

5 DESIGN STRATEGIES AND GUIDELINES



The University will maintain and enhance the Okanagan Campus as a beautiful and memorable place with its own clear identity distinct from other campuses in the world.

The Campus Plan's core design strategies are to:

- Improve the cohesiveness of the design of campus buildings and landscapes, by defining building siting and massing, simplifying and specifying architectural and landscape material palettes, and identifying standard campus furniture and lighting.
- Accentuate UBC Okanagan's sense of place and natural Okanagan landscape beauty, by drawing design inspiration from the campus setting, capturing celebrated views, and designing strong indoor-outdoor relationships between buildings and their surroundings.
- Encourage a campus quality and stature befitting of a world-class campus, by encouraging a high-level of design for all buildings and superior architectural standards at major gateways, introducing high-quality improvements to the public realm, and minimizing use of accessory buildings and discontinuing use of temporary structures.
- Showcase the expression of the academic cultures within buildings on the building exteriors.

Based on these design strategies, this section presents guidelines that are relevant across the campus for urban design, landscape, views, universal accessibility and sustainability.

Please also refer to *The Campus Plan* companion document, *UBC Okanagan Design Guidelines*, for more detailed design guidelines, materials, and specifications to be used during capital project development and reviews.

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Residences along University Way



Animated outdoor and indoor spaces



Generous overhangs and transparency

5.1 URBAN DESIGN

Orient and Mass Buildings to Strengthen Campus Legibility and Cohesion

The orientation of the existing campus grid, skewed from a true north-south orientation, should set the geometry of the campus core and common areas. Siting of buildings in other areas need not have the orientation of the core, and should respond to the combination of topography and the desire to have long facades facing south to optimize solar management.

The composition of buildings should relate to the program of adjacent open spaces and the hierarchy of movement routes—by controlling massing, scale, materials, proportions, and program distribution inside the buildings. Architectural form and expression should reinforce the programmatic activities as well as emphasize the hierarchy of buildings on campus in order to contribute to wayfinding by urban design legibility.

Use Buildings to Define and Animate Outdoor Spaces

Buildings should be shaped and located to create well-defined outdoor rooms and corridors. The build-to lines shown in Figure 26 establish the locations where a building mass must be sited in order to create planned outdoor campus social space or corridors. These lines define the most important social and movement spaces for where a building is intended to provide a containing wall and, in specific cases, to animate the space with interesting and activity-generating adjacent uses.

Winter solar access should be optimized for outdoor spaces. An appropriate balance between the demands for winter sun and summer shading can be met through orientation and massing of adjoining buildings, the use of deciduous trees, arbours and seasonal shade structures, or by providing multiple seating groups within a space. Outdoor seating should be located for both winter sun and summer shade. Wherever possible, covered bike parking should also be integrated into building design.

Entries and active ground floor interior spaces of buildings should be located and designed to animate open spaces. Incorporate substantial areas of glazing to provide “eyes on the street” and to create a vibrant and lively pedestrian experience wherever possible. Generous visual connections between indoors and outdoors provide increased visibility and security and are to be employed wherever possible. New buildings should also contribute to overall campus vibrancy, Crime Prevention Through Environmental Design (CPTED) performance, nighttime legibility, and visual interest. This can be done, for example, by locating stairs and elevators with transparent building envelopes and ambient lighting on corners or at prominent locations.

Windowless laboratories, storage rooms, service areas, waste collection areas

and other windowless spaces should be located internally, underground, or otherwise away from active public pathways and courtyards.

All buildings possess the inherent potential to creatively inform students, faculty and visitors of the academic pursuits within. New buildings should consider an integrated and substantive approach to sharing academic narratives. Early design explorations should consider distinctive opportunities and related budget requirements to “share the story” by identifying strategies for ongoing academic presentation, visual engagement, and celebration of student and faculty achievement, and by considering site location, orientation, and prominence of certain features and facades. Creative use of visual media may be an appropriate site-specific strategy.

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LEGEND

- Build-to Line
- Reference Line Determined by Existing Building Face or Corridor
- Priority Site for Weather Protection and Active Edge

FIGURE 26 BUILD-TO LINES, ACTIVE EDGE AND WEATHER PROTECTION

Enhance the Campus Entry Experience

A memorable campus arrival experience from Alumni Avenue or University Way will rely on strengthening the legibility of peripheral portals (see Figure 28). A visual expression of arrival into the distinctive academic campus will be announced through the introduction of building forms and other architectural and public realm features. These elements and features will be of sufficient scale to be contextually distinctive while also contributing to a cohesive campus identity through their form and expression. Thoughtful lighting strategies, entry signage and banners should introduce a ceremonial expression and enhance the arrival experience during both day and night.

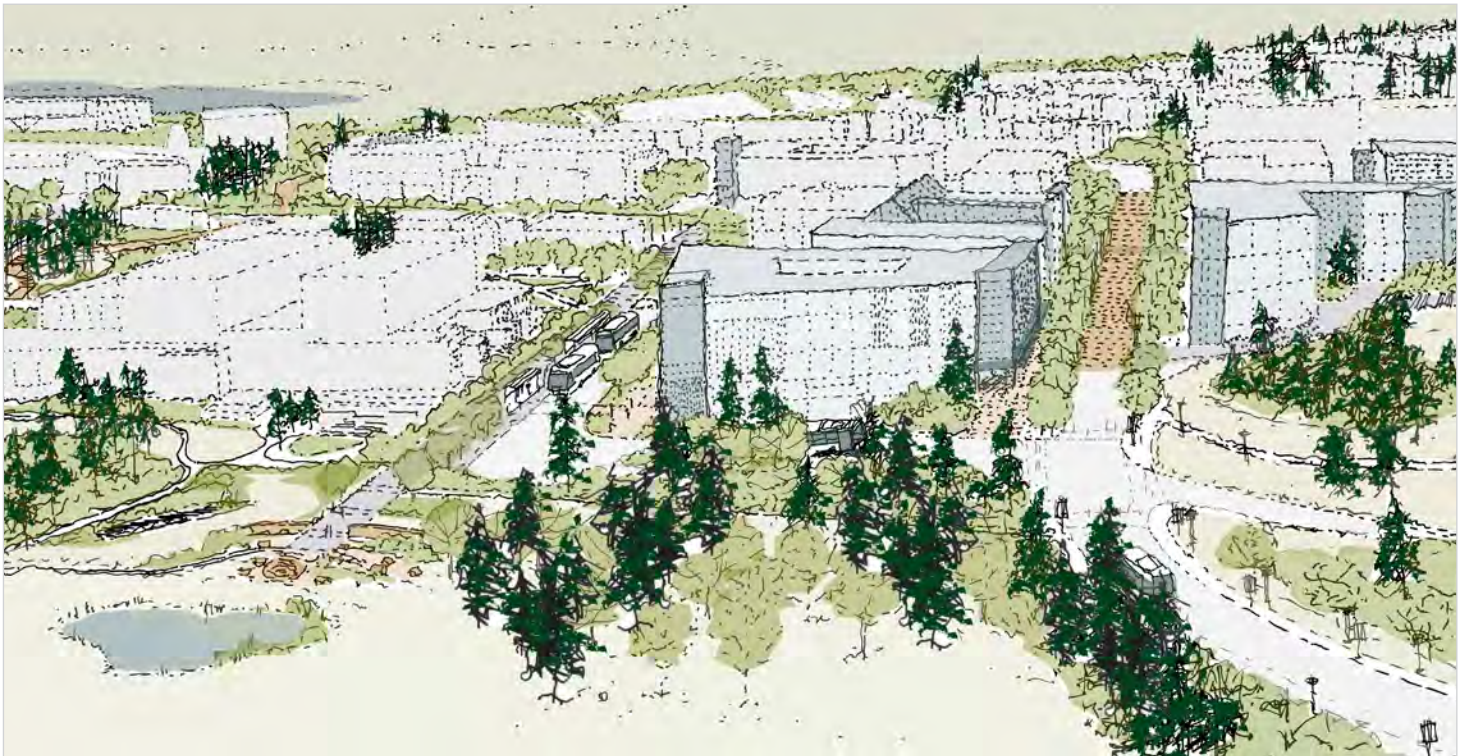


FIGURE 27 BIRD'S EYE VIEW OF EAST CAMPUS GATEWAY AND THE POND



Interior atrium space for interaction

Design Interiors to Contribute to Community Well-Being

Atrium spaces should be considered in new and renovated buildings to maximize daylight in interior spaces, support natural ventilation through mechanically operated ventilating windows, and support the strategy of creating identifiable spaces for mixing and interaction.

Arrange internal circulation within academic buildings around atriums where feasible. Ensure circulation widths are widened to allow seating and study areas looking into atrium spaces to create busy, multi-level activity zones. Locate common areas (cafeterias, lobbies, etc.) to create visual and physical links from these atriums to the outdoors to further enrich activity in these spaces.

5.2 VIEW ENHANCEMENT

Preserve Special Views Out

The *Campus Plan* has been structured around the principle of maximizing view opportunities from many places on campus in order to provide a strong sense of place within the Okanagan landscape. The major view corridors should be preserved in the implementation of *The Campus Plan* and managed over time to maintain views from encroachment of structures, trees, parking lots, and other elements that block or degrade their intrinsic attractiveness.

Key views, identified by number in Figure 28, are protected through managing the siting and massing of buildings.



FIGURE 28 KEY VIEWS

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KEY VIEWS

- 1 The view over the Commons to the valley is enhanced by restoring the landscape to the east to its natural state. No structures impede this expansive view.
- 2 Views from the Engineering Management and Education Building, the Library and future buildings are preserved and enhanced by the Okanagan grassland landscape in the foreground.
- 3 Views west from Nonis Field are preserved through limiting massing of future buildings to the east.
- 4 The Discovery Avenue Greenway and the north end of Discovery Avenue allow expansive western views to agricultural lands and Robert Lake.
- 5 Major pedestrian spines provide framed views of the campus landscape, northward to the Ponderosa Pine Woodland and eastward to the grassland and beyond.

LEGEND

- Long Views
- Internal Framed Views

ECO-SERVICES

Eco-services are the result of interactions and processes between living elements, such as wildlife, vegetation, and soil organisms, and non-living elements such as bedrock, water and air.

There are many examples of eco-services. Through evaporation, transpiration, and the uptake and storage of carbon, plants detoxify and cleanse the air, soil, and water, and provide a breathable atmosphere. Trees regulate local climate by providing shade and acting as windbreaks. Vegetation also helps control erosion, slowing the deposition of sediment and preventing the loss of soil. Healthy wetlands protect against damaging floods, as well as improve water quality.

Campus development can contribute to maintaining, supporting and enhancing natural systems and the essential services they provide.

Enhance Campus Identity and Legibility in the Regional Context

The proposed expansion strategy toward a more compact campus provides a special opportunity to celebrate such a unique campus identity in the Okanagan setting. New buildings, public realm, and landscape restoration should strengthen the growing campus as a distinctive, memorable image. New buildings on the periphery and prominent landscapes on prevailing topography that are highly visible from Highway 97, other approach roads and distant vantage points should be recognized for their strategic role in shaping and strengthening an overall, cogent expression of academia in a special landscape setting. Public realm strategies must recognize the role of the foreground landscape in establishing an authentic setting to announce the larger campus context.

5.3

LANDSCAPE DESIGN

Manicured landscapes should be minimized and located only in the campus core and in proximity to building entrances. Large expanses of manicured lawn should be found only on the Commons, artificial turf sport fields, or places that service some social, recreation or event use. Peripheral landscapes should take their design cues from the characteristic Okanagan landscape typologies of grassland, wetland, and pine woodland, and use drought-tolerant native species.

The extension of Hollywood Road North near the highway is an exception; a grassland landscape should predominate here although copses of native trees can be used to provide visual interest. The University will work with the City on appropriate landscape within this municipal road right-of-way.

Consider the eco-services and whole systems benefits provided by well-conceived landscapes and apply these principles wherever possible. Existing stands and pockets of native trees and associated landscape within the campus core will be retained wherever possible to support ecological and placemaking goals, consistent with the obligations of the *UBC Okanagan Campus Wildland Fire Management Plan* (2006).

Parking lots should be designed to manage stormwater, and landscaped with internal rows of trees, at a maximum of five parking spaces apart, for visual interest and shading of the pavement to reduce the heat-island effect.

Historically, a number of residential-style gazebos were distributed through the campus core to provide restricted locations for smoking. Many of these structures are located in highly visible locations, occupy substantive open space, and detract from the academic setting. All opportunities to remove the gazebos will be pursued. A new approach that considers others' desire for limited exposure to smoking will be adopted, providing aesthetically unobtrusive and compatible infrastructure that focuses primarily on safe cigarette disposal.

5.4 UNIVERSAL ACCESSIBILITY

Although UBC's Okanagan Campus benefits from its sloping topography with breathtaking views of the surrounding Okanagan landscape and agricultural lands, it also presents inherent challenges to the equal participation by persons of varied and reduced abilities. To ensure the equal participation by people of all ages and abilities in the future, *The Campus Plan* seeks to create a barrier-free campus by encouraging the application of universal design principles in planning and designing new facilities, major renovations and retrofits to facilities and the public realm.

Creating a barrier-free campus environment relies on a number of interrelated strategies:

- Establish a well-connected and legible network of pathways, supported with:
 - » a wayfinding system established in *UBC Sign Standards and Guidelines*
 - » exterior lighting and pathway design consistent with standards in *UBC Okanagan Design Guidelines*
- Site new development to achieve a compact campus with close access to transit.
- Integrate new buildings into existing topography to moderate the elevation change, instead of "benching" the site.
- Integrate retaining walls with the base massing and materials of the building.
- Use contrasting colours and materials to identify changes in function that can be detected with visual aids.
- Design new facilities with:
 - » main entrances that are clearly visible, well lit, and at grade to avoid the need for ramps
 - » legible and welcoming through-routes accompanied with elevators for sites with large grade changes
 - » well-defined connections to the network of accessible pedestrian paths
- Provide parking spaces for people with disabilities:
 - » within 100m of the new facility, except in the pedestrian priority zone where parking for people with disabilities will be provided as close as possible (in both cases, the parking spaces must be linked to the facility via accessible pedestrian paths)
 - » drop-off areas close to and (where possible) visible from entrances
- Strive to design as many student residence suites as possible to universal design standards.

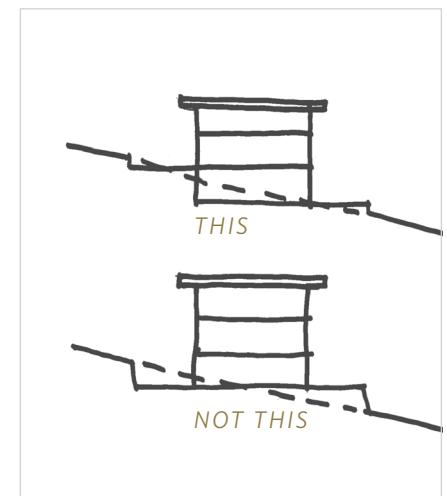
With facility retrofits and renew projects, the above elements will be pursued to the degree possible, given available funding.

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Cassiar Residence ramp

FIGURE 29 BUILDING INTEGRATION WITH GRADES



Buildings to retain elevation change instead of "benching" site

WHOLE SYSTEMS GOALS

Campus growth should be managed through a whole systems and regenerative design lens that incorporates environmental, economic and social sustainability outcomes, to achieve a net-positive impact on the well-being of the campus community and ecology.

The forthcoming UBC Okanagan: Whole Systems Approach to Campus Infrastructure is informed by the following six long-term goals:

Goal #1: Maximize building energy efficiency and achieve a net positive performance in operational energy and carbon

Goal #2: Implement a framework that supports low embodied carbon future development

Goal #3: Optimize water quality, supply and security

Goal #4: Optimize diversion of stormwater from municipal systems

Goal #5: Strive towards full waste recovery/reuse

Goal #6: Enhance and/or restore the site's ecology

5.5 ECOLOGY AND STORMWATER

To sustain and enhance unique ecological landscapes within the campus lands, and to support and connect landscape systems beyond the campus, requires deep ecological understanding. In particular, the distribution and connectivity of the pine woodland areas, wetlands, grasslands, and other wildlife corridors and habitats are essential in supporting biodiversity, and ecological processes such as wildfire and summer drought are critical to supporting healthy ecosystem function.

Three core strategies are proposed to sustain and enhance local landscape ecology.

Create a Campus Core that Integrates Buildings and Landscapes that Capitalize on Natural Systems

The development and densification of the campus core creates opportunities to better integrate natural systems into building and landscape function. Two broad approaches should be followed.

- First, a 10 to 25 percent increase in tree cover within the campus core will reduce ambient summer temperatures, enhance building shading, and reduce summer cooling requirements. Trees should consist of both native conifers and non-native deciduous trees that are suitable to the region, and should be sited and maintained to address fire risk.
- Second, rainwater runoff from buildings and other hard surfaces within the campus core should be infiltrated into adjacent landscape areas to reduce stormwater runoff, reduce irrigation requirements, and sustain landscaped areas. Raingardens, permeable paving, infiltration galleries, and absorbent landscapes with deep organic soils are all effective design approaches for increasing infiltration.

Collect and Filter Stormwater to Enhance Wetlands

Wetlands and their riparian zones are hotspots of biodiversity in the arid Okanagan landscape. Birds, amphibians and invertebrates, including several species at risk, are drawn to the wetlands for food, water, nesting and breeding. In order to support the extent and variability of wetlands and riparian areas throughout the campus, and to increase ecological and stormwater management benefits, there should be minor expansion of the wetlands as well as development of a wetland complex within the lower bench adjacent to the main parking area. Given the variation in soil conditions across the campus, infiltration is recommended as a strategy to reduce stormwater runoff and help recharge the aquifer where soil conditions allow or is made possible through soil enhancements.

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Incorporate Native Plant Communities

As much as possible, native flora and fauna of the Okanagan landscape should be brought into the campus core. Native plant communities are often better adapted to local soil and climate, which results in less maintenance and water to maintain them. In addition, native plant communities support a broader range of wildlife, such as native butterflies, bees, and birds, as compared to landscapes of non-native plants. Even small patches of native grasses and wildflowers are important for native bees and butterflies if they are part of an interconnected network across the campus.

The distinct aesthetic qualities of the Okanagan landscape can be used to create a unique identity for the campus. Corridors of native vegetation that connect the campus core to the surrounding pine woodland and grasslands provide another way of structuring the campus landscape, similar to the use of pedestrian spines for human movement. However, this approach should be balanced against the need to create programmed landscapes that support active social and recreational use and hardscaped social spaces like courtyards that are an intrinsic part of the campus core character.

5.6

SUSTAINABLE DESIGN

UBC's *20-Year Sustainability Strategy* provides the overarching vision, aspirations and strategic goals for sustainability at the UBC Vancouver Campus. The *Campus Plan* for the Okanagan Campus supports UBC's regenerative sustainability vision through the development of a *Whole Systems Approach to Infrastructure*, which will be completed subsequent to the *Campus Plan*, identifying a 30-year Roadmap and a 5-year Implementation Plan for achieving long-term targets for sustainability.

All Major Capital Projects are to:

- follow the UBC Sustainability Process
- target the goals set out in the project-specific design briefs
- take an integrative approach to design and construction
- achieve at minimum LEED Gold certified standard or approved equivalent (and adhere to the UBC LEED Implementation Guide) or REAP 3.0 for residential buildings
- follow the sustainability guidelines in *UBC Okanagan Design Guidelines*

In addition, all projects are generally expected to:

- prioritize passive design strategies
- embrace innovation and managed experimentation in their design and construction as part of UBC's Campus as a Living Lab objectives and overarching commitment to sustainability
- provide a showcase of learning, research, and demonstration projects