UBC Okanagan Teaching and Learning Center

Development Permit Application

MTA
MQN
IN JOINT VENTURE

UBC Okanagan Teaching and Learning Centre

View to the North West corner from University Way

Project Description

The UBCO TLC project is a critical piece in the overall master planning of the campus that will anchor the north end of the campus and establish a key intersection between the main campus street, University Way, and the pedestrian boulevard, University Walk, envisioned as the main connector between the residences and the south end of the campus, characterized by Wellness activities.

Understanding the placement of the building reveals the opportunities for:

- Exploring passive house strategies for design,
- making legible the campus organization,
- creating memorable interior spaces

Beyond the much needed space requirements that this new building will fulfill, it is a critical piece in the completion of UBCO`s vision for social sustainability and urban design. The Teaching and Learning Centre will be the southern anchor for the Highstreet/University Walk Crossroad. This is an exciting opportunity to create an impression and set the tone for the expanding campus.

The building design must be simple to meet the stringent cost and schedule deadlines responsibly but it must balance this simplicity with **unique gestures befitting of a Landmark building**. Additionally, as the first impression, once through the doors, visiting potential students and parents need a snapshot of the vibrant, practical, regional and progressive culture at UBCO.

Some of the design considerations are:

Profile

How can the building establish presence and profile on University Walk?

Street

How can an entry point clearly signal a point of welcome and destination from University Way? Could a connection to the TLC promote a street friendly and safe environment for pedestrians as well as invite the curious to explore the campus and the building?

Façade

Could a major collective space be located on University Way, activating the façade and allowing generous amounts of natural light without the concern of glare or heat gain to the occupied spaces?

Interior

Could the arrival space be inviting, active and clear in its organization?

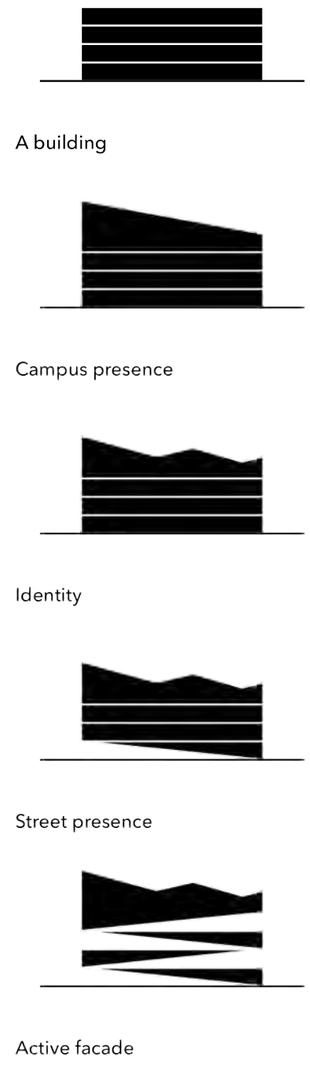


Figure A

Additionally the design must reflect these project goals:

- Social Sustainabilty and Urban Design: Contribute to a memorable student experience through interior spaces and learning spaces and strengthen the campus while being vibrant, accessible and legible
- Economic Sustainability: Optimize the planning, incorporate life cycle assessments, coordinate a project that is delivered in a coordinated way and prioritizes the operational effectiveness
- Environmental Sustainability: Low carbon operations and construction and design for ambitious energy consumption targets

The major components that shape the project are:

- Study and Informal Learning Commons (600 seats)
- Graduate Student Commons; Digital Technology Centre with a Teaching and Visualization Lab and a Digital Media Production and Streaming Room
- Special Collection Reading Room, Archives and Art Collection
- Large, tiered Lecture Theatre (408 seats) with capacity for small group collaboration

The functionality of the design has been derived and informed by an ongoing stakeholder process; additionally, the placement of the major components was established to facilitate the project's urban design goals and to enhance the campus context. The interior spaces will be the focus of subsequent review submissions.

The project scope includes the adjacent public space extending to the north sidewalk of University Way from the face of the proposed future academic building. The future pedestrian character of this street and the vision for a programmable plaza at the intersection of High and Main (University Way and Walk) directly influences the character and levels of the ground floor of the TLC.

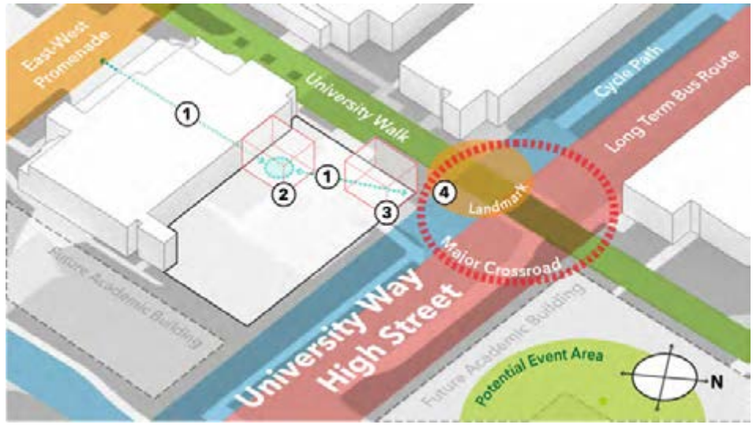


Figure B

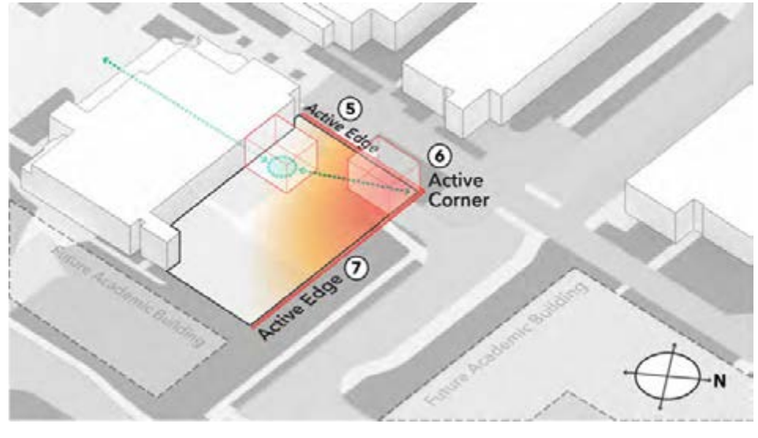


Figure C

Project Priorities and Principles

1. Establish legible Interior Pathways from interior to exterior

- Main Entry A: Located at the intersection of University Way and University Walk with direct cross axial relationship to the Great Hall-a (main Informal Study lounge) and the Library-b
- Secondary Entry B: Located at mid block on the East elevation anticipates traffic from the EME building, the Transit Stop and from Alumni Way
- Secondary Entry C: Located between the Library and the TLC anticipates pedestrian traffic from on University Walk and the Campus Court

2. Seek opportunities for informal gathering spaces to orient and create memorable spaces

- Informal Study Lounge is centrally located and visible, intended to be a "collision space" where different types of activity are accessible and showcased. Tiered platforms (5 of the 6 are Barrier Free accessible) cascade from the ground level towards Alumni Way following the street section. Platforms extend to the exterior to create opportunities for gathering in good weather. Meeting rooms with groups of 4-10 students involved in group-study overlook the Informal Study Lounge. Above the Informal Study Lounge is the Galleria over looking University Way. A clerestory window allows views to the activities below the Galleria.
- Other spaces that encourage awareness of activities and amenities include the Media Lab over looking the Quiet Study Lounge, the Immersive Theatre adjacent to the main building lobby, and the Visualization Lab adjacent to the Lecture Theatre crush space.
- The café is located at the main entry allowing for spill out seating under a protected overhang viewing back to the new plaza and University Walk.

3. Vibrant corner to anchor University Way and University Walk (Fig. B, Fig. F)

- The corner is programmed with activity, with the main entry and café at grade, Lounges, potential event space and the Media Visualization Lab located on level 2 and 3
- The protected entry is clad with a wood soffit and the ground plane leads from the level plaza to the main entry, connecting the University Student Centre with the TLC.

4. Corner should be a landmark for those arriving to campus (Fig. G)

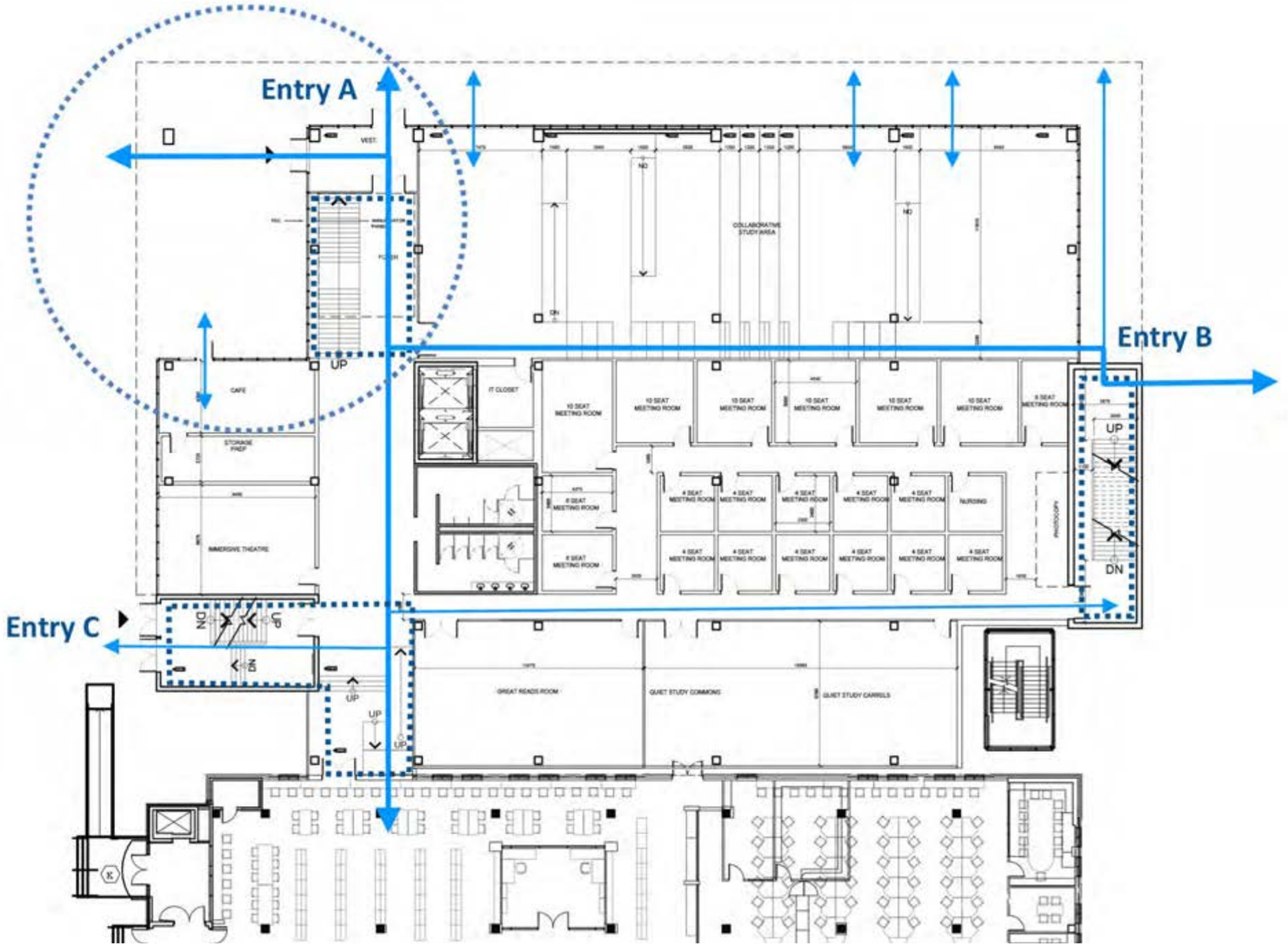


Figure D

- Arriving from the North, the TLC's Great Hall follows the slope of University Way with a series of terraces that extend from inside the hall to the exterior pedestrian edge.
- Level 2 is a transparent double storey student lounge space adjacent to the 400 seat Theatre. This space is also imagined as a space for a special event receptions.

5. Street furniture and places to stop along western-facing University Walk

- Subject to full budget review and development of the landscape plan, there is the possibility to locate permanent street furniture along University Walk.
- It is anticipated that café seating can be located at the main entry under the protective overhang

6. Vibrant corner expression, building signage and beacon (Fig. F, Fig. G)

- At the NW corner, the proposed cementitious cladding lifts dramatically on the second level to reveal a continuous glazed lounge and circulation space along University Way focused to the north while on the third level the cladding peals away on both the north and west facades to refocus the grad lounge and meeting rooms to views on University Way, the distant views and University Walk.
- The profile of the building at the NE corner follows the same gesture as the NW corner lifting to allow the glazed room to be revealed and creating a distinctive evening profile for the building. Together with views to the activity in the Great Hall, this is seen as an inviting and significant arrival tableau

7. Anticipation of the forthcoming development to the East and the north (Fig. H, Fig. J)

- Suggestions for relationship between the future buiding and the TLC shown in Fig. H and J
- Please See landscape street sections for anticipated relationship across University Way.

General: The most compact footprint has been pursued to create an efficient site plan and spatial programme organization towards retention of future site development on the south-easterly portion of the site.

The overall character of the TLC design is a be a bold but simple building that is characterized by a rational plan, strategic compact massing, approx. 40% overall glazing and distinguished by four major unique exterior gestures:

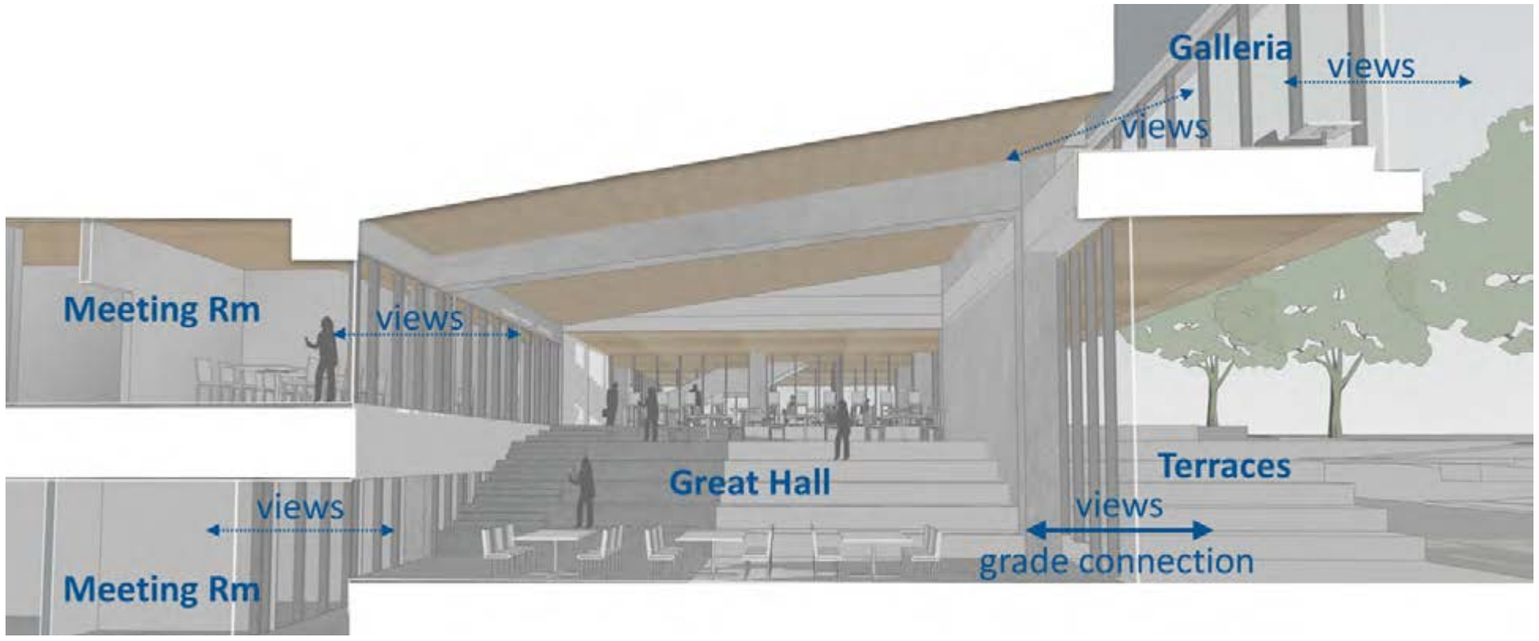


Figure E

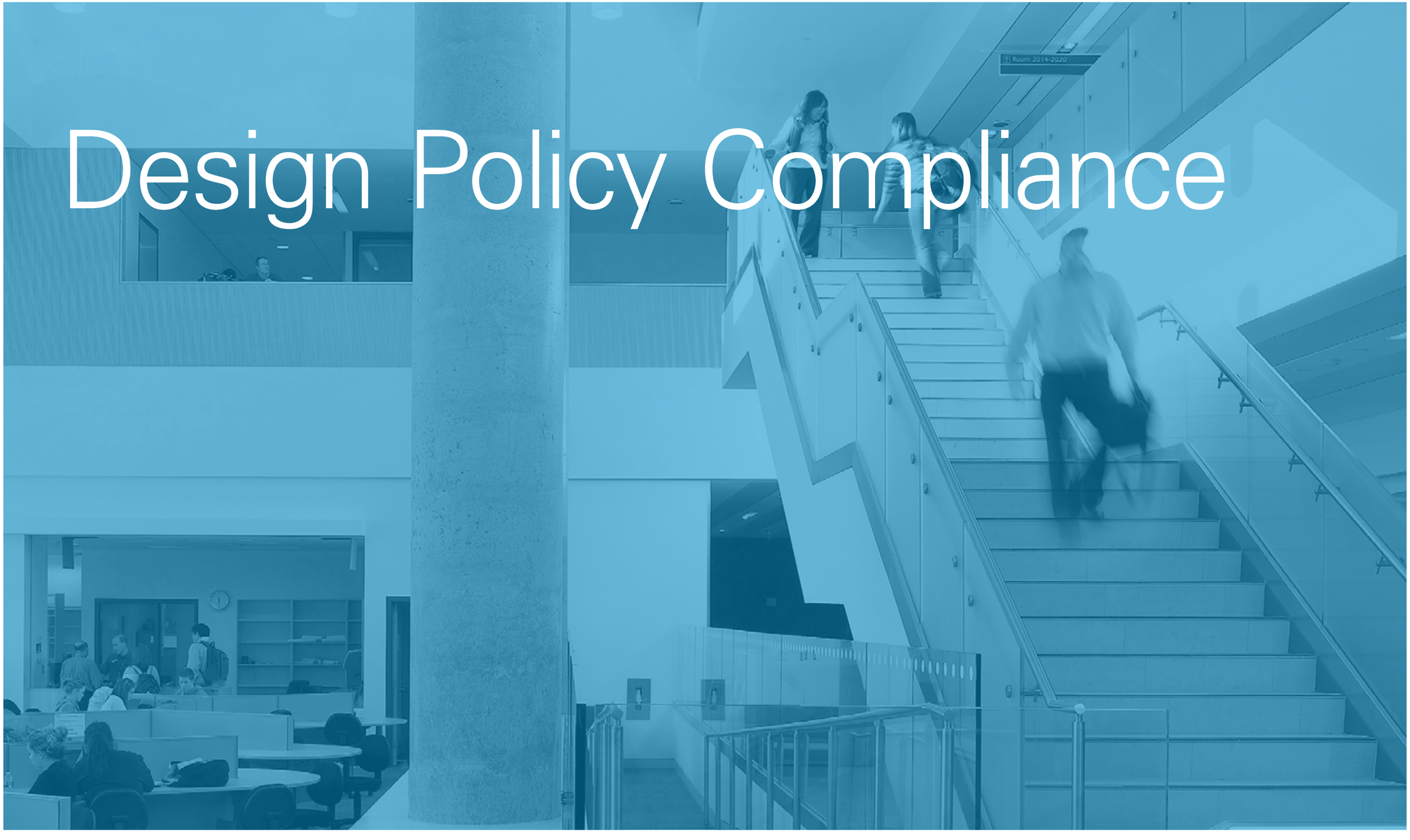
8. A cascading Great Hall made expansive by its connection to the exterior and its views and visual relationship to other programme, shaped by the underside of the raked seating of the 400 seat Theatre
9. Articulated curtainwall cut into the north façade with an angled gesture revealing the Galleria and convenience stair landing as well as articulating the NW corner of the building
10. A cantilevered north overhang along University way creating an outdoor room over the NW building corner
11. A wrapping window cut into the north and west facades on the third level contributing to the dynamic and active NW corner.

- The building cladding is under development and is anticipated to be a limited palette of regional materials, inspired by local and campus form and the dialogue between solid, void, reflective surfaces, highlight colours and wood. The refinement of the gestures, details and material palette will be further developed in the forth-coming design development phase.

Figure F

Figure G

Design Policy Compliance



View approaching from the East on University Way

Design Policy Compliance

2. The Overall Campus Experience

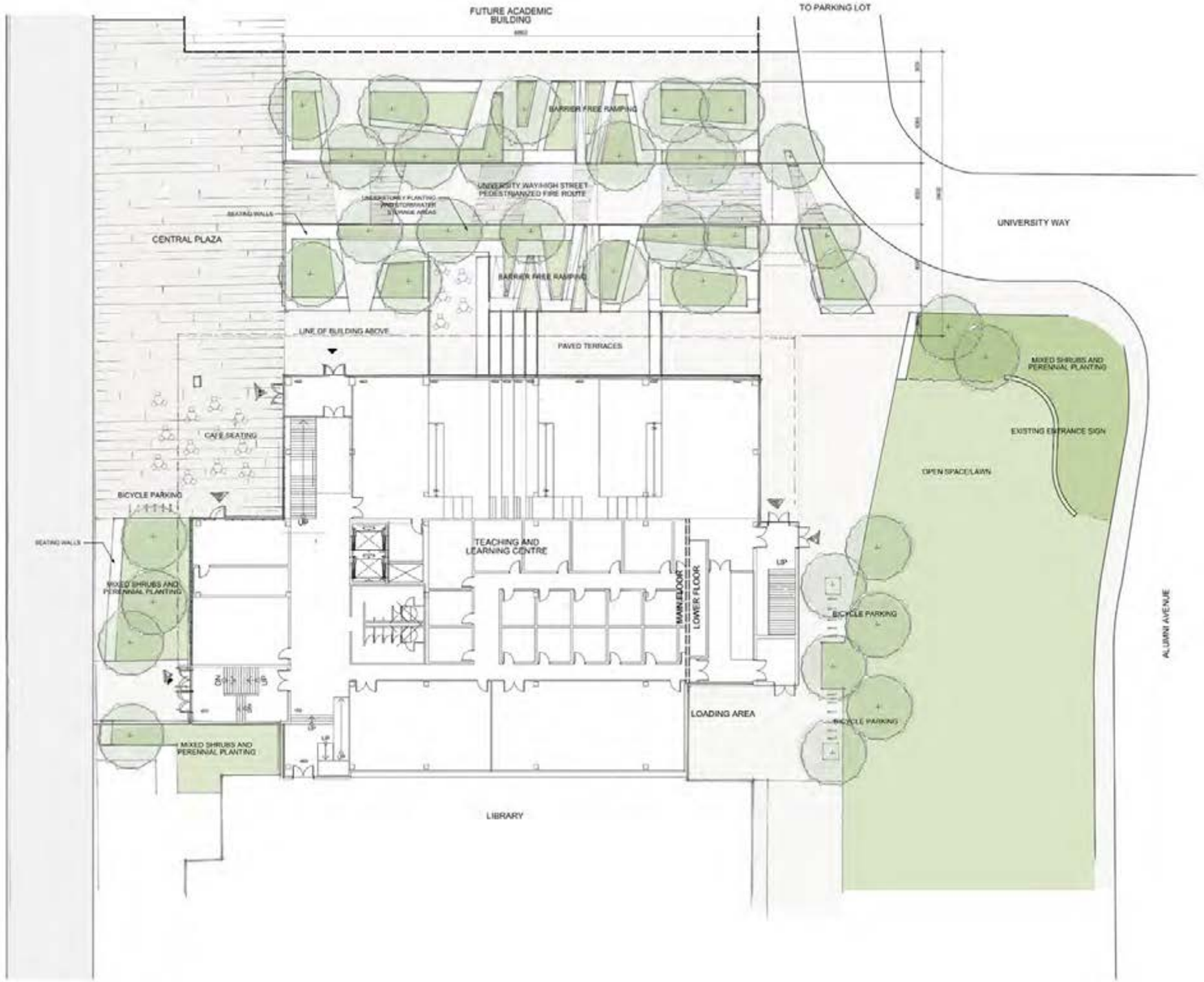
The new TLC is designed to be fully integrated and enrich the existing campus network of indoor and outdoor social spaces while creating a cutting-edge environment for learning and teaching.

2.1 Campus Arrival and Access

2.1.1 Gateway:

The project acknowledges that University Way is a principal vehicular arrival point and proposes a transparent façade on the ground floor and second floor that addresses the East arrival.

The existing signage at entry points in campus will be updated to reflect the new TLC building according to UBC Sign Standards and Guidelines.



Landscape plan incorporating future Central Plaza and North side of University Way

2.1.6 University Way/High Street

The pedestrianization of University Way/High Street North of Alumni Way is anticipated and the landscape design facilitates barrier free access to the upper plaza.

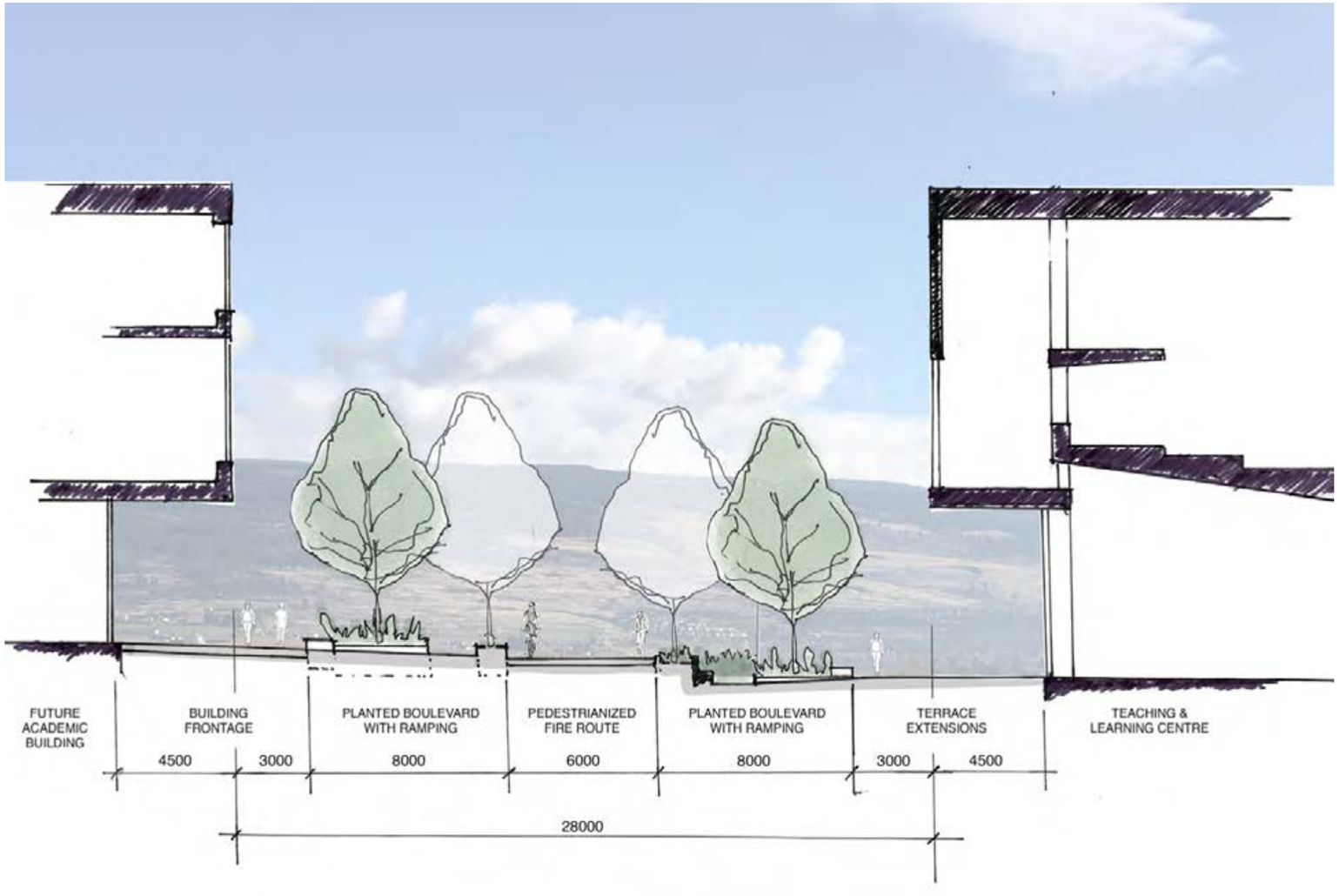
University Way/High Street is envisioned as a space with urban character and expression. The frontage of the TLC along University Way/High Street will be an extension of the TLC interior terraces with generous outdoor terrace spaces. This will allow for the interior activities to be reflected to the spaces outside and create an active edge to the building exterior. Further North, between the terraces and pedestrianized fire route, will be smaller, more intimate and informal social spaces arranged around the accessible pathways that wind through the boulevarded area. These spaces will be articulated with numerous seating walls – some with wood toppers – and water efficient planting within planters under a treed canopy.

This treatment in character and expression is to be reflected in the boulevard and pedestrian spaces along the frontage of the future academic building. This treatment supports the desire for the future academic building to incorporate exterior café space and an active edge that will support retail spaces fronting onto University Way/High Street.

The urban character will be reinforced by the expression of the TLC and future academic building at the base as well and the spatial arrangement within its width.

The overall width is slightly tightened compared to the University Way/High Street further West to a building face-to-building face dimension of 28 metres. This will frame Eastern views to the mountains and views to the proposed High Street/University Way spaces to the West. The building base is set back from the overall building mass creating a protected overhang. The boulevards are 8 metres wide and are lined with a street-like treatment of canopy trees to provide shade and scale to the street. The planting areas will also contribute to the stormwater strategy for storage and infiltration of roof water runoff within the planted areas. The spaces are also designed to accommodate necessary snow clearing widths and snow storage.

The pedestrianized fire route will be paved with a high quality concrete unit paving. All consideration in further development will be given to lighting, planting, edge treatments and seating that will contribute to the pedestrianized scale of the space.



Street section through University Way looking East

2.2 Pedestrian and Cycling Network:

The pedestrianization of the fire route will reinforce the core pedestrian network of the campus and create ample pedestrian access to the campus cross roads at University Way/ High Street, University Walk and the central Plaza. There are accessible connections across University Way/High Street at the East end, at the West at the plaza level and at mid-block.

Main access at the North West corner of TLC building is located at this crossroads reinforcing the importance of this core area of the campus. There are secondary entrances located on the East and West sides serviced by walkways well connected to University Way/ High Street and University Walk.

The boulevard spaces will provide the accessible pathways necessary to negotiate the slope incorporating low slope sidewalks (5% or less) with ramping at 1:12 (8%) kept to a minimum.

The fire route width of University Way/High Street provides ample room for pedestrians and cyclists to negotiate the space. There will be bicycle parking on the West and East sides of the TLC building located adjacent to the entrances.

The pedestrian routes will be further studied with respect to any changes anticipated to pedestrian movements that result from the development and implementation of the public realm plan.

2.3 Ceremonial Routes:

The TLC building's massing and West elevation further enhance the Ceremonial experience along the University Walk by providing a continuous front aligned with the existing Library.

Planter seating walls, understorey planting and canopy trees will provide a formal frame for University Walk enhancing the ceremonial expression of the space that continues further South along the library edge. Moving South to North along the walk, the landscape will frame views to the entrance area at the North-West corner of the TLC and will create a decompression moment to the plaza as it opens up to the central space.

[blow up plan of area]

2.4 Open Space:

University Way/High Street has been designed to allow for seating and gathering in sun and shade, and also will provide protection from the elements. Informal gathering areas have been planned with lines of canopy trees and open areas that will provide opportunities for both sun and shade. The building is set back at the base creating an overhang for protection from the elements on the terraces adjacent to the TLC building.

Paving will be patterned using concrete unit paving combined with stone feature paving and accents. The paving will provide visual interest as well as cues for way finding. Signage can also be embedded in the paving for wayfinding, artwork and commemorative purposes.

2.4.3 University Centre Plaza

The new TLC North-West corner is purposely designed to support the University Centre Plaza as the social heart of the campus. Programmatically, the recessed transparent corner main entrance with a significant overhang and the location of the café with an outdoor terrace facilitate the social use of the Plaza with loose seating to create an active and flexible space.

The paving in this area will take cues from the TLC building and will mesh with the University Centre Plaza. Opportunities for incorporating light and artwork will be explored in the next stage of the design.

2.5 Use buildings to Define and Animate outdoor Spaces

- The corner of the TLC is programmed with activity, with the main entry and café at grade, and Lounges, potential event space and the Media Visualization Lab located on levels 2 and 3
- The protected entry is clad with a wood soffit and the ground plane leads from the level plaza to the main entry, connecting the University Student Centre with the TLC.
- The Principle Corner of the building (NW) is the intersection of University Way and University Walk. The corner is transparent on levels 2 and 3 to provide views to the activity within and provide a dramatic evening silhouette.
- The TLC's massing and elevations define the University Way's social space as "outdoor room" by creating an animated Southern edge. The building's heavily glazed ground level and 2nd floor allow connection with the outdoors. Of particular note is the flow created by the Great Hall where the interior steps and platforms follow the natural grade and extend to the exterior in a similar and symbiotic manner dissolving the visual edge between the inside and outside. The 2nd floor Galleria, together with the Great Hall, link visually with the dynamic pedestrian stretch of the University Way.
- Furthermore, a coffee shop situated at the North West corner of the building and in close proximity to the building's main entrance acts as a social hub with its extended covered terrace.
- The 3rd and 4th floor, by contrast, form a solid mass with 'punched' windows in strategic places that offer framed views of the outdoors.
- The programmes and circulation are organized such that a main hall and a feature stair are in the proximity of the main entrance, visible from the Plaza. Other programmes that benefit from outdoor views were distributed along the main glazed North and West walls of the building, such as the Galleria and the Teaching and Visualization Lab on the 2nd floor, as well as the café, Immersive Theatre and Collaborative study on the ground floor.

2.6 Build to Lines

- The TLC aligns with the Library on the West side thus reinforcing the West front of the University walk and further defining the ceremonial walk.
- On the North side, the building extends 43.97m from the north face of the Library. Section 2.6 of the UBCO guidelines references a distance of 24.7m from the library. The offset of the TLC is determined by i) a minimum 8 m offset from the library to assure the new construction does not undermine the structure of existing library and ii) the requirement for the largest programmatic element in the building design, the 400 seat theatre. The ground floor is offset from the library by 39 m with the upper levels cantilevered a further 5m.

2.7 Views

- The North – South street section was designed to frame the North-East views of the valley.
- The glazed building 'base' on the ground floor and 2nd floor allows for exceptional views of the North-East hills, given the natural slope down towards the East on which the building sits and follows.
- Upper floors' solid mass integrates 'punched' openings that offer framed views.

2.8 Integrate buildings with Topography

- The Great Hall Collaborative Study area along the University Way at the ground level proposes a series of steps and platforms used for study that follow the natural slope down towards the East. This approach is supported by the landscape along the University Way where the exterior steps and landings were created along the building to emerge from the Great Hall steps. The University Plaza at the West end and the East end of the building integrate into the natural slope.

2.9 Accessibility

- The TLC is part of an overall master plan for University Way that envisions a level plaza at the intersection of university Walk and University Way
- From both the upper plaza and lower entry from Alumni Way there is barrier free access to the entire project with the exception of 1 tier of the informal study lounge (The Great Hall), the Projector Room in the 400 Seat Theatre and the loft space in the Digital and Media Lab
- Barrier Free / Universal washrooms are accommodated on each floor.
- Please refer to the landscape design statements regarding accessibility on University Way

View approaching from the East on University Way

View to the North West corner from University Way

2.10 Services

- The existing service road to the adjacent Library's loading dock is being preserved and used for access to the basement level.

2.11 Weather Protection

- The main entry is recessed by approx. 4m on the North side and 10m on the West side thus providing generous weather protection for large groups in the busy North West corner.

2.12 Crime Prevention

- Under development with UBCO, the following will be reviewed in the Design Development Stage: lighting and landscape plan, security cameras, vision panels and hardware

3. Architectural Design Guidelines

3.1 Massing and Articulation

- The Design for the TLC reinforces emphasis on the horizontal proportions reflecting the character of the rolling Okanagan landscape.
- The overall aeththetic on the longest façade is a combination of a layered massing with a "floating" solid plane that also has a strong ground connection to the landscape articulated with terraces, level plazas, ramping and planters.
- To avoid a monolithic façade along University Way, setbacks are utilized, materials are nested and transparency shifts from the lower through second floors on the NE corner to second and third at the NW corner.
- The building expresses the full 3-4 storeys along University Way to establish street framing and mass, to frame the views to the landscape and to create the proportions that support the sense of enclosure.

3.2 Building Heights

- The new TLC building has an underground level and 4 levels above ground. It is approx. 4m higher than the adjacent existing Library, with the lowest North East corner being approx. 20m above ground.
- The Mechanical units are recessed from the edge of the building and its highest unit is approx. 5m above the roof

3.3 Upper Storey Setbacks

N/A

3.4 Materials and Colours

- The building cladding is under development and is anticipated to be a limited palette of regional materials, inspired by local and campus form and the dialogue between solid, void, reflective surfaces, highlight colours and wood. The refinement of the gestures, details and material palette will be further developed in the forth-coming design development phase.
- The conceptual material palette includes natural materials and fire resistant materials:
- Wood for protected soffits and for the interior cladding of the 400 seat theatre
- Cement Panels (precast integral neutral colour, fibre reinforced for detail control, possibly with texture)
- Curtainwall with areas of vertical frit and spandel panels
- Additional design expression relating to materials includes exposed concrete structure and accent colours used possibly as a coloured interlayer in interior spaces.

3.5 Sustainable Design

UBC Okanagan Teaching and Learning Centre design team is committed to following the UBCO LEED design guidelines for sustainable development at the Okanagan campus, with a goal of achieving LEED Gold. The guidelines state that all UBCO's Academic Buildings are to be constructed using accepted standards to be able to achieve the minimum LEED™ silver rating and all residential buildings are to conform to UBC's Residential Environment Assessment Program (REAP) standards.

While these standards allow some flexibility in meeting the targets, design teams are particularly encouraged to explore the following aspects of sustainability in their designs.

- sustainable site development
- water efficiency
- energy efficiency
- materials selection
- indoor environmental quality

Every quality of the project reflects on the others starting, with selection of site, the location on the site and which vegetation is installed to reflect the native species of the area. The quality and quantity of storm water drainage will be analyzed to see if it can be incorporated into the existing education pond located east of the Engineering and Management building.

Our selection of locally sourced and durable materials and details will accentuate the memorable spaces of the Teaching and Learning Centre while still making the spaces comfortable to occupy by the students and staff. The use of low VOC paints and finishes, as well as the incorporation of materials with low embodied energy and minimal off-gassing, is essential to minimizing greenhouse gas emission and ensuring excellent indoor environmental quality.

With the location of the site, our design encourages maximum use of natural daylight and views within building and out to the natural Okanagan Valley landscapes, keeping in mind that careful light control is essential in classrooms, labs, and anywhere computers are used. The provision of sun shading will allow winter sun to provide passive solar heat, while still shading windows in summer to minimize cooling requirements.

Materials with high recycled content will be sourced and utilized within the construction of the facility including the use of high fly-ash content concrete to increase the recycled content of the project as a whole.

Incorporation of air lock type vestibules for cold weather at all main and secondary entries will be installed. This will not only assist with keeping the temperature in the building warm but it will also control debris that would normally be tracked into the building, which assists with the air quality of the spaces.

Locally harvested wood, with the possibility of using pine beetle damaged timber, will be sourced for the highlighted features of the spaces. Buildings which use wood can provide significant net storage of carbon, which contributes to decreasing greenhouse gases.

In keeping with the University's role as an educator, opportunities to visually express strategies for sustainability and advanced building performance will be taken wherever possible. The UBCO Teaching and Learning Centre has aimed to achieve LEED Gold, with a current schematic design of 74 points

3.6 Security Plan

To be developed in DD/CD

4. Landscape

4.1 Lighting

Lighting in the landscape is an opportunity to create an alternative expression and life for the campus that differentiates and augments the landscape and architecture from its character during the day. Lighting strategically in the paving, trees and planted areas to highlight architectural features will be explored in the next design phase. Additionally, provision of appropriately scaled pedestrian level lighting for safety and recognition will be incorporated using the University's guidelines for fixture selections and lighting levels. Event lighting in the Central Plaza should also be incorporated.

4.2 Art

The landscape design will be developed in the next stages of design to incorporate art pieces to create environments that will not only “show off” the proposed pieces, but also engage them in a formal and spatial dialogue that enhances their setting and maximizes the potential for rich public space along the street and around the buildings. The exterior spaces provide the greatest potential for the arts and public space design to make the buildings stand out in the larger public realm, and will help to enhance perception of the buildings.

The key to the success of any art piece on this site is in creating a strong dialogue between the pieces and the public space design they sit within. The design will seek to engage the art pieces in a material and formal dialogue that would both speak to and enhance their relationship to the public realm, and that will engage the visitor. This will include structuring seating and planting forms to frame and set off the art, paving materials and patterns that could incorporate the art or engage in a visual dialogue with it, and consideration of the precise relationship or the art to the street.

Careful siting of art elements at gathering nodes along the street near building main entrances will activate these spaces. There are many opportunities for the integration of art pieces into landscape elements along the street, such as incorporating it into paving, lighting features, walls, benches, tree grates, or stand-alone pieces. Siting vertical art in the plaza will provide great potential to create a landmark place with strong axial views from both the east and west along University Way, and north and south along University Walk.

Example of planting

Example of Planters

Example of outdoor seating integrated with planting and stairs

Example of planters integrated with outdoor seating

Planting

Trees, shrubs grasses and perennials will be laid out to harmonize with the formality of the urban character of University Way/High Street. Deciduous canopy trees will dominate to provide shade in the summer and allow for sunlight to building interiors during the winter. Framing of views with trees will be key in reinforcing open space relationships. Plant mixtures within planters will be designed with height texture and layering to provide year round interest. Additionally, the plants areas will need to be flood tolerant as roof water will be stored within planting areas in the event of large storms.

Lawn areas should be developed to the east side of the TLC building for sitting in the sun and informal recreational uses

Along University Walk, the planting will be structured and designed to enhance the framing of the views and the ceremonial importance of the space.

Planting will be irrigated according to design guideline requirements for firewise planting close to structures and general plant health. The goal will be strategic water reduction in irrigation use where possible.

Example of planting

Example of Planters

Furniture

Landscape furniture will vary depending on the nature of the space, requirements for flexibility, and formality or informality of use. Seating within the University Way/High Street boulevard areas will be incorporated into seating walls with custom wood toppers in select locations. Loose seating and tables will be considered for the terrace areas along the TLC as well as in the cafe space at the north west recessed transparent corner of the TLC building.

Infrastructure such as garbage and recycling bins will be as per the campus standard in order for them to be recognizable as well as in keeping with facilities and maintenance requirements.

To be further developed in DD and CD:

Planting, lighting, paving and paving patterns, material selection, coordination of infrastructure and utilities, general detail development.

Example of outdoor seating integrated with planting and stairs

Example of planters integrated with outdoor seating

Reports

Title Search

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN

Title Issued Under SECTION 189 LAND TITLE ACT

Land Title District KAMLOOPS
Land Title Office KAMLOOPS

Title Number BB1527749
From Title Number LB225847

Application Received 2016-11-18

Application Entered 2016-11-18

Registered Owner in Fee Simple
Registered Owner/Mailing Address: THE UNIVERSITY OF BRITISH COLUMBIA
107 - 6328 MEMORIAL ROAD
VANCOUVER, BC
V6T 1Z2

Taxation Authority CITY OF KELOWNA
GLENMORE-ELLISON IMPROVEMENT DISTRICT

Description of Land
Parcel Identifier: 027-594-564
Legal Description:
LOT A SECTIONS 10 AND 11 TOWNSHIP 23 OSOYOOS DIVISION YALE DISTRICT
PLAN KAP87188 EXCEPT PART ON PLAN EPP57644

Legal Notations
NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA3066526
FILED 2013-04-08

SUBJECT TO RESERVATIONS SEE DD 108142F

ZONING REGULATION AND PLAN UNDER THE AERONAUTICS ACT 'CANADA' FILED
DECEMBER 13, 1977 UNDER NO M74009 & S23537 SEE PLAN M13304

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 29 OF THE
MUNICIPAL ACT SEE KF75306

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 29 OF THE
MUNICIPAL ACT SEE KF75311

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 29 OF THE
MUNICIPAL ACT (SEE DF KG112117)

HERETO IS ANNEXED EASEMENT D94800 OVER LOT A, PLAN 18883
PART FORMER LOT 2 PLAN KAP87184

HERETO IS ANNEXED EASEMENT T37500 OVER THOSE PARTS OF LOTS 1 TO 10
INCLUSIVE, BLK 15, PLAN 1068 ON PLAN B16248 SHOWN AS PCLS 'A' TO 'J'
INCLUSIVE RESPECTIVELY ON PLAN A16953
PART FORMER LOT 2 PLAN KAP87184

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL
GOVERNMENT ACT, SEE KW8196
PART FORMER LOT 2 PLAN KAP87184

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL
GOVERNMENT ACT, SEE KX163125
PART FORMER LOT 2 PLAN KAP87184

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL
GOVERNMENT ACT, SEE KX89010
PART FORMER LOT 2 PLAN KAP87184

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL
GOVERNMENT ACT, SEE KX89011
PART FORMER LOT 2 PLAN KAP87184

THIS TITLE MAY BE AFFECTED BY A PERMIT UNDER PART 26 OF THE LOCAL
GOVERNMENT ACT, SEE LA99754

HERETO IS ANNEXED EASEMENT LB205470 OVER PART OF THAT PART OF THE
EAST 1/2 OF SECTION 10 SHOWN AS 'DITCH RIGHT OF WAY' ON PLAN 1638
TOWNSHIP 23 ODYD LYING ADJACENT TO LOTS 3, 5, 6 AND 7 PLAN 1638
(DESCRIBED IN DD 51486F) AS SHOWN ON PLAN KAP86733

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Charges, Liens and Interests

Nature: RIGHT OF WAY
Registration Number: 72978E
Registration Date and Time: 1958-01-30 12:34
Registered Owner: BC GAS UTILITY LTD.
INCORPORATION NO. 368681
Transfer Number: KR104757
Remarks: PART ON PLAN A1635 INTER ALIA
CANCELLED AS TO PART IN PLAN KAP58758 BY KL23675

Nature: UNDERSURFACE RIGHTS
Registration Number: E11007
Registration Date and Time: 1970-04-15 15:24
Registered Owner: MARY CATHERINE NEAVE
Remarks: INTER ALIA (DD E10197) OTHER THAN THOSE EXCEPTED
BY THE CROWN
PART FORMER LOT 2 PLAN KAP87184

Nature: STATUTORY RIGHT OF WAY
Registration Number: V42675
Registration Date and Time: 1983-06-22 14:06
Registered Owner: GLENMORE IRRIGATION DISTRICT
Remarks: THAT PART SHOWN ON PLAN A17725 TOGETHER WITH
ANCILLARY RIGHTS OVER THE REMAINDER AS TO PART
FORMER LOT 3 PLAN 1638 EXCEPT PLANS 34113, 37788,
H764, H739 AND H16596
INTER ALIA
EXTENDED BY LB225850

Nature: EASEMENT
Registration Number: V42677
Registration Date and Time: 1983-06-22 14:07
Remarks: THAT PART SHOWN ON PLAN A17726 APPURTENANT TO LOTS
1 AND 2, PLAN 34113
INTER ALIA
MODIFIED BY KL134643
EXTENDED BY KL135893

Nature: STATUTORY RIGHT OF WAY
Registration Number: W2807
Registration Date and Time: 1984-01-17 10:44
Registered Owner: GLENMORE IRRIGATION DISTRICT
Remarks: INTER ALIA
ANCILLARY RIGHTS AS TO PART FORMER LOT 3 PLAN 1638
EXCEPT PLANS 34113, 37788, H764, H739 AND H16596

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Nature: STATUTORY RIGHT OF WAY
Registration Number: W8379
Registration Date and Time: 1984-02-14 11:40
Registered Owner: WEST KOOTENAY POWER AND LIGHT COMPANY LIMITED
Remarks: PART ON PLAN A18107 WITH ANCILLARY RIGHTS OVER THE
REMAINDER AS TO PART FORMER LOT 5 PLAN 1638
EXCEPT PLAN H8323
INTER ALIA
EXTENDED BY LB225849

Nature: STATUTORY RIGHT OF WAY
Registration Number: W44573
Registration Date and Time: 1984-08-14 10:05
Registered Owner: BRITISH COLUMBIA TELEPHONE COMPANY
Remarks: ANCILLARY RIGHTS

Nature: STATUTORY RIGHT OF WAY
Registration Number: X166578
Registration Date and Time: 1987-03-05 10:20
Registered Owner: WEST KOOTENAY POWER AND LIGHT COMPANY, LIMITED
Remarks: INTER ALIA PART ON PLAN 37776

Nature: STATUTORY RIGHT OF WAY
Registration Number: KF118943
Registration Date and Time: 1992-11-26 14:01
Registered Owner: BRITISH COLUMBIA TELEPHONE COMPANY

Nature: STATUTORY RIGHT-OF-WAY
Registration Number: KH117170
Registration Date and Time: 1994-12-02 13:46
Registered Owner: BC TEL
INCORPORATION NO. A1801

Nature: STATUTORY RIGHT OF WAY
Registration Number: KJ6278
Registration Date and Time: 1995-01-26 09:37
Registered Owner: BC GAS UTILITY LTD., (INC. NO. 368681)
Remarks: PART SHOWN ON PLAN A17725
WITH ANCILLARY RIGHTS OVER THE REMAINDER
EXTENDED BY LB225851

Nature: STATUTORY RIGHT OF WAY
Registration Number: KK86207
Registration Date and Time: 1996-10-02 13:33
Registered Owner: BC GAS UTILITY LTD.
Remarks: EXTENDED BY LB225852

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Nature: EASEMENT
Registration Number: KL134643
Registration Date and Time: 1997-12-09 11:11
Remarks: MODIFICATION OF V42677
PART FORMER LOT 2 PLAN KAP87184

Nature: EASEMENT
Registration Number: KL135893
Registration Date and Time: 1997-12-09 11:11
Remarks: EXTENSION OF V42677
PART ON PLAN KAP60726

Nature: STATUTORY RIGHT OF WAY
Registration Number: KT137440
Registration Date and Time: 2002-12-12 12:03
Registered Owner: AQUILA NETWORKS CANADA (BRITISH COLUMBIA) LTD.
Remarks: EXTENDED BY LB225848
PART FORMER LOT A PLAN KAP57788, LOT A PLAN 38917
EXCEPT PLAN KAP57788 AND LOT B PLAN KAP57788
CANCELLED BY LB511361 2012-10-17 AS TO PART SHOWN
ON PLAN KAP92877

Nature: STATUTORY RIGHT OF WAY
Registration Number: KT140716
Registration Date and Time: 2002-12-19 11:12
Registered Owner: BC GAS UTILITY LTD.
INCORPORATION NO. 368681
Remarks: PART FORMER LOT 2 PLAN KAP87184

Nature: STATUTORY RIGHT OF WAY
Registration Number: KT140717
Registration Date and Time: 2002-12-19 11:12
Registered Owner: BC GAS UTILITY LTD.
INCORPORATION NO. 368681
Remarks: PART FORMER LOT 2 PLAN KAP87184

Nature: STATUTORY RIGHT OF WAY
Registration Number: KV71378
Registration Date and Time: 2003-06-24 11:02
Registered Owner: GLENMORE-ELLISON IMPROVEMENT DISTRICT
Remarks: PART FORMER LOT 2 PLAN KAP87184

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Nature: COVENANT
Registration Number: LB28151
Registration Date and Time: 2007-03-13 09:00
Registered Owner: CITY OF KELOWNA
Remarks: PART FORMER LOT A PLAN 38917 EX:
PLAN KAP57788

Nature: UNDERSURFACE AND OTHER EXC & RES
Registration Number: LB225839
Registration Date and Time: 2008-07-30 15:00
Registered Owner: THE CROWN IN RIGHT OF BRITISH COLUMBIA
Remarks: SECTION 40 COMMUNITY CHARTER
RIGHT OF RESUMPTION IN SEC 35(8) OF THE
COMMUNITY CHARTER CANCELLED SEE LB225840
PART FORMER CLOSED ROAD ON PLAN KAP87183

Nature: COVENANT
Registration Number: LB225845
Registration Date and Time: 2008-07-30 15:00
Registered Owner: CITY OF KELOWNA
Remarks: SECTION 44 COMMUNITY CHARTER
PART ON PLAN KAP87186

Nature: COVENANT
Registration Number: LB225846
Registration Date and Time: 2008-07-30 15:01
Registered Owner: CITY OF KELOWNA
Remarks: SECTION 44 COMMUNITY CHARTER
PART ON PLAN KAP87187

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB225848
Registration Date and Time: 2008-07-30 15:01
Registered Owner: FORTISBC INC.
Remarks: EXTENSION OF KT137440
PART ON PLAN KAP87189
CANCELLED BY LB511361 2012-10-17 AS TO PART SHOWN
ON PLAN KAP92877

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB225849
Registration Date and Time: 2008-07-30 15:01
Registered Owner: FORTISBC INC.
Remarks: EXTENSION OF W8379
PART ON PLAN KAP87190

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB225850
Registration Date and Time: 2008-07-30 15:01
Registered Owner: GLENMORE-ELLISON IMPROVEMENT DISTRICT
Remarks: EXTENSION OF V42675
PART ON PLAN KAP87191

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB225851
Registration Date and Time: 2008-07-30 15:01
Registered Owner: TERASEN GAS INC.
INCORPORATION NO. BC0778288
Remarks: EXTENSION OF KJ6278
PART ON PLAN KAP87191

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB225852
Registration Date and Time: 2008-07-30 15:04
Registered Owner: TERASEN GAS INC.
INCORPORATION NO. BC0778288
Remarks: EXTENSION OF KK86207
PART ON PLAN KAP87192

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB385187
Registration Date and Time: 2010-05-14 10:08
Registered Owner: FORTISBC INC.
Remarks: PART IN PLANS KAP90788 AND KAP90789

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB385214
Registration Date and Time: 2010-05-14 10:08
Registered Owner: FORTISBC INC.

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB385241
Registration Date and Time: 2010-05-14 11:02
Registered Owner: FORTISBC INC.
Remarks: PART IN PLANS KAP90790, KAP90791, KAP90792,
KAP90793 AND KAP90794

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB420918
Registration Date and Time: 2010-11-23 14:39
Registered Owner: FORTISBC INC.
Remarks: PART ON PLAN KAP91571

TITLE SEARCH PRINT 2016-11-28, 14:00:59
File Reference: Requestor: Jennifer Fossum

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB429663
Registration Date and Time: 2010-12-24 12:26
Registered Owner: FORTISBC INC.
Remarks: PART ON PLAN KAP91731

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB458706
Registration Date and Time: 2011-03-29 11:25
Registered Owner: FORTISBC INC.
Remarks: PART ON PLAN KAP91957

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB467211
Registration Date and Time: 2011-05-26 11:37
Registered Owner: FORTISBC INC.
Remarks: PART ON PLAN KAP92113

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB511362
Registration Date and Time: 2012-10-17 14:38
Registered Owner: FORTISBC INC.
Remarks: PART SHOWN AS PARCEL J ON PLAN KAP90790

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB511363
Registration Date and Time: 2012-10-17 14:38
Registered Owner: FORTISBC INC.

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB511364
Registration Date and Time: 2012-10-17 14:38
Registered Owner: FORTISBC INC.
Remarks: PART SHOWN ON PLAN EPP22372

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB511365
Registration Date and Time: 2012-10-17 14:38
Registered Owner: FORTISBC INC.

Nature: STATUTORY RIGHT OF WAY
Registration Number: LB516538
Registration Date and Time: 2013-03-28 10:15
Registered Owner: GLENMORE-ELLISON IMPROVEMANT DISTRICT
Remarks: PART ON PLAN KAP92936

TITLE SEARCH PRINT 2016-11-28, 14:00:59

File Reference: Requestor: Jennifer Fossum

Nature:	STATUTORY RIGHT OF WAY
Registration Number:	CA3063835
Registration Date and Time:	2013-04-05 09:55
Registered Owner:	GLENMORE-ELLISON IMPROVEMENT DISTRICT
Remarks:	PART IN PLAN KAP88509

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

Site Profile

THE UNIVERSITY OF BRITISH COLUMBIA
Campus and Community Planning
2210 West Mall · Vancouver, B.C. · V6T 1Z4
☎ 604.822.2633 · 🖷 604.822.6119

DP # _____

Environmental Compliance Check List

*All projects at UBC must comply with environmental regulatory requirements mandated by UBC, Metro Vancouver and the Ministry of the Environment. This form is to be completed and submitted as part of your Development Permit Application. The completed form will be submitted to **Risk Management Services** for review prior to Development Permit issuance.*

Please refer to the guidelines at the back of this document for further details related to completing this form.

Project Address: 3297 University Way		
Building Name: UBCO teaching and Learnin Centre		
Contact name: Dave Poettcker		Email: dpoettcker@ubcproperties.com
Mailing address: #200-3313 Shrum Lane		Phone: (604) 731-3103
City: Vancouver	Postal Code: V6S 0C8	Fax: (604) 731-2130

The following articles will require Risk Management Services review to ensure regulatory compliance. Please check "Yes" or "No" below for elements applicable/not applicable to your project.

Yes No

- ☐ ☒ **Storage tanks**
- ☒ ☐ **Chillers and other units containing Ozone Depleting Substances**
- ☐ ☒ **Boilers and process heaters with capacity of 3MW and above**
- ☐ ☒ **Planned discharges/connections of non-domestic wastewater to sanitary sewer**
- ☐ ☒ **Planned discharges/connections of non-stormwater water sources to storm drain**
- ☐ ☒ **Building's hazardous waste storage areas**

Signature of Authorized agent: _____ Date: _____

For additional information on each of the above elements see the reverse of this page, and/or contact UBC Risk Management Services (RMS) at 604-822-9280 or noga.levit@ubc.ca

Environmental compliance requirements to be addressed by Development Projects

- **Storage tanks**

All new above and underground storage tanks must be preapproved by UBC RMS and registered in the UBC storage tank inventory. Click here[1] for more information and online application for approval.

Storage tanks include: fuel tanks, chemical storage tanks, acid neutralization tanks, oil water separators, grease traps, septic tanks, liquefied gas tanks, waste water collection and containment tanks.

Tank selection and installation requirements will vary dependent on the tank type and must comply with: BC Hazardous Waste regulations, BC Fire Code, Metro Vancouver Sewer Use Bylaw, Environment Canada Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, the Sewer System Regulations under the Public Health Act, and the BC Contaminated Sites Regulations.

- **Chillers and other units containing Ozone Depleting Substances**

Installation, service, and maintenance for chillers and other units containing Ozone Depleting Substances must follow the BC Ozone Depleting Substances and other halocarbon regulation[2]. Click here[3] for additional information.

- **Boilers and process heaters with capacity of 3MW and above**

All boilers and process heaters with capacity of 3MW and above must be registered with Metro Vancouver and comply with all requirements pursuant to Metro Vancouver Boilers and Process Heaters Emission Regulation Bylaw 1087[4] (i.e. registration, emission limits, emission testing, etc.)

- **Planned discharges/connections of non-domestic wastewater to sanitary sewer**

All non-domestic waste water discharge to the sanitary sewer must comply with Metro Vancouver Sewer Use Bylaw 299[5]. Non-domestic waste not complying with this regulation prohibition or restriction may require a discharge permit from Metro Vancouver.

- **Planned discharges/connections to storm drain of non-storm water or other contaminated water**

According to the Metro Vancouver Sewer Use Bylaw 299[5] only storm water and uncontaminated water can be discharged into the storm sewer.

- **Building's hazardous waste storage areas**

The design of a building's hazardous waste storage area must comply with the BC Fire Code, the BC Hazardous Waste Regulations, and WorkSafe BC ventilation and hazardous materials storage requirements. Storage room size and proximity to loading dock and truck access to loading dock should also be considered.

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[1] http://riskmanagement.ubc.ca/environment/storage-tank
[2] http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/36_387_99
[3] http://riskmanagement.ubc.ca/environment/ozone-depleting-substances
[4] http://www.metrovancouver.org/boards/bylaws/Bylaws/GVRD_Bylaw_1087.pdf
[5] http://www.metrovancouver.org/boards/bylaws/Bylaws/GVSDD_Bylaw_299.pdf

Green Building Certification

LEED Canada-NC 2009 Project Checklist

UBC Okanagan Teaching & Learning Centre 18756

Yes	?	No				
70	24	6	**Project Totals** (pre-certification estimates)			110 Possible Points

Certified 40-49 points **Silver** 50-59 points **Gold** 60-79 points **Platinum** 80 points and above

Yes	?	No				
17	8	1	**Sustainable Sites**			26 Points
✓				Prereq 1	Construction Activity Pollution Prevention	Required
1			M	Credit 1	Site Selection	1
5			M	Credit 2	Development Density and Community Connectivity	3, 5
		1	O	Credit 3	Brownfield Redevelopment	1
6			M	Credit 4.1	Alternative Transportation: Public Transportation Access	3, 6
1			M	Credit 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1
	3		O	Credit 4.3	Alternative Transportation: Low-Emitting & Fuel-Efficient Vehicles	3
	2		O	Credit 4.4	Alternative Transportation: Parking Capacity	2
1			M	Credit 5.1	Site Development: Protect and Restore habitat	1
1			M	Credit 5.2	Site Development: Maximize Open Space	1
1			M	Credit 6.1	Stormwater Design: Quantity Control	1
	1		O	Credit 6.2	Stormwater Design: Quality Control	1
1			M	Credit 7.1	Heat Island Effect: Non-Roof	1
	1		O	Credit 7.2	Heat Island Effect: Roof	1
	1		O	Credit 8	Light Pollution Reduction	1

Yes	?	No				
8	2	0	**Water Efficiency**			10 Points
✓				Prereq 1	Water Use Reduction	Required
4			M	Credit 1	Water Efficient Landscaping	2, 4
	2		O	Credit 2	Innovative Wastewater Technologies	2
4			M	Credit 3	Water Use Reduction	2 - 4

Yes	?	No				
18	9	0	**Energy & Atmosphere**			35 Points
✓				Prereq 1	Fundamental Commissioning of Building Energy Systems	Required
✓				Prereq 2	Minimum Energy Performance	Required
✓				Prereq 3	Fundamental Refrigerant Management	Required
11			M	Credit 1	Optimize Energy Performance	1 - 19
	7		O	Credit 2	On-Site Renewable Energy	1 - 7
2			M	Credit 3	Enhanced Commissioning	2
2			M	Credit 4	Enhanced Refrigerant Management	2
3			M	Credit 5	Measurement and Verification	3
	2		O	Credit 6	Green Power	2

Yes	?	No				
6	1	5	**Materials & Resources**			14 Points
✓				Prereq 1	Storage and Collection of Recyclables	Required
		1	M	Credit 1.1	Building Reuse: Maintain Existing Walls, Floors, and Roof	1 - 3
		1	O	Credit 1.2	Building Reuse: Maintain Interior Non-Structural Elements	1
2			M	Credit 2	Construction Waste Management	1 - 2
		2	O	Credit 3	Materials Reuse	1 - 2
2			M	Credit 4	Recycled Content	1 - 2
2			M	Credit 5	Regional Materials	1 - 2
	1		O	Credit 6	Rapidly Renewable Materials	1
		1	O	Credit 7	Certified Wood	1

Yes	?	No				
11	4	0	**Indoor Environmental Quality**			15 Points
✓				Prereq 1	Minimum Indoor Air Quality Performance	Required
✓				Prereq 2	Environmental Tobacco Smoke (ETS) Control	Required
1			O	Credit 1	Outdoor Air Delivery Monitoring	1
	1		O	Credit 2	Increased Ventilation	1
1			M	Credit 3.1	Construction IAQ Management Plan: During Construction	1
1			M	Credit 3.2	Construction IAQ Management Plan: Before Occupancy	1
1			M	Credit 4.1	Low-Emitting Materials: Adhesives and Sealants	1
1			M	Credit 4.2	Low-Emitting Materials: Paints and Coatings	1
1			M	Credit 4.3	Low-Emitting Materials: Flooring Systems	1
1			M	Credit 4.4	Low-Emitting Materials: Composite Wood and Agrifibre Products	1
	1		O	Credit 5	Indoor Chemical and Pollutant Source Control	1
1			O	Credit 6.1	Controllability of System: Lighting	1
1			O	Credit 6.2	Controllability of System: Thermal Comfort	1
1			O	Credit 7.1	Thermal Comfort: Design	1
1			O	Credit 7.2	Thermal Comfort: Verification	1
	1		O	Credit 8.1	Daylight and Views: Daylight	1
	1		O	Credit 8.2	Daylight and Views: Views	1

Yes	?	No				
6	0	0	**Innovation in Design**			5 Points
1			M	Credit 1.1	Innovation in Design- Education	1
1			O	Credit 1.2	Innovation in Design - Green Housekeeping	1
1			O	Credit 1.3	Innovation in Design - Landscape Re-use	1
1			O	Credit 1.4	Innovation in Design - Exceed M&R C2	1
1			O	Credit 1.5	Innovation in Design - Exceed Credit Criteria	1
1			M	Credit 2	LEED® Accredited Professional	1

Yes	?	No				
4	0	0	**Regional Priority**			4 Points
1			O	Credit 1	Durable Building	1
1			M	Credit 2.1	Regional Priority Credit	1
1			M	Credit 2.2	Regional Priority Credit	1
1			M	Credit 2.3	Regional Priority Credit	1

Geotechnical Report

- INTERIOR -
TESTING SERVICES
- LTD. -

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
3333 University Way
Kelowna, BC V1V 1V7

September 29, 2016
Job 16.217

Attention: Mr David Pottecker

Dear Sir;

Re: **Geotechnical Investigation**
Proposed Building – North of Existing Library
3333 University Way
Kelowna, BC

As requested and further to our proposal of August 31, 2016, Interior Testing Services Ltd. (ITSL) has carried out a geotechnical investigation for the above noted proposed campus building. Please find attached one site plan with schematic logs, two pages of auger hole logs and a copy of our two-page "Terms of Engagement" that governs our work on this project, previously signed and accepted.

1.0 INTRODUCTION & PROPOSED SCOPE OF WORK

As outlined in our proposal, we understand that a 4 level structure is proposed for an area immediately north of the existing library building. We further understand that the proposed structure will have 1 underground level.

For preliminary settlement estimates of the proposed building, we have assumed an approximate average building footprint load of roughly 10 kPa (200 psf). As the building design proceeds, ITSL should be forwarded formal loading estimates (particularly column load take downs) so that more detailed static settlement analysis can be carried out.

As part of our desktop work for this report, we have reviewed our previous information on the property (Job 9023) and in particular our report dated December 1990.

To evaluate and confirm sub-surface soil conditions, we carried out a geotechnical investigation. The purpose of our investigation was to identify the underlying soil and groundwater conditions with respect to general geotechnical comments for building construction. The following report presents our investigation and laboratory results, along with general geotechnical comments and recommendations for site preparation, foundation design and building drainage.

As noted, we provided geotechnical design and construction services for the existing Library building as part of the initial phase of campus development. To the best of our knowledge, we understand the Library building foundations are performing well, with no signs of distress or movement.

3.0 SITE DESCRIPTION

The site is located north of the existing library building. The proposed building site contains a small parking lot as well as a landscaped area. The parking lot is generally flat and the landscape area slopes down to the southeast, towards Alumni Avenue.

The site is bordered by University Way to the north, landscaping and Alumni Avenue to the east, the existing library building to the south and other campus buildings and walkways to the west.

4.0 FIELD WORK

On September 15, 2016 a track mounted drill rig operated by Mud Bay Drilling Co Ltd was used to advance two solid stem auger holes to as much as 13.7 m below current site grades. The (solid stem) auger holes were continuously logged in the field and regular, representative samples were recovered from the auger flights and returned to our laboratory for additional analysis. A single undisturbed (Shelby-tube) sample was recovered from AH2 for swell testing purposes.

One 25 mm diameter PVC piezometer was installed to approximately 4.3 m below grade at AH1 to allow for future groundwater level measurement.

Locations of the auger holes were approximated by reference to a site plan adapted from Google Earth and are shown on Drawing 16.217-1. Elevations of the test holes were not obtained.

5.0 RESULTS

5.1 Soil Profile

The schematic logs of the auger holes are shown on Drawing 16.217. Detailed soil descriptions are shown on the attached auger hole logs (Drawings 16.217-2 to 16.217-3), which should be used in preference to the generalized soil descriptions that follow.

Below the asphalt, there is roughly 0.5 m of granular FILL. Below the FILL the site is underlain by roughly 4 to 5 m of stiff to very stiff SILT / CLAY. Underlying the SILT / CLAY a layer of SILTs / SANDs was noted to roughly 6 to 8 m below grade. Below the SILT / SAND, SAND to SAND and GRAVELs were encountered to the base of each auger hole, at 13.9 and 9.1 m respectively.

Within each solid stem auger hole, a series of unconfined compressive strength (UCS) tests were carried out on the natural SILT / CLAY soils using a pocket penetrometer. The results are shown on the attached auger hole logs and varied between 147 to 270 kPa. This range can be loosely translated to range from stiff to very stiff. It should be noted, that the in-situ strength of the soil is expected to be higher than the UCS values measured, as a result of the soil on the auger flights (where the UCS values were obtained) being disturbed (sometimes significantly).

5.2 Groundwater Conditions

During our investigation of September 15, 2016, seepage was noted in both auger holes between approximately 3.8 and 4.2 m below grade. We installed one 25 mm diameter PVC piezometers within AH1 to roughly 4.3 m below grade, to allow for additional groundwater monitoring. During our field visit of September 26, 2016, groundwater was not observed within the piezometer.

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 the proposed basement type structure, as well as positive finished grading away from the structure (see Section 10.0).

5.3 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 roughly 25 and 38% moisture. The SILT / SAND soils had oven-dried moisture contents varying between 19 and 29%. The granular samples varied between 4 and 14% oven-dried moisture.

As noted above, we recovered an undisturbed sample from AH2 for swell testing purposes. The results indicate less than 1% swell, which we would normally consider as low-potential for swell. Due to the low swell of the sample, the results have not been formally plotted.

6.0 STATIC SETTLEMENT CONSIDERATIONS

For preliminary settlement purposes, we have assumed an approximate average building footprint load of roughly 10 kPa (200 psf) for the currently planned building. Overall, given that a basement-type structure is proposed, we anticipate a net-unload to the underlying subgrade soils.

However, it is also useful to check individual columns for static settlement. Using an assumed load of 1000 kN (225 kips), our estimates indicate between 40 to 80 mm of potential settlement where columns are set on the natural SILTs / CLAYs. Typically, design objectives for total settlement are roughly 25 mm. Furthermore, design objectives typically limit differential movement to 20 mm.

After loading details are finalized, ITSL should be given the opportunity to review and update our static settlement estimates.

Given that settlement estimates are in excess of standard objectives and given our experience with the existing campus foundation preparation procedures, over-excavation and replacement with gravel FILL is recommended (see recommendations below).

7.0 SITE PREPARATION RECOMMENDATIONS

1. As part of the initial stripping work, we recommend that all asphalt, topsoils and old fills be removed from proposed building area to expose natural SILTs and CLAYs. Based on the results of our investigation, natural soils should be exposed between at roughly 0.5 m below existing asphalt grade.

   We anticipate that the existing gravels can be re-used for structural FILL, although this should be checked at the time of construction, prior to placement.

2. Understanding that an underground (basement) level is being considered for the building, we are anticipating a foundation excavation of roughly 3 m will be required to achieve the desired footing elevations. We recommend that as a minimum, foundation excavation extend to at least 1 m below design footing elevation (total excavation of roughly 4 m). This sub-excavation will allow for the placement of a granular structural FILL pad for final footing preparation and will remove a substantial thickness of the remaining SILT / CLAY layer (see AH2).

   Prior to structural FILL placement, a geotechnical review of the subgrade is to be carried out to confirm conditions are suitable.

3. Subject to a geotechnical review of the sub-excavated subgrade, structural FILLs may be placed and compacted to achieve the desired foundation grade. Structural FILLs should consist of clean, gravel material (less than 8% fines) and are to be placed in maximum 300 mm (1 ft) lifts, compacted to a minimum of 95% of Modified Proctor Density (MPD) and conditioned to within 2% of the optimum moisture content.

   It is recommended that regular field density testing be carried out as the FILL is placed, to confirm adequate compaction is being achieved. As a minimum, field density testing is to be carried out on at least every second lift (every 600 mm).

   Structural FILLs should extend laterally beyond the edge of the proposed footings a distance at least equal to the depth of new FILL placed. This is to create a proper load spread condition through the FILL to the natural soils below (ie 1 Horizontal to 1 Vertical).

4. A geotechnical engineering review of the final bearing surface is recommended to confirm suitable conditions, prior to pouring concrete.

5. For slab subgrade FILL, similar clean gravel should be placed as outlined in 3. above. The final slab bearing surface should consist of 19 mm crushed gravel compacted to at least 95% of MPD. Where radon rock is required (design and comment by others), we can review the suitability of that material for slab support.

8.0 FOUNDATION DESIGN COMMENTS

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 the gravel pad, foundations may then be placed on the structural FILLs with an allowable bearing pressure of 200 kPa (4000 psf) subject to the following considerations.

a) Bearing surfaces to be clean, dry, free of any TOPSOIL or old FILLs and in a well compacted condition (95% of MPD).
b) Minimum structural FILL thickness of 1000 mm (40 inches).
c) Minimum footing width to be 400 mm (16 inches).
d) Minimum depth of footing to be 900 mm (36 inches) below final adjacent grade, or as per local by-law, for frost protection.

The above allowable bearing pressure can also be taken as the Service Limit State (SLS). The factored bearing resistance at the Ultimate Limit State can be assumed to be 400 kPa (8000 psf) using a resistance factor of 0.5 as taken from CFEM 4th Ed Table 8.2.

Based on the results of our investigation and laboratory work, we generally anticipate a granular deposit below roughly 5 m below existing site grades. 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 to be appropriate for the seismic design purposes of the proposed campus building.

9.0 LATERAL EARTH PRESSURE DESIGN COMMENTS

As noted above, we understand that the proposed building will have at least 1 underground level. We anticipate that guidance with respect to lateral earth pressures will be required for foundation wall design purposes.

We anticipate that the proposed concrete walls will be restrained by a top concrete slab and will be relatively stiff and unyielding. Understanding this, we anticipate that the at-rest lateral earth condition will be appropriate to consider for design.

For the at-rest condition, an equivalent fluid pressure of 8.1 kN / m^2 / m of wall height can be used. To account for surcharge pressures, an at-rest coefficient of 0.43 can be used. We do not anticipate significant compaction induced pressures and heavy compaction equipment should not be used within 1 m of the wall. However, if heavy compaction is to be applied, then a tabular pressure of 20 kN / m^2 should be used for design, until intersection with the above equivalent fluid pressure at roughly 2.5 m (ie 20 / 8.1).

The lateral earth pressure comments above are based a soil unit weight of 19 kN / m^3 and a friction angle of 35° and assumed drained conditions for clean gravel backfill. 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.

10.0 BUILDING DRAINAGE

As noted above, we anticipate the proposed building will have a single underground level. As is conventional, perimeter drainage should be provided and directed to a suitable disposal location. Given the likelihood of pipe collapse, 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.

Onsite drainage, including rock pits and drywells, do not appear to be suitable for this development, given the low permeability of the underlying natural soils.

In addition, all finished grades are to be sloped away from the proposed building to limit infiltration into the backfill zone.

11.0 CONCLUSIONS

11.1 As requested, ITSL has carried out a geotechnical investigation for the proposed campus building. Recommendations for site preparation, foundation design, lateral earth pressures and building drainage have been provided in the previous sections of this report.

Once finalized building loads have been established, they should be forwarded to ITSL for our review. This is to confirm our static settlement estimates.

11.2 It is recommended that a geotechnical engineer conduct reviews of the stripped subgrade soils prior to placing the structural FILL pad. This is to confirm that the exposed soils are as expected or to advise on remedial measures, if necessary.

It is recommended that regular field density testing be carried out within all structural FILLs.

11.3 ITSL should be given the opportunity to review, after the foundation plans have been finalized, to confirm that design is consistent with our comments in this report.

In particular the design structural loads should be forwarded for our review, so that we can confirm our preliminary static settlement estimates.

We trust the above comments are sufficient at this stage. After your review, please feel free to call and discuss any questions you may have.

Best Regards,
Interior Testing Services Ltd

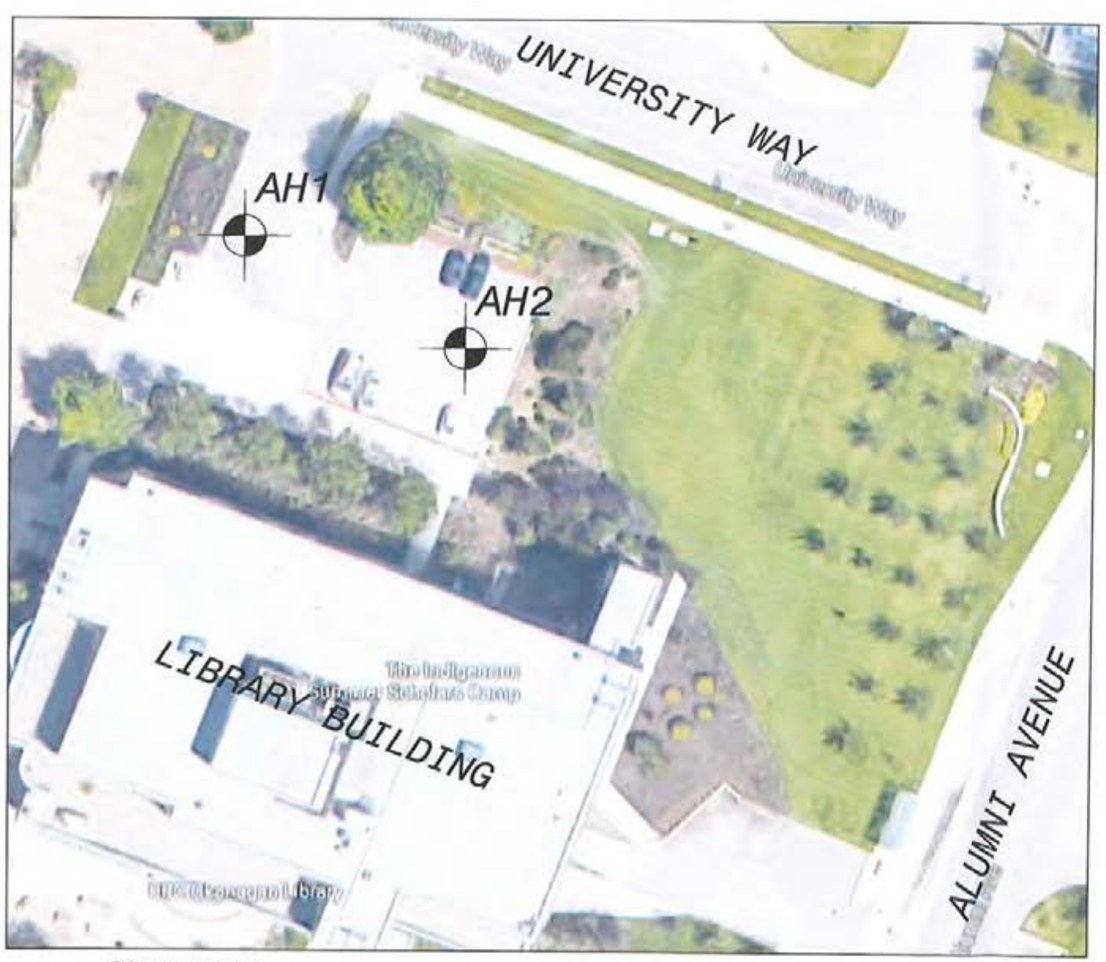
Prepared By:

Jeremy Block, P Eng
Intermediate Geotechnical Engineer

Reviewed By:

Peter Hanenburg, P Eng
Principal Geotechnical Engineer

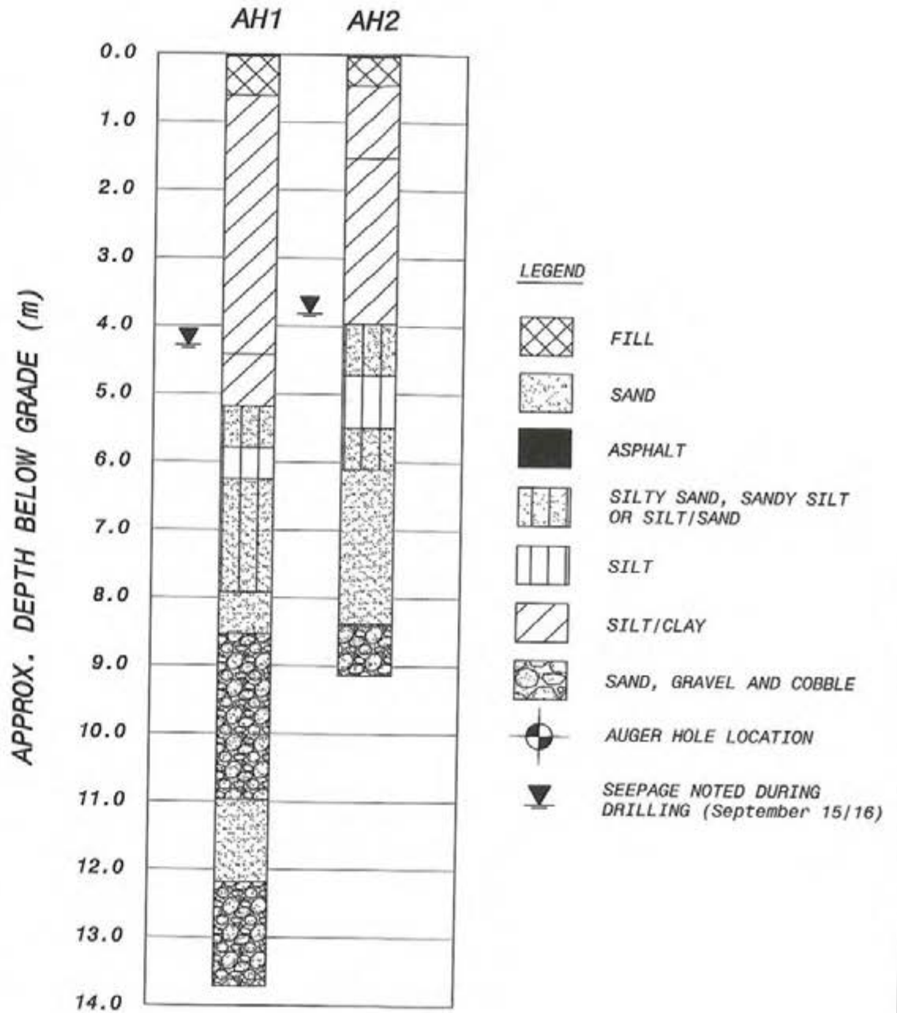
SITE PLAN



SCALE 1:500

0 15 30 m

SCHEMATIC LOGS



NOTES

1. REFERENCE PLAN ADAPTED FROM GOOGLE MAPS.
2. AUGER HOLE LOCATIONS ARE APPROXIMATE AND MAY VARY FROM THAT SHOWN.
3. FOR DETAILED SOIL DESCRIPTIONS REFER TO AUGER HOLE LOGS.

UBC PROPERTIES TRUST

GEOTECHNICAL INVESTIGATION
PROPOSED CAMPUS BUILDING
NORTH OF LIBRARY
KELOWNA, B.C.

SITE PLAN

INTERIOR TESTING SERVICES LTD.
1-1925 KIRSCHNER ROAD, KELOWNA, BC V1Y 4N7
PH: 250-860-6540 EM: info@interiortesting.com

DATE OF INVESTIGATION: SEPTEMBER 15, 2016

JOB NUMBER: 16.217 DRAWING NUMBER: 16.217-1

- INTERIOR - TESTING SERVICES - LTD. -

LOG OF AUGER HOLE 1

Interior Testing Services Ltd.
1 - 1925 Kirschner Road
Kelowna, BC V1Y 4N7
Ph: (250) 860 - 6540
email: info@interiortesting.com

Project : 16.217 : Proposed Campus Building : North of Library : Kelowna, BC
Location : See Dwg. No. 16.217-1
Method : Tracked Drill Rig
Contractor : Mud Bay Drilling
Logged By : ER
Date : September 15, 2016

Legend: Water Noted During Drilling; Water Noted in Piezometer; Disturbed Sample; Undisturbed Sample; LL Liquid Limit; PL Plastic Limit

Depth in Meters	% Moisture	Water Level	REMARKS	GRAPHIC	Sample Number	Sample Type	DESCRIPTION	Depth in Meters
0							Asphalt.	0
1	29%				S1		Brown sand and gravel FILL.	1
2			Pocket Penetrometer: 147 kPa.				Dark grey, stiff to very stiff SILT/CLAY.	2
3	38%				S2			3
4	38%		Seepage at 4.3 m.		S3			4
5	30%				S4		Grey, stiff to very stiff SILT/CLAY. White staining noted.	5
	29%				S5		Brown, fine, silty SAND.	
6	25%				S6		Brown, stiff to very stiff SILT.	6
7	19%				S7		Brown, fine SILT/SAND.	7
8	4%				S8		Brown medium SAND. Coarser grains with depth.	8
9	4%				S9		Brown, medium to coarse SAND/GRAVEL. Limited recovery.	9
10	7%				S10			10
11					S11		Grey fine to medium SAND.	11
12	6%							12
13	7%				S12		Grey, fine to medium SAND and GRAVEL.	13
14							Bottom of auger hole at 13.7 m due to refusal.	14

Drawing No. 16.217-2

- INTERIOR - TESTING SERVICES - LTD. -

LOG OF AUGER HOLE 2

Interior Testing Services Ltd.
1 - 1925 Kirschner Road
Kelowna, BC V1Y 4N7
Ph: (250) 860 - 6540
email: info@interiortesting.com

Project : 16.217 : Proposed Campus Building : North of Library : Kelowna, BC
Location : See Dwg. No. 16.217-1
Method : Tracked Drill Rig
Contractor : Mud Bay Drilling
Logged By : ER
Date : September 15, 2016

Legend: Water Noted During Drilling; Water Noted in Piezometer; Disturbed Sample; Undisturbed Sample; LL Liquid Limit; PL Plastic Limit

Depth in Meters	% Moisture	Water Level	REMARKS	GRAPHIC	Sample Number	Sample Type	DESCRIPTION	Depth in Meters
0							Asphalt	0
1	25%		Pocket Penetrometer: 270 kPa.		S1		Brown sand and gravel FILL. Dark grey, stiff to very stiff SILT/CLAY.	1
2							Grey, stiff to very stiff SILT/CLAY. White staining noted.	2
3	36%		Pocket Penetrometer: 270 kPa.		S2			3
4			Pocket Penetrometer: 147 kPa. Swell Test: <1%		SS1			4
	28%		Seepage at 3.8 m		S3		Brown, fine, silty SAND.	
5	37%		No groundwater in piezometer on Sept. 26/16.		S4		Brown, stiff to very stiff SILT.	5
6	29%				S5		Brown, fine SILT/SAND.	6
7	14%				S6		Brown medium SAND. Coarser with depth.	7
	10%				S7			
8	4%				S8			8
9	5%				S9		Brown, medium to coarse SAND/GRAVEL. Limited recovery.	9
10							Bottom of auger hole at 9.1 m.	10
11								11
12								12
13								13
14								14

Drawing No. 16.217-3

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.

PERSONAL LIABILITY
For the purposes of the limitation of liability provisions contained in the Agreement of the parties herein, the Client expressly agrees that it has entered into this Agreement with ITSL, both on its own behalf and as agent on behalf of its employees and principals.

The Client expressly agrees that ITSL's employees and principals shall have no personal liability to the Client in respect of a claim, whether in contract, tort and/or any other cause of action in law. Accordingly, the Client expressly agrees that it will bring no proceedings and take no action in any court of law against any of ITSL's employees or principals in their personal capacity.

THIRD PARTY LIABILITY
This report was prepared by ITSL for the account of the Client. The material in it reflects the judgement and opinion of ITSL in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. ITSL accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This report may not be used or relied upon by any other person unless that person is specifically named by us as a beneficiary of the Report. The Client agrees to maintain the confidentiality of the Report and reasonably protect the report from distribution to any other person.

INDEMNITY
The client shall indemnify and hold harmless ITSL from and against any costs, damages, expenses, legal fees and disbursements, expert and investigation costs, claims, liabilities, actions, causes of action and any taxes thereon arising from or related to any claim or threatened claim by any party arising from or related to the performance of the Services.

DOCUMENTS
All of the documents prepared by ITSL or on behalf of ITSL in connection with the Project are instruments of service for the execution of the Project. ITSL retains the property and copyright in these documents, whether the Project is executed or not. These documents may not be used on any other project without the prior written agreement of ITSL.

FIELD SERVICES
Where applicable, field services recommended for the Project are the minimum necessary, in the sole discretion of ITSL, to observe whether the work of a contractor retained by the Client is being carried out in general conformity with the intent of the Services.

DISPUTE RESOLUTION
If requested in writing by either the Client or ITSL, the Client and ITSL shall attempt to resolve any dispute between them arising out of or in connection with this Agreement by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, the dispute shall be referred to and finally resolved by an arbitrator appointed by agreement of the parties.

CONFIRMATION OF PROFESSIONAL LIABILITY INSURANCE
As required by by-laws of the Association of Professional Engineers and Geoscientists of British Columbia, it is required that our firm advises whether or not Professional Liability Insurance is held. It is also required that a space for you to acknowledge this information be provided.

Our professional liability insurance is not project specific for the project and should not be regarded as such. If you require insurance for your project you should purchase a project specific insurance policy directly.

Accordingly, this notice serves to advise you that ITSL carries professional liability insurance. Please sign and return a copy of this form as an indication of acceptance and agreement to the contractual force of these Terms of Engagement.

ACKNOWLEDGEMENT:_____

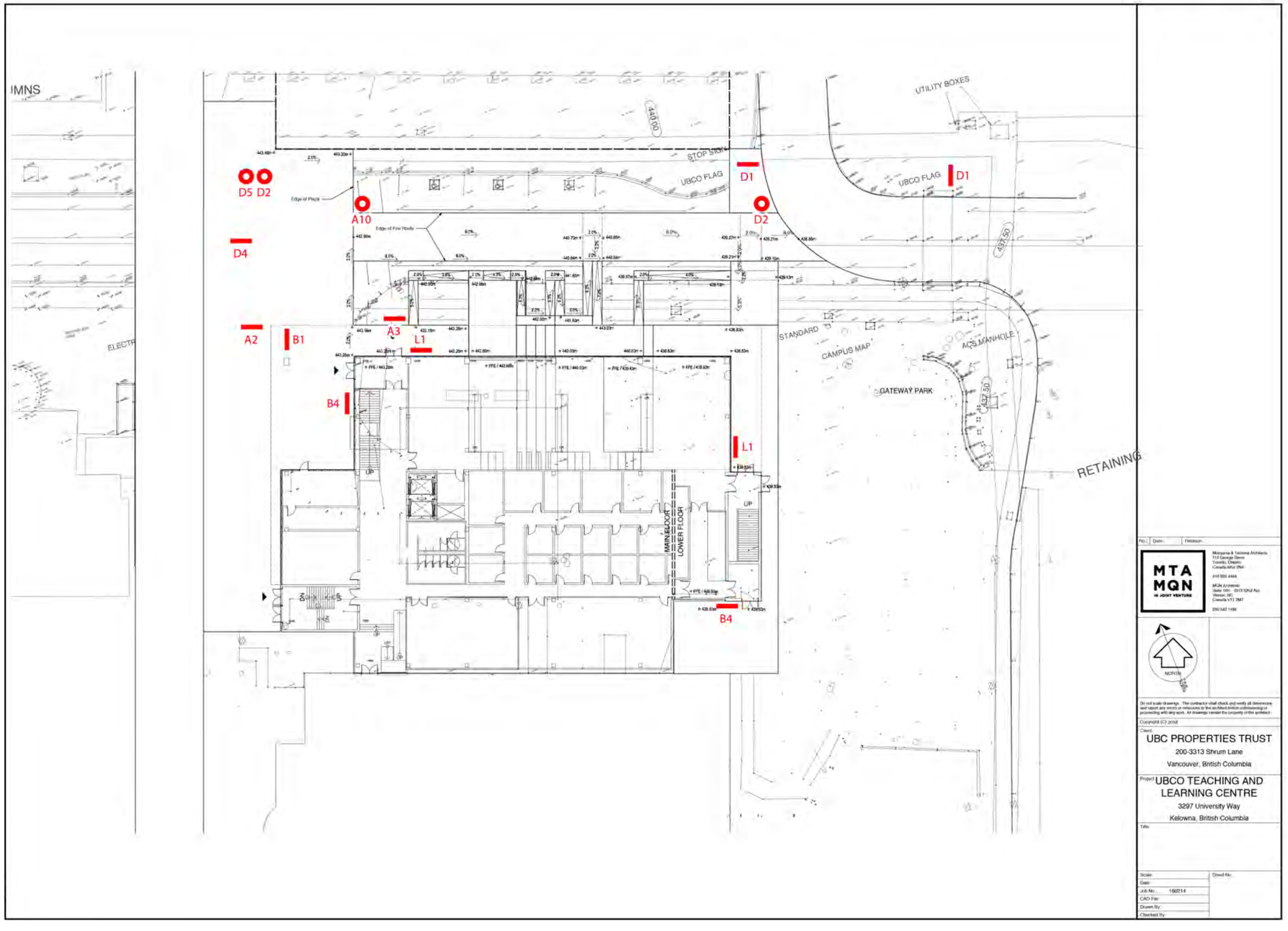
Pre-Construction Photos

View West to site across University Way

View East across site from University Walk

View South to site across University Way

Building Signage

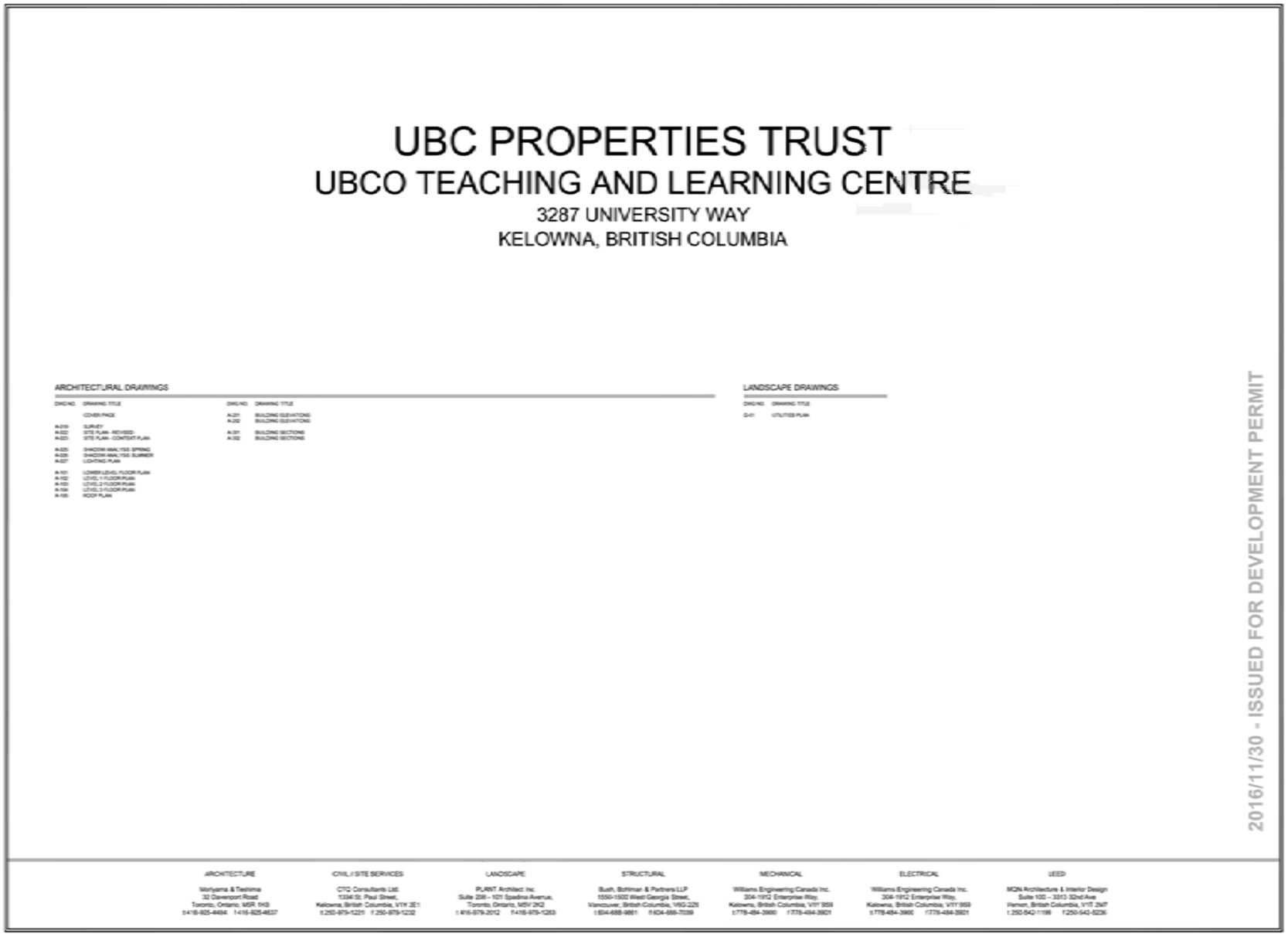


Legend

D1	Campus Directional Sign Vehicular scale
D2	UBC Street Sign Campus Core
D4	Area Facility Signs for Pedestrians
D5	Destination Sign Blades
A2	Immediate Building Vicinity (accessible routes)
A3	Access Directional Sign
A10	TTY Telephone Sign
B1	Freestanding Building Identification Sign (standard)
B4	Wall-mounted Building Identification Signs
L1	Smoking is Prohibited Sign

Drawings

Cover Sheet / Building Statistics



UBC PROPERTIES TRUST

UBCO TEACHING AND LEARNING CENTRE

3287 UNIVERSITY WAY

KELOWNA, BRITISH COLUMBIA

ARCHITECTURAL DRAWINGS

DWG NO.	DRAWING TITLE
	COVER PAGE
A-210	SURVEY
A-222	SITE PLAN - REVISED
A-223	SITE PLAN - CONTEXT PLAN
A-225	SHADOW ANALYSIS: SPRING
A-226	SHADOW ANALYSIS: SUMMER
A-227	LIGHTING PLAN
A-101	LOWER LEVEL FLOOR PLAN
A-102	LEVEL 1 FLOOR PLAN
A-103	LEVEL 2 FLOOR PLAN
A-104	LEVEL 3 FLOOR PLAN
A-105	ROOF PLAN
A-201	BUILDING ELEVATIONS
A-202	BUILDING ELEVATIONS
A-301	BUILDING SECTIONS
A-302	BUILDING SECTIONS

LANDSCAPE DRAWINGS

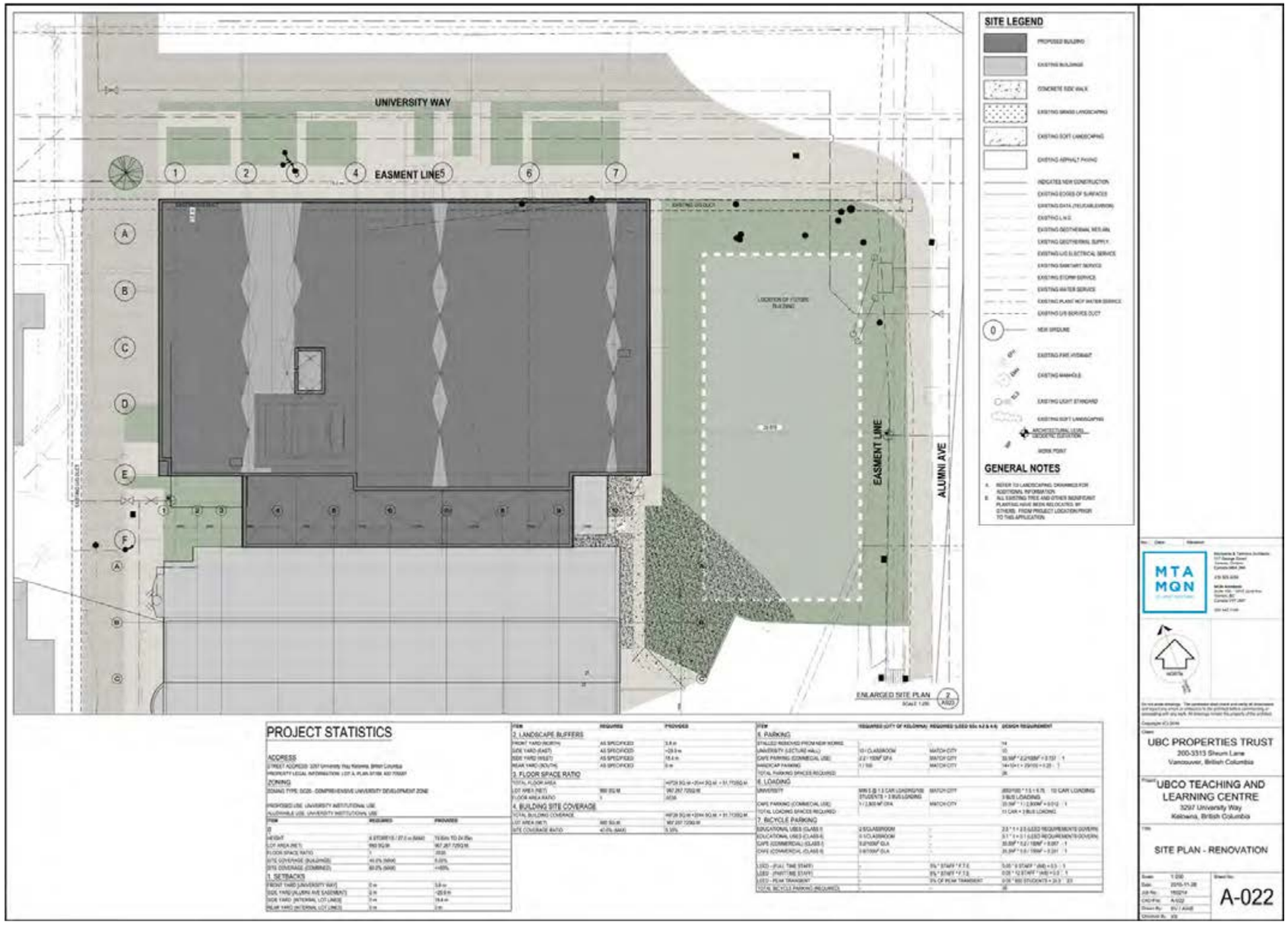
DWG NO.	DRAWING TITLE
D-01	UTILITIES PLAN

2016/11/30 - ISSUED FOR DEVELOPMENT PERMIT

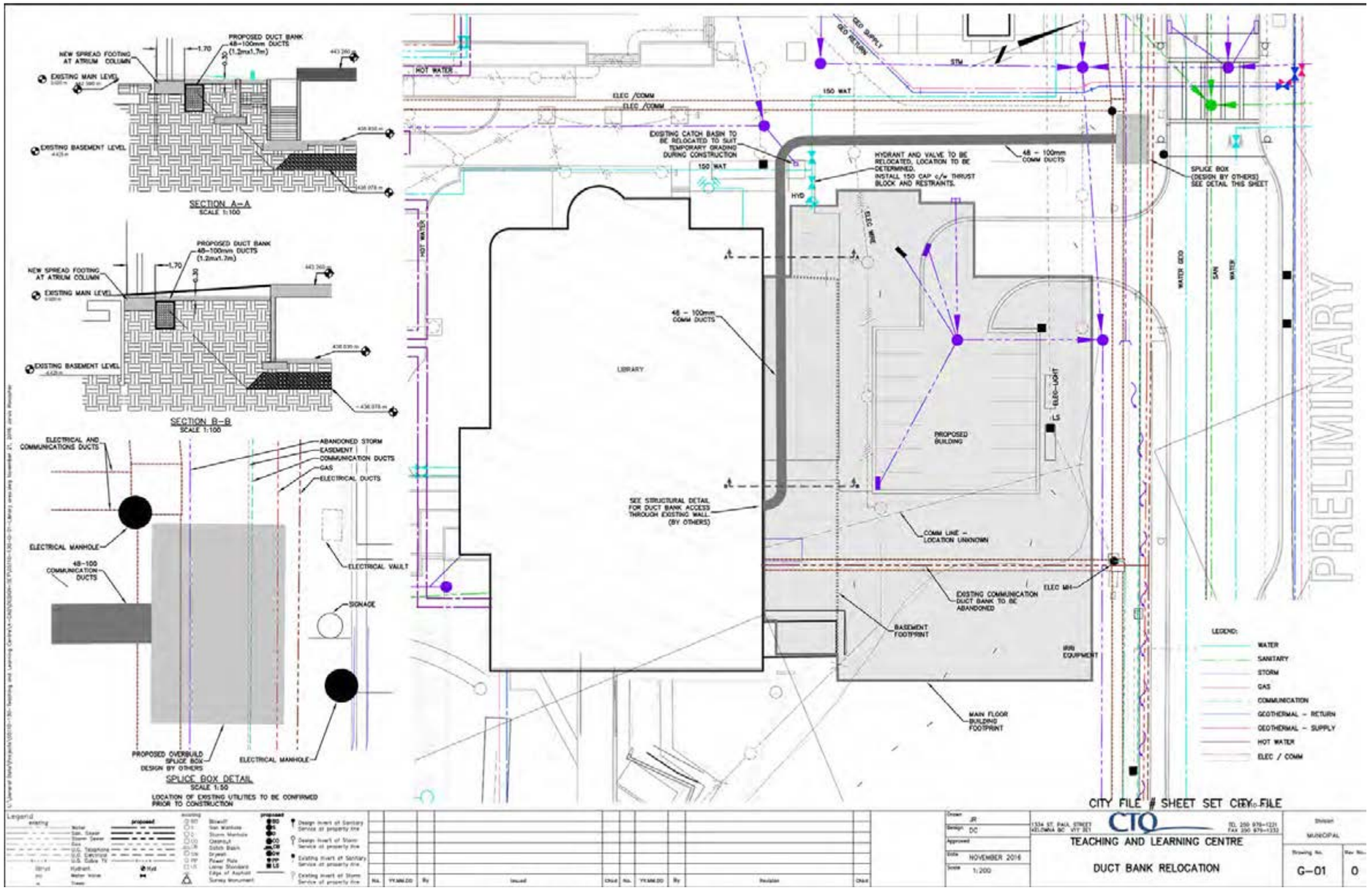
ARCHITECTURE	CIVIL / SITE SERVICES	LANDSCAPE	STRUCTURAL	MECHANICAL	ELECTRICAL	LEED
Moriyama & Teshima 32 Davenport Road Toronto, Ontario, M5R 1K9 t:416-925-4484 f:416-925-4627	CTC Consultants Ltd. 1334 St. Paul Street, Kelowna, British Columbia, V1Y 2E1 t:250-979-1221 f:250-979-1232	PLANT Architect Inc. Suite 2300 – 101 Spadina Avenue, Toronto, Ontario, M5V 2K2 t:416-979-2012 f:416-979-1263	Bush, Bohlman & Partners LLP 1500-1500 West Georgia Street, Vancouver, British Columbia, V6G 2Z6 t:604-688-9661 f:604-688-7039	Williams Engineering Canada Inc. 304-1912 Enterprise Way, Kelowna, British Columbia, V1Y 9S9 t:778-484-3900 f:778-484-3901	Williams Engineering Canada Inc. 304-1912 Enterprise Way, Kelowna, British Columbia, V1Y 9S9 t:778-484-3900 f:778-484-3901	MDN Architecture & Interior Design Suite 100 – 3313 32nd Ave Vernon, British Columbia, V1T 2M7 t:250-542-1199 f:250-542-5236

Context Plan

Site Plan


UNIVERSITY WAY
EASMENT LINE
EASMENT LINE
ALUMNI AVE
ENLARGED SITE PLAN
SITE LEGEND
GENERAL NOTES
PROJECT STATISTICS
UBC PROPERTIES TRUST
200-3313 Shrum Lane
Vancouver, British Columbia
UBCO TEACHING AND LEARNING CENTRE
3297 University Way
Kelowna, British Columbia
SITE PLAN - RENOVATION
A-022

Utilities Plan



Drawing to be resubmitted when utilities connection design complete

Preliminary Service Connection Application Form

UBC Utilities
2040 West Mall, Vancouver, BC V6T 1Z2
Tel: (604) 822-9445 Fax: (604) 822-8833

PRELIMINARY UTILITY SERVICE CONNECTION APPLICATION

Part 1. INSTRUCTIONS

- Application is required for any new or substantially modified connection to UBC's utility systems. There is no fee for this application.
- Fill in Part 2 for all requests. **INCLUDE PROJECT NAME**. Fill in Parts 3 and/or 4 as applicable.
- **This *Service Connection Application* shall be considered approved when an authorized UBC *Development permit* is obtained.**

Part 2. REQUESTOR INFORMATION
UBC Contract Administrator or UBC Project Manager

Project Manager name & Dept. (e.g. C&CP DM, UBCPT Manager, UBC Plant Ops, Housing)		Telephone	
		Fax	
		Email	
Project Name/Title/Description		Project No.	
Building Gross Area (m2)		Date BOG Approval Obtained (month, year)	
Total Impervious Area (m2)			
Date Requested		Highest UBC Board of Governors Approval (Pre-board,1,2,3 or 4)	

Part 3. MECHANICAL SERVICES: WATER, SANITARY, STORM, GAS, and DISTRICT HEATING

Part 3 (a). Water Distribution. Water service to meet requirements of UBC Technical Guidelines Division 2, Section 02660.

Design by (Company)	CTQ Consultants Ltd		Telephone	250 979 1221	
Primary Contact	David Cullen P.Eng		Fax		
			Email	dcullen@ctqconsultants.ca	
Drawings Attached? (Yes / No / Later)	No Later	Peak Domestic Water Consumption (L/S)	TBD	Sprinkler & Hose Fire Flow Demand (L/s)	TBD

Part 3 (b). Storm Sewer and Sanitary Sewer: Consultant & Design Data
Service to meet requirements of UBC Technical Guidelines Division 2: Section 02720 for Storm, and Section 02730 for Sanitary.

Design by (Company)	CTQ Consultants Ltd			Telephone	250 979 1221		
Primary Contact	David Cullen P.Eng			Fax			
				Email	dcullen@ctqconsultants.ca		
Storm Drawings Attached? (Yes / No / Later)	No Later		Stormwater Control Plan Attached? (Yes / No / Later / Not Required)		No Later		
Lot Area (m^2)	3,200 m²	Total of roof horizontal projection area, 50% of largest vertical area adjacent to roof and paved area	TBD	Run-off coefficients	Predeveloped	✓	
					Postdeveloped		
Time of concentration T_c (min)		10 year rainfall (mm/h)		Peak storm load (L/s)	TBD	Pumped storm load (L/s) ***Note 1***	Ø
Sanitary Drawings Attached? (Yes / No / Later)		No Later		Peak sanitary load (L/s)	TBD	Pumped sanitary load (L/s) ***Note 1***	Ø
Any new or modified food preparation facilities?(Yes / No). If yes, then describe.	No	Any Biological, Chemical or Radioactive Wastes to be discharged to sanitary? (Yes / No). If yes, then describe.	No				

Note 1: Only under unique circumstances pumping into UBC network will be considered. A prior request for permission to pump into UBC network shall be submitted to UBC Utilities (see UBC Technical Guidelines, Section 02720, Clause 2.5.7 and Section 02730, Clause 2.5.6).

Revised 8 February 2013

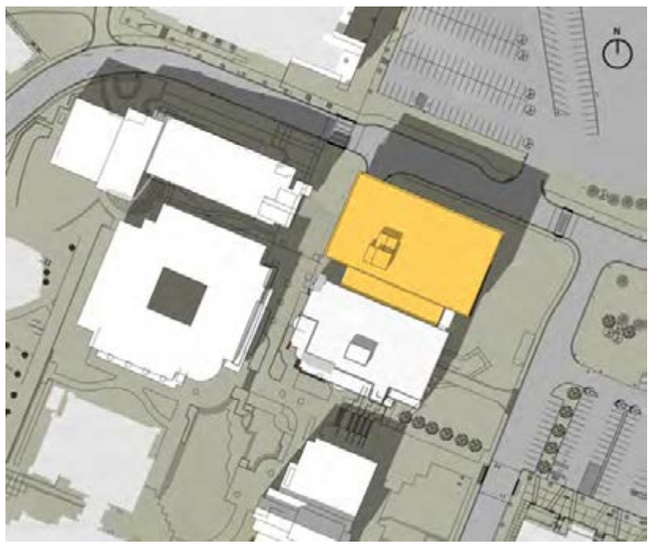
Survey Plan


SITE INFORMATION
STREET ADDRESS: 3297 University Way Kelowna, British Columbia
SITE AREA: 967,267.72SQ.M.
FOR INFORMATION ONLY
SURVEY PLAN
SCALE 1:2500
1
A019
No.: Date: Revision
MTA
MQN
NORTH
Copyright (C) 2016
Client:
UBC PROPERTIES TRUST
200-3313 Shrum Lane
Vancouver, British Columbia
Project:
UBCO TEACHING AND LEARNING CENTRE
3297 University Way
Kelowna, British Columbia
Title:
SURVEY PLAN
Scale: 1:2500
Date: 2016-11-30
Job No.: 160214
CAD-File: A-019
Drawn By: SV
Checked By: XX
Sheet No.:
A-019

Shadow Analysis

March 20, 10AM

March 20, 12PM



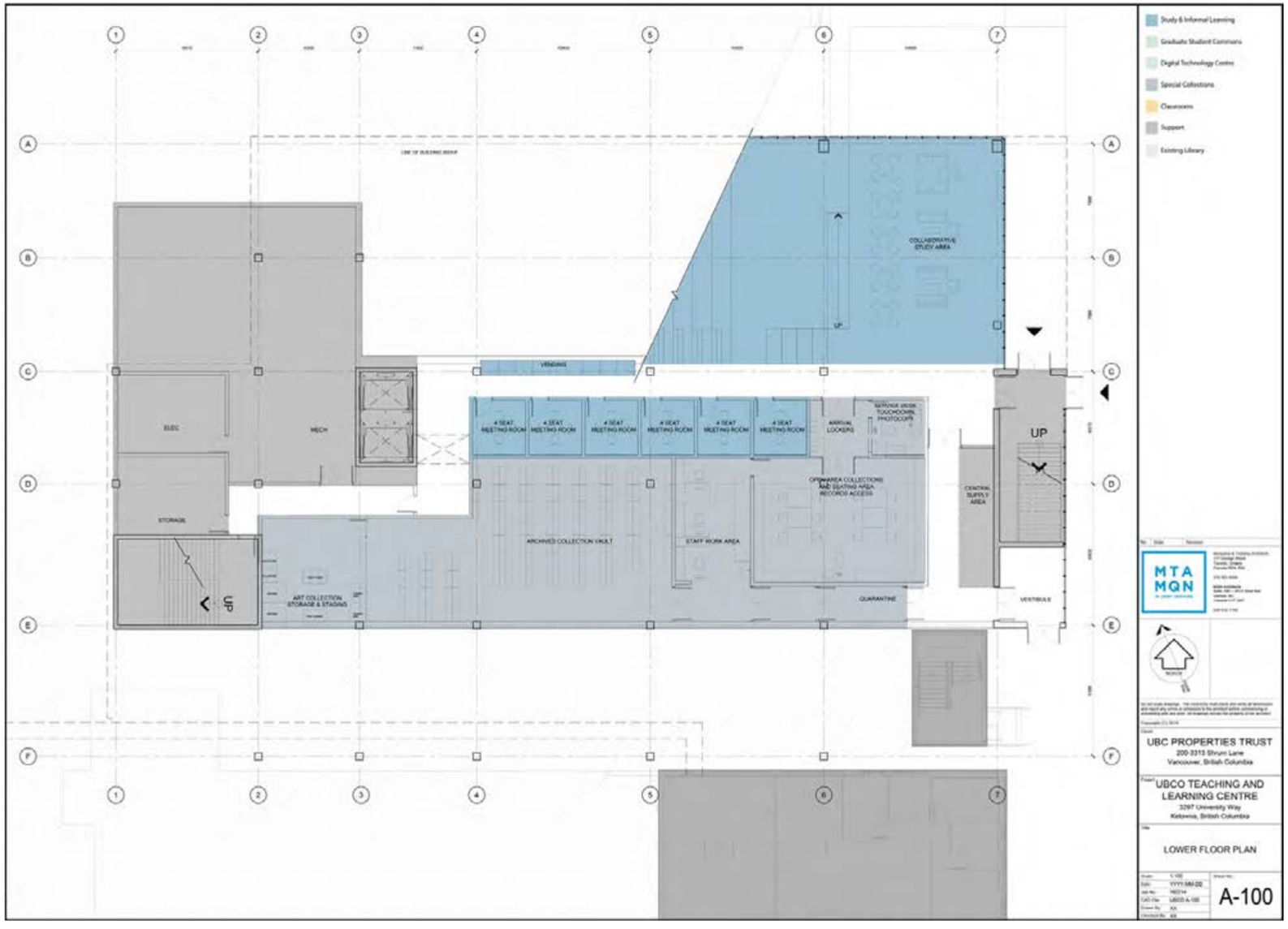
March 20, 2PM

June 20, 10AM

June 20, 12PM

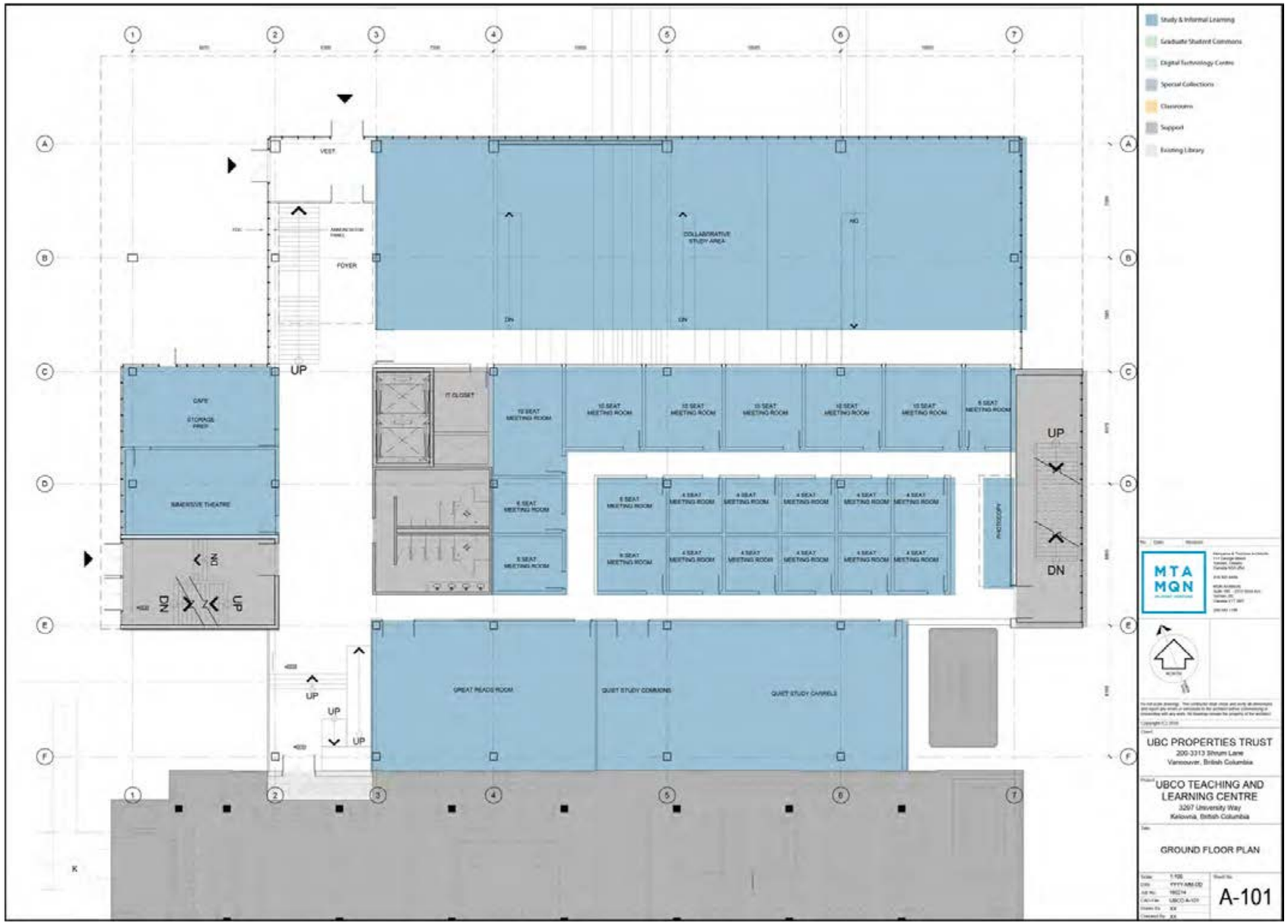
June 20, 2PM

Lower Level Floor Plan



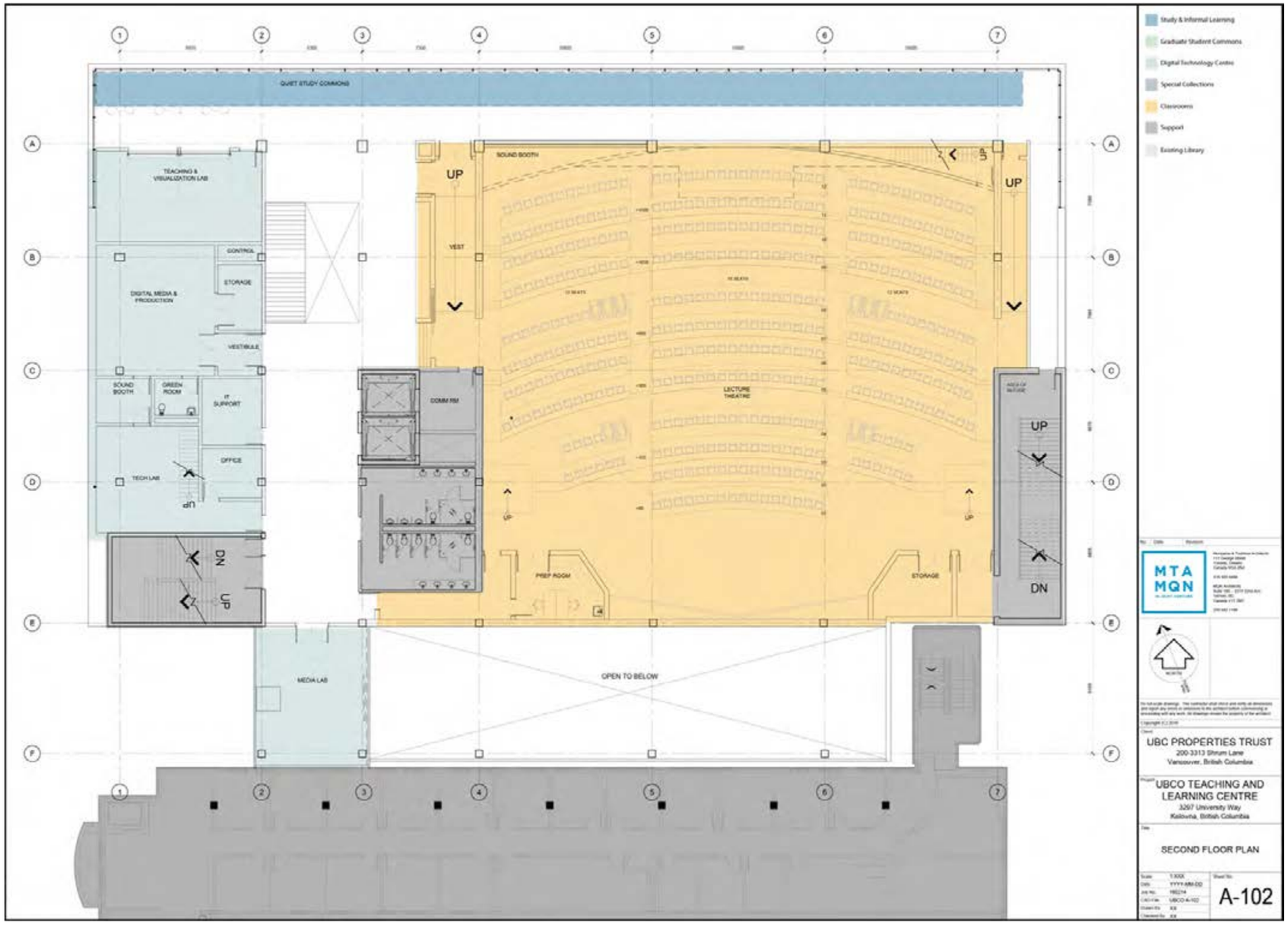
Summer

Ground Level Floor Plan



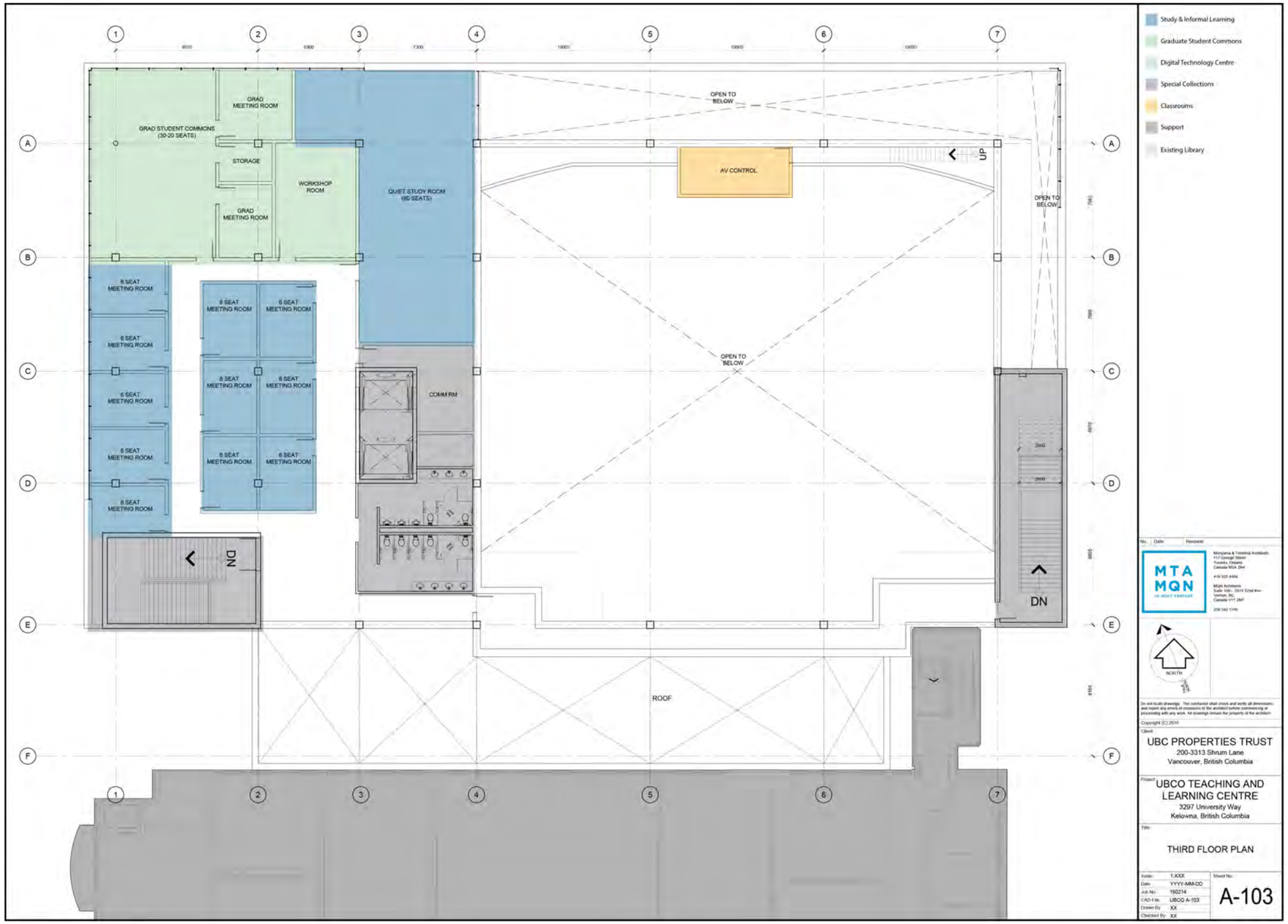
Lower Level

Second Level Floor Plan



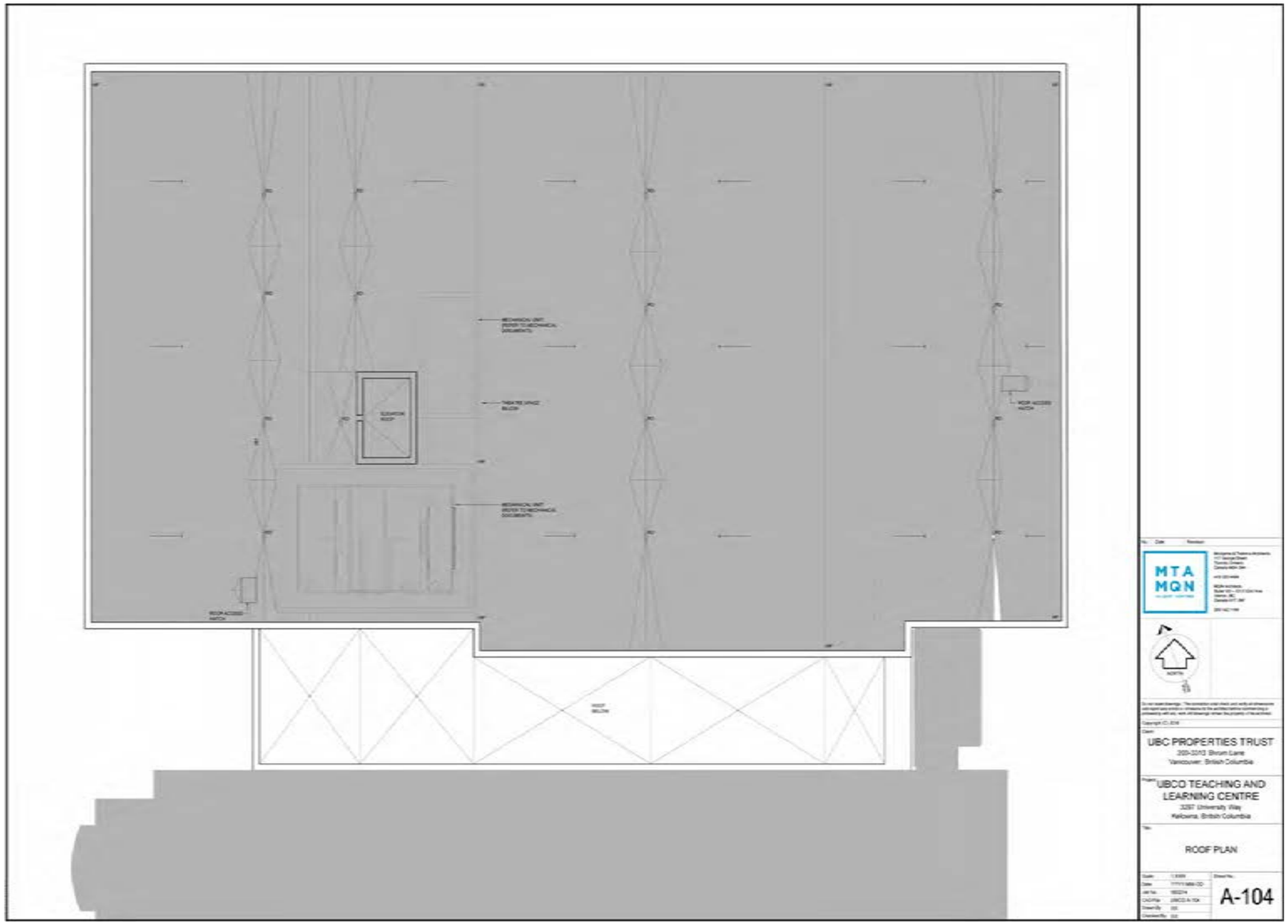
Ground Floor

Third Level Floor Plan



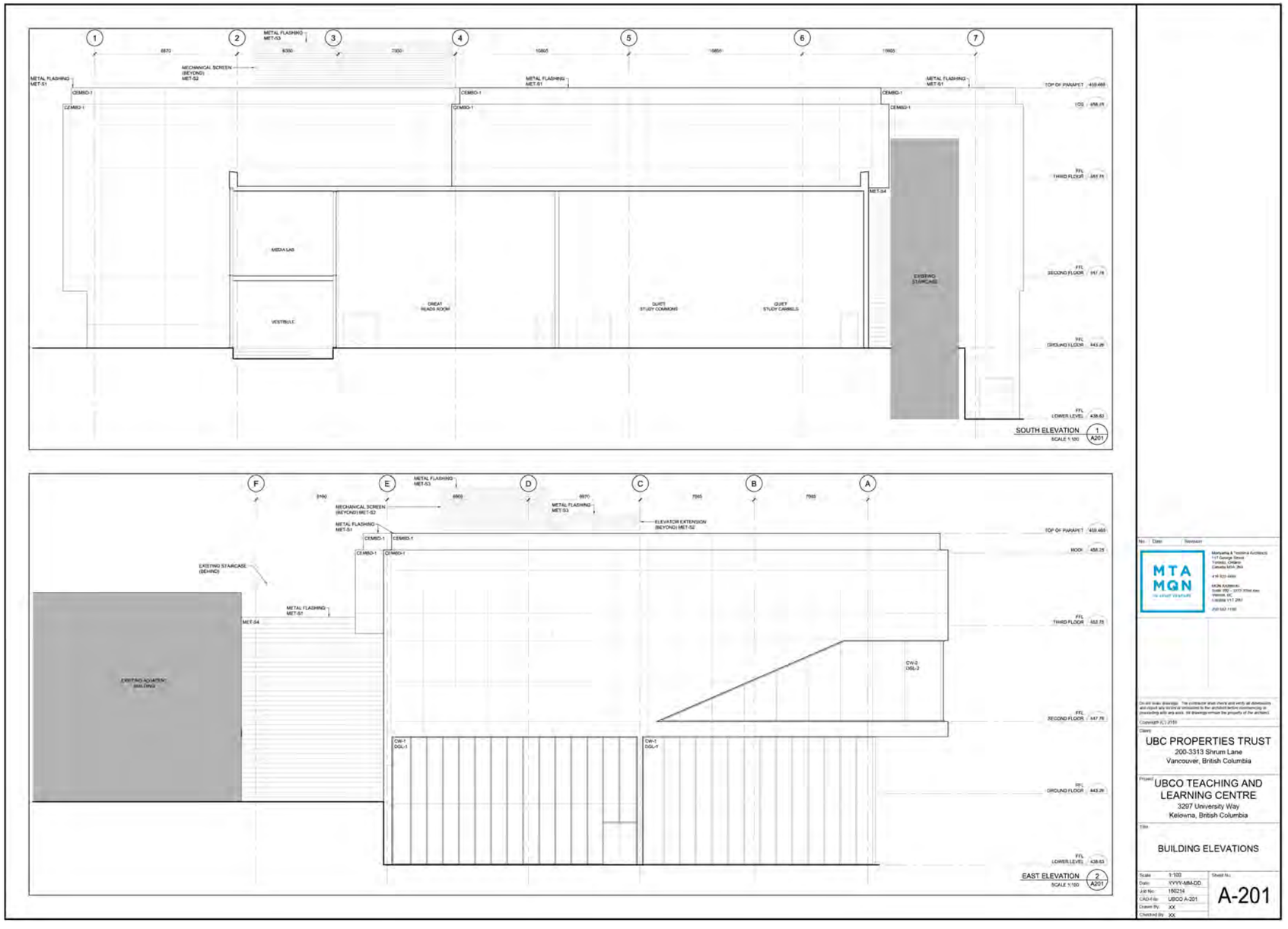
Second Floor

Roof Plan



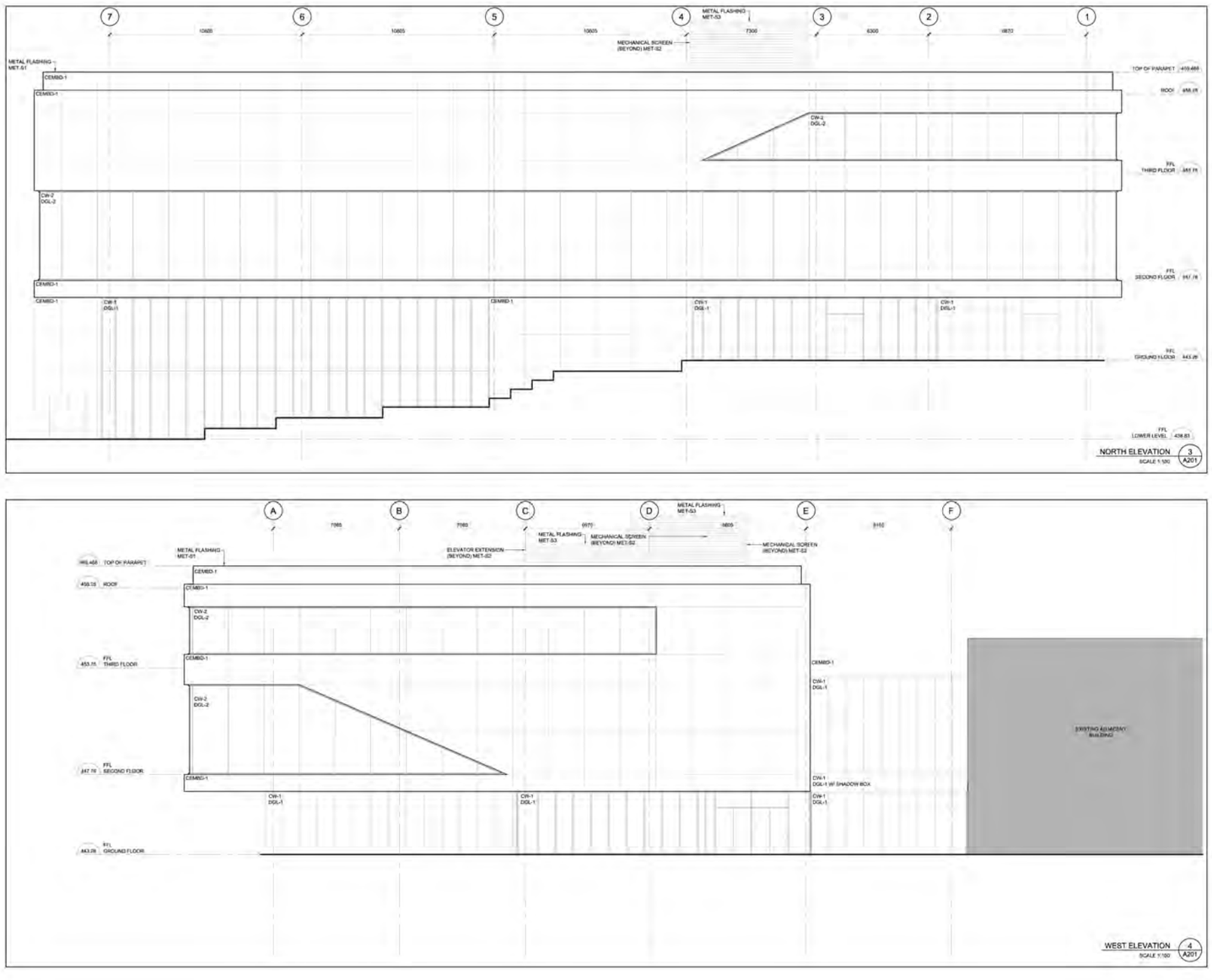
Third Floor

Elevations



Caption

Elevations



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UBC PROPERTIES TRUST
200-3313 Shrum Lane
Vancouver, British Columbia

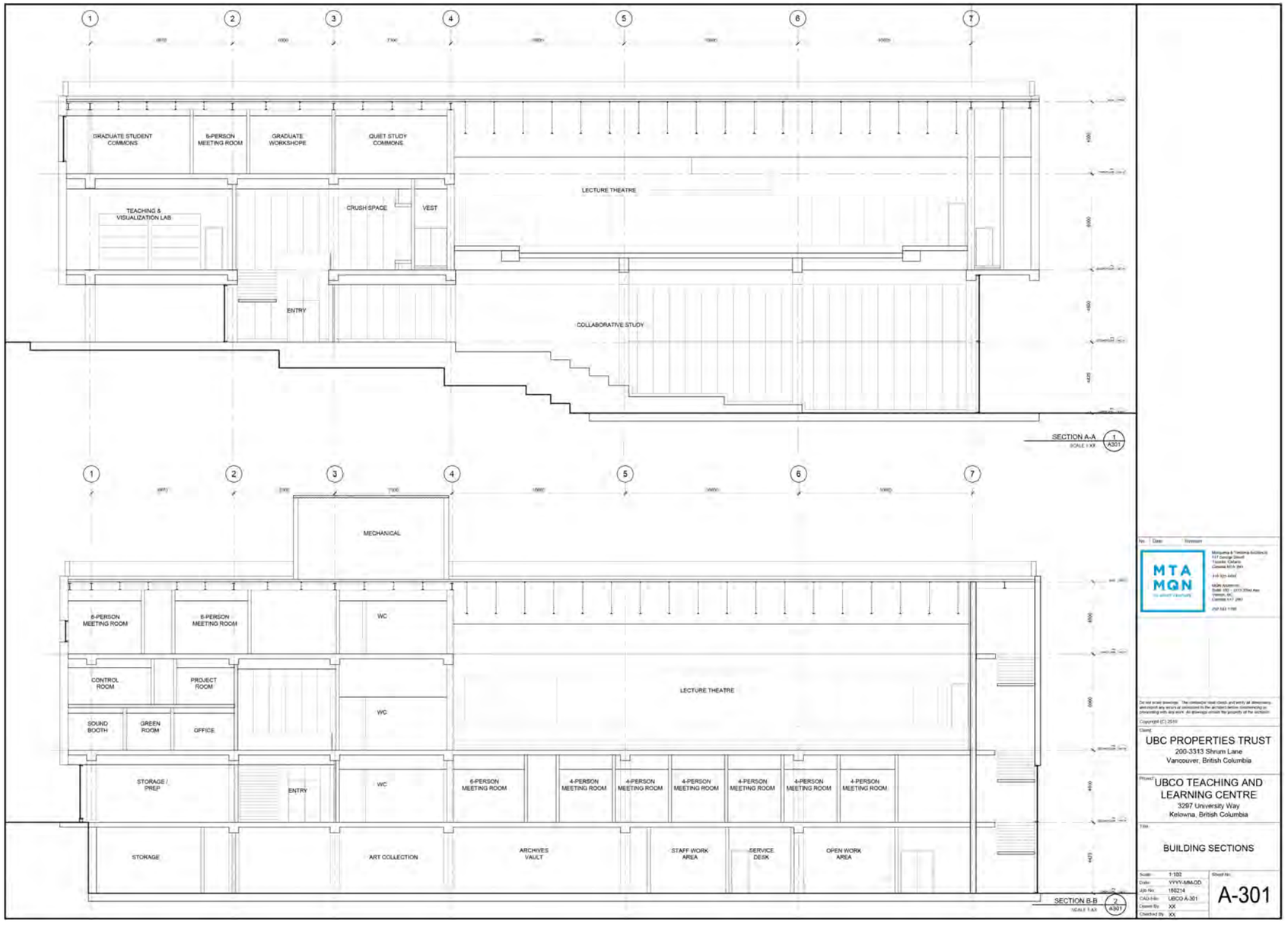
UBCO TEACHING AND LEARNING CENTRE
3297 University Way
Kelowna, British Columbia

BUILDING ELEVATION

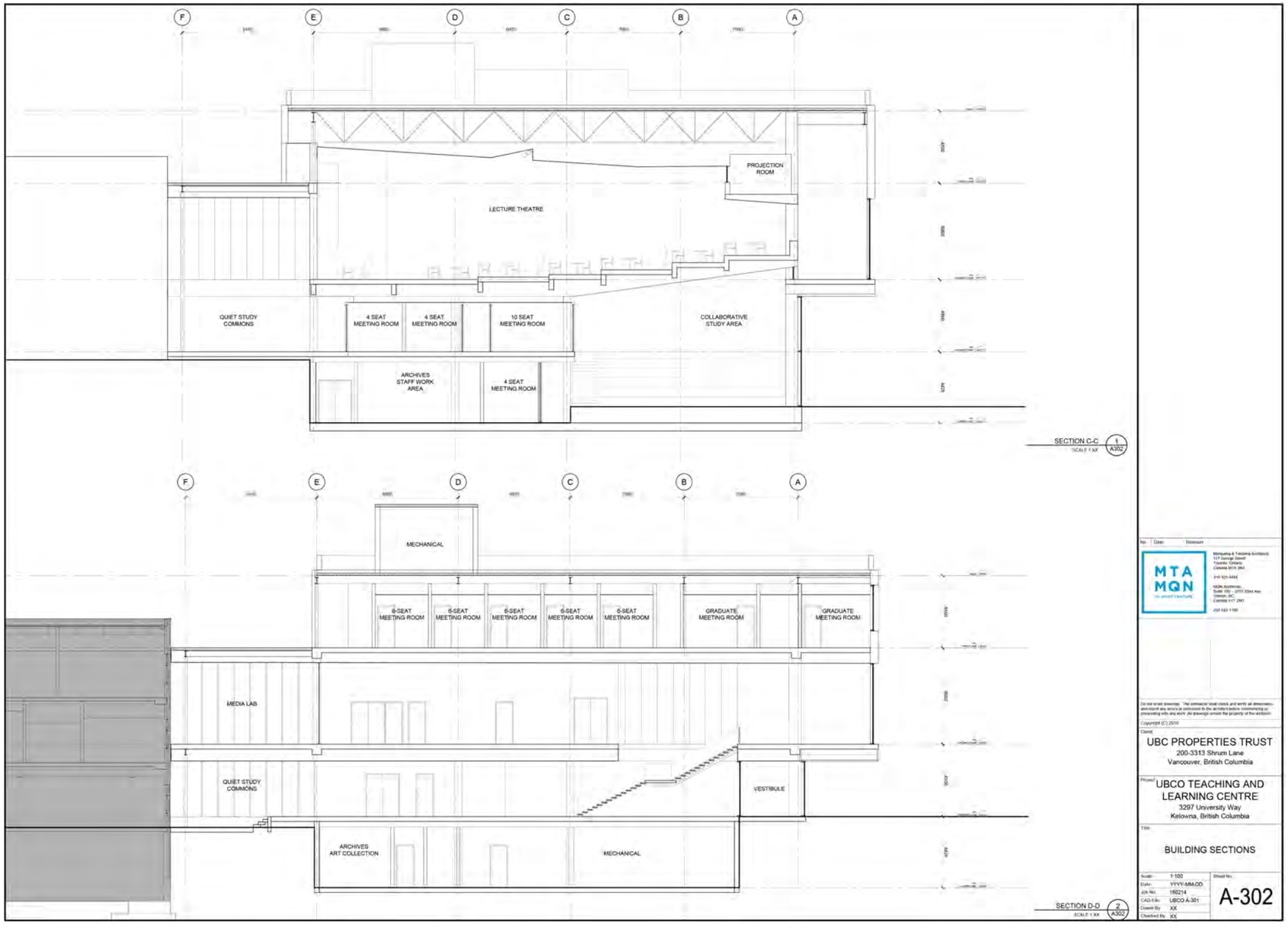
Scale	1:100
Date	YYYY-MM-DD
Job No.	180214
CAD File	UBCO A-201
Drawn By	XX
Checked By	XX

Sheet No.
A-202

Sections

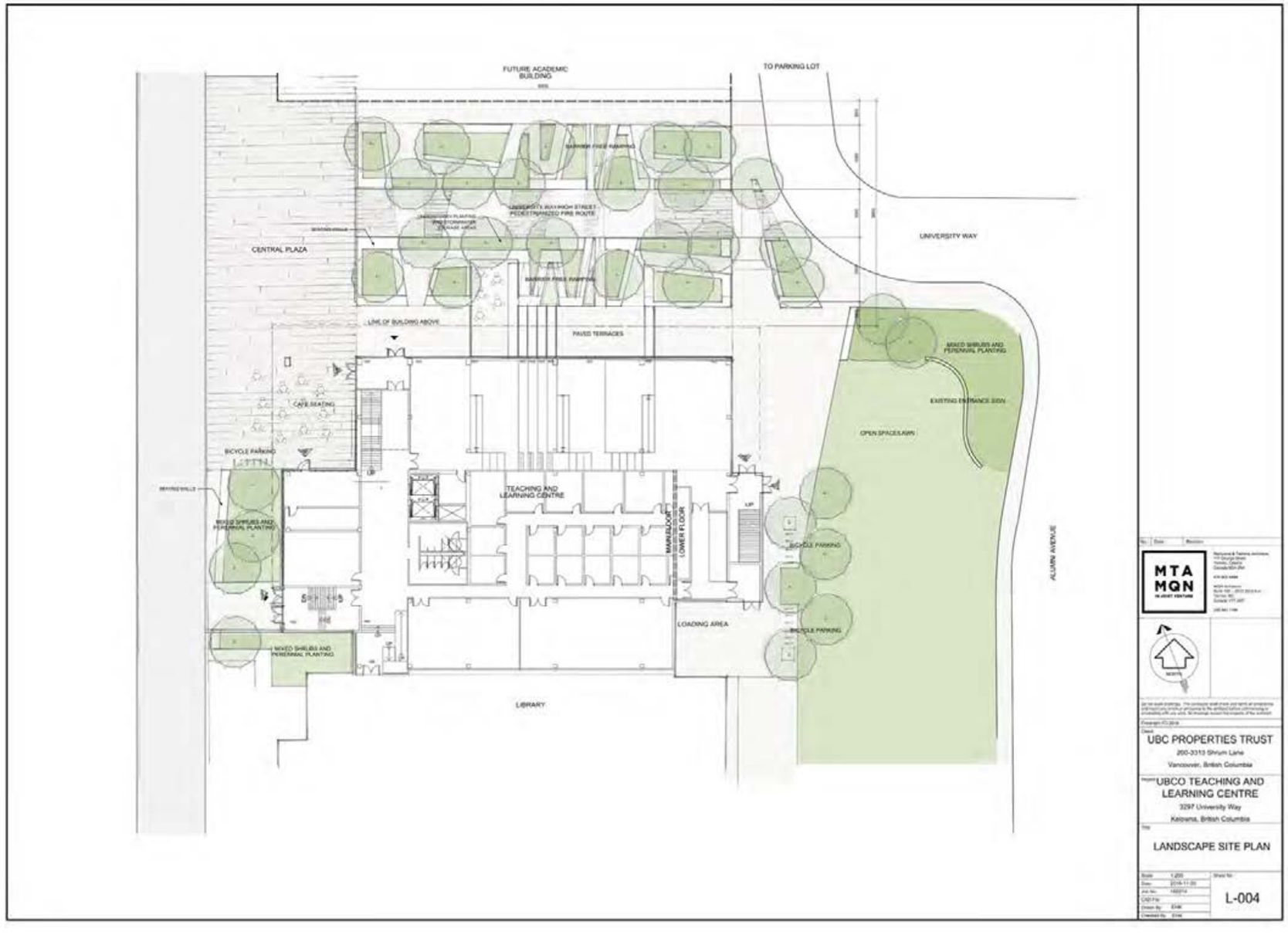

1
2
3
4
5
6
7
GRADUATE STUDENT COMMONS
8-PERSON MEETING ROOM
GRADUATE WORKSHOPE
QUIET STUDY COMMONS
LECTURE THEATRE
TEACHING & VISUALIZATION LAB
CRUSH SPACE
VEST
ENTRY
COLLABORATIVE STUDY
SECTION A-A
SCALE 1:XX
1
A301
MECHANICAL
6-PERSON MEETING ROOM
6-PERSON MEETING ROOM
WC
CONTROL ROOM
PROJECT ROOM
LECTURE THEATRE
SOUND BOOTH
GREEN ROOM
OFFICE
WC
STORAGE / PREP
ENTRY
WC
6-PERSON MEETING ROOM
4-PERSON MEETING ROOM
4-PERSON MEETING ROOM
4-PERSON MEETING ROOM
4-PERSON MEETING ROOM
4-PERSON MEETING ROOM
4-PERSON MEETING ROOM
STORAGE
ART COLLECTION
ARCHIVES VAULT
STAFF WORK AREA
SERVICE DESK
OPEN WORK AREA
SECTION B-B
SCALE 1:XX
2
A301
MTA MQN
UBC PROPERTIES TRUST
200-3313 Shrum Lane
Vancouver, British Columbia
UBCO TEACHING AND LEARNING CENTRE
3297 University Way
Kelowna, British Columbia
BUILDING SECTIONS
Scale: 1:100
Date: YYYY-MM-DD
Job No: 180214
CAD File: UBCO A-301
Issued By: XX
Checked By: XX
A-301

Sections



Caption

Landscape Plan



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IN JOINT VENTURE