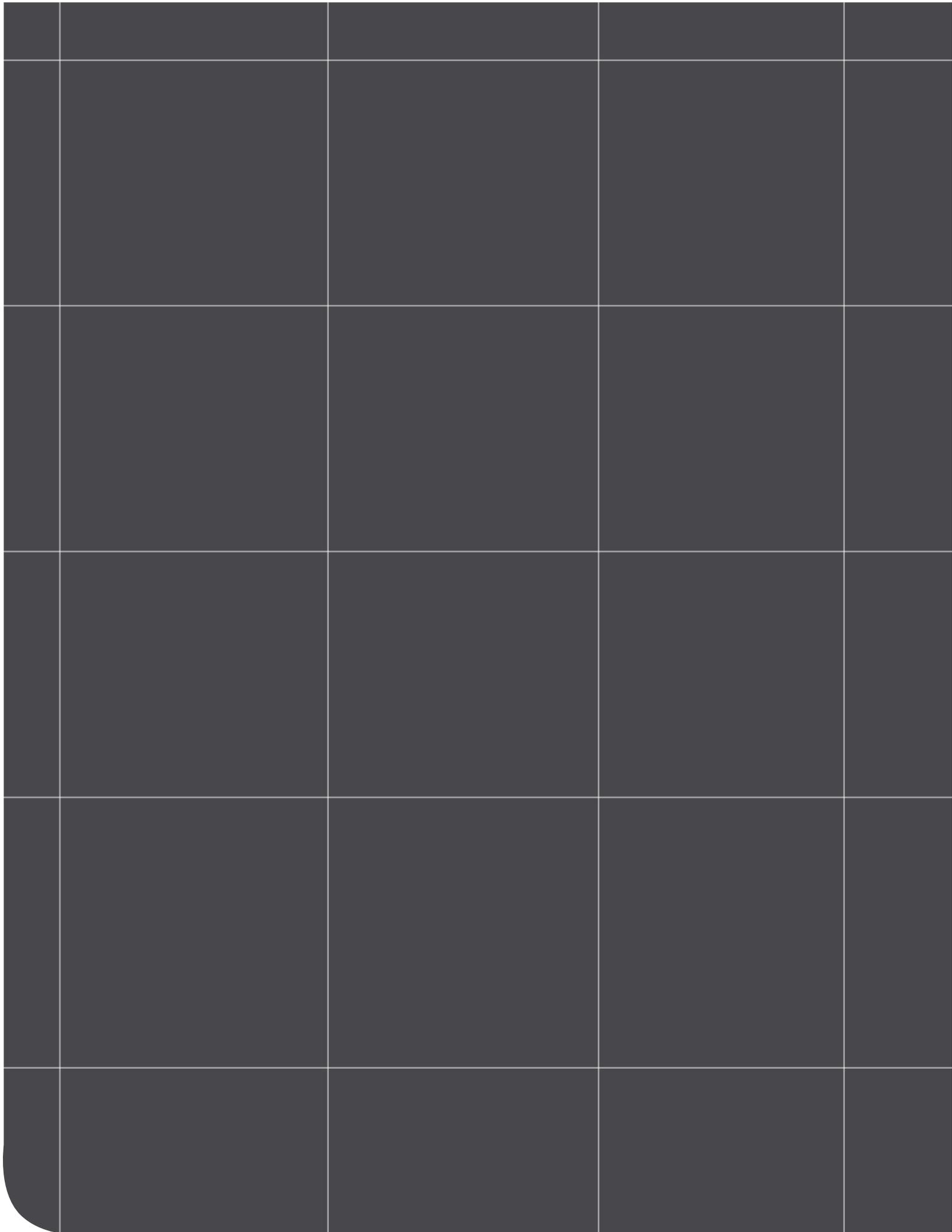


**UNBC** UNIVERSITY OF  
NORTHERN BRITISH COLUMBIA

**/// MASTER PLAN**

**2012**







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# 1.0 PURPOSE

The first Master Plan for the University of Northern British Columbia (UNBC) was created over 22 years ago. Due to the changes (e.g., in facilities, programs, growth and vision) that have taken place, it is necessary to update the Master Plan for the coming years. Accordingly, the purpose of this document is to provide a broad framework for policy about the physical environment that is intended to advance the University's teaching, research and community partnership goals.

**/// THIS PLAN IS DIVIDED INTO 9 SECTIONS**



- 2** *Overview (the history and context)*
- 3** *Master Planning Process*
- 4** *Planning Principles for the Prince George and regional campuses;*
- 5** *Design Principles for the main Prince George campus;*
- 6** *Sustainable Practices for the Prince George and regional Campuses;*
- 7** *Landscape*
- 8** *Visions and Development Patterns for the Prince George land-use zones - Core Campus lands; new Crown Grant lands; lands adjacent to the University Heights Neighbourhood; and the Off-Campus sites; and*
- 9** *Regional Campuses*

As the Master Plan is a policy framework, there should be a yearly accounting to the Board of Governors on policy issues arising from the University Master Plan. As well, because of the evolving nature of the University's academic and research plans, City, Provincial and Federal Government legislation and policy directions, and normal review practices, there should be a review of the Master Plan every three years. The next review should occur in **2015**.

## 2.0 OVERVIEW

### 2.1 Historical - Master Plan and Capital Plans

In 1991, a Facilities Master Plan<sup>1</sup> was developed by Musson Cattell Mackey Partnership for the Interim Governing Council. This Plan was “conceived as a campus based on a radial organization that plans for growth around a central core, while maintaining a sense of completeness at all stages of growth.”<sup>2</sup> The Plan was established with stages of growth as follows:

*/// Phase 1-Year 1993 - 2,000 FTE Students*

*/// Phase 2 -Year 2000 - 4,000 FTE Students*

*/// Medium Long Range - 6,000 FTE Students*

*/// Long Range – 12,000 FTE Students*

<sup>1</sup> This Plan included: phasing and growth; land use; functional organization of the campus core; spatial ordering system; circulation systems, utilities, storm drainable system; planning principles; and design guidelines for the Prince George campus.



Since the original Plan was developed, the University has gone through two stages of capital development. Phase 1 spanned the period from 1990 - 1996 during which time UNBC constructed its original core campus. The Net Assignable Square Meters of Space (NASM) built was 24,706 consisting of 7 buildings comprised of 10 components that together comprised the core campus (Agora, Administration Building, Conference Centre, Winter Garden, Student Services Centre, Laboratory building, Library, First Nations Centre, Power Plant and a student residence). Two additional buildings, a second residence and a Daycare Centre, brought to conclusion the University Phase 1 campus development.

<sup>2</sup> 1991 Master Plan

Phase 2 began with the approval of the 1997 Five Year Capital Plan. The highest priority item was a Teaching Laboratory Building (with the intended by-product of converting the original Laboratory Building to a Research Laboratory building), and an athletic centre. A government imposed capital freeze delayed the implementation of the Phase 2 Plan, but subsequently, the University submitted a 2001 – 2003 Capital Plan and a 2003 – 2008 Capital Plan and completed the Teaching Laboratory Building, the Bentley Centre, the I.K. Barber Enhanced Forestry Lab, the Dr. Donald Rix Northern Health Sciences Centre, the Double the Opportunity expansion to the Teaching Laboratory Building, the first phase of renovations to the Geoffrey Weller Library, the expansion of heating and cooling capacity with the Central Power Plant, the Teaching and Learning Centre, and a number of specialized research laboratories from Canada Foundation for Innovation (CFI), BC Knowledge Development Fund (BCKDF) and private funding. This phase of planning is complete with the Northern Sport Centre and the second phase of the Library renovations (fall of 2007), and the conversion of the west wing of the Conference Centre to a Northern Undergraduate Student Centre. Upon completion of these capital projects, there was significant re-allocation of existing space on the Prince George campus, including space vacated by the Northern Undergraduate Student Society and other students groups in the Agora.<sup>3</sup>

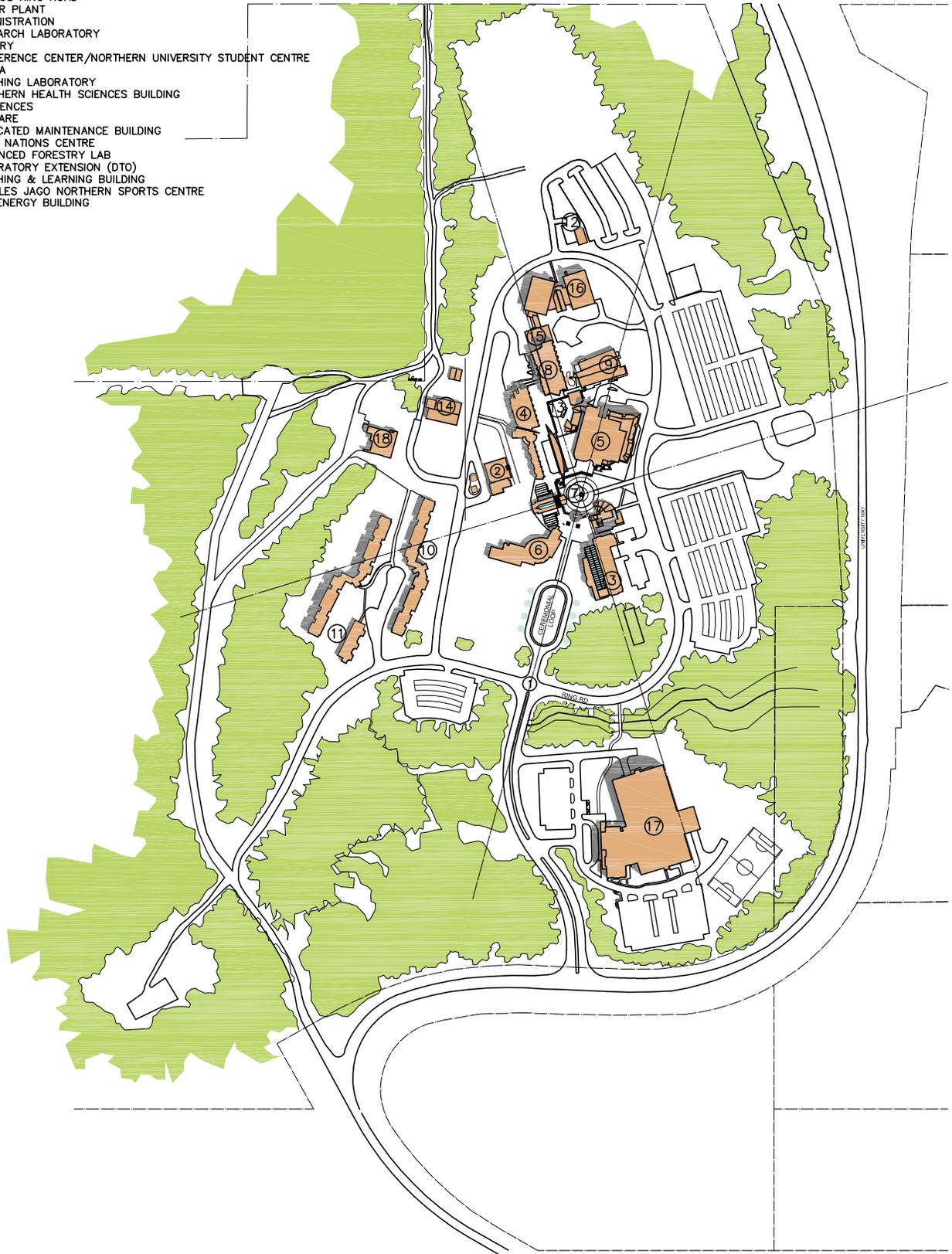
This major phase of campus expansion succeeded in enhancing UNBC's teaching, research and recreational space and provided UNBC with a complement of facilities and services expected at a University. The student enrolment, however has been essentially static over the past decade.

In an effort to increase UNBC's profile, attract students, and strengthen the University's connection to northern communities, UNBC trademarked the phrase "Canada's Green University" in 2008. This has stimulated a new phase of growth at the Prince George campus that has included an expansion of the heating/cooling distribution system, a wood pellet system at the I.K. Barber Enhanced Forestry Lab, and a Bioenergy Plant. This development has attracted national/international attention and positions UNBC for continued growth in renewable energy. In fact, this is one of the goals presented in UNBC's most recent plan, which was published in 2010. With respect to future development of the Prince George Campus, the emergence of UNBC as Canada's Green University, with a leadership position in renewable energy is a primary consideration.



<sup>3</sup> As noted in the 2006 - 2011 Capital Plan, there have been developments at the regional campuses. In Quesnel, the University partnered with CNC in the construction of the North Cariboo Community Campus. In Terrace, the University purchased a building there to serve as a Northwest regional campus. In addition, the Bank of Montreal donated its downtown building and property in Prince George to the University, establishing the basis for the creation of a UNBC Downtown Centre.

- 1 CAMPUS RING ROAD
- 2 POWER PLANT
- 3 ADMINISTRATION
- 4 RESEARCH LABORATORY
- 5 LIBRARY
- 6 CONFERENCE CENTER/NORTHERN UNIVERSITY STUDENT CENTRE
- 7 AGORA
- 8 TEACHING LABORATORY
- 9 NORTHERN HEALTH SCIENCES BUILDING
- 10 RESIDENCES
- 11 DAYCARE
- 12 RELOCATED MAINTENANCE BUILDING
- 13 FIRST NATIONS CENTRE
- 14 ENHANCED FORESTRY LAB
- 15 LABORATORY EXTENSION (DTO)
- 16 TEACHING & LEARNING BUILDING
- 17 CHARLES JAGO NORTHERN SPORTS CENTRE
- 18 BIO-ENERGY BUILDING



Campus Plan - Existing



- 1 CAMPUS RING ROAD
- 2 POWER PLANT
- 3 ADMINISTRATION
- 4 RESEARCH LABORATORY
- 5 LIBRARY
- 6 CONFERENCE CENTER/NORTHERN UNIVERSITY STUDENT CENTRE
- 7 AGORA
- 8 TEACHING LABORATORY
- 9 NORTHERN HEALTH SCIENCES BUILDING
- 10 RESIDENCES
- 11 DAYCARE
- 12 RELOCATED MAINTENANCE BUILDING
- 13 FIRST NATIONS CENTRE
- 14 ENHANCED FORESTRY LAB
- 15 LABORATORY EXTENSION (DTO)
- 16 TEACHING & LEARNING BUILDING
- 17 CHARLES JAGO NORTHERN SPORTS CENTRE
- 18 BIO-ENERGY BUILDING
- 19 STUDENT UNION BUILDING - FUTURE
- 20 NORTHERN HEALTH SCIENCES - FUTURE EXPANSION
- 21 FUTURE ACADEMIC & ADMINISTRATION BUILDINGS
- 22 FUTURE ACADEMIC/RESEARCH
- 23 FUTURE RESIDENCES
- 24 BIO-ENERGY FUTURE EXPANSION
- 25 FUTURE GREENHOUSE
- 26 CHARLES JAGO NORTHERN SPORTS CENTRE - FUTURE EXPANSION
- 27 POWER PLANT - FUTURE EXPANSION



Campus Plan - Future



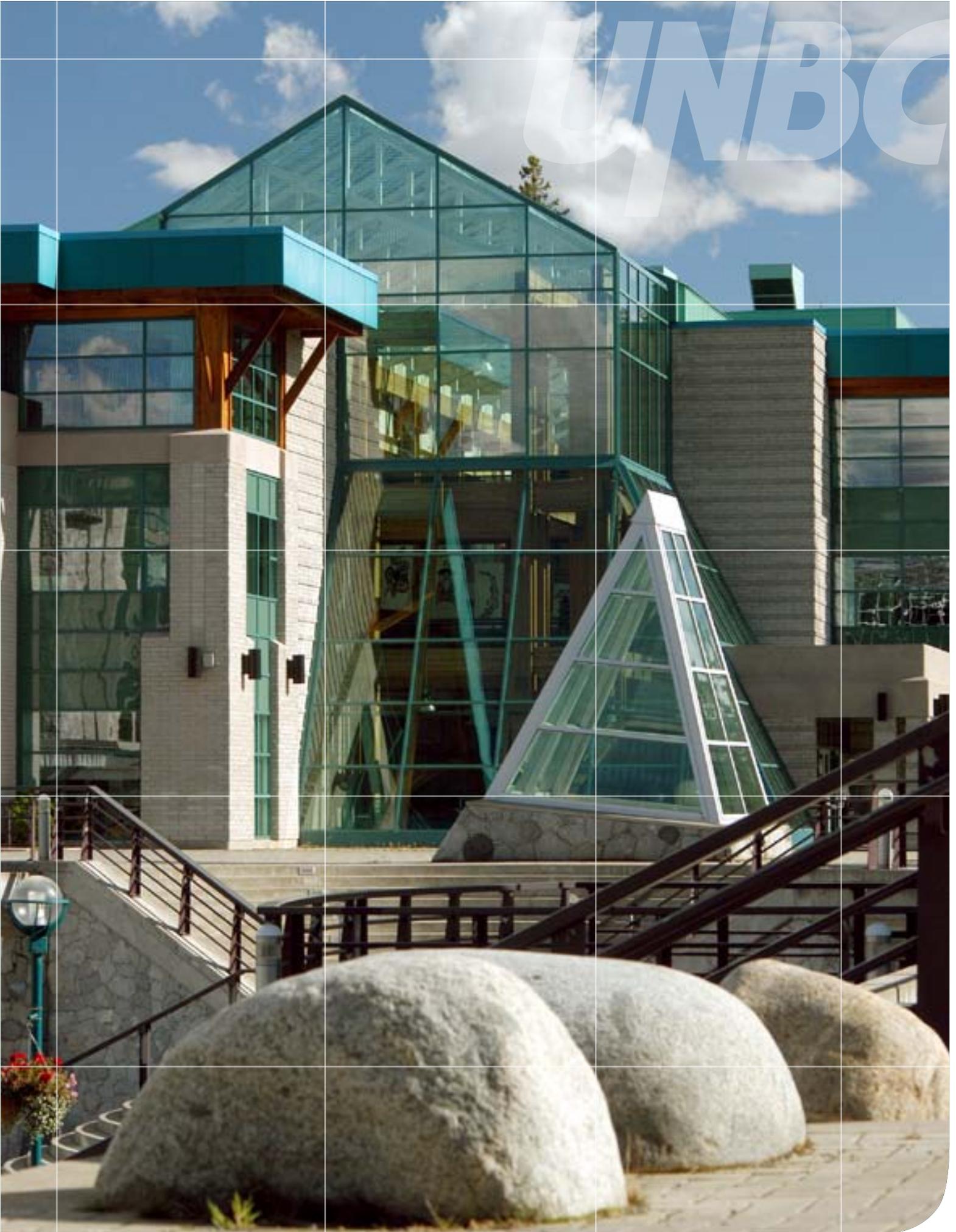


## ***2.2 Master Plan References***

Several initiatives by the UNBC and Ministry of Advanced Education are reflected in the criteria that have guided the master planning decisions. The listed references are available as separate reports.

- *Five Year Capital Plan*
- *Academic Vision*
- *Research Programs*
- *Accountability Plan and Report*
- *Campus 2020 Thinking Ahead Report*
- *Provincial Initiatives for Energy Self-sufficiency*
- *Provincial Wood First*

UNBC



# 3.0 MASTER PLANNING PROCESS

The planning process begun in 2008, guided by a Master Plan Committee consisting of the Director of Capital Planning, Director of Facilities, a dean's representative, a Board of Governors representative, student representatives, faculty representatives, a representative of the Communications Department, the University Architect and the Vice-President, Special Projects. Additional resources supporting the planning process include engineers, architects, developers and city staff. The Committee established the project activities, deliverables and timelines for each of the Phases of the Master Plan. With all the Plans, there was consultation with the University community, the City, the Lheidli T'enneh and community groups. In 2011 an update process was initiated with an all day workshop with the university students, faculty and staff focused on confirming the 2008 vision, exploring approaches for collaboration and interaction and articulating elements that define Canada's Green University.

## 3.1 Work Plan

The 2008 Master Plan Committee divided the Phase 1 work into eight facets:

- 1) Committee education – Reviewing the details of the 1991 Master Plan, the capital plans and the context for the planning process;
- 2) the development of the planning principles via a facilitated discussion;
- 3) the development of the design principles via a facilitated discussion;
- 4) the development of sustainable practices;
- 5) the development of the visions (including the opportunities) for the Prince George land-use zones with a facilitated discussion and the assistance of a Consultant.
- 6) the commissioning of a review of residential and commercial development opportunities for the campus;
- 7) the development of a draft Master Plan and consultation with the University and community groups; and
- 8) the review of consultation feedback and finalization of the Master Plan.

## 4.0 **PLANNING PRINCIPLES**

Grounded in the preceding documents (Section 3 Overview) and informed by various consultations, Master Plan committee members discussed and sifted through numerous considerations with regard to the future of UNBC. Eventually, the Committee was able to synthesize four broad points of focus, identified here as planning principles for the Prince George campuses and the regional campuses. These principles are intended to guide future growth by enhancing a stimulating university environment that promotes learning, academic scholarship and research by maintaining a unique identity as a University in the north for the north.

### **4.1 Principle 1 — Sustainability**

A commitment to sustainability will provide the best outcomes that embrace environmental, economic, and social considerations both now and for the future. In creating a sustainable community, the University wants to protect its natural environment by conserving resources, reducing pollution, protecting the ecosystem and being a leader in utilizing natural northern materials for new products and new energy. To ensure economic sustainability, the University is committed to maximizing financial value by ensuring optimal efficiency in all new buildings and assessing life cycle optimization and developing an infrastructure that promotes and embodies sustainability. To promote social sustainability involves developing a safe, livable, and culturally connected and healthy community. The University is also committed to keeping the community aware of, and participating in, the University's sustainability plans and our vision to be Canada's Green University™.

### **4.2 Principle 2 — Interconnectedness**

The principle of interconnectedness is intended to enhance the connectedness of buildings and the connectedness of UNBC to the community and the region. This connectedness should promote interaction and collaboration among faculty, students and staff. Campus connectedness involves considerations such as the articulation of doorways to major walkways, adjacency of complementary knowledge disciplines, circulation paths, formal and informal interaction space, accessibility and the thematic extension of the spatial ordering system. For the community, the UNBC campus is not only a place of learning, but an agora or meeting place for a variety of events. Within this context, buildings have secondary uses such as conferences, retail, receptions, and fairs. Planning should take into consideration secondary uses of campus facilities. For example, an event that required several buildings would be facilitated by adjacency and accessibility. For the northern region, connectedness is best established by an emphasis upon communication technologies as an essential infrastructure in facilities.



### ***4.3 Principle 3 — Nature***

This principle is intended to preserve nature in campus construction projects. A balance must be sought between the natural character of the north and functional needs of the University, including dwelling units, land usage and traffic. At present, the main Prince George campus is embedded within a forest with a northwestern view of the Rocky Mountains. Forest pathways abound for hiking in summer and cross-country skiing in winter. The preservation of the natural habitat can be enhanced by minimizing forest clearing, maintaining access to pathways, landscaping, maintaining lines of view and using building materials that reflect the north.

### ***4.4 Principle 4 — Sense of Place***

In the 1991 Master Plan, a sense of place referred to the perception of the campus, emphasized by a sequence of open spaces. However, in the present usage a sense of place is broadened to the subjective experience of the UNBC campuses. The principle is intended to ensure that UNBC is and remains a welcoming, safe, non-discriminatory and secure place for each person and culturally diverse groups of people engaged in diverse activities. Planning considerations involve clarity in arrangement, adequate security, lighting (from parking to facility), a wide range of space to support a multitude of activities, and diverse scales of spaces for different needs (from commercial to intimate).

# 5.0 MAIN PRINCE GEORGE CAMPUS DESIGN PRINCIPLES

Design principles are a policy statement about the physical environment. Included are the connector systems; building size, shape and character; and exterior and interior materials and colour.

## 5.1 Connector Systems

### A) Walkways

Walkways connect all major elements of the campus. A maximum 5% slope is required to minimize hazardous conditions during periods of ice and snow. Walkways should be located to facilitate access throughout the campus for both destinations and casual walking with attention to anticipated desire lines. For security, walkways which connect buildings and parking areas are to be lit and laid out to avoid screened areas. This is especially important for buildings and parking areas that will see significant after hours use.

Another component of walkways will be a nature trail system through the site to be laid out for cross-country skiing in the winter and walking in the summer. The system should link up with the existing and proposed trails in the Forests for the World area.

### B) Exterior and Interior Connector System

Complementing the exterior walkway system is the Interior Connector System which links the buildings in the campus core. This system is totally enclosed and accessible during extended hours of the day. Making up the system are 3 components:

1. The Central Connector/Agora Building,
2. An upper level connector system where possible feeding into the Agora, and
3. Various vertical transfer points containing stairs and elevators, or ramps. As the campus grows, the system will be extended to maintain enclosed connectors between all primary campus core buildings.

### C) Bikeways and Storage

Use of bicycles on campus is encouraged through provision of extra width in roads and walks, and in storage racks at designed building entries. However, a separate bikeway system is not anticipated. A bike storage strategy is being developed as part of the landscape plan.



#### **D) Building Service and Emergency Vehicle Access System**

Providing service to buildings and access for emergency vehicles involves some of the same roadways, and are, for this reason, grouped under a single category.

Most materials and supplies are delivered to the central receiving dock below the Administration Building. Here goods are unloaded, processed, and either stored as inventory in the warehouse, or sent with hand trucks through the service tunnel system to the appropriate building destination. Solid waste, which is generated in buildings, is disposed outside the individual buildings in dumpsters for pick-up by truck.

The food service system for the campus generates the bulk of delivery and waste removal activity. For this reason, the central kitchen is located near the main service area. Waste from the kitchen is placed in compactors in the same area for removal by truck.

Emergency vehicle access requirements are governed by the City of Prince George Fire Department. As such, communication with City officials ensures the campus can appropriately accommodate necessary access.

## E) Roadways and Parking

Roadways serve to link the individual elements of the larger campus, and to link the campus with the City. To create an efficient and attractive roadway system, a hierarchy of road types has been set up. University Way links the campus with the City of Prince George. The primary access road on the campus is the main entry drive, which begins at the Fifteenth Avenue extension. The Ring Road encircles the centre of the campus, creating a vehicle-free zone at the academic core. The Campus Connectors link ancillary facilities with the Ring Road. Access drives connect the parking and service areas.

Parking represents a transition between walks and roads. The Plan locates the primary parking facilities east of the campus, near the main entries to the Connective Building/ Agora. Although these lots accommodate a substantial number of cars, they are visually broken up with buffer strips. These buffer strips, which also serve to store snow in the winter are planted to interrupt otherwise long vistas across a large number of cars. In addition, the lots are generally to be terraced to accommodate the sloping topography. To provide security, the lots are well lit and not so screened as to be isolated.

In addition to the large lots on the east, there should be a number of smaller lots distributed around the campus serving generally non-academic functions. These smaller lots should be sized to accommodate vehicles that would not be able to conveniently use the primary lots because of excessive walking distance or because of the facility-specific nature of the trip. (eg. equipment & sample drop off)

As the institution grows and the number of cars exceeds the capacity of the land surrounding the campus (in terms of reasonable walking distance), the plan anticipates that structured parking can be introduced as individual parking structures or located under new buildings.

The parking criteria<sup>4</sup> for the campus were derived from reviewing other universities and the following allocation is considered to be appropriate for planning purposes.

<b><i>Student FTE</i></b>	<b><i>Ratio/Students</i></b>	<b><i>No. of Spaces</i></b>
2,000	1:2	1,000
4,000	1:2.5	1,600
6,000	1:2.7	2,200

The plan also encourages and supports the continued expansion and access transit operations on campus via expanded locations for public transit that are close to key university facilities. Ongoing transportation demand monitoring and initiatives to reduce vehicle trips to the Campus are essential for minimizing land dedicated to parking and reinforcing the University's "green mission".

## 5.2 Building Size, Shape and Character

The following is a list of Design Guidelines related to size, shape and character:

### A) Site Responses

<sup>4</sup> A review of the parking criteria should be included in the next Master Plan review

**Objective:** Siting of buildings can contribute significantly to the university's ability to grow through efficient land use, to create desirable open space, to have year round access to sunlight for campus users and to avoid negative impacts of the northern winter climate.

- Buildings must be designed to consider future expansion.



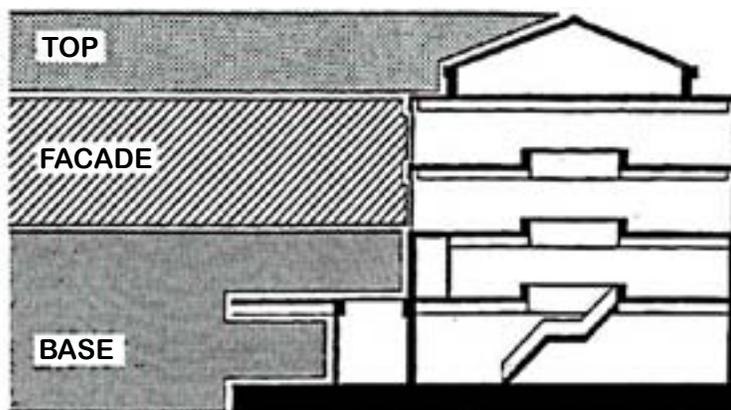
*Parking Diagram*

- Building massing must consider solar orientation, and important indoor and outdoor public space to maximize solar exposure and view sightlines.
- Building massing must consider low winter sun angles, prevailing winter winds and snowdrift accumulation.
- Buildings should provide south facing main entries where possible & minimize extensive north-facing walls.
- Building and planting materials suited to Prince George climatic conditions should be used.
- Indoor activity spaces should be supported by adjacent outdoor spaces and allow for immediate connection and accessibility.
- Some buildings should act as landmarks to emphasize their relative importance and to provide points of orientation. Their architectural expression should reinforce this role. This includes the Library Building and a potential future main entry pavilion to the Agora. Providing a covered and future enclosed structure where maps and displays would describe the University to visitors.

## B) Massing: Form, Proportion and Scale

**Objective:** The architecture of the main campus is unique and special. Through design initiatives incorporating interesting visual elements and use of varied massing, the campus will maintain its family of buildings, while creating identity for each building. Emphasis on a vertical module expression conveys a collegial character on the campus.

- The three-dimensionality of buildings should be emphasized through articulation of exterior elements.
- Architectural massing should not only reflect the functional requirements of the building, but also symbolize its intended use where appropriate and contribute to the shaping and enclosure of campus open space.
- A human architectural scale should be established by use of window patterns, recessed windows, changing materials and textures, use of coursing, cornices, copings, sills, and lintels.
- Building forms in the Academic Core should reflect the organizing principle expressed in the adjacent diagram: that there should be a heavy strongly articulated base where buildings intersect the Agora; that above the base should be a middle façade of lighter materials; and that the top of each building should form a defined cap. Buildings should have a very similar expression at the base level, more diversity in the middle facades, and may be very different at the top. In addition, buildings that are more integrated with the Agora will have more expression of the base. Buildings that are located further up the hill are not required to have a base expression.



*Building Expression in the Campus Core*

## C) Circulation

**Objective:** An essential component on the campus is its interconnectedness through the circulation system. Pathways should bring people together and promote interaction. Where possible, weather protection should be provided.

- Building design should reinforce pedestrian routes, both through the building or adjacent, and should provide protection from the weather wherever possible through the use of canopies, colonnades, or pergolas.
- All major buildings in the campus core should be interconnected through the Agora or via an overhead walkway system, where practical, when access over a roadway is required. Connections to buildings should present a direct, “front door” entry experience.
- Interior connections between individual buildings and the Agora should be integrated with the Agora circulation system.
- As the university grows and separation of people increases, a focus on establishing pathways where people intersect will enhance connectedness and interaction in the university community as a whole reinforcing the spirit of the early years,.

## D) Universal Accessibility

**Objective:** Universal access on the UNBC Campus is a fundamental requirement to achieve equality for all users.

- All buildings and associated public spaces should provide universal and non-segregated access to the disabled including the physically challenged, and those with audio, visual or mental disabilities.

## E) Entrances

**Objective:** Well designed entrances provide orientation and enhance wayfinding for users. Entrances should also establish an indoor-outdoor relationship engaging the building with its surroundings and providing identity for each building.

- Building entrances should be transparent and multi-storied where possible, encouraging entry and creating an inviting entry experience.
- All major building entrances should be well defined, prominent, and should relate directly to major open spaces and circulation routes.
- Entrances should establish identity for each building.
- Building entrances should celebrate the transition from exterior space to interior space or from the Agora to building, both spatially and symbolically.

## F) Signage

**Objective:** Buildings and entrances should have well positioned and well-lit signs that provide orientation for users.

- Signs should use local and natural materials and University colours

## G) Roof Forms

**Objective:** Roof forms can establish identity for a building, provide visual interest and afford weather protection. Roof forms and lines should visually and physically relate to existing campus buildings.

- Roof forms should be considered an important element in the composition of a building form. Roof elements such as vertical roof shafts, skylights, elevators, stairwells and mechanical pent-houses figure as important elements in the rhythmic composition of the roof surfaces.
- Eave and cornice lines should relate to those of adjacent buildings.
- Roof forms and shapes should be expressive, but also responsive to climatic conditions of snow accumulation, and ice build-up, freezing and thawing cycles. Overhanging pitched roofs should be avoided.



## H) Windows/Transparency

**Objective:** Windows provide the opportunity to capture views from inside but also should establish visual transparency to not only have sightlines to the outside, but also to engage those looking in with the activities and people in the buildings.

- The use of glass should optimize views, natural light, comfort, energy efficiency and cost.
- Windows and openings should relate directly to outdoor open space and maximize short, middle and long-range views and vistas.
- At the base level, windows and doors should be recessed to express the depth of the wall material as well as for a climatic response.
- At the base level, glass should be clear to create transparency for building occupants viewing to the outside and for those viewing from outside to inside, but should be sensitive to solar heat gain concerns. Glass above the base may be clear or tinted.



## I) Nighttime Illumination

**Objective:** Careful use of lighting can enhance the perception of the UNBC Campus at night by highlighting special elements and providing visual access to interior public areas. Illumination for safety indoors and outdoors should be a high priority. Energy conservation must be a key consideration in the selection of lighting.

- Night Aspect: General illumination should be planned for esthetic effect as well as to facilitate nighttime way finding and security. Pools of light at entries can be created using downlights under overhangs. In addition, interiors can be lit at night expressing transparency, and spilling light to illuminate walkways and entries.
- General nighttime illumination should also contribute to the definition of open spaces and complement both the architectural and landscaping concept of the campus.
- Avoid creating glare or spillage of light to surrounding areas and the night sky.



## 5.3 Exterior and Interior Materials and Colour

### A) Materials

**Objective:** Materials and colours are key elements that distinguish the UNBC and reinforce it as a university of the North. Emphasis on local and natural materials contributes to the UNBC image and references to local colour further unify the campus with its context. Consistency of materials and how they are used in buildings contribute to the continuity and unique feel of the UNBC.

- Building materials should reflect a sense of permanence and quality. They should reinforce the desired cohesive nature of the campus.
- The use of indigenous materials such as wood is encouraged.
- The expression of wood is appropriate both structurally, and in heavy timber post and beam, and

through the use of interior finishes and components. Wood use in an exterior exposure should be sensitive to long term maintenance and durability concerns. Preferred exterior applications should be in protected and covered areas.

- The use of stone such as tyndall stone, sandstone, slate, river rock and bluestone should be investigated both as a surface finish material and in the landscaping concept. All buildings should include a significant use of the original UNBC split face masonry units material.
- The use of industrial materials such as metal panels, glass, steel and aluminum are encouraged to reflect the nature of industry in the region and complement the use of wood and stone in the design vocabulary. Thermal bridging is to be avoided.



## B) Colour

**Objective:** Colour plays an important role in architectural expression and can be used symbolically to suggest a building's function as well as for community image.

- Incorporate the university's official colours where appropriate to reinforce the UNBC identity.
- The choice of colour should be expressive of the saturated colour found in the flora of the region and in the quality of the sky and forest during different times of the day and different times of the year.
- Colours that create a warm ambiance should be considered for use as accents.
- Colour should be used to accent windows and door entries, skylights and glass wall framing systems, spandrel panels, metal columns, building fixtures such as railings, roof top equipment, or any other special equipment.
- A green colour should be considered for tinted glass, consistent with existing buildings.

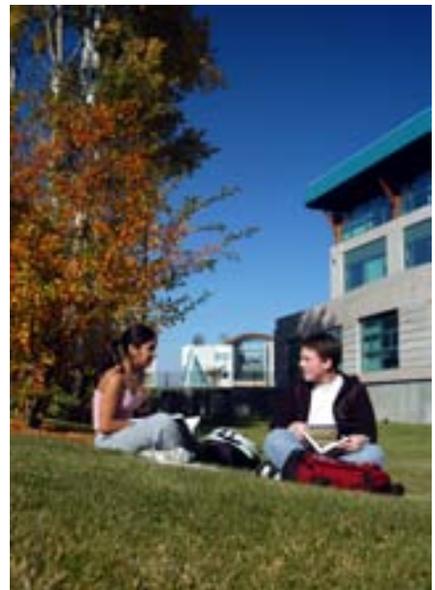
The material palette for the main campus was established in the original master plan document and served to guide the material selections for buildings to date.

## 5.4 Interaction Spaces

The UNBC is a place for teaching, learning and research which occurs formally and informally throughout the campus. Planning and design can facilitate spontaneous interaction among faculty, staff and students to promote a creative teaching and learning environment. The UNBC is committed to fostering interaction through provision of spaces of varied sizes, from smaller alcoves to larger gathering areas, to create a spirit of interaction of people on the campus.

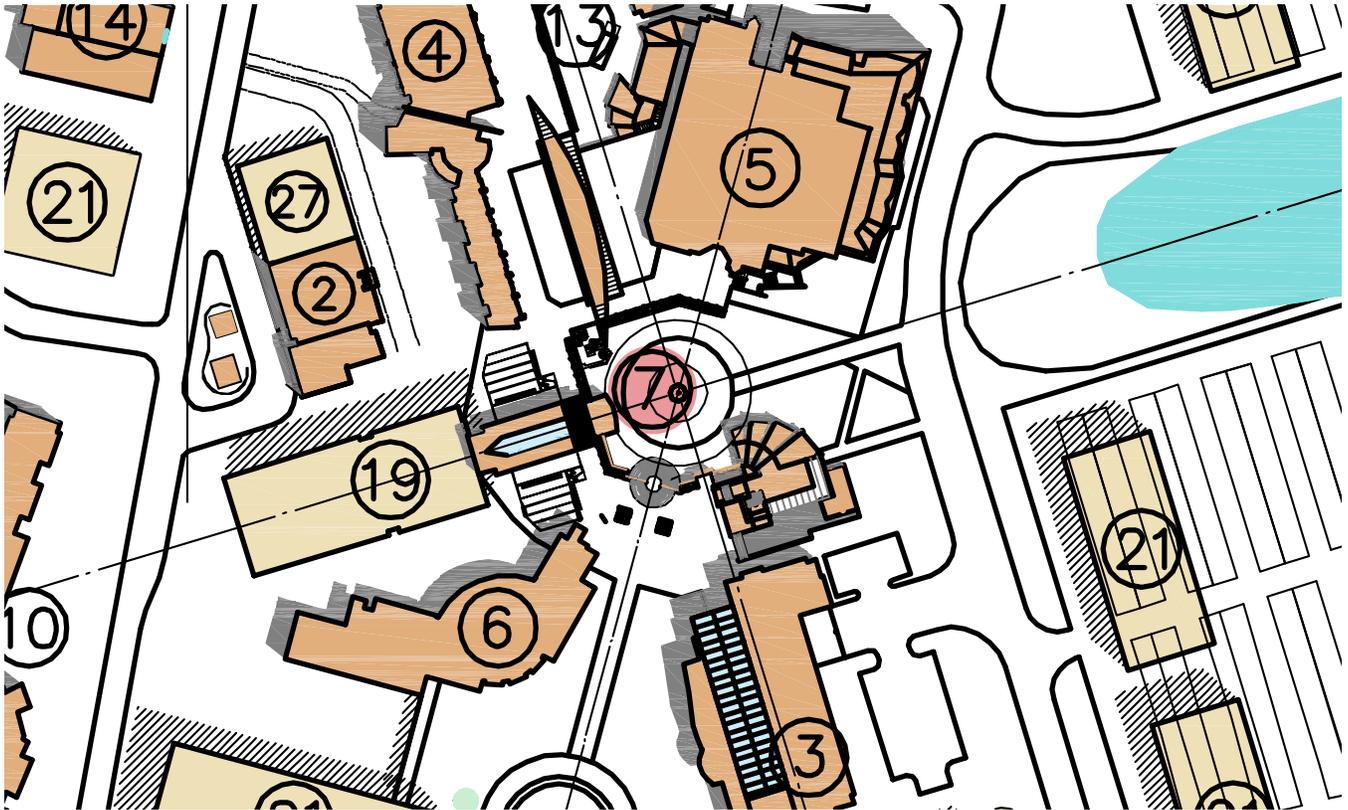
At the time functional space programs are developed, interaction spaces should be included as essential teaching and support space where booked and spontaneous meetings can occur.

It is natural and beneficial for enclaves of similar interest to emerge as the university grows. Both within enclaves and on a campus wide basis, a priority must be placed on design that promotes opportunities for interaction.



## 5.5 Public Interaction

The university is a major part of life in Prince George and is a centre of interest for both citizens and visitors. A key outcome of the latest consultation with students, faculty and staff was the importance of educating people about the university, its goals, its activities and especially its focus on being a 'green' university. The main courtyard bounded by the Food Services and Library will serve as the welcome point for visitors and tours with a display providing maps and important information about the university.



Greeting / Arrival

## 6.0 **SUSTAINABLE PRACTICES**

The University is committed to sustainable practices in the development and operation of its campuses through environmental, economic and social best practices. Although specific guidelines are provided, it is expected that creative and practical approaches reflecting the current “state of the art” and the circumstances of a particular project will be considered. Individual projects will present special opportunities that should be explored.

All design and development proposals require a sustainability report to be submitted outlining proposed sustainable measures. The report will present scoring based on the Leadership in Energy and Environmental Design (LEED) and additional initiatives incorporated into the design.



## 6.1 Environmental

**Objective:** Minimize the impact of campus facilities on the environment through creative solutions that do not compromise the functionality of those facilities.

### A) Site

- Buildings and structures should be sited to provide optimum orientation for solar control and gaining benefit from solar energy where possible.
- Design of buildings should strive for suitable land use through efficient planning and minimizing the building footprint.
- Erosion and sediment control should be implemented to avoid siltation of storm sewers and to reduce disturbance to the campus.
- Minimize “heat island” surfaces on grade and on roofs of structures.
- Landscape material should be indigenous drought tolerant varieties to avoid invasive plants and high maintenance.

### B) Water

- Implement design solutions that conserve water in landscaped areas, through plumbing fixture selection and in providing for process requirements.
- Explore opportunities for water reuse (eg. rainwater, research programs that use large quantities of water and other grey water options).
- Incorporate storm water management strategies that complement the UNBC Storm Water Management Plan.



## **C) Energy and Atmosphere**

- Concepts and systems should strive to achieve a high level of energy efficiency and performance through choices in HVAC and lighting equipment. Heat recovery systems should be considered for all projects.
- Incorporate opportunities for implementation of passive approaches to energy efficient design.
- Incorporate renewable energy opportunities that minimize greenhouse gases.
- Select equipment and processes that minimize emissions harmful to the atmosphere.
- Provide bicycle parking and shower/change facilities for all new buildings.
- Exterior exposed building perimeters should be carefully considered to minimize energy consumption.
- An integrated approach with all disciplines should be used to achieve holistic design solutions.
- Implement a “less is more” approach to buildings and their systems by exploring options that provide a quality, functional building.
- Design solutions should consider long term operating impact on energy and atmosphere and regular operational reporting. (refer to Strategic Energy Management Plan)

## **D) Materials and Resources**

- All construction projects should employ a construction waste management program including waste separation and recycling.
- Incorporate opportunities for recycled materials and recycled content in construction projects.
- Select materials and products from within the region where practical.
- Incorporate natural materials such as wood, stone and masonry where appropriate.
- Durability and on-going maintenance considerations of products and materials should be a high priority.

## **E) Indoor Environment**

- Incorporate low emitting materials for adhesives, sealants, paints, flooring and manufactured wood products.
- Provide monitoring of carbon dioxide and indoor airflow.
- Strive to achieve an even distribution of temperature within rooms and hallways.
- Make provision for maximizing access to natural light for users and depth of light penetration into the interior spaces.
- Design space for comfort and spatial quality that avoids trendy materials and colours. Enduring solutions will result in space that is suitable for long life usability.
- Space planning and building design should strive to achieve maximum flexibility over the life of a building, thus minimizing cost, disruption and potential for waste and extensive construction from change.

## **6.2 Social**

### **A) Interaction and Public Spaces**

- Spaces should promote interaction among faculty, staff, and students, such as alcoves to create circulation and pathways that facilitate interaction.
- Provide desirable gathering spaces to attract people to where they can interact.

### **B) Quality of Experience**

- A focus should be placed on creating a campus that achieves a quality, memorable experience that makes the UNBC a place where people want to be and creates a sense of place.
- Create campus gathering places that showcase community artists' work and capture the natural environment.

### **C) Learning and Teaching Environment**

- Through design, the learning experience can be enhanced. Natural light, good sightlines in classrooms, good acoustics, appropriate lighting and friendly spaces contribute to a positive learning and teaching experience, which will be an attraction for students and faculty to be a part of the UNBC.

### **D) Safety**

- “Crime Prevention Through Environmental Design” principles should be a key design consideration. (refer to appendix)

## **6.3 Economic**

### **A) Value for Cost**

- Selection of systems, products and equipment should be evaluated for initial cost and long term operating cost to provide best value for money.
- Life cycle benefits, durability, and potential replacement availability should be considered in selection of building systems and components.

### **B) Affordability**

- Design to achieve a balance between affordability and design excellence.

### **C) “In Kind” Contributions**

- Consideration should be given to sourcing “in kind” contributions, which can assist in achieving higher value for money spent, and encouraging use of local materials and products.

# 7.0 LANDSCAPING

The intent of the landscape master plan is to use the campus master plan as a vehicle to open a dialogue between the natural and built environments in order to provide a framework for the campus to become a showcase of and function as Canada's Green University.

## 7.1 Objectives

- Use the local context to evaluate and define the campus character.
- Use an aesthetic of rough and refined to develop a unique campus identity.
- Evaluate the campus systems to increase efficiencies and reduce environmental impacts.
- Evaluate/Design/Consider pedestrian circulation and link character zones with crossing paths.
- Create a series of linked nodes with views in, out and to the larger context.
- New designs to create hierarchies of gathering spaces within nodes to allow for interaction and retreat.
- Work with faculty to look at learning and experiential opportunities on campus.
- Work together with the Botanical Garden Society to identify maintenance and learning opportunities.
- Install interpretive signage to explain learning opportunities throughout campus.
- Campus appropriate planting guidelines to be implemented throughout the various character zones.
- Evaluate ways to reduce maintenance, environmental impact and operational costs.
- Use infrastructure and other key upgrades as an opportunity to implement elements in the master plan.
- Implement core components of the master plan based on priority, funding and opportunities.
- Evaluate and improve the ways people move to and from the Campus.
- Implement design guidelines to develop and maintain a cohesive look to the Campus.

## 7.2 Existing Campus Landscape

The existing campus is predominantly mown grass with a few pockets of remnant vegetation scattered throughout. Currently, the maintenance required by such a landscape is a burden both environmentally and from a staffing perspective. As the campus has evolved, the natural vegetation surrounding the campus has been removed for maintenance, or to make way for the function of the University. Circulation through the campus is for the most part pedestrian oriented, but the car still has a visible priority until one is inside the “Ring Road.”

## 7.3 Landscape Statement

Moving forward, the attitude toward the landscape should work toward an overall greening of the campus. This does not mean that the whole campus should become a completely manicured landscape, nor does it recommend reforestation of the entire campus, but proposes a holistic attitude to both functionally and physically green the campus. By evaluating the use of lawn areas, treatment of left over space, planting, irrigation, circulation, drainage, greenspaces, nodes and other key elements, this document introduces ways to begin the process of greening the campus.

## 7.4 Campus Aesthetic

Drawing on the surrounding landscape for influence, the forest and grasslands offer an iconic image that can become the backbone of the campus aesthetic. The urban core of the campus should feel clean, manicured and formal, but should also have controlled intrusions of the surrounding forest and grassland. Further away from the campus core, a grassland aesthetic, with more significant forest intrusions will be used to connect the campus with its context.



Figure 1. The manicured formal entry to the UNBC Campus with natural vegetation seen in the background.



Figure 2. An example of a natural grassland landscape with a forest backdrop and use of stormwater to create a unique character.



Figure 3. An example of a grassland landscape with a pathway mown in for circulation.

## 7.5 Lawn Areas

Currently, the campus is predominantly lawn. If areas are being used for active recreation or as areas for gathering, lawn should be considered as the preferred alternative and irrigated with a high efficiency system. Any other areas that would typically be mown lawn can be seeded with a local grassland mix and allowed to naturalize. These naturalized areas will still need some maintenance, but only require cutting twice a year to control weeds.

The juxtaposition of the naturalized areas with lawn areas will produce a rough and refined dialectic, similar to a golf course aesthetic, weaving its way through the campus.

### Strategy

- Mow and irrigate active recreation and circulation identified on the open space plan.
- Minimize lawn areas to reduce campus maintenance, carbon emissions and water use.
- Use stormwater, where possible as the main source for irrigation to reduce potable water demands.

## 7.6 Left Over Spaces

When new buildings are introduced to campus, the campus aesthetic should be applied in a way that both the programmed and unprogrammed spaces look like they belong. These spaces should have the flexibility of being convertible into usable space and evaluated in a continuous process of open space planning.

### Strategy

- Create “Naturalized Areas,” instead of lawn, in left over spaces to reduce maintenance and environmental impact.
- Mow areas that are suitable nodes of activity as a cost effective way of creating courtyard spaces, while allowing the grass to grow long in all other areas.
- As funding allows, seed “Naturalized Areas,” as identified on the open space plan, with “UNBC grassland mix,” as developed by the Botanists and botanical garden society to promote diversity of flora and fauna, local to the region.
- New developments must produce a plan that considers circulation, spaces for social interaction and left over spaces to identify areas that will be either planted, lawn or naturalized so that irrigation can be provided where required.



Figure 4. An example of a space between buildings at the UNBC campus is all maintained as lawn area.



Figure 5. A retouched photo to illustrate how a combination of manicured lawn and grassland can further define courtyard spaces.



Figure 6. An example of a leftover space that is maintained as lawn instead of being a.) programmed or b.) left as grassland.

## **7.7 Planting**

The surrounding context plays a key role in defining the planting character zones on campus. Although areas toward the “urban” core of the campus are typically more formal than those on the periphery, all planting should be appropriate to its location on for the UNBC Campus. Planting Guidelines and Character Zones are being developed with input from the Botanical Garden Society and local landscape professionals.

### **Strategy**

- As funding allows and as areas are developed on Campus, implement planting character zones, as identified on the planting character zone plan.
- Follow the recommendations outlined in the “UNBC planting guidelines,” for any plant selections and locations on campus.
- Irrigate all planted areas on campus.

## **7.8 Irrigation**

As the campus expands, consideration should be given to which areas will require irrigation. While some areas will be planted and irrigated, others will be allowed to “naturalize” and not require irrigation.

### **Strategy**

- Provide drip irrigation for all hanging baskets.
- Provide spray heads for Lawn and planted areas only.
- Do not provide irrigation for “Naturalized” areas and left over spaces.
- Rough in connections for left over spaces so they can be converted in future, if desired.
- Use stormwater, where possible as the main source for irrigation to reduce potable water use.
- Install wide coverage spray heads to provide full coverage within 8m of the perimeters of buildings where areas are allowed for fire suppression.

## **7.9 Site Components**

Although the existing campus has a well defined architectural expression, guidelines are in progress to develop a standard for site furniture, paving, lighting and other site components to support the campus aesthetic and sustainability goals.

## **7.10 Hierarchies**

Within layers that were used to develop the master plan, hierarchies play a key role in how each layer functions and interacts with the other layers. Circulation, spaces for social interaction, drainage, vegetation, nodes and interconnected spaces are just some of the layers that were used in the development of the master plan and are explained in the following diagrams.

## 7.11 Campus Circulation

As the campus expands, future buildings will need to be located on the outside of the “Campus Promenade.” As this occurs, the buildings outside the promenade will naturally feel more isolated from the campus core unless the circulation is rethought. Instead, the “Campus Promenade” should act as a collector for pedestrian circulation, intersected by “spokes” that will bring pedestrians into the campus core.

### Strategy

- Install a continuous sidewalk along the non-core side of the “Campus Promenade.”
- Install a continuous line of street trees around the “Campus Promenade” for shade, to create an enjoyable place to walk and to help with stormwater management.
- Install a drainage/infiltration swale between the new sidewalk and road.
- Replace existing crosswalks with raised crosswalks, using materials that feel pedestrian rather than vehicular.
- Connect the outer buildings with circulation “fingers” that focus pedestrian flows across the “Campus Promenade,” toward the campus core.

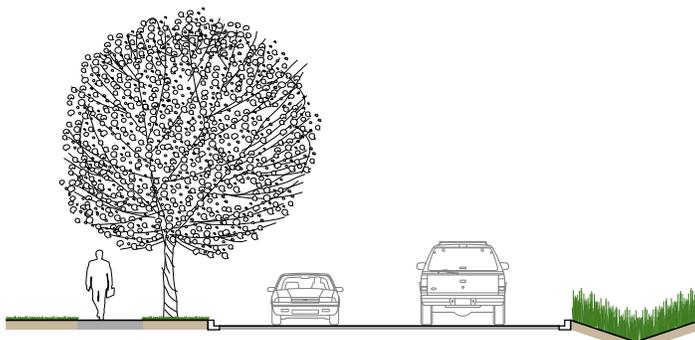


Figure 7.11.4 Cross section of proposed Campus Promenade.



Figure 7.11.1 An example of a crosswalk that gives visual priority to the pedestrian realm.



Figure 7.11.2 An example of a raised section of road with a change in material to make the crossing feel like an extension of the plaza rather than a road crossing.



Figure 7.11.3 An example of a raised crosswalk with a change in material and bollards for better pedestrian safety and visual cues for the driver.

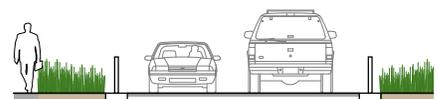


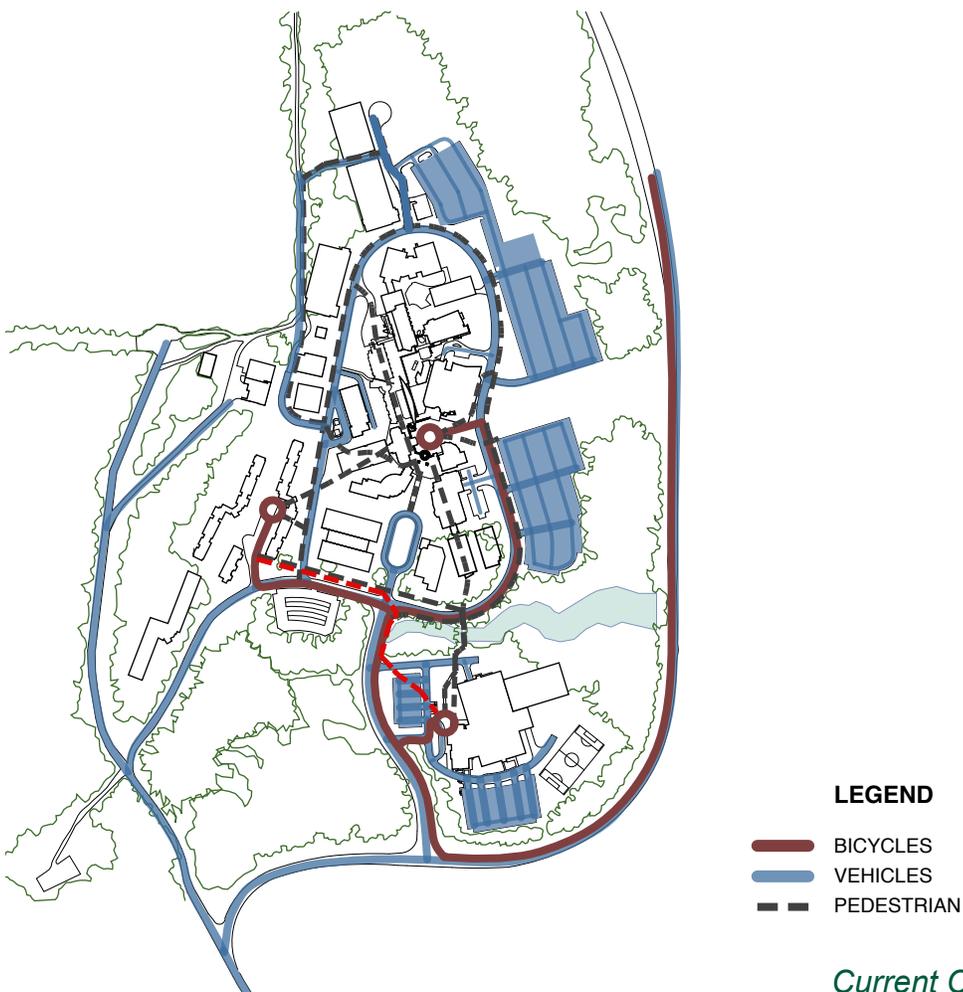
Figure 7.11.5 Cross section of proposed pedestrian crossing of the Campus Promenade.

## 7.12 External Circulation

As a largely commuter campus, the car plays a primary role in the layout and circulation of the Campus. In order to work toward the greening of the campus, there is a need to make the shift toward sustainable transportation options and provide the infrastructure to support those choices.

### Strategy

- Provide new infrastructure on campus to support evolving transportation choices and seamlessly integrate design of this new infrastructure into the design of the existing campus.
- Campus improvements to ensure safe, efficient circulation for all transportation modes.
- Links from the campus to future university town centre are to be designed to minimize or eliminate single occupancy car trips.

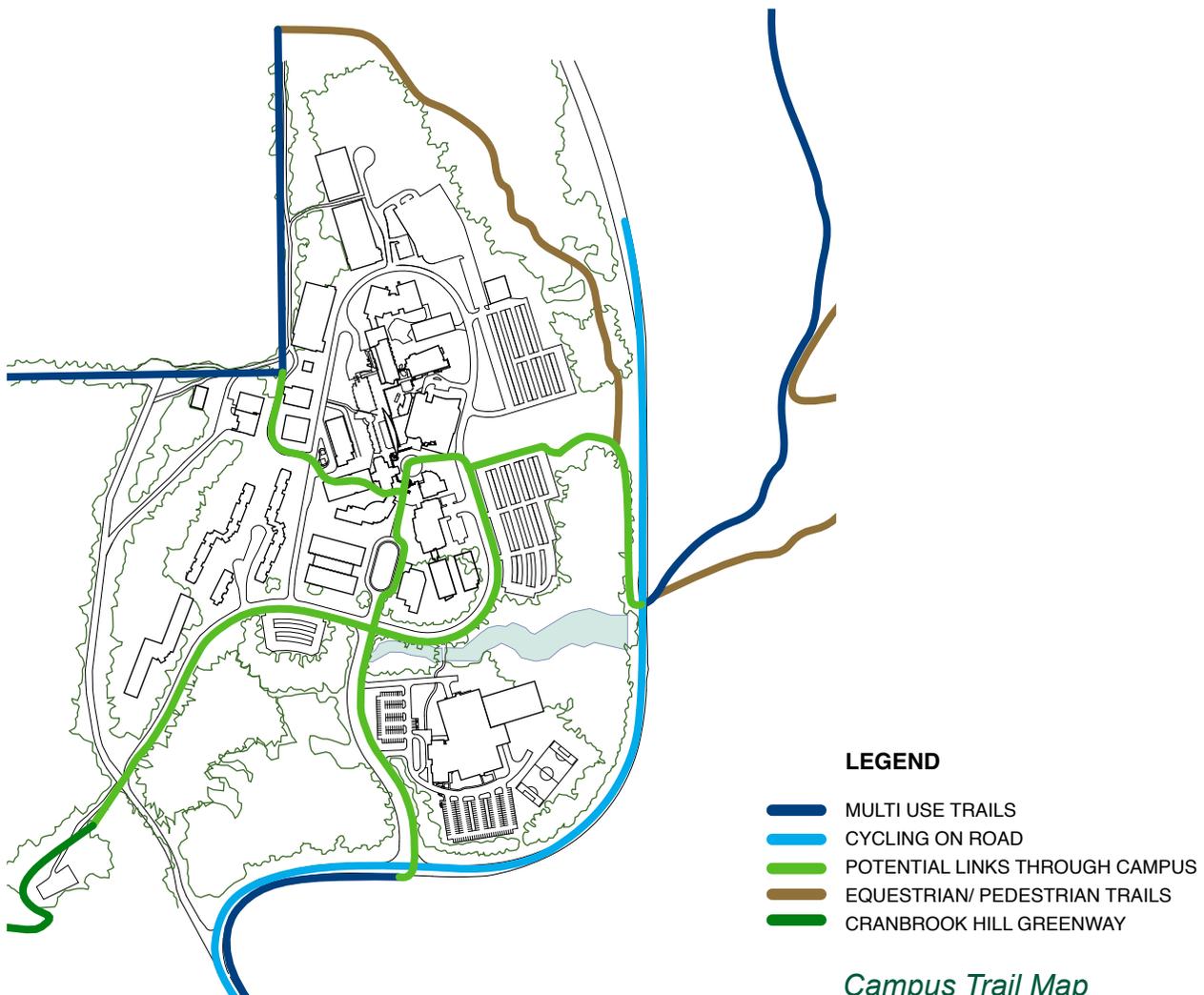


## 7.13 Trail System

The existing system of regional and campus connections can be used to form the backbone of an integrated and hierarchical circulation system. Based on the use, trails should be constructed or retrofitted to meet the “UNBC Trail Standards,” currently under development.

### Strategy

- Produce detailed map of existing regional and campus trails and their uses.
- Develop trail hierarchy and surface treatment for each.
- Develop proposed campus connections to link up with regional connections shown below.



*Campus Trail Map*

Figure 13.

## 7.14 Campus Nodes and Courtyards

The campus can be seen as a series of nodes or linked spaces ordered around an “Urban” Core. Identified nodes include where the Teaching, Medical, Administration and Bio-energy zones touch one another, the campus core and where the circulation routes intersect.

### Strategy

- Create nodes in locations with visual and physical relationship between inside and outside.
- Nodes to have places for social interaction.
- Nodes to have places for escape, but allow views into the more active centre of the node.
- Circulation routes to connect nodes to form a series of linked courtyards.
- Create outdoor gathering spaces, by providing lawn or paved areas in key locations.
- Locate nodes in areas that encourage interaction between disciplines or character zones.
- Develop ceremonial places on campus as key nodes.



#### LEGEND

- COURTYARDS
- RING ROAD CROSSING

### Campus Node / Courtyard Map

Figure 14

## 7.15 Nodes Defined

Nodes are areas on campus, where people naturally congregate or where circulation routes/character zones interact with one another. The series of three diagrams below illustrate the conceptual relationships of the Character Zones and nodes, beginning at the large (Campus) scale and working down to the individual node level.

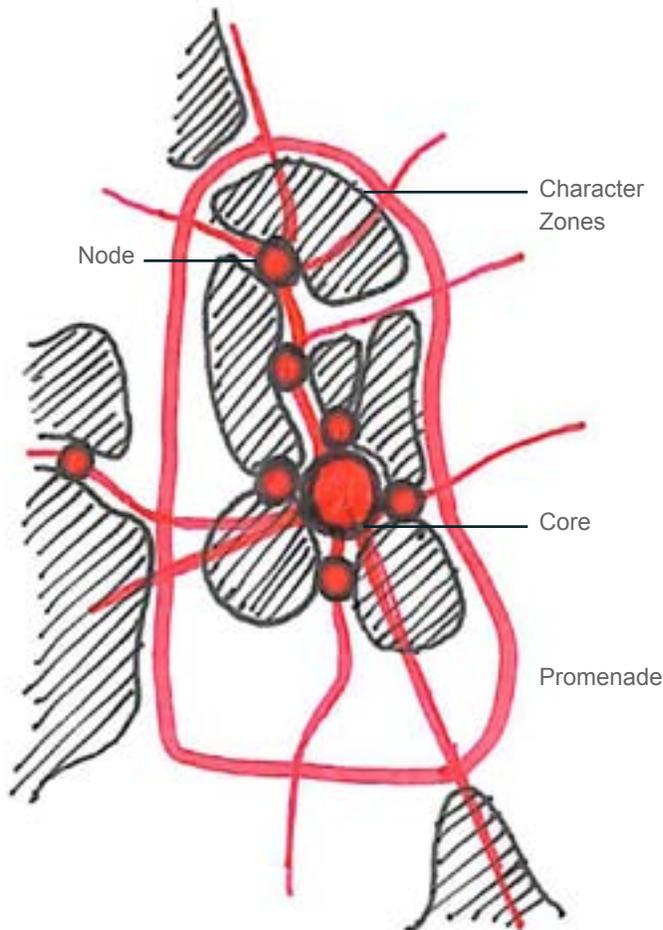


Figure 7.15.3 Conceptual diagram of the UNBC Campus centred around its core, with the Campus Promenade acting as a central circulation route. The diagram illustrates the opportunities for nodes to facilitate interdisciplinary interaction where they touch.



Figure 7.15.1 An example of an interior node at UNBC off a common exterior courtyard with a view beyond.



Figure 7.15.2 An example of a series of nodes off a larger open space, overlooking a distant view.

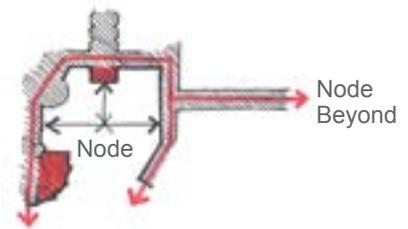


Figure 7.15.4 Conceptual diagram showing how buildings or vegetation define nodes. Visual and physical connections are shown between separated spaces.

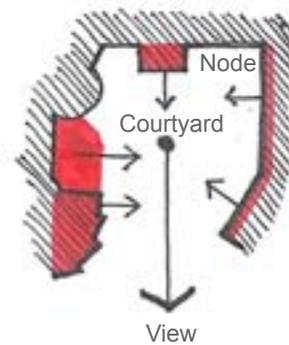


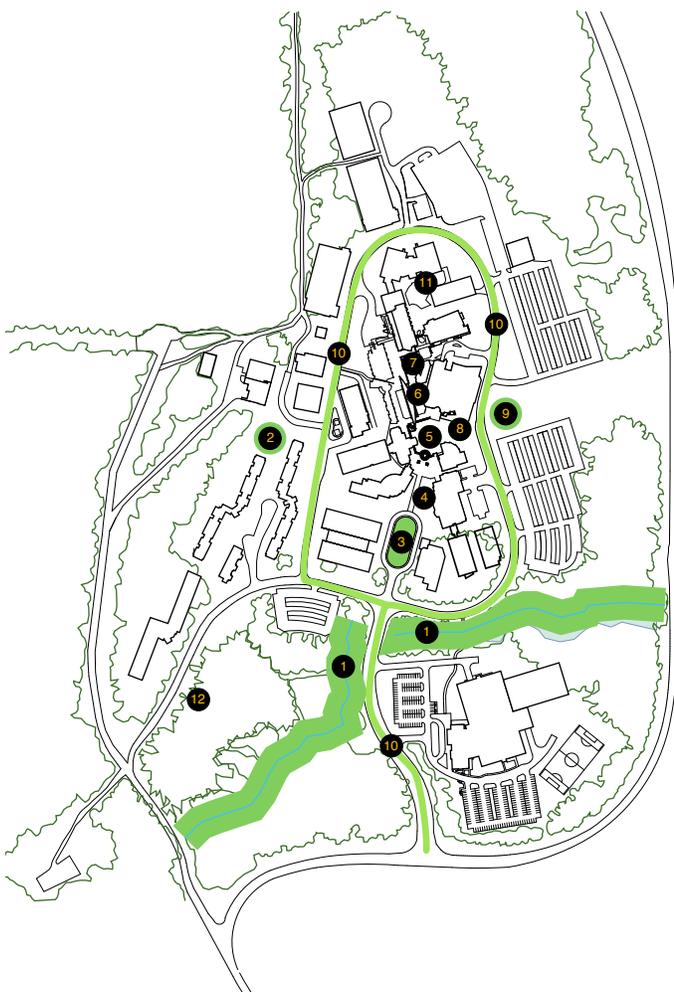
Figure 7.15.5 Conceptual diagram of a series of nodes happening around a common courtyard with a view beyond.

## 7.16 Campus Green Spaces

The Green Spaces Plan highlights key areas on campus that should be preserved as open space. While programmed spaces can take on a manicured character, depending on their function, it is recommended that all other areas on campus be allowed to “Naturalize.”

### Strategy

- Use greenspaces as a framework to implement landscape maintenance and development decisions.
- Identify additional green spaces that are important to the Campus and plan accordingly.



### LEGEND

- ① GREEN BELT
- ② RESIDENT COMMONS
- ③ CEREMONIAL ENTRY
- ④ ADMIN COURTYARD
- ⑤ CENTRAL PLAZA
- ⑥ UPPER LAWN
- ⑦ FIRST NATIONS GARDEN
- ⑧ ENTRY PLAZA
- ⑨ DEMONSTRATION GARDEN
- ⑩ CAMPUS PROMENADE
- ⑪ SCIENCE COURTYARD
- ⑫ FUTURE POTENTIAL BOTANICAL GARDEN

### Campus Greenspace Plan

Figure 16.

## 7.17 Forest

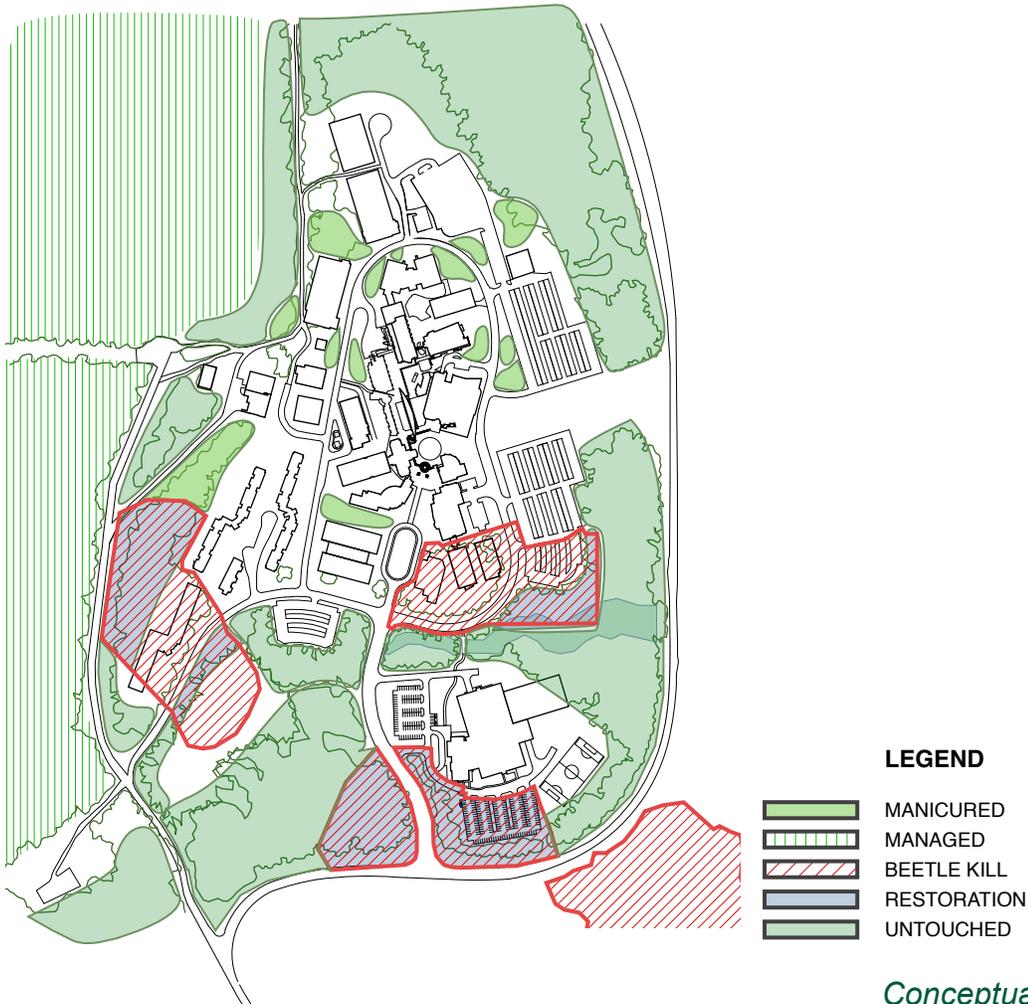
The forest plays an essential role in the definition of the UNBC campus; from its dramatic backdrop to the campus, to its essential role in campus education.

### Strategy

- Protect areas important to preserve habitat, wildlife corridors, views and native vegetation.
- Manage identified areas where harvesting will have the least impact on other interests.
- Reclaim areas identified as locations where the forest can enter the campus.
- Develop wildfire guidelines around forest types.

### Forest Hierarchies

1. Manicured Stands in campus (pruned up for CPTED)
2. Forest - Managed (Can be harvested)
3. Beetle Kill Forest - (To be harvested for maintenance and safety considerations)
4. Forest - Restoration (To be reclaimed)
5. Forest - Untouched (To remain as is and maintained).



*Conceptual Forest Management*

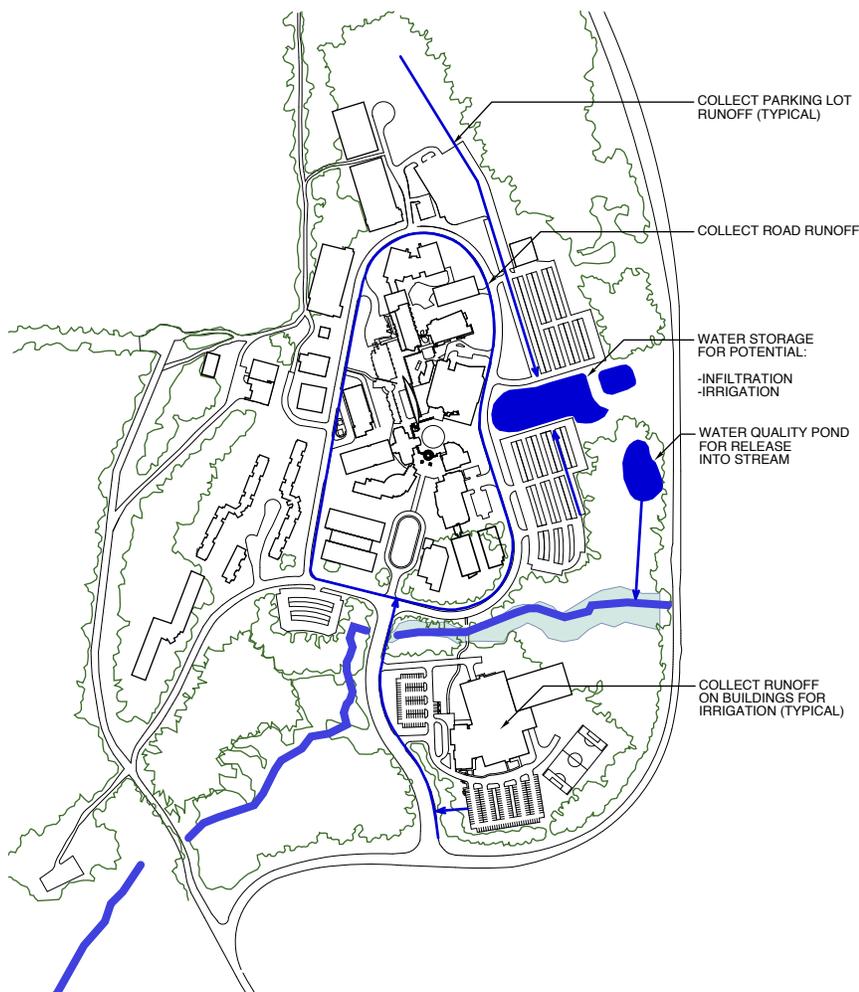
Figure 17.

## 7.18 Campus Drainage

The natural drainage patterns on site should be respected and be reinforced by vegetation, where suitable. Infiltration and retention water on site should form the backbone of an integrated, campus wide stormwater management design.

### Strategy

- Enhance existing drainage systems to improve infiltration and water quality.
- Look for uses for water on site as a resource, instead of viewing it as waste.
- New developments to identify and respect existing watersheds and drainage systems.
- Stormwater to be managed in a sustainable manner.



*Campus Drainage Map*

Figure 18.

## 7.19 Landscape Master Plan

The illustration below is a rendering of the combination of the layers discussed in the landscape section of this document and their internal hierarchies to form the landscape master plan.



*Landscape Master Plan*

Figure 19.

## **7.20 RECOMMENDATIONS**

As stewards of the title of “Canada’s Green University,” elements of the master plan should be evaluated and implemented over the next 5 years to reduce operating costs and environmental impacts. The following list and associated plan identifies key elements that should be considered.

### **Transit**

- Provide new infrastructure on campus to support evolving transportation choices and seamlessly integrate design of this new infrastructure into the design of the existing campus.
- Encourage use of the U-Pass.
- Promote car share programs and develop infrastructure.
- Promote bike ridership and develop infrastructure.
- Provide bike storage sheds and showers, integrated into the campus design.

### **Ring Road**

- Rename “RING ROAD” to “CAMPUS PROMENADE” to de-emphasize the “Roadness” of the ring road and allowing it to become a central spine for pedestrian circulation.
- Add a continuous sidewalk and plant a continuous line of street trees for shading and an enjoyable place to walk.
- Incorporate drainage/infiltration into the road redesign.

### **Trail Standards**

- Use Prince George Trail Standards as a guide, to develop trail standards adapted to campus.
- Wood mulch where reasonable from the beetle kill.

### **Site Components**

- Develop Site Furniture Specifications.
- Develop Colour and Materials.
- Develop Paving Standards.

## **Wildfire Guidelines**

- Adapt “Prince George Wildfire Management Plan” to UNBC campus context.
- Incorporate principles of the Wildfire Management Plan into forest and landscape management at UNBC.

## **Planting Guidelines**

- Develop “Grassland Mix” with input from botanical garden and local industry professionals.
- Develop “Plant Character Zones” based off campus character zones with input from botanical garden and local industry professionals.
- Develop “campus appropriate” planting guidelines with input from botanical garden and local industry professionals.

## **5 - 10 Year Initiatives**

1. Identify lawn areas and circulation routes to remain as mown lawn and change maintenance schedule to begin to let the unprogrammed spaces grow long.
2. Upgrade the Campus entry and entry drive.
3. Remove beetle kill trees and replace areas identified with new
4. Construct campus promenade, including sidewalk, trees, drainage and raised crosswalks.
5. Select areas where forest fingers can be installed.
6. Upgrade trail system using UNBC standards.
7. Begin implementation of Botanical Garden.
8. Begin seeding “naturalized areas” with grassland mix.
9. Refresh planning in the core with plants.
10. Evaluate and redesign irrigation system for campus.
11. Integrate infrastructure to support green transportation into campus.
12. Replace inefficient site elements, such as campus light fixtures.

## 7.20 Landscape Plan (5 - 10 Year Plan)

The illustration below shows the existing campus plan and identifies elements that should be considered as the campus develops over the next 5 years.



*5 - 10 Year Landscape Plan*

Figure 20

**7.21 Landscape Plan (Existing Campus)**

The illustration below shows a graphic representation of the campus plan as of summer 2012.



*Existing Landscape Plan*

Figure 21

# 8.0 PRINCE GEORGE LAND-USE VISIONS & DEVELOPMENT PATTERNS

There are four land-use zones (Appendix A): Core Campus lands (land-use zone 1); new Crown Grant lands (land-use zone 2); lands adjacent to the University Heights Neighbourhood Plan (land-use zone 3); and the Off-Campus site (land-use zone 4).

## 8.1 Core Campus Lands (land-use zone 1)

The vision for the Core Campus lands (297 hectares) is a place where collaboration and an intimate learning environment can flourish. The campus is based on a spatial ordering system that plans for growth around a central core, with various academic (teaching and research, including a Research Park), administrative, and student service and activity/residence land uses (quadrants). These quadrants are serviced by a ring road and will be connected by established roadways and UNBC Connector Trail to the City.

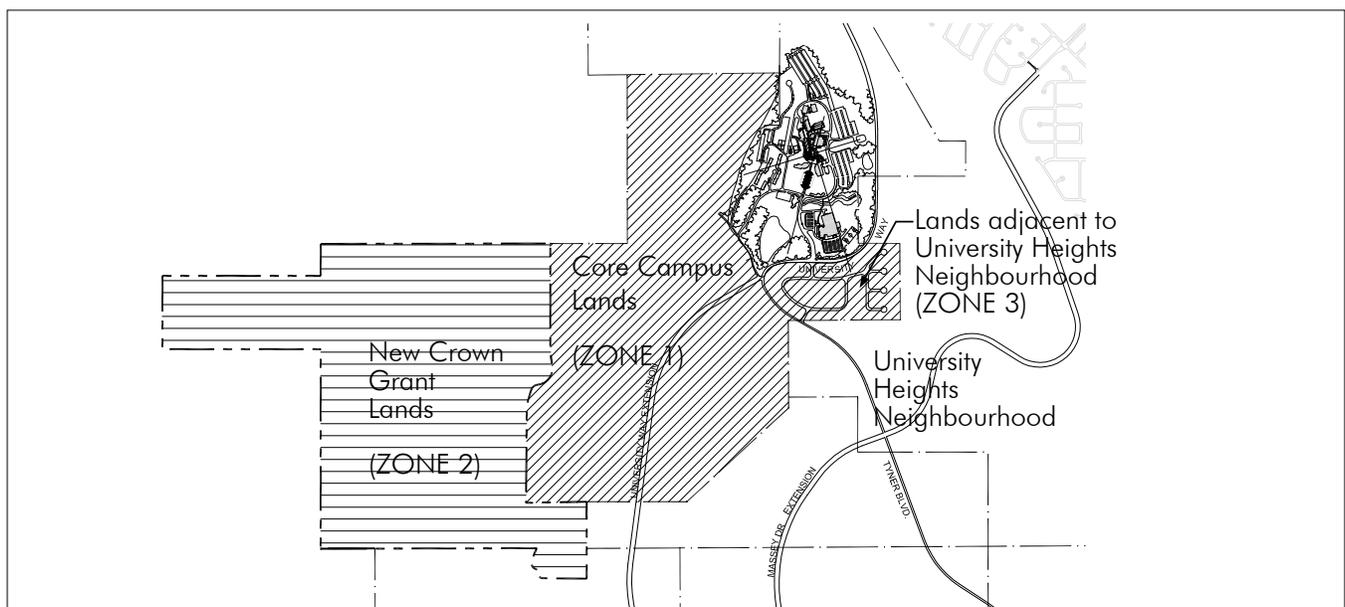
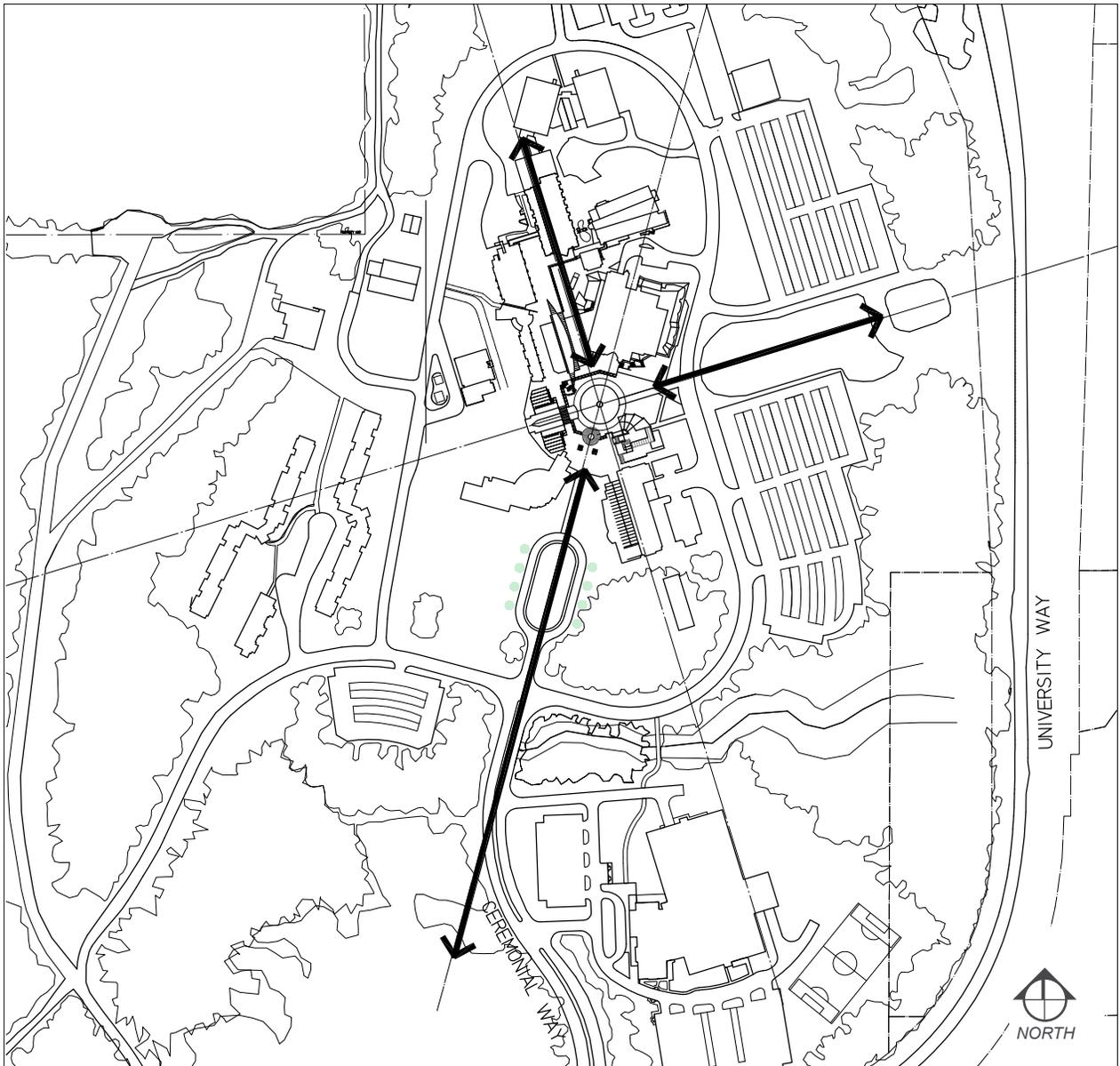


Figure 1



**Figure 2**

### **8.1.1 Spatial Ordering System**

The spatial ordering system describes the visual relationships of the elements of the Plan. Most significant as a shaper of the relationships is the intersecting axial system. There are three axes intersecting at an angle. Rather than being lined up in a static orthogonal grid, the three axes create forms and relationships, which create a dynamic interest and vitality in the organization of the elements.

A second aspect of the Spatial Ordering System is the framing of long views from the core campus and of short views (Figure 2) within the campus. Of particular importance to the visual experience of the campus in the northeast view to the City of Prince George in the middle distance, and to the Rocky Mountains in the far distance. The view is expressed in the long axis of the landscaped mall which extends to the northeast from the centre of campus.

A visitor's first impression of the campus is formed by the entry sequences. The entry sequence comes up 15th Avenue to the main entry east of University Way and Tyner Boulevard. From this entry a visitor descends slightly while following a sweeping curve to the main ceremonial entry where the buildings are illuminated by the sun for most of the day.



**Figure 3**

Critical to perception of the campus, is the sense of place that is established. To emphasize sense of place, a system of exterior open space is developed. Most significant of these spaces is a sequence of courtyards which begin at the termination of the Commons in the relatively formal space at the ceremonial entry. A counterpoint to this formal space is the informal academic court on the plaza above the Agora. The court surrounds the geographic centre of the campus. From the geographic centre extend two other linked courtyards into the northern portion of the campus connected at the upper plaza level and the landscaped mall with a stormwater management pond which aligns with the view of the City (Figure 3).

### **8.1.2 Character Zones and Quadrants**

**Character Zones:** The UNBC lands are diverse in their topography, site features and use designations. The original 1992 Master Plan identified character zones which highlight these special elements of the UNBC campus. To reflect the campus as is has evolved and the current vision resulting from the master planning process, an update of the character zones is illustrated.

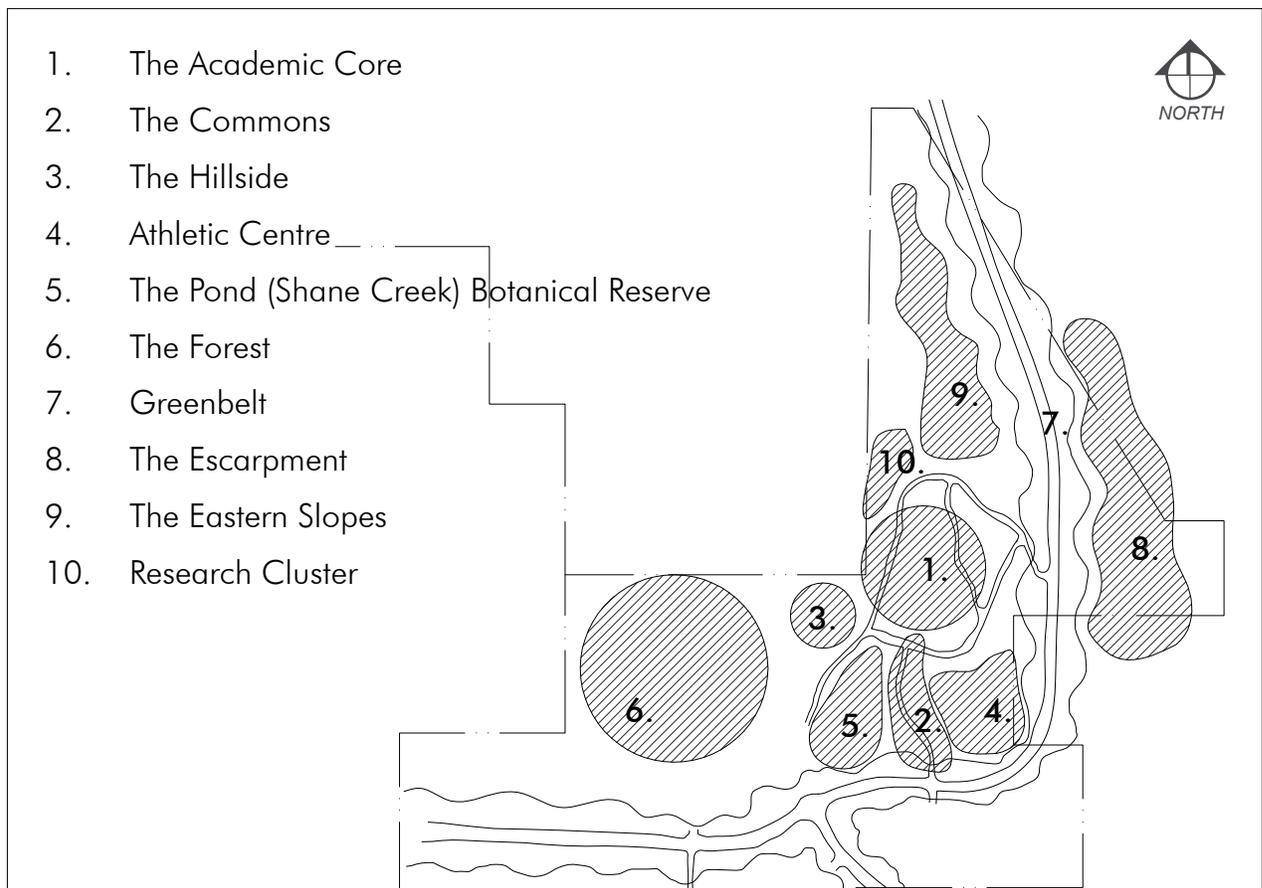


Figure 4

**Quadrants:** There are four quadrants. The northeast quadrant provides the best location for the academic core, and hence is where the primary campus facilities are located. Reasons for this location's preference include more direct access to the City, greater amount of land suitable for construction, lower infrastructure costs, and the potential for a strong visual connection between the campus core and Prince George.

Because of its topography and strategic location, the area southeast of the ring road is dedicated to sport related activities. This provides a transition to the City of Prince George, and its residential neighbourhoods planned east of Cranbrook Boulevard Extension and dedicate space for the sports centre.

### 8.1.3 Existing and Future Development Patterns

Since the initial phase of construction, the UNBC campus has experienced significant growth Figure 5 illustrates the 2007 built campus. Figure 6 highlights the development zones intended for future building projects that have been identified during the master planning process. Within these areas, Figure 7 shows recommended placement and orientation of future building footprints. As the University needs for new facilities increase, this diagram provides a reference for guidance in locating new buildings. The placement of footprints takes into consideration the following key objectives:

- planning axes;
- view corridors;
- reinforcement and extension of the Agora/Circulation concet;
- strengthening of the formal entry and the personal experience of the campus; and
- maintaining the spirit of the overall Master Plan.

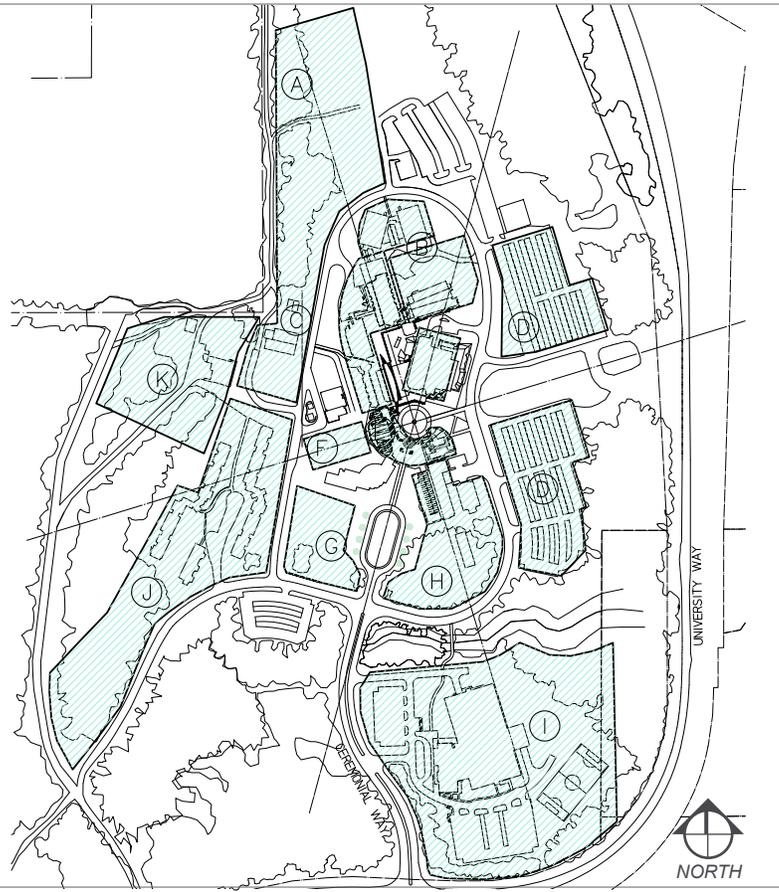
1. CAMPUS RING ROAD
2. POWER PLANT
3. ADMINISTRATION
4. RESEARCH LABORATORY
5. LIBRARY
6. CONFERENCE CENTRE / NORTHERN UNIVERSITY STUDENT CENTRE
7. AGORA
8. TEACHING LABORATORY
9. NORTHERN HEALTH SCIENCES
10. RESIDENCES
11. DAYCARE
12. RELOCATED MAINTENANCE BUILDING
13. FIRST NATIONS CENTRE
14. ENHANCED FORESTRY LAB
15. LABORATORY EXTENSION (DTO)
16. TEACHING & LEARNING BUILDING
17. CHARLES JAGO NORTHERN SPORT CENTRE
18. BIO-ENERGY BUILDING



2011 Built Campus

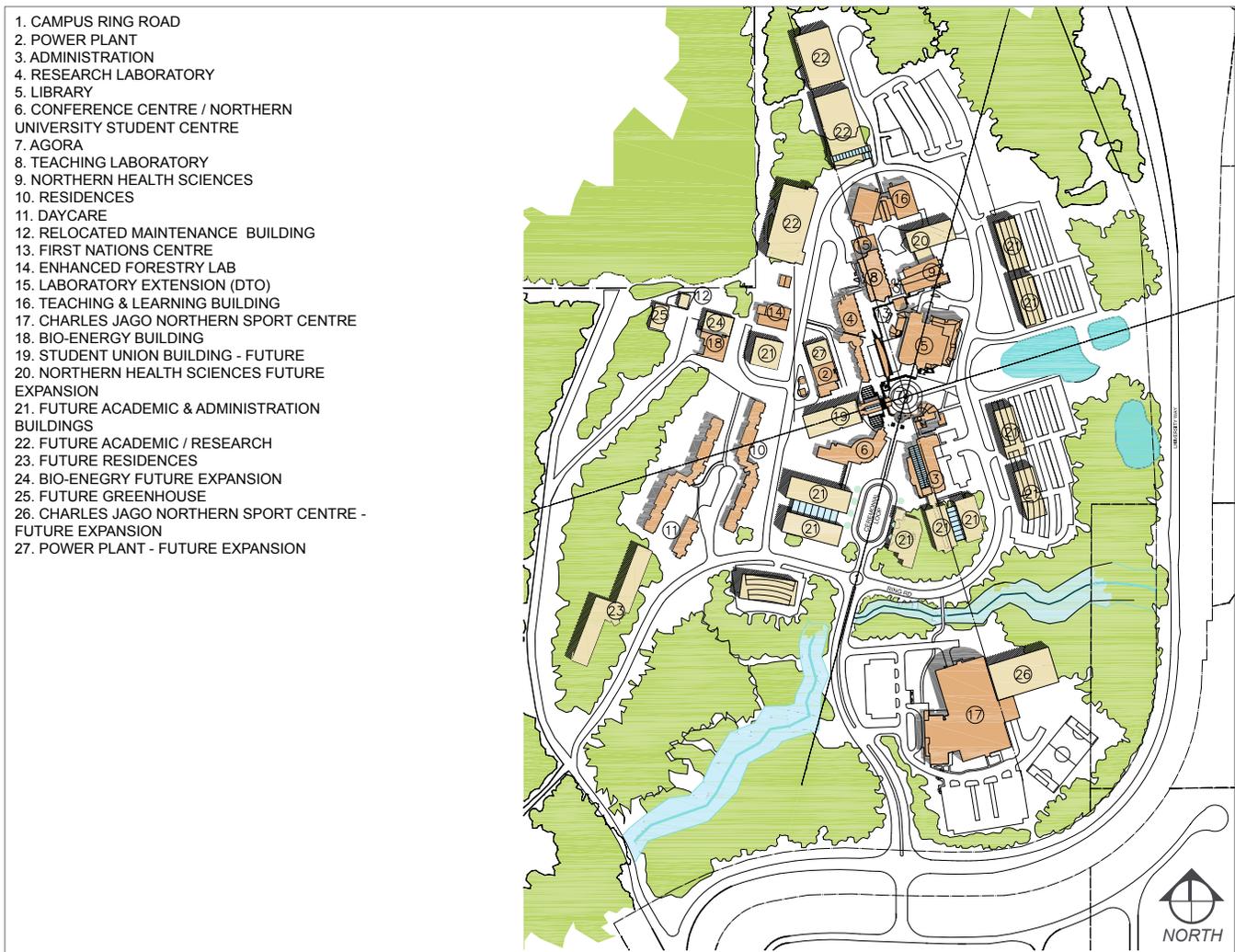
Figure 5

- A. ACADEMIC/ RESEARCH
- B. HEALTH SCIENCES
- C. SCIENCE CLUSTER EFL EXPANSION
- D. ACADEMIC WITH OPTIONAL PARKING UNDER
- E. GATHERING/ COMMERCIAL
- F. RETAIL/ ACADEMIC/ PHASED UNDERGRADUATE
- ARTS
- G. ACADEMIC
- H. ADMINISTRATION / FINE ARTS
- I. CHARLES JAGO NORTHERN SPORT CENTRE
- J. RESIDENTIAL
- K. ENERGY CLUSTER



Development Zones

Figure 6



*Future Campus Plan - Proposed Building Foot Prints*

*Figure 7*

## 8.2 New Crown Grant Lands (land-use zone 2)

The vision is that the lands (248 hectares) will continue as teaching<sup>5</sup> and research<sup>6</sup> lands and that the Greenway trails will be used for the purpose of becoming a major provincial and national centre for nordic sports. There is an element of suitability and responsibility stewardship of our natural heritage that is part of the vision.

### 8.2.1 Future Development Patterns

Proposed plans for a new water main through this parcel to service the new University Heights Neighbourhood should strive to maintain the natural state of the land. A new Right of Way has been established for access to the water main. This alignment must ensure that the impact on the land and the University's research activities is minimized and does not prejudice the best use of the land. The area when designated as a "Right of Way" should be finished as a gravel path dedicated to walking and bicycles.

<sup>5</sup> The University offers a large number of credit courses and Continuing Studies courses that use the lands for field labs and project work.

<sup>6</sup> The University will continue with the research focus, including major research on root rot and pine beetle damage; monitoring and detection of entomological and pathological outbreaks; sampling sites for lichenological studies; taxonomic plant collections; plant response mechanisms; cartographic design techniques; remote sensing reflectance principles and change detection; and micrometeorological measurements of temperature and relative humidity.

### 8.3 Lands Adjacent to the University Heights Neighbourhood (land-use zone 3)

The long-term vision for the 12 hectares of land adjacent to the University Heights Neighbourhood lands<sup>7</sup> is:

- Creation of a community that complements the main Prince George campus through the inclusion of a variety of retail, personal services, health care and entertainment.
- A portion of this land could be made available for research with potential for collaboration with the private sector in a research park concept. This close relationship with the core campus could result in synergies between the University and private research leading to commercialization and technology transfer.
- There will be a range of housing choices, including rental housing and condominium ownership to appeal both to University and non-University households.
- There will be developed a range of transportation options, which encourage transit and an emphasis on bicycle and pedestrian networks.
- The architectural integrity of UNBC will be respected, ensuring the University's planning and design principles are followed.

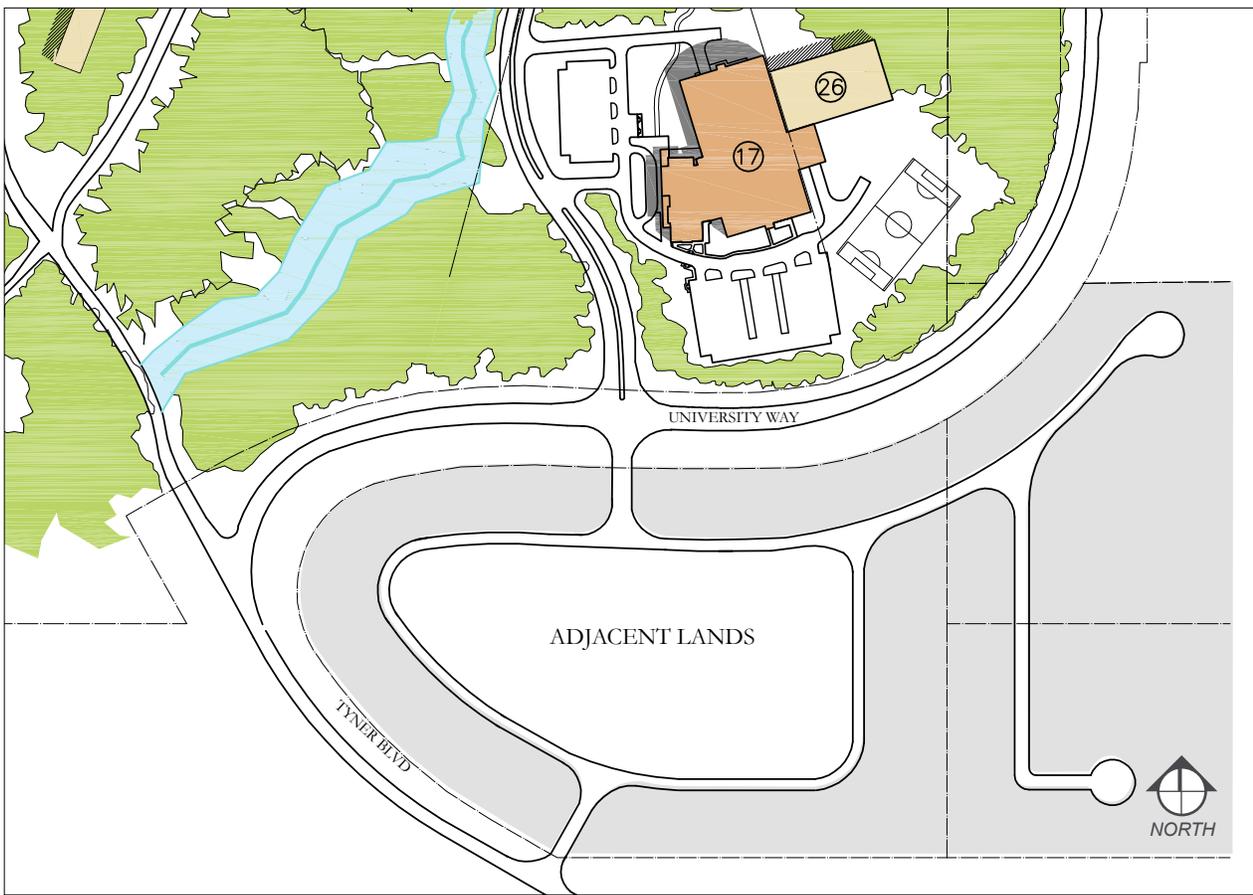


Figure 9

<sup>7</sup> In the spring of 2006, a planning exercise commenced that involved the development of 675 hectares, some of which lie directly adjacent to the southern boundary of the University, owned by 14 different property owners,

### **8.3.1 Future Development Patterns**

The land between University Way and University Heights Neighborhood provides long term planning opportunities that will benefit the University. Some potential areas of development are commercial zones, a research park, parking and residential/guest accommodation facilities. A market study was conducted during the full master planning process in 2008, to explore uses for this land and the opportunity profile for the University. At that time, the findings indicated limited success for commercial developments due to land prices, and low population density. As the University Heights Neighborhood develop, this opportunity profile will become more attractive.

A future development plan was prepared (Fig. 7), identifying designated areas for use arising from the market study and using the following criteria:

- The land is comprised of two distinct parcels which have different use designations and potential for development. The west parcel must be used for “University purposes” specific to uses that support University related activities. The east parcel may be developed for a range of uses not constrained by the University purposes definition.
- Commercial uses such as a research park and retail are ideally located where the businesses have good visual exposure to major streets and have easy access.
- Residential is preferably located away from busy streets.
- A residential hotel is appropriately placed with exposure to a major street.
- Appropriate access to the parcels and anticipated lot size options that can facilitate mixed use development.

## **8.4 Off Campus Sites (land-use zone 4)**

The Bank of Montreal donated a building to the University. This building is located in downtown Prince George and is envisioned to be a bridge between our business community and the University. The School of Business and Continuing Studies will work collaboratively with the business community to enable learning and educational opportunities through courses, workshops, speakers, consulting, mentorship and other forms of engagement.

The University and the Prince George community have been engaged in a feasibility study to examine aspects of the design, construction, and operation of a downtown regional Performing Arts Centre. This Centre will enable the University to pursue an element of the new Academic Vision, “Artistic Cultural Expression.” The University will be able to consider the further development of courses and concentrations that would be offered in the Centre in such diverse areas as Art History, Dance, Music and Theatre. The Centre will promote further interaction between the region, the city and performing arts groups.

The University also conducts research at various off-campus sites and the type of site depends on the nature of the research activity.

## 9.0 **REGIONAL CAMPUSES**

The design and planning principles and sustainability practices of the Master Plan involve a broad framework of policy that is intended to forward teaching, research and community partnership goals of UNBC. For this reason, it is important for regional campuses to adopt these principles and practices. However, since regional campuses are distinctive, it must be recognized that the principles and practices are broad guides under which each campus can be expected to develop unique versions of a common framework.

# ***APPENDIX***

***Appendix A***

***I***

## **Appendix A**

### Crime Prevention through Environmental Design/CPTED

CPTED is an approach to planning and design directed at reducing opportunities for crime. The original UNBC campus design incorporated principles of CPTED and all development for the campus should be reviewed for inclusion of CPTED design principles.

The following outlines four CPTED design principles widely accepted by practitioners:

#### 1. Natural Surveillance

Design to achieve maximum visibility and make provision for users to observe the space around them. Siting of buildings and elements relative to one another, exterior lighting, landscaping and placement of windows can facilitate good visibility and sightlines.

#### 2. Natural Access Control

The objective of this principle is to direct the flow of people. Placement of entries and exits, signage and landscape can contribute to a safer environment.

#### 3. Territorial Reinforcement

Use of physical design elements can reinforce the perceived sphere of influence of territory which creates a sense of ownership. People become more connected with their surroundings and public areas are distinguished from private ones. Fencing, paving, signage and landscaping can contribute to the perception of ownership of space.

#### 4. Image and Maintenance

Physical appearance of buildings and their surroundings can promote respect for users. Good choices for durable attractive finishes and elements can aid with maintenance, reduce deterioration and increase respect for property.

