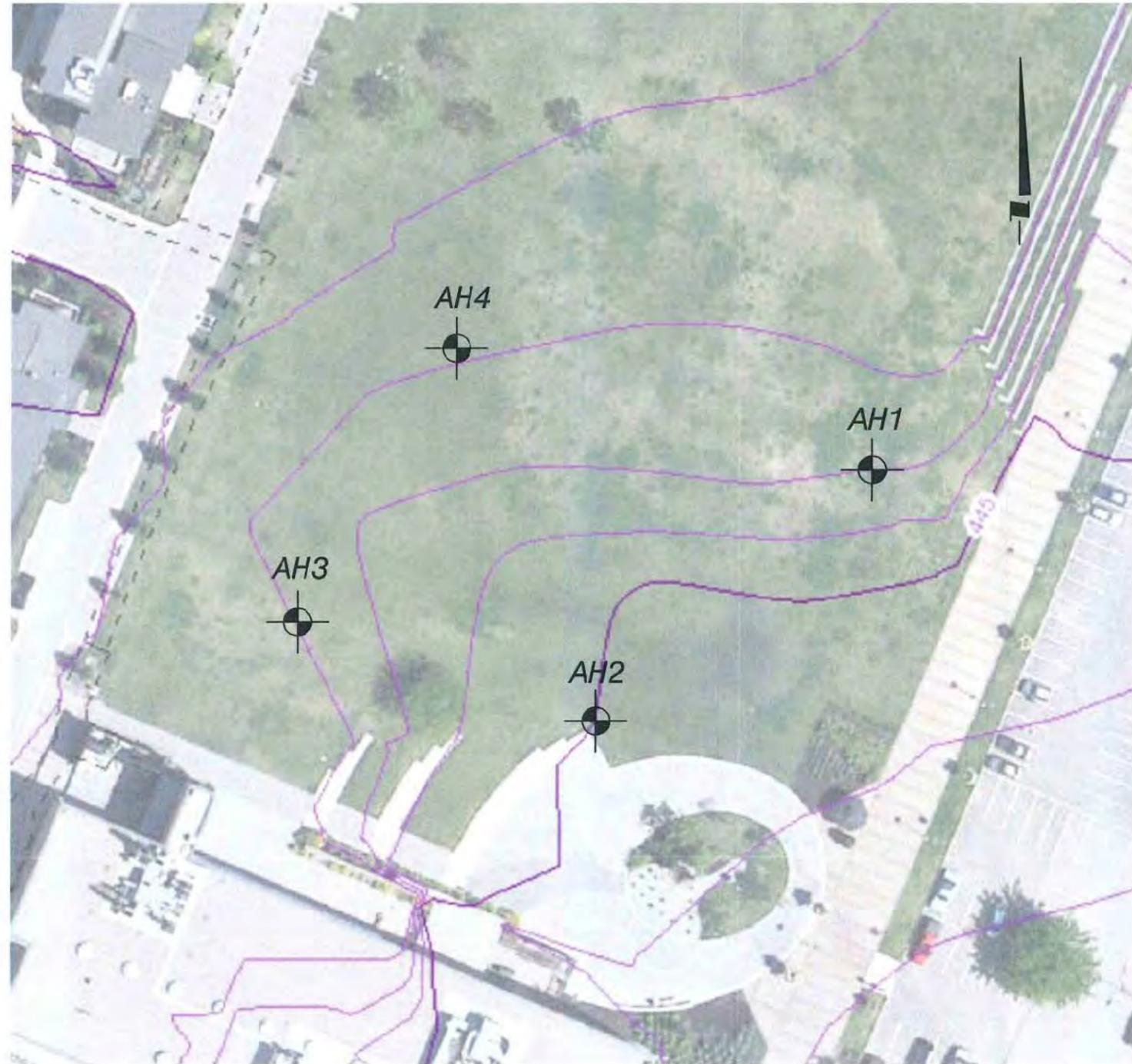
Yours truly,
Interior Testing Services Ltd.


Jennifer Anderson, P.Eng.


Peter Hanenburg, P.Eng.

SCHEMATIC LOGS

SCALE VERTICAL 1:100



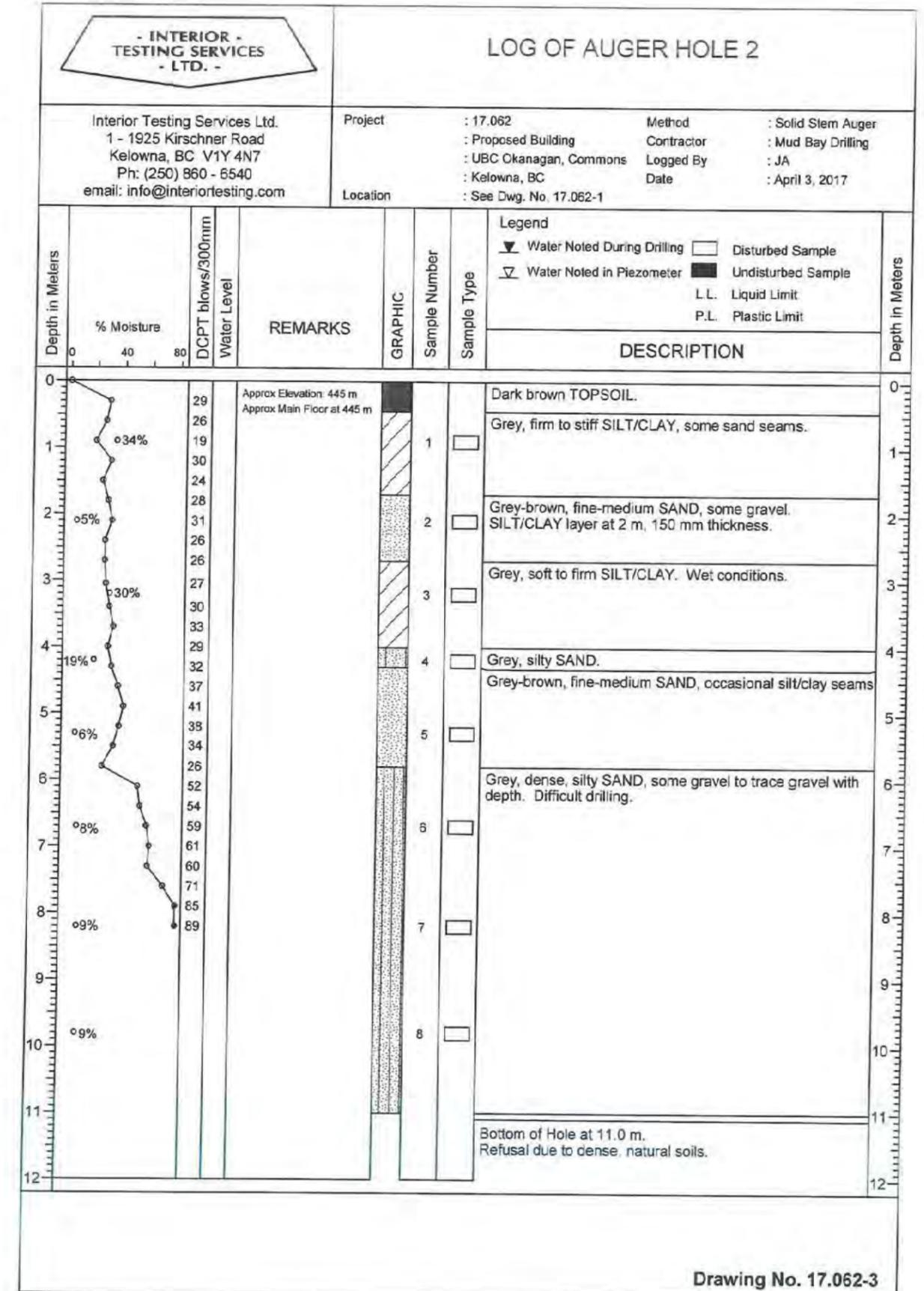
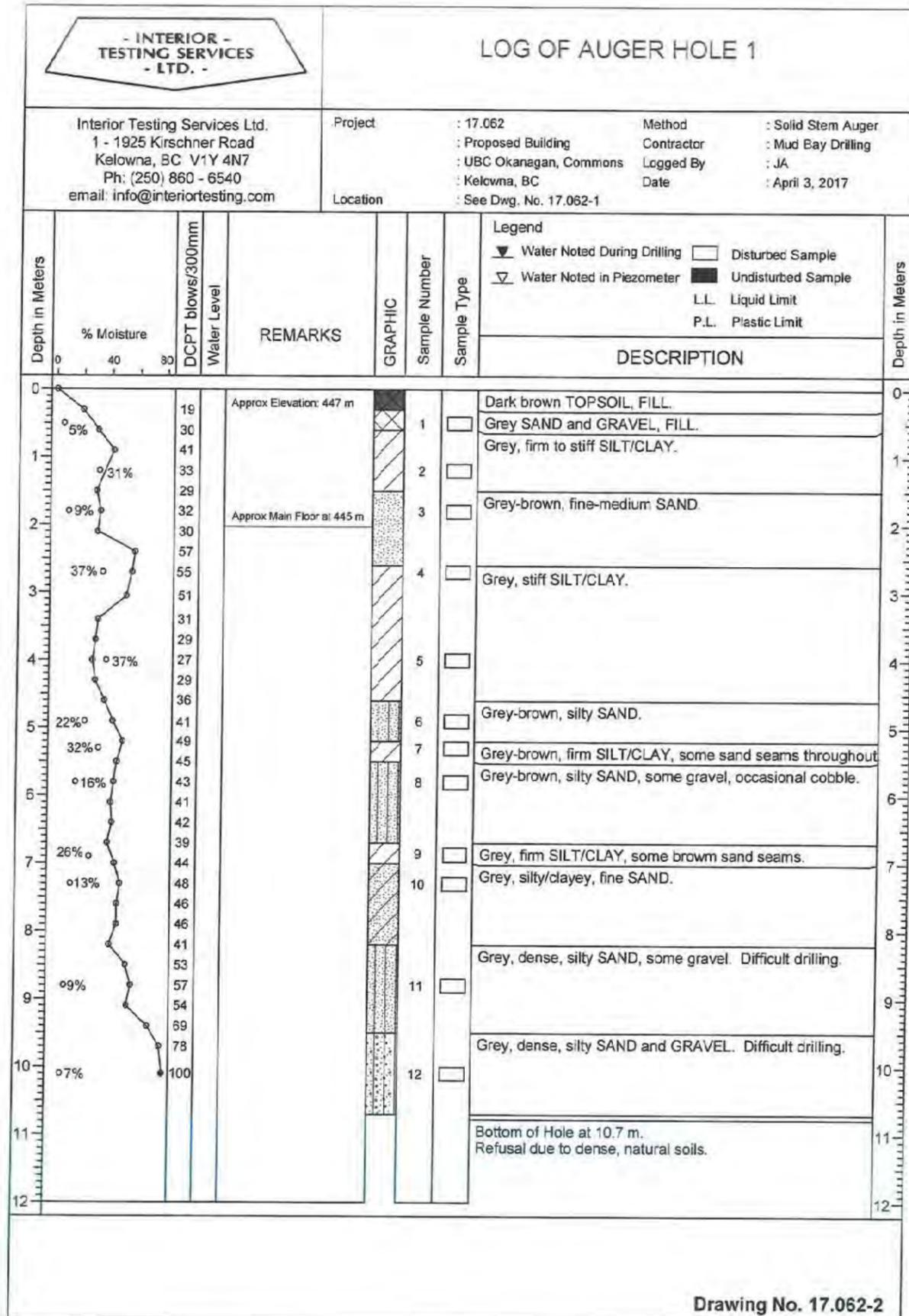
LEGEND

-  AUGER HOLE LOCATION
-  TOPSOIL
-  SILT
-  FILL
-  SAND
-  SILT/CLAY
-  GRAVEL, COBBLE

NOTES

1. REFERENCE PLAN ADAPTED FROM CITY OF KELOWNA GIS MAPPING. NOT TO SCALE.
2. AUGER HOLE LOCATIONS ARE APPROXIMATE AND MAY VARY FROM THAT SHOWN.
3. FOR DETAILED SOIL DESCRIPTIONS REFER TO AUGER HOLE LOGS.

UBCO PROPERTIES TRUST GEOTECHNICAL INVESTIGATION PROPOSED BUILDING THE COMMONS - UBC OKANAGAN KELOWNA, BC	SITE PLAN & SCHEMATIC LOGS	INTERIOR TESTING SERVICES LTD. 1-1925 KIRSCHNER ROAD, KELOWNA, BC V1Y 4N7 PH: 250-860-6540 FAX: 250-860-5027 DATE OF INVESTIGATION: APRIL 3, 2017 JOB NUMBER: 17.062 DRAWING NUMBER: 17.062-1
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TERMS OF ENGAGEMENT

GENERAL

Interior Testing Services Ltd. (ITSL) shall render the Services performed for the Client on this Project in accordance with the following Terms of Engagement. ITSL may, at its discretion and at any stage, engage subconsultants to perform all or any part of the Services. Unless specifically agreed in writing, these Terms of Engagement shall constitute the entire Contract between ITSL and the Client.

COMPENSATION

Charges for the Services rendered will be made in accordance with ITSL's Schedule of Fees and Disbursements in effect from time to time as the Services are rendered. All Charges will be payable in Canadian Dollars. Invoices will be due and payable by the Client within thirty (30) days of the date of the invoice without hold back. Interest on overdue accounts is 12% per annum.

REPRESENTATIVES

Each party shall designate a representative who is authorized to act on behalf of that party and receive notices under this Agreement.

TERMINATION

Either party may terminate this engagement without cause upon thirty (30) days' notice in writing. On termination by either party under this paragraph, the Client shall forthwith pay ITSL its Charges for the Services performed, including all expenses and other charges incurred by ITSL for this Project.

If either party breaches this engagement, the non-defaulting party may terminate this engagement after giving seven (7) days' notice to remedy the breach. On termination by ITSL under this paragraph, the Client shall forthwith pay to ITSL its Charges for the Services performed to the date of termination, including all fees and charges for this Project.

ENVIRONMENTAL

ITSL's field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater. ITSL will co-operate with the Client's environmental consultant during the field work phase of the investigation.

PROFESSIONAL RESPONSIBILITY

In performing the Services, ITSL will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices and procedures normally provided in the performance of the Services contemplated in this engagement at the time when and the location in which the Services were performed. ITSL makes no warranty, representation or guarantee, either express or implied as to the professional services rendered under this agreement.

LIMITATION OF LIABILITY

ITSL shall not be responsible for:

- (a) the failure of a contractor, retained by the Client, to perform the work required in the Project in accordance with the applicable contract documents;
- (b) the design of or defects in equipment supplied or provided by the Client for incorporation into the Project;
- (c) any cross-contamination resulting from subsurface investigations;
- (d) any damage to subsurface structures and utilities;
- (e) any Project decisions made by the Client if the decisions were made without the advice of ITSL or contrary to or inconsistent with ITSL's advice;
- (f) any consequential loss, injury or damages suffered by the Client, including but not limited to loss of use, earnings and business interruption;
- (g) the unauthorized distribution of any confidential document or report prepared by or on behalf of ITSL for the exclusive use of the Client.

The total amount of all claims the Client may have against ITSL under this engagement, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, shall be strictly limited to the lesser of our fees or \$50,000.00.

No claim may be brought against ITSL in contract or tort more than two (2) years after the Services were completed or terminated under this engagement.

h. Photos



VIEW OF SITE FROM SOUTH



VIEW OF SITE FROM EAST



VIEW OF SITE FROM NORTH



VIEW FROM SITE TO WEST



Drawing Requirements

- Cover Sheet** 30
- Context Plan**..... 31
- Site Plan** 32
- Utilities** 33
- Survey Plan** 34
- Shadow Analysis** 35
- Floor Plans** 37
- Roof Plan** 40
- Elevations** 41
- Sections** 43
- Landscape Plans** *Forthcoming: Refer to Site Plan*
- Lighting** 45
- CPTED Principles** 46
- Context Drawings** 47
- Perspective Renderings** 48
- Materials** 53

City of Kelowna Zoning Bylaw Preliminary Review

Project Name: Universtiy of British Columbia Okanagan Housing Commons
 Project Address: 1255 International Mews, UBCO, Kelowna B.C.

Section 1: General Administration

Section Reference

1.3 Zoning Map Project Zoning is **CD-20 (Comprehenisve Univeristy Development)**

Development Site Area¹ **6621.1m²** Refers to the area of development of the new Housing Commons Facility
 Development Site Area² **5817.8m²** Refers to the area of development for ancillary site work

Section 6: General Development Regulations

6.6 Height and Grade *Walkout basements oriented to the rear yard shall not be considered for the purpose of determining height for single-detached, duplex or semi-detached housing. Where single-detached, duplex or semi-detached housing has a walkout basement oriented to the rear yard, height shall be determined as follows: The maximum height of any building elevation facing a front yard or, flanking street is the lesser of 8.6m from grade or 2 storeys. The height for the lowest floor or walkout basements at the rear elevation can not exceed 3.6m measured from approved building grade to the top of the finished floor above the slab. In addition the total height of the rear building elevation cannot exceed the lesser of 3 storeys or 12.5m measure from approved building grade. Where access is required through, and is limited to a lane the yard abutting the lane may be considered the front yard*

Average Grade: **446.225** **Contingent on review of final Survey.**
 Building Height Above Grade **25.125m**
 Storeys above grade **5**
 Storeys below grade **1**

Section 7: Landscaping and Screening

7.6 Minimum Landscape Buffers **Refer to CD-20 Requirements**

Section 8: Parking and Loading

8.1 Off-street Parking: Additional Parking is not provided as part of this development. The development site sits adjacent to an existing University parking lot.

Min parking spaces required (table 8.1) N/A (Universities are calculated per classroom, no classrooms provided)

8.2 Off-street Loading: Loading is located within the basement of the development.
 Space as been allocated for two (2) semi trucks, one (1) waste compaction unit and (1) stacked compactor

Loading space area minimum (8.2.9): 28.0m²
 Loading space area provided: **351m²** (4 spaces, not including dock area)

Loading space width minimum (8.2.9): 3.0m
 Loading space width provided: **3.66m** (each of 4)

Loading space clearance minimum (8.2.9): 4.0m
 Loading space clearance provided: **4.1m**

Minimum Loading space req'd. (Table 8.2): 1.5 car per 100 students, minimum 5 plus 3 bus loading spaces.
 Loading spaces provided **4**

8.3. Development Standards

(8.3.5) Every off-street parking or loading area required by this Bylaw to accommodate 50 or more vehicles at-grade shall incorporate landscaped open space within the parking area calculated on the basis of 2.0 m² of landscaped island area per required parking and loading space. This shall be landscaped in accordance with Section 7.

Area of landscape provided **2880m²**

8.4 Off Street Bicycle Parking

No. Class I Bicycle parking spaces req. (table 8.3)	NA	(2.5 per classroom)	Interior Space provided for the secure storage of 34 residence bikes per functional design brief requirements.
No. Class II Bicycle parking spaces req. (table 8.3)	NA	(0.1 per classroom)	

Schedule 'B' Comprehensive Development Zones CD-20

The Below list of primary, secondary and ancillary uses is congruent with a listing of primary building functions provided by the UBCO working group in the "Housing Commons Functional Program" developed by Resource Planning Group Inc., received February 17, 2017

1.2 Principal uses

Housing Commons - Assembly Spaces
Parking Services - Office and Administrative Uses
Student Housing and Hospitality Services - Office and Administrative Uses
Housing Commons Residence - Student Residences
Student Housing and Hospitality Services Amenity - Office and Administrative Uses

1.3 Secondary Uses

Dining Hall + Convenience - University Related Business Services - Food and Beverage Uses

Ancillary Uses

Building Support Services
Field House Programming

1.4(a) Minimum Lot Width
 Proposed Lot Width

18m
54.2m

1.4(b) Minimum Lot Depth
 Proposed Lot Depth

30m
101.5

1.4(c) Minimum Lot Area
 Proposed Lot Area

660m²
6621.1m²

1.5 Development Regulations- Density (FAR)
 Proposed Site FAR
 Proposed Development FAR- campus

1.0 *The total density for this project, based on entire campus site area*
1.89 (project site only)
<1.0

1.5 Development Regulations- Site Coverage
 Proposed Site Coverage (Project Site only)
 Proposed Site Coverage (Campus land area)

40% *of entire campus land area*
56% (project site only)
<40%

1.5 Development Regulations- Height

6 Storeys *or*
 27m

Proposed no. Storeys
Proposed building height above grade
Proposed Average Grade*

5 + basement
25.125m
446.225m Contingent on review of final Survey.

1.5 Development Regulations- Setbacks

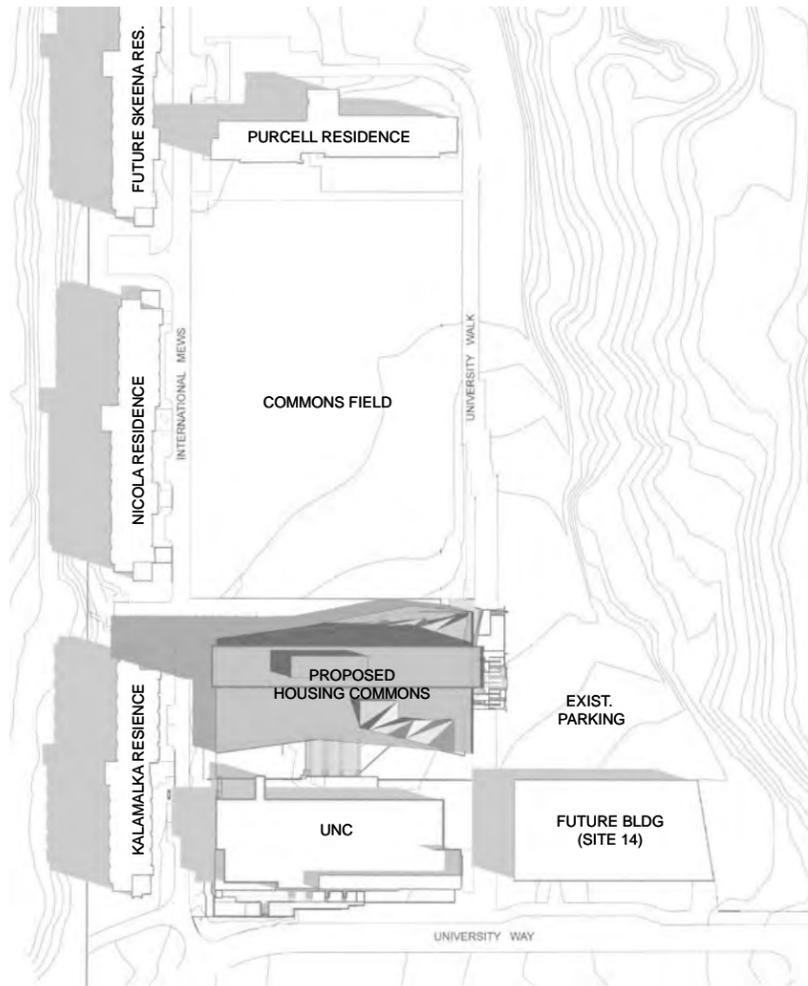
Min Setback from campus Border	30m
Proposed Setback from Campus Border	>30m
Required Setback from internal lot lines	0m
Proposed Setback from Internal Lot lines (N)	5.2m
Proposed Setback from Internal Lot lines (S)	6.4m
Proposed Setback from Internal Lot lines (E)	0m
Proposed Setback from Internal Lot lines (W)	4.5m
Min Frontage on Arterial Roads	6m
Proposed Setback from International Mews	4.5

1.5 Development Regulations- Selected Floor Area Limits

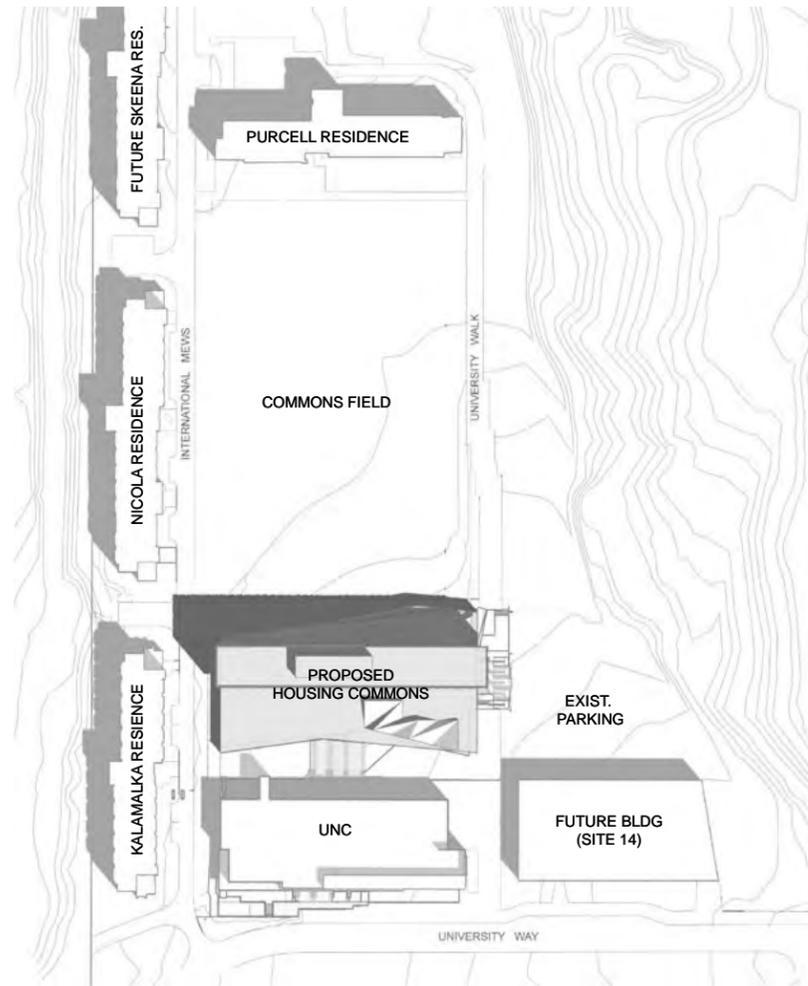
Food and Beverage	3000m ²	max.
Proposed Food and Beverage Area	760m²	
Student Residence Beds	2500	max.
	50000m ²	max.
Proposed No. Beds	220	
Proposed Residential Residence Area	5571.5m²	

Residence Breakdown

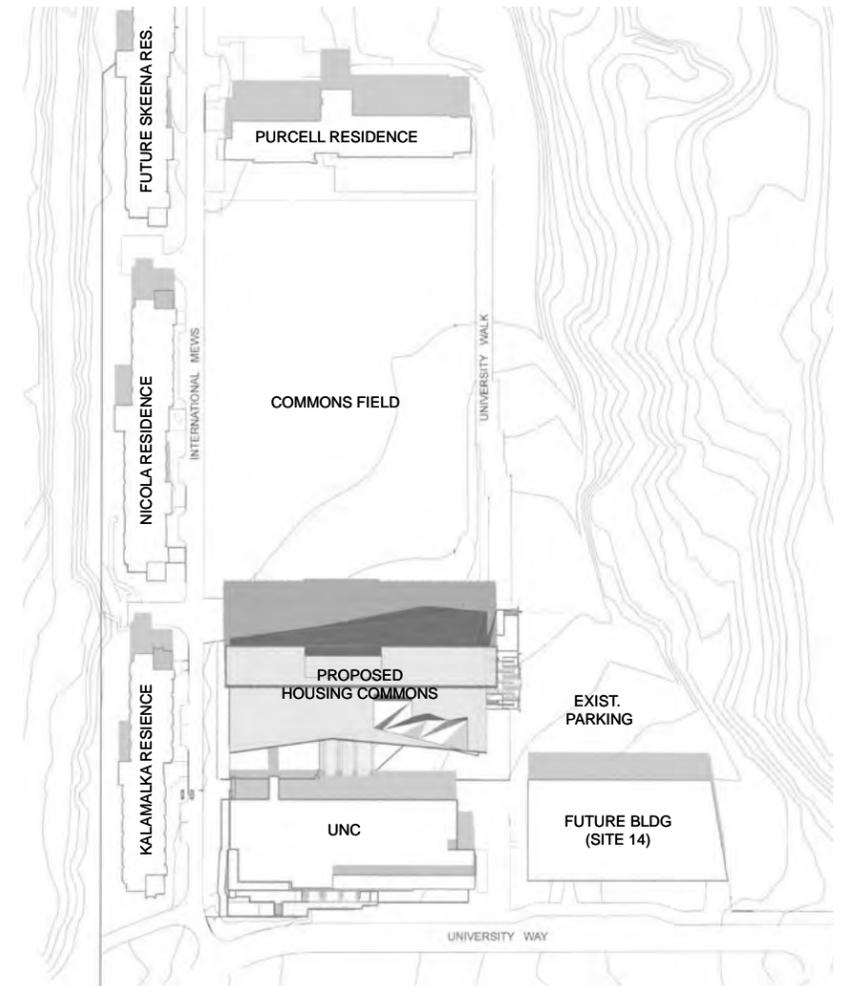
No. Standard Suites	104	each suite consists of 2 rooms @ 12.96m ² ea. and 1 shared washroom @ 4.65m ²
No. Residence Rooms per Standard Suite	2	
Total Residence Rooms (Standard)	208	
No. Accessible Suites	6	each suite consists of 1 rooms @ 16.23m ² ea. and 1 single washroom @ 7.55m ²
No. Residence Rooms per Accessible Suite	1	
Total Residence Rooms (Accessible)	6	
No. Hotelling/ Hostelng Suites	6	each suite consists of 1 rooms @ 16.23m ² ea. and 1 single washroom @ 7.55m ²
No. Residence Rooms per Hotelling/ Hostelng Suite	1	
Total Residence Rooms (Hotelling/ Hostelng)	6	



10 AM
 SPRING (MARCH 21)

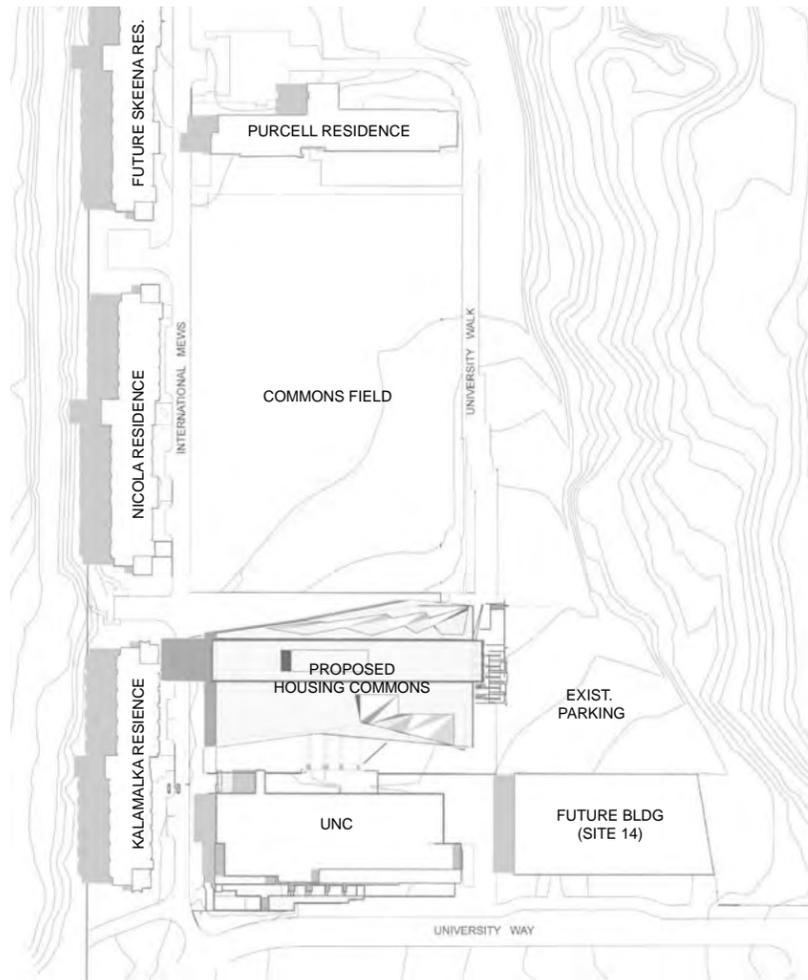


12 PM

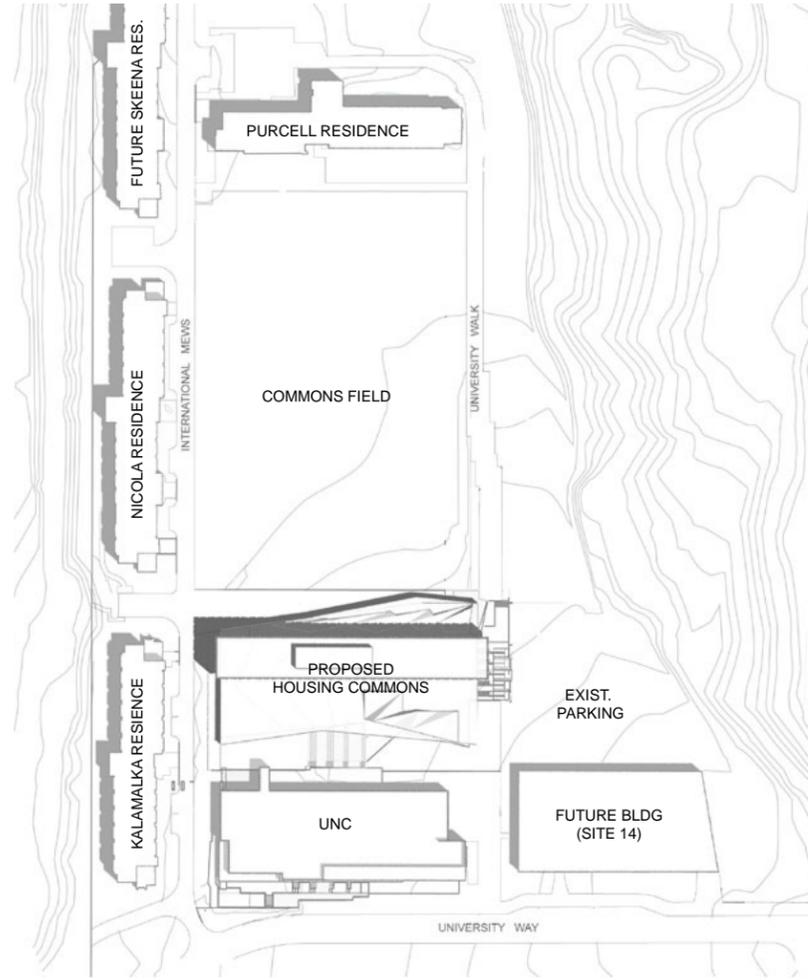


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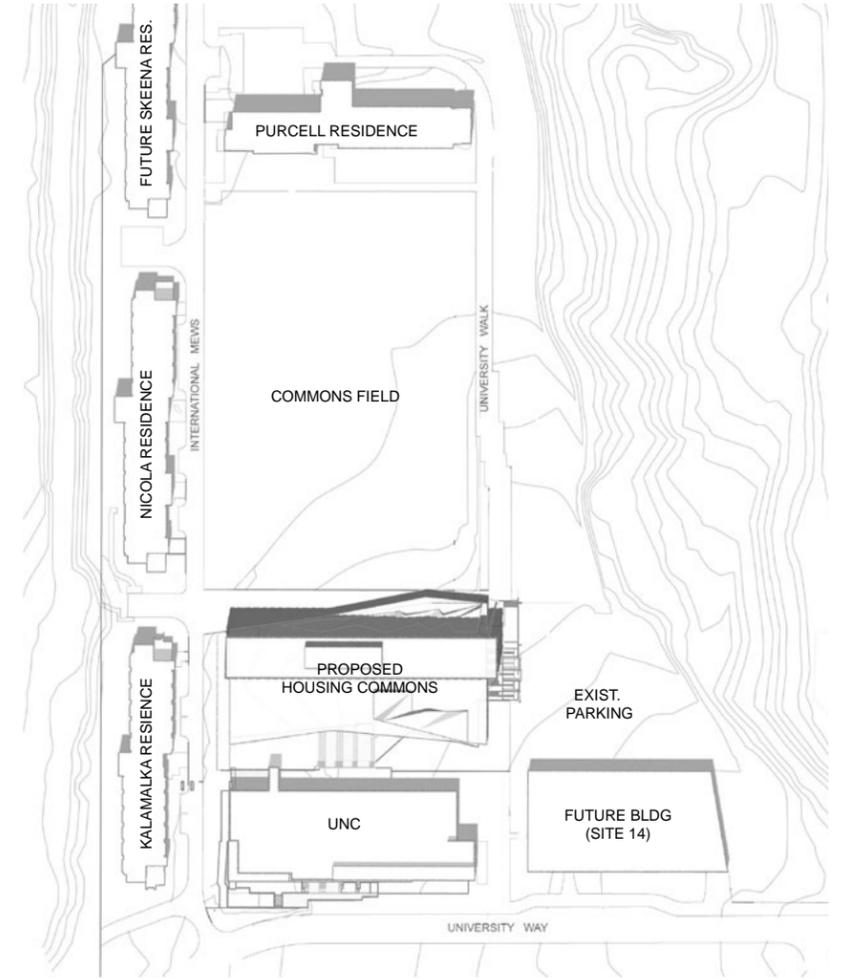
SHADOW STUDIES



10 AM
SUMMER (JUNE 21)



12 PM



2 PM

SHADOW STUDIES

CPTED Principles



Providing a safe and secure environment for students and staff has been a primary focus of the design so far, with the aim of integrating safety and security in a natural manner. The Housing Commons “hub” will be open, transparent, and the majority of key spaces will be easily monitored from a single point. This will ensure that every space is both open and welcoming and safe. The residence environment will be highly secure, while at the same time feeling warm and welcoming. Security points will occur at multiple levels: access to the building as a whole; from the public areas of the building to the residence; and at the level of the suite and individual room. CPTED principles are being employed in the following key ways:

Encouraging natural surveillance

Large amounts of transparency are deployed along major interior and exterior circulation routes into key program areas, maximizing the visibility and user interaction that increases opportunities for passive surveillance. Lighting design will compliment this strategy, avoiding shadow, blind-spots and glare. Exterior walls have been designed to form only 90 degree or larger inside corners, minimizing opportunities for hiding or entrapment. Landscaping will be chosen so that shrubs do not grow to provide cover and so that views are unobstructed under tree canopies.

Creating natural access control between public and private spaces

The centrally placed Housing Commons reception desk will act as a natural point of control for visitors to the entire “Hub” area. Entry into the Dining Hall is available via the “Hub” as well as a clearly identifiable exterior entry, utilizing large areas of transparent glazing to create a strong sense of passive oversight. Access to the Residence shared amenities and individual floors and suites will be via a single, easy-to-locate point, within view of the reception desk, featuring mechanical access control.

Employing natural territorial reinforcement

Creating a highly sought after destination facility will play an important role in attracting users and a feeling of stewardship over the building and its spaces. Prioritizing the selection of attractive, hardy, easy-to-maintain materials and creating indoor and landscaped spaces that remain attractive even with heavy use will help create a sense of pride of place and ownership amongst users, who are less likely to mistreat the building or tolerate mistreatment among others.



STRATEGIC TRANSPARENCY AND THE GROUPING OF ACTIVE USES ALONG INDOOR AND OUTDOOR CIRCULATION PATHS INCREASE USER ENGAGEMENT AND OPPORTUNITIES FOR NATURAL SURVEILLANCE.



VIEW OF DINING HALL & PLAZA FROM SOUTHEAST (UNIVERSITY WALK)

PERSPECTIVE RENDERINGS



VIEW OF COMMONS "HUB" ENTRY FROM NORTHEAST (UNIVERSITY WALK)

PERSPECTIVE RENDERINGS



VIEW OF COMMONS "HUB" ENTRY FROM NORTHWEST (INTERNATIONAL MEWS)

PERSPECTIVE RENDERINGS



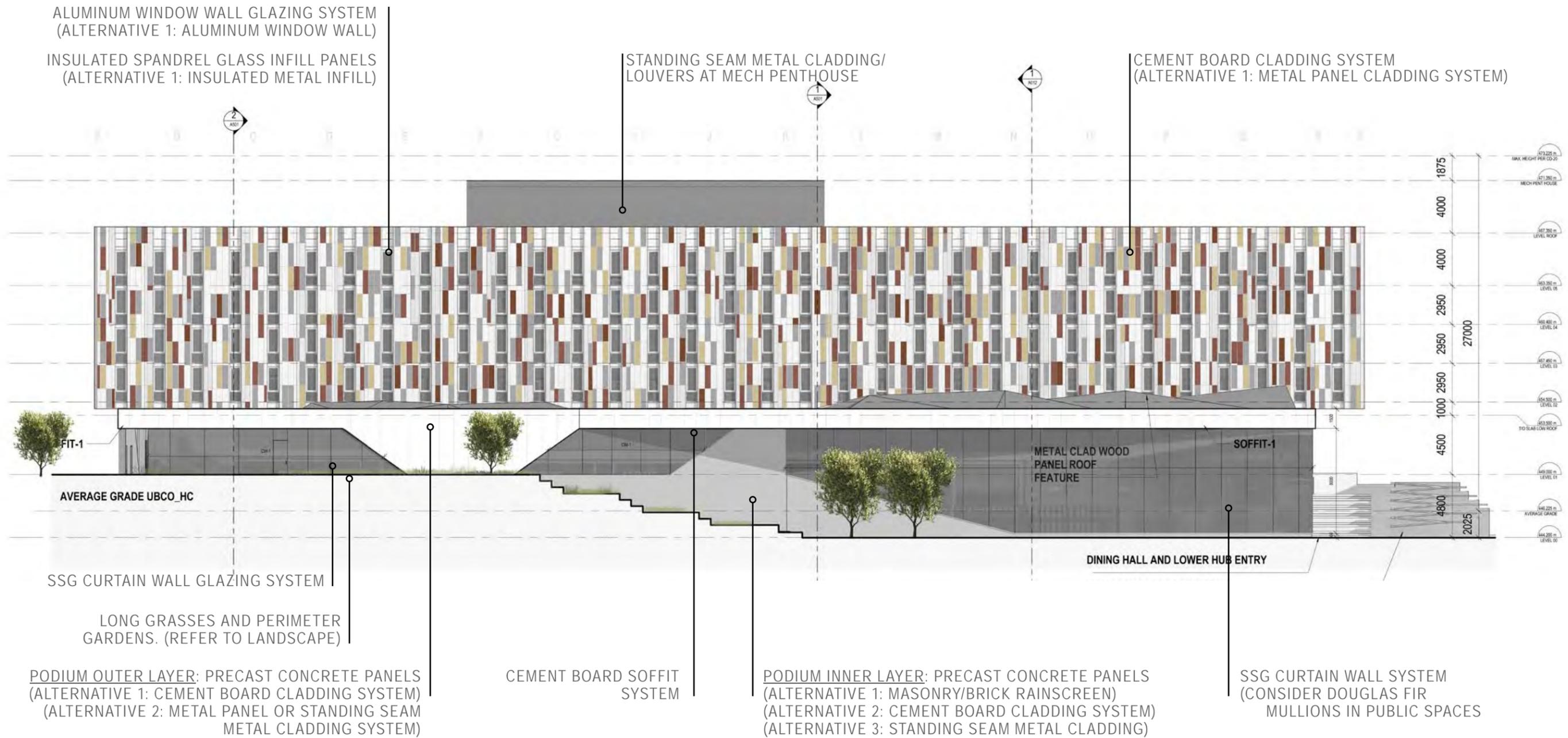
VIEW OF DINING HALL SHOWING SUSPENDED BALLROOM, VAULTED CEILING AND VALLEY VIEW

PERSPECTIVE RENDERINGS



VIEW OF HOUSING COMMONS "HUB" SHOWING FRONT DESK, VAULTED CEILINGS AND VIEW TO THE COMMONS

PERSPECTIVE RENDERINGS



A variety of cladding materials are being considered for both the lower podium and residence bar – including metal panel, cement board panel, and precast concrete panels – all with the aim of expressing a sense of depth and dynamism in the finished product. Glazing will preferably be a high-performance SSG curtain wall system, with exploration of a high quality window wall system for the residence bar. Prefabricated envelope panel systems will be considered for the residence bar.

MATERIALS: ANNOTATED ELEVATION



CEMENT BOARD CLADDING

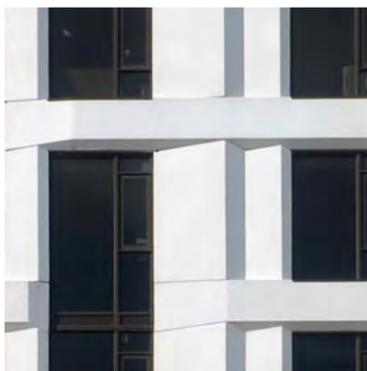
Cement board cladding is currently considered as the primary material on the Residence Bar and all soffits, and can be used in a variety of colours. Patterning can be developed to mix and match the recommended colours per the UBCO Draft Design Guidelines, and can be layered/ shingled to provide a further nuanced texture. The material acts as a durable rainscreen and could be utilized as part of a larger prefabricated wall panel system, in accordance with the recommendations of the building facade consultant.



METAL PANEL CLADDING

As with Cement Board Cladding, metal panel cladding is versatile and economic choice for cladding a large surface area of the residence bar, and as an alternative choice for the lower podium fascias. There are a significant amount of standardized colours that fall in line with the recommendations of the UBCO Draft Design Guidelines. Panel systems are also capable of incorporating facets and shadow lines to provide secondary nuanced texture.

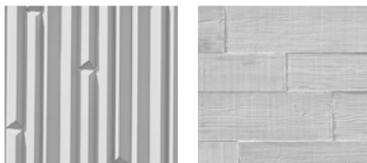
Our recommendation would be for a high quality prefinished aluminum or steel panel with an engineered system for concealing all fasteners, to be developed in accordance with the recommendations of the building facade consultant.



PRECAST CONCRETE

Precast concrete is considered as a secondary material for the podium only, and would be used sparingly as either the inner or outer layer (based on preliminary elevations). The material is both aesthetically massive - giving weight to the podium, and economically sensitive. It is versatile and plastic, allowing for a wider range of design flexibility for non-standardized elements and textures (incorporating shaped pieces and/or textured form liners).

Our recommendation would be for white or natural colour only for this material.



CURTAIN WALL GLAZING

An SSG curtain wall glazing system will be used around the perimeter of the lower podium, showcasing the large aperture at the dining hall and establishing a modern and contemporary aesthetic for the base of the new housing commons. Glazing would be double or triple pane, Low-E or otherwise as specified by the LEED consulting team.



An alternative and/or secondary application may involve using a wood curtain wall system at significant public spaces such as the dining hall and housing commons hub.



STANDING SEAM METAL

Standing Seam is suggested for the outer cladding of the peaked roof elements atop the podium, and is also considered as a viable material choice for the mechanical penthouse (louvers of a similar colour or perforated panels of a similar cladding system may be utilized for air flow and intakes. It is a robust material that can be fabricated in a number of colours and panel widths. It is conducive to the faceted forms of the roof.

Our recommended colour choice would be a dark slate or charcoal grey in accordance with the UBCO Draft Design Guidelines.



MASS TIMBER CONSTRUCTION

With the advent of refined technologies in laminated timber, there is significant interest in utilizing CLT/ DLT/ Glulam in a structural capacity for the peaked roof elements atop the podium. Working with our structural engineering team we would look to create a unique, structural composition that is free of ancillary beams and columns to showcase not only the material but the craft of fabricating panels in a manner that has been employed in other significant UBO/UBCO projects.

MATERIALS: ILLUSTRATED PRIMARY MATERIAL LIST



WINDOW WALL

High- performance window wall is considered for the Residence Bar, using either thermally broken aluminum units or fibre-glass window units, minimum double glazing or as recommended by our LEED consulting team.

Slabs, parapets and soffits would be either insulated spandrel glass panels, or, more likely, insulated metal pans in a colour to match the window framing.



MASONRY UNITS (BRICK OR CONCRETE)

Conceived as a secondary material, brick or other prefabricated masonry units would be used sparingly on the inner layer of the current podium design only. Using modular masonry would provide a textural and material link to a number of significant public buildings on campus.

A weathered brick material on these isolated areas of the podium could also conceptually link into the design of the landscaping around the new facility, with limited use of weathered cobbled or textured concrete.



LANDSCAPE

While the design of the landscape will be contingent on the work our the Landscape design consultant, primary consideration could be given to massive, simple materials like cast in place concrete for stairs, ramps etc. Long grasses and local planting materials can be used to soften the edges of the facility via perimeter plantings and provide controlled landscapes adjacent to administrative areas and the dining facility.

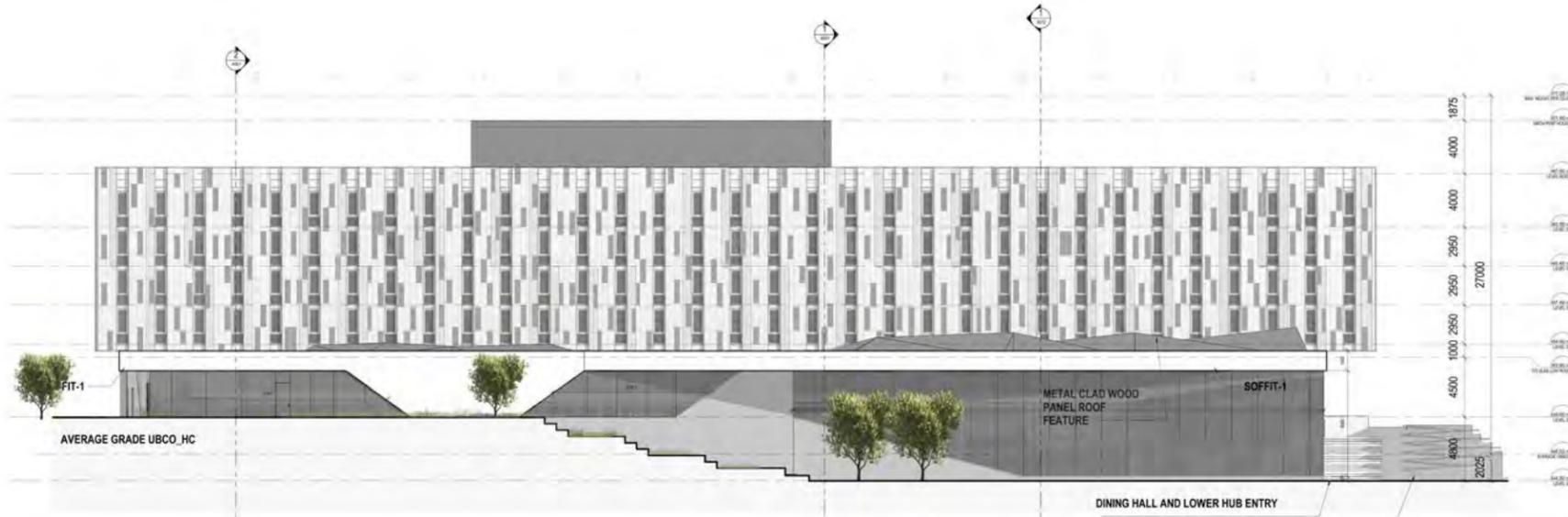
Inspiration could be taken from the vitality of the local landscape and the Okanagan valley.



RESIDENCE BAR PANALIZATION STUDY:
RANDOMIZED_WHITE+"GRASSLANDS"



RESIDENCE BAR PANALIZATION STUDY:
RANDOMIZED_WHITE+"OCHRE"



RESIDENCE BAR PANALIZATION STUDY:
RANDOMIZED_WHITE+"EARTH"

MATERIALS: EXPRESSION | COMPOSITION STUDIES



RESIDENCE BAR PANALIZATION STUDY:
GRADIENT_WHITE+"GRASSLANDS"



RESIDENCE BAR PANALIZATION STUDY:
GRADIENT_WHITE+"OCHRE"



RESIDENCE BAR PANALIZATION STUDY:
GRADIENT_WHITE+"EARTH"

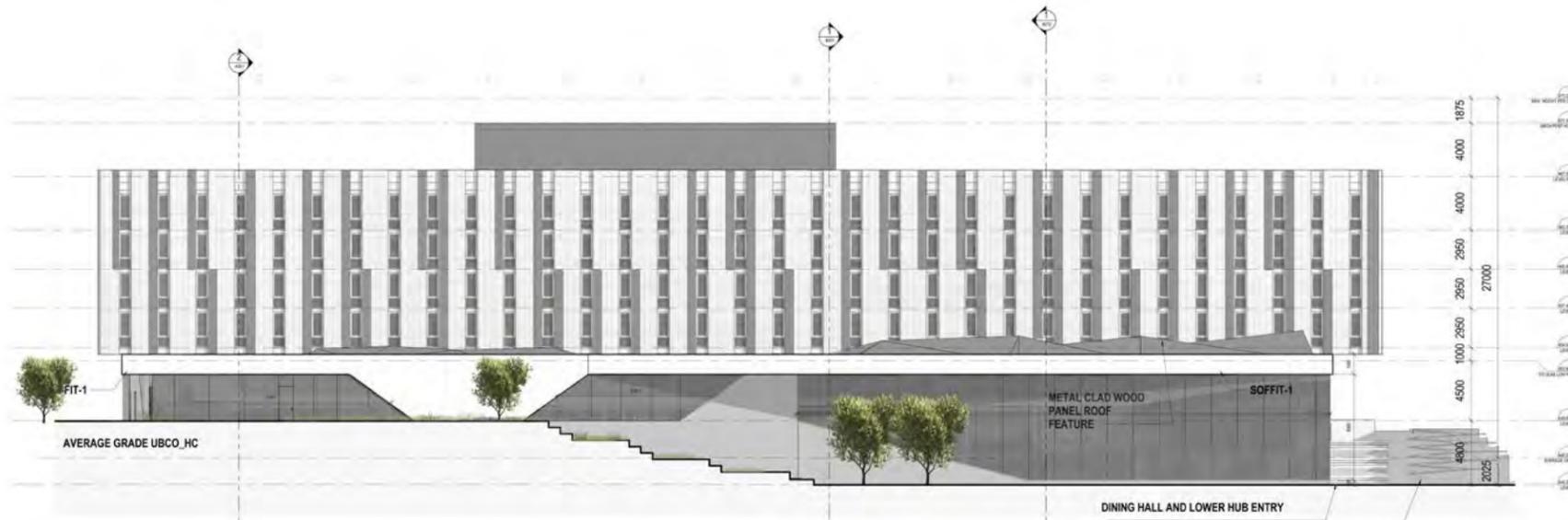
MATERIALS: EXPRESSION | COMPOSITION STUDIES



RESIDENCE BAR PANALIZATION STUDY:
STRIPE_WHITE+"GRASSLANDS"



RESIDENCE BAR PANALIZATION STUDY:
STRIPE_WHITE+"OCHRE"



RESIDENCE BAR PANALIZATION STUDY:
STRIPE_WHITE+"EARTH"

MATERIALS: EXPRESSION | COMPOSITION STUDIES