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To  
BYLAW 2500, 2017

SEA TO SKY UNIVERSITY  
SUB AREA PLAN  
DISTRICT OF SQUAMISH



# TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION</b>	<b>PAGE 1</b>
1.1	Purpose Of The Sub Area Plan	Page 1
1.2	Planning Process	Page 1
1.3	Boundaries of Sub Area Planning Area	Page 1
<b>2.0</b>	<b>PLANNING CONTEXT</b>	<b>PAGE 2</b>
2.1	University's Goals and Objectives	Page 2
2.2	Existing Official Community Plan and Zoning Bylaw	Page 2
2.3	Physical Site Conditions	Page 3
2.4	Site Access and Municipal Services	Page 5
2.5	Community Issues	Page 5
<b>3.0</b>	<b>VISION STATEMENT AND PLANNING PRINCIPLES</b>	<b>PAGE 7</b>
3.1	Vision Statement	Page 7
3.2	Planning Principles	Page 8
<b>4.0</b>	<b>POLICY FRAMEWORK</b>	<b>PAGE 10</b>
4.1	General Framework	Page 10
4.2	Green Space/Environment	Page 10
4.3	Housing	Page 12
4.4	Campus Lands	Page 12
4.5	Elementary School Site	Page 13
4.6	Circulation	Page 13
4.7	Municipal Services	Page 15
<b>5.0</b>	<b>DEVELOPMENT PERMIT AREA GUIDELINES</b>	<b>PAGE 17</b>
<b>6.0</b>	<b>IMPLEMENTATION</b>	<b>PAGE 18</b>

## **FIGURES**

Figure 1:	Planning Area
Figure 2:	Environmental Sensitive Areas and Natural Features
Figure 3:	Slope Conditions
Figure 4:	Land Use Plan
Figure 5:	Conceptual Open Space Plan

## **APPENDICES**

**Appendix A**      ***Initial Environmental Review: Sea to Sky University - Cascade Environmental Resource Group Ltd.***

**Appendix B**      ***Geotechnical Overview (2001) – Thurber Engineering Ltd***

***Assessment of Debris Flow Hazard – Ring Creek (2002) – Thurber Engineering Ltd***

# INTRODUCTION

## 1.1 PURPOSE OF THE SUB AREA PLAN

The purpose of the Sea to Sky University Sub Area Plan is to guide the future development of the Sea to Sky University Campus and adjacent residential neighbourhood. Consistent with District's overall Official Community Plan, which requires that a Sub Area Plan be prepared for all major developments greater than 300 dwelling units, the Sub Area Plan outlines appropriate land use policies and conceptual design parameters, taking into account such factors as:

- parks and open space, both natural and active;
- campus development;
- housing types and densities;
- school locations;
- major roads;
- pedestrian and bicycle circulation; and
- municipal infrastructure.

The Plan is intended to provide a vision for the development of a new and unique neighbourhood in Squamish. The Plan will provide direction:

- to **District Council** as to how rezoning or development applications will be addressed. It is also intended to provide:
- to **existing and future residents** as to how the neighbourhood is expected to grow and evolve in the future; and
- to the **University and the developers** of its lands as to how the District envisions the University neighbourhood to grow over the years.

## 1.2 PLANNING PROCESS

This Neighbourhood Plan has been prepared with considerable input from a number of sources. The District Council and Staff were involved throughout the process, reviewing issues, considering options, and evaluating draft documents.

Two Public Information Meetings were held during the preparation of the Sub Area Plan, one in October 2001 before the Bylaw was given first reading, and a second one in November 2001 after the Bylaw was given readings by Council. A formal Public Hearing was held April 3, 2002 after which third reading was given by Council. Council adopted the Bylaw on April 9, 2002.

As a result of further refinement of the campus layout and Master Plan by the proponent in conjunction with District Staff, application for amendment to reflect the updated Master Plan was made in April 2003. A Public Information Meeting respecting the proposed amendments was held in June 2003 and Council gave first and second readings to the amending bylaw on July 2, 2003. A formal public hearing was held July 15, 2003, after which Council gave third reading. The amending bylaw was adopted on July 29, 2003.

A number of government agencies who have interests in the area were involved in the process, including BC Environment, Ministry of Transportation, School District 48, Squamish Lillooet Regional District, and the Department of Fisheries and Oceans. The agencies were invited to provide input at the inception stages of the planning process and were invited to review a draft of the Plan, as well as the subsequent amendments.

### **1.3 SUB AREA PLANNING AREA**

The boundaries of the Sub Area Plan area are identified on Figure 1. The area, known as DL 512, is approximately 240 acres. It is located east of the Garibaldi Highlands neighbourhood.

## **PLANNING CONTEXT**

The preparation of the University Sub Area Plan has been undertaken within an overall planning context. In this section, the key elements that have influenced this Plan have been identified.

### **2.1 University's Goals and Objectives**

The Howe Sound Educational Society has a vision to establish a private post secondary educational facility in the District of Squamish. The primary intent of the University is to offer students with a rigorous and well-rounded liberal education that leaves them with a deep understanding of the major characteristics of Western and Eastern civilization. The ultimate size of the student population is considered to be 1200.

The University Campus will contain a mix of academic, residential, recreational, commercial facilities typically associated with the operation of a University, and associated uses. Many of the facilities on the university will be available for use by the community.

The University will undertake the development of a new residential neighbourhood on the lands adjacent of the campus. This development will function as an endowment to the University and will assist in offsetting the significant capital and operational costs of the University. This neighbourhood is intended to provide housing for faculty and staff, local residents, and retirees. Within the neighbourhood, there will be substantial open spaces provided and access to natural environments, recreational areas, and an integrated pedestrian pathway network.

The University's objective is to act as business generator providing jobs, creating spin off companies, attracting corporate offices and attracting academic ancillary operations for the District of Squamish and its community. It is the University's expectation that this objective coupled with appropriate market housing development will add to the livability, health, and sustainable growth of the neighbourhood.

## **2.2 Existing Official Community Plan and Zoning Bylaw**

### **2.2.1 Official Community Plan**

In June 2001, the District Council enacted an amendment to the Official Community Plan that redesignated the subject lands from Limited Use to Private University and Residential Neighbourhood to accommodate a new private university and an adjacent residential neighbourhood. Section 4.1.13 of the Official Community Plan requires that major developments such as the University project be the subject of a Sub Area Plan.

The Official Community Plan contains a number of broad objectives that are applicable to this Sub Area Plan, and have been used in crafting the Plan, a brief description of which is as follows:

- 1) *Support Sustainable Growth:* Provide a balance between economic development and community livability.
- 2) *Preserve and Protect the Natural Environment:* Protect the environmentally sensitive areas that are the reason that people have chosen to make Squamish their home.
- 3) *Promote Community Identity and Livability:* Maintain the quality of life in each of the community's unique neighbourhoods.
- 4) *Nurture a Healthy Community:* A healthy community is one in which individuals and government work together to strive for economic, social, cultural, and physical health.
- 5) *Deliver Cost Effective Services:* Development should be planned so that services can be delivered in a cost efficient manner.

On the various OCP Maps, the subject property has been designated in the following manner:

- 1) *Land Use Designations:* Private University and Residential Neighbourhood
- 2) *Flood and Debris Hazards:* Debris Flow Hazard Area
- 3) *Trails Map:* Link between Mamquam River and Mashiter Creek  
Ring Creek corridor

### **2.2.2. Zoning Bylaw**

The subject property was rezoned from Resource (RE) to University Campus –1 (UC-1) and University Housing (UH-1) in April 2002 to accommodate the development of the University.

## **2.3 Physical Site Conditions**

The site's physical conditions are illustrated on Figure 2. The following is a brief description of the site. More detailed information is contained within the following 2 reports:

- a) *Initial Environmental Review: Sea to Sky University* prepared by Cascade Environmental Resource Group Ltd. dated 3 July 2001;
- b) *Geotechnical Overview* prepared by Thurber Engineering Ltd. dated 10 May 2001, and

c) *Assessment of Debris Flow Hazard – Ring Creek (2002)* prepared by Thurber Engineering Ltd dated 10 January 2002, copies of which are included in Appendices A & B of the Sub Area Plan.

2.3.1 Topography: The subject property ranges in elevation from 25 m (adjacent to lower Mashiter Creek) to a high point of approximately 220 m. As is illustrated on Figure 3, the site consists of a variety of topographic features, ranging from steep slopes to flat - moderately sloping terraces.

2.3.2 Forest Cover: The site has been recently logged, with over half the site presently comprised of a regenerating clear-cut (shrub/herb structural stage). Non-logged areas include the Mashiter Creek ravine, a young mixed forest within the riparian area associated with Ring Creek; a young coniferous forest in isolated clumps within the clear-cut, and a mixed forested wetland (riparian/basin swamp) in the central portion of the parcel.

2.3.3 Geomorphology: Rocky outcrops, bluffs, benches, and ravines dominate the surficial character of the area. Bedrock is overlain by a veneer of colluvium and glacial till, except where glacial processes have removed these materials and only a thin organic layer has been left. The soils are generally described as thinly deposited, discontinuous and punctuated by numerous rock outcroppings

2.3.4 Hydrology: Two creeks have been identified as main drainages in the study area. Mashiter Creek is the dominant drainage and flows south-west through a contiguous riparian corridor, paralleling the western boundary of the project property, from its headwaters on Diamond Head, columnar Peak and Round Mountain, into the Mamquam River. The creek is a source of drinking water for the District of Squamish, with the intake located about 3.2 km upstream of the subject site.

Ring Creek flows along the eastern edge of the area, and receives a lesser portion of the subject area's drainage. Ring Creek also flows into the Mamquam River to the south of the subject property.

A small tributary of Mashiter Creek, called Main Creek, is also found on site. This drainage flows through a wetland in the central portion of the property, and also includes an intermittent and ephemeral tributary creek. An un-named drainage flowing into Mashiter Creek from the north is also found on site, along with a tributary to that watercourse.

There are two interconnected wetland areas on the site - a large central wetland and a smaller one to the north-east. Although logged over, the wetlands continue to contribute to base flow and storm flow regulation.

#### 2.3.5 Wildlife:

The diverse vegetation structure within the study site provides habitat for a multitude of avian species. The cut-blocks, riparian areas, wetlands and forests contain unique habitat properties and species. The large amount of wetland, creeks and ephemeral drainages present throughout the site is suitable habitat for a number of amphibian and reptile species.



Due to the extensive riparian habitat of the study site, a number of wide-ranging mammals frequent the area.

### 2.3.6 Hazard Lands

The Geotechnical Overview (2001) conducted by Thurber concluded the following:

- a) the site conditions are generally favourable for development;
- b) no significant landslide or erosion areas were observed;
- c) concerned with potential instability of western edge of upper terrace above Mashiter Creek, and therefore a 30 meter setback may be required at crest of slope;
- d) notwithstanding the findings of the Klohn Leonoff Study (1994), only Ring Creek may be subject to debris flow, and the hazard may be mitigated by judicious layout of facilities or by installing deflection berms and/or catchment basins;
- e) Mashiter Creek is likely subject to flooding but would be confined to the canyon floor; and
- f) the risk of volcanic eruption is negligible.

The Ministry of Water, Land, and Air Protection, in reviewing the Thurber reports, has no objection to the proposed development provided that specific flood control requirements can be satisfied, items that would be addressed at the time of subdivision approval.

## **2.4 Site Access and Municipal Services**

### 2.4.1 Site Access

At present, physical access to the site is from the south by way of the Garibaldi Provincial Park access road. The road through the property is a former Forest Service Road and is maintained by the Province through both private and Crown Land. From Mamquam Road up to the Mashiter Creek Bridge, the road is a dedicated paved public road.

The subject property has public road frontage on an undeveloped portion of The Boulevard road allowance, an arterial road within the Garibaldi Highlands neighbourhood. A bridge crossing of Mashiter Creek would be required in order to connect the University neighbourhood with The Boulevard.

Access to the site can also be gained by a hiking/biking trail that exists to the west of Mashiter Creek, commencing at the eastern end of The Boulevard, and tending southwest along the western bank of Mashiter Creek. Another important hiking trail that exists on the property is the pipeline trail that crosses Ring Creek south of the property and passes through the south west portion of the proposed campus linking up to the Mashiter Creek ravine.

### 2.4.2 Municipal Services

The subject property is not currently serviced with either the existing water distribution system or sewage disposal system. Upgrading of both these systems will be required to accommodate a new neighbourhood.

The Fire Department has expressed a concern that the subject property may be beyond an acceptable response time distance from the existing Fire Hall, and therefore a new Fire Hall may be required in the general area.

## **2.5 Community Issues**

The proposed University lies adjacent to an existing residential neighbourhood. Planning of the University neighbourhood should be sensitive to the lifestyle and activities of the adjacent Garibaldi Highlands neighbourhood. Over the last two years, the University has held a number of Open Houses in order to keep the community informed of the University project. According to material provided by the University, those who attended the meetings were very supportive of the project.

During the process of preparing this Plan, the District held 2 Public Information Meetings for the initial Plan, and one for the amendments undertaken in 2003. A majority of the people who spoke at the initial meetings were in favour of the University project provided that the various impacts could be addressed to the satisfaction of the community. The issue that drew much of the attention was the traffic impacts on The Boulevard. Residents were concerned with traffic volumes through the Garibaldi neighbourhood. Of particular concern was the need for sidewalks and the safety of children going to and from school. A number of residents also noted that the University should have a second access and that an upgraded Diamond Head road could serve that purpose.

Another issue that was raised at the meetings was the financial impact of the project and the risks associated to the District. A number of people advised Council to be prudent in the consideration of the financial aspects of the project.

# VISION STATEMENT AND PLANNING PRINCIPLES

## 3.1 VISION STATEMENT

The Sea to Sky University Sub Area Plan is intended to encourage the creation of a residential neighbourhood that has a sense of community and identity. The neighbourhood will have the Sea to Sky University as its focal point. The University will ultimately contain educational, social, and housing facilities for 1200 students. As such this unique neighbourhood will consist of a mixture of land uses, the types of which will contribute to the evolution of an interesting, safe and vibrant community.

It is expected that the non campus portion of the University neighbourhood will house approximately 2500 - 3000 people, and will evolve as a residential area that will provide a variety of housing opportunities for residents to choose from. This will include not only traditional single family subdivisions and smaller lot subdivisions for affordable housing, but also townhousing and apartments. The neighbourhood will differ from other neighbourhoods in Squamish, in that mid and high rise buildings may be developed. At build out (maximum 960 units), the neighbourhood will have a greater proportion of multi family units than single family houses.

To satisfy the recreational and leisure needs of not only the neighbourhood residents and university students but also the overall community, both active and passive opportunities will be provided throughout the neighbourhood. Parks and playgrounds will service active recreational needs, while a trail system linking key elements of the neighbourhood will cater to walkers and cyclists.

A site for an elementary school has been identified in the central portion of the neighbourhood. Should the School District determine that a school is needed within the neighbourhood to serve the school population, then it will be developed when there is enough of a school-aged population to support a new school.

To create a further focus for the neighbourhood, the University will provide a Village type commercial centre on the campus lands that will contain small scale commercial outlets servicing the daily needs of students and residents, such as a convenience store, bakery, dry cleaning, etc. The development of the commercial component may be a longer term concept, and may not occur until a significant amount of housing is developed in the neighbourhood and student enrollment that would create the demand for commercial and community services. Another component of the University will be the development of social and recreational facilities that will be made available for use by the community.

Initial access to the neighbourhood will be provided by an extension of the The Boulevard over Mashiter Creek. Over time, the Diamond Head Road access will be upgraded providing a second access to the neighbourhood.

The University neighbourhood will develop in an incremental and gradual manner over the years in accordance with the demand for housing that will be generated by market forces.

This Sub Area Plan is intended to manage the growth of the neighbourhood in a way that is sensitive to the lifestyle of existing and future residents, meaning that the necessary supporting infrastructure (i.e. roads, hard services, parks and community amenities) will be provided to adequately serve the neighbourhood's residents.

### **3.2 PLANNING PRINCIPLES**

The Sub Area Plan embodies a number of planning and land use principles beyond those contained in the District's overall Official Community Plan. These principles take into consideration, amongst other things, input from Council, its staff, the University, neighbourhood residents and property owners, and key government agencies.

#### **3.2.1 Green Space/Environment**

- Preserve the Mashiter and Ring Creek ravines as recreational and ecological assets.
- Provide a network of pedestrian and cycling trails through the neighbourhood and linkages with the trail network external to the neighbourhood.
- Retain the ecological value of the existing marsh / wetland in the central portion of the neighbourhood
- Protect the riparian areas of the seasonal and year round creeks
- Develop a street planting program that would include both native and ornamental shrubs and trees.
- Provide for a variety of green space/recreational opportunities including both passive and active areas, including a centralized neighbourhood park.
- Ensure that development does not occur on lands subject to hazardous conditions.

#### **3.2.2 Housing**

- Provide for a variety of housing forms and densities to accommodate a mix and choice of lifestyles.
- Develop housing types in consideration of topographic constraints and opportunities.
- Concentrate higher density multiple family development near community amenities where possible (i.e. university campus, parks, schools, community centres, etc.)
- Create a sense of community through the proper location of neighbourhood amenities.
- Encourage the development of affordable housing to suit the needs of seniors, families with children, and individuals with special needs.

#### **3.2.3 Neighbourhood Focal Point and Amenities**

- Create opportunities within the campus lands and within the neighbourhood that will foster social interaction and community activities.
- Develop within the campus lands, a "Sense of Place" for the neighbourhood, a staging ground and "meeting area" for community events, and areas for passive and active recreation.
- Identify a suitable location for an elementary school.

#### **3.2.4 Roads / Pedestrian Circulation**

- Ensure that the District's existing road network is upgraded to accommodate the additional traffic that will be generated by the neighbourhood.

- Provide 2 access points into and out of the new neighbourhood.
- Undertake measures that will reduce the impact of additional traffic on the residents within the existing Garabaldi Highlands neighbourhood, particularly in the vicinity of the existing elementary school.
- Provide opportunities for alternative forms of circulation for pedestrians and cyclists in the form of sidewalks, trails, bicycle paths and walkways.

# POLICY FRAMEWORK

## 4.1 GENERAL FRAMEWORK

The following policy framework has been prepared to reflect the Vision Statement and Planning Principles that were described in the previous section. The policies and its descriptive elements that follow are intended for use by Council as a tool to manage growth of the University neighbourhood in accordance with the Vision Statement and Planning Principles. Given this approach, the lines on the Land Use Plan (Figure 4) which differentiate land use categories and identify future roads, are not to be interpreted as rigid, but rather are intended to illustrate intent and principle.

### 4.1.1 Generalized Land Use Pattern

Land shall be developed in accordance with the general land use pattern identified on Figure 4 – Land Use Plan. The land use designations are quite broad and general in this Plan, because the University, at this early point in the planning development process, is not in a position to be more definitive on its long term development planning. The following chart indicates the amount of land within each land use category shown on Figure 4 and their respective percentages.

**Table 1: Land Use Distribution within Neighbourhood**

<u>Land Use Type</u>	<u>Acreage</u>	<u>% of Area</u>
Campus Lands	55	23
Housing Area	124	52
Housing Area / Potential Campus	25	10
School / Park	5*	2
Park	31**	13
<b>TOTAL</b>	<b>240 Acres</b>	<b>100%</b>

\*Approximate Area – to be Determined with School Board

\*\*Area does not include parks or open spaces within housing areas or on trails network

### 4.1.2 Zoning Approach

At the outset, the Council will consider rezoning the University lands to accommodate a 1200 unit campus and a maximum of 960 housing units. However given the magnitude of the project, and the number of issues still to be resolved, the Council shall maintain control over managing the planning and development of the neighbourhood, by requiring a restrictive covenant be registered on the title of the property that will require that specific conditions be satisfied as a condition of further subdivision approval and/or building permit.

## 4.2 Green Space / Environment

### 4.2.1 Green Space

The Sub Area Plan recognizes the value of the natural environment in contributing to the livability of the University Neighbourhood. It also acknowledges that neighbourhoods require park land to serve the active recreational pursuits of its residents. And finally, the Plan also recognizes the value of providing an integrated linear park system enabling people to

circulate both within the University neighbourhood, and between adjacent neighbourhoods and/or recreational amenities without having to use an automobile.

On this basis, it is Council's policy that the following parks and open space features be integrated within the neighbourhood as generally identified on Figure 5 – Conceptual Open Space Plan:

:

- an active **neighbourhood park / school** that could accommodate such facilities as an open play field, children's play equipment, picnic areas, and public washrooms. It is possible that the neighbourhood park land and facilities will be incorporated within the proposed elementary school grounds if a school is developed within the neighbourhood;
- a **trail system** linking the residential areas, the neighbourhood amenities, such as the University, elementary school, and neighbourhood park, the creek corridors and the trail system external to the neighbourhood;
- the **ravines and riparian areas** of Ring and Mashiter Creeks; and
- the **wetland** area in the central portion of the site.

As a condition of the adoption of the Zoning Bylaw amendment, the Council will require the University to commit, by way of a registered restrictive covenant, to the dedication of the park areas, privately owned open space, and trail network at the time of subdivision, including the neighbourhood park, the wetland area, the key connecting elements of the trail system, and the Ring Creek and Mashiter Creek ravine corridors. Additional components of the trail network will be obtained as part of further development approvals. The park land will not be zoned Park until it is dedicated to the Municipality.

#### 4.2.2 Environment

The Sub Area Plan contains creeks, wetlands, steep slopes, and hazard lands. To manage the development of the neighbourhood in a manner that respects these environmental features, it is Council's policy to:

- a) Require that all new development responds satisfactorily to the critical environmental resources identified on Figure 2 and all necessary measures are undertaken to protect said resources, including adherence to the standards set out in the *Streamside Protection Regulations*.
- b) Utilize a variety of tools to protect the environmentally sensitive areas, including obtaining the land as public park land through dedication and registering non or limited disturbance covenants on private land.
- c) Minimize the disturbance of environmentally sensitive land by directing development to other areas
- d) Include all lands identified as Environmentally Sensitive Areas on Figure 2 within Development Permit Area 1 – Protection of the Natural Environment
- e) Require site specific geotechnical studies and hazard assessments be conducted for all potential debris flow and flood prone areas prior to any development occurring, in particular along Mashiter Creek (south of the Boulevard extension) and Ring Creek (between the creek and the Park access road.) These studies will be used to delineate areas that should not be

- developed, and/or identify mitigation measures that are needed to render the land safe for development.
- f) Protect those portions of Mashiter Creek and its tributaries that have salmon habitat values.

### 4.3 Housing

The Sub Area Plan will accommodate a variety of types of housing units to be developed in the neighbourhood, including single family dwellings, two family dwellings, townhouses, and ground oriented / apartment oriented multi family dwellings within the area designated Housing Area on the Land Use Plan.

Not more than 960 dwelling units will be developed within the neighbourhood. However should the University decide to expand the Campus Lands beyond 52 acres, the District will require the University to demonstrate the manner in which the density will be accommodated on the remaining lands and/or whether the total number of units will be reduced.

Unlike other Squamish neighbourhoods, the predominant form of housing will be multi family dwellings. It is projected that 66-75% of the dwelling units will be multi family in form. Regarding applications for specific **multi family** development proposals, it is Council's policy to:

- a) Direct multi family dwellings to be located either adjacent to major community amenities, or on terrain that it is not suitable for single family residential subdivision.
- b) Minimize the intrusion of multi family housing on either existing or future single family areas.
- c) Require all multi family housing sites to be designated as Development Permit Areas.

Regarding applications for specific **single family** development proposals, it is Council's policy to:

- a) Encourage a variety of different lot sizes in order to cater to a variety of types of households.
- b) Ensure that sites more suitable for multi family dwellings are not developed with single family subdivision.
- c) Ensure that the minimum lot size is not less than 4000 square feet.
- d) Require all single family housing subdivisions with a lot size of less than 6000 square feet to be designated as Development Permit Areas and be the subject of Development Permit Guidelines.

### 4.4 Campus Lands

The education campus will be the focal point of the neighbourhood. At build out, it will accommodate 1200 students. It is Council's policy to:

- a) Ensure that a **1200 student campus** can be accommodated in the neighbourhood by requiring that not less than 52 acres of land be zoned exclusively for campus related uses.



- b) Accommodate **expansion** of the Campus Lands to 80 acres by designating a portion of the Housing Area as Potential Campus Area, as per the Land Use Plan.
- c) Ensure that the **social** (eg. theatre) and **recreational** (eg. play fields and courts) **facilities** on campus are made available to the community by entering into a Community Use Agreement with the University.
- d) Encourage the University to provide **commercial activities** within the campus lands in a location that is convenient to the surrounding neighbourhood. These commercial outlets would serve the day to day needs of both the students and neighbourhood residents. The Zoning Bylaw amendment shall permit such uses in the campus zone, and will specify that not more than 20,000 – 30,000 square feet of commercial floorspace shall be permitted on campus.
- e) Encourage the University to create a **central open space** on the campus which will serve as a community meeting place or assembly area. It shall provide sunny and shaded places to sit, a venue for impromptu events, and a visual amenity for the surrounding neighbourhood.
- f) Encourage the University to locate its on campus **sports field** in a location that is convenient for use by the neighbourhood.
- g) Ensure that the design of the University buildings is compatible with the **form and character** of adjacent residential and recreational areas.
- h) Encourage the University to provide **linkages**, both physical and otherwise, with the immediate neighbourhood and the larger community.

#### 4.5 Elementary School Site

Given the isolated location of the neighbourhood, and the capacity and demands on other schools in the general area, the School District has indicated that a new elementary school will be needed to serve the expected school age population that will be generated by the new housing units. It is Council's policy to:

- a) Accommodate an elementary school within the University neighbourhood by requiring the University to reserve a site in the 6-8 acre range for a future school as generally identified on Figure 4.
- b) Ensure that the design of the elementary school is compatible with the adjacent residential and recreation areas.

#### 4.6 Circulation

As is indicated on the Land Use Plan, the neighbourhood will be well served by vehicular and pedestrian circulation routes that enhance both lifestyle and recreational opportunities and provide choice in transportation. The road and trail network shown on the Plan is conceptual in scope and will be further refined during more detailed planning exercises. It is Council's policy to:

##### 4.6.1 Roads

- a) Accommodate the extension of The Boulevard via a bridge across Mashiter Creek as the initial access to the neighbourhood.
- b) Ensure that the new neighbourhood is served with 2 access points. Upgrading of or realigning the existing Garibaldi Park access road which will function as an

additional access. The Garibaldi Park access road shall be used as the primary route for construction vehicles. During the initial phases of the development of the neighbourhood and until the Garibaldi Park access road is upgraded, the District will ensure that the road is maintained in such a manner that it can be used by emergency vehicles.

- c) Mitigate the traffic impacts within the existing Garibaldi Highlands neighbourhood by:
  - i) requiring the University to undertake sidewalk improvements and traffic calming measures within the existing neighbourhood, said works to be identified in consultation with the neighbourhood; and
  - ii) requiring that the internal road network be designed in such a manner whereby vehicular traffic would be encouraged to access and egress the neighbourhood by way of the Garibaldi Park access road
- d) Require that the offsite road system be upgraded to accommodate the buildout of the University Project. The following items are projected to be included in the upgrading:
  - Construction of the Mashiter Creek Bridge at the eastern end of The Boulevard;
  - Upgrading of The Boulevard and Highlands Way South streets and intersections retaining the single lanes in each direction; and
  - Upgrading of Mamquam Road from Highlands Way South to Highway 99 to a four lane road
- e) Provide for a road linkage, within the neighbourhood, between The Boulevard and the Garibaldi Provincial Park access road, recognizing that the linkage is not intended to function as the primary access to the Provincial Park.
- f) Require that roads be designed and constructed to a standard that not only meets engineering and safety standards of the District, but also takes into account storm water management principles of sustainability and, minimizing the amount of non-permeable surfaces.

#### 4.6.2 Bicycle Paths

- a) Accommodate safe bicycle paths on all collector roads, preferably physically separated from vehicular traffic
- b) Accommodate bicycle paths within the major trail network
- c) Require bicycle parking stands be provided as part of any building on the campus.

#### 4.6.3 Pedestrian Circulation

- a) Accommodate safe pedestrian movements on all collector roads.
- b) Provide alternatives to pedestrians by ensuring that an elaborate off road trail system is provided within the neighbourhood, linking the residential areas with community amenities such as the University, elementary school, and the neighbourhood park.

#### 4.6.4 Transit

- a) Ensure that collector roads are designed to accommodate the easy movement and operation of transit vehicles.

### **4.7 Municipal Services**

The University neighbourhood is currently not adequately serviced with municipal services. Major extension and / or upgrading of the District's water and sewer infrastructure and/or installation of systems to service the University neighbourhood is therefore required. It is Council's policy to:

- a) Ensure that the University neighbourhood is adequately serviced with water, sewer, drainage, and fire protection infrastructure. The following upgrading to the infrastructure shall be required:

#### Domestic Water System

The offsite domestic water system will require upgrading to accommodate the build-out of the University Project. The following items are projected to be included in the upgrading:

- A domestic water supply system is to be constructed sufficient to service the build-out of the University Project to the satisfaction of the Director of Community Development.

#### Sewer System

The offsite sewer system will require upgrading to accommodate the buildout of the University Project. The following items are projected to be included in the upgrading:

- A new sewer main from the University property line along The Boulevard and Highlands Way South to Mamquam Road.
- A new sewer main along Mamquam Road from Highlands Way South to station 712 at Willow Lane
- Miscellaneous sewer pipe upgrading from station 712 to the Mamquam Sewer Plant

#### Wastewater Treatment Plant

The Mamquam Wastewater Treatment Plant will require upgrading in order to accommodate the build out of the campus and non-campus lands.

- b) Require that a study be undertaken by a professional specializing in fire hall locations and protective services prior to subdivision approval or the issuance of building permits to assess if a new fire hall is required for the neighbourhood and if so, the appropriate location.
- c) Enter into a Construction Financing Agreement with the University that would detail the University's and the District's obligations with respect to the provision and financing of off site infrastructure and services.
- d) Ensure that the Construction Financing Agreement is agreed to in principle prior to adopting the Zoning Bylaw amendment.

## 5. Development Permit Area #11: University Campus

### Residential Application and Intent:

Section 919.1 of the *Local Government Act* authorizes the establishment of Development Permit Areas in which Council must issue a development permit prior to the subdivision of land, the construction or alternation of a structure, or the alteration of land.

The Development Permit Area 11 guidelines form part of the University sub-area plan and establish criteria to be applied in the design and approval of new development. The Guidelines are intended to give Council greater control over the form and character of developments in the affected areas beyond the provisions of the Zoning Bylaw and the Subdivision Bylaw.

It is the intent of these guidelines to support the university sub area plan by enhancing the special character of the university, its distinctive qualities and opportunities to develop a cohesive university campus and residential community.

### Designation

Development Permit Area 11 is established to regulate the form and character of commercial, multi-family, and intensive residential development within the University lands pursuant to Section 919.1 of the *Local Government Act*. The University has agreed by covenant to the regulation of the University campus development through Development Permit Area Guidelines as commercial development.

The Development Permit Area 11 Guidelines apply to all lands within District Lot 512 . The guidelines are grouped into three categories and apply as follows.

**11A General:** This designation applies to all lands within Development Permit Area #11

**11B Campus:** These guidelines apply to all lands within the area designated for the University Campus and commercial area.

**11C Residential:** These guidelines apply to all multi-family or intensive residential development on the lands.

**Justification**

Development policies for the University are aimed at creating a high-amenity community focused around the University campus, village centre, and community amenities. The community's mix of uses and users, its prominent focal point and uniqueness requires particular attention to creating continuity in development throughout the entire community. Implementation of Development Permit Area Guidelines will help support the University Sub Area Plan and the evolution of the area's physical form by providing guidelines for consideration of development applications.

**Exemptions:**

A development permit will not be required for the following development within Development Permit Area 11.

- the construction of a single-family dwelling unit or duplex dwelling unit.
- construction within a building including interior renovations
- addition of a balcony, deck or patio not exceeding an area of 20 m<sup>2</sup>
- replacement of a roof with the same or similar style and building materials
- underground service connections
- addition of (HVAC) rooftop equipment
- replacement of building exterior finishes using the same or similar colour scheme
- replacement of sign faces with no change in the location, size or type of signage
- addition of canopies or other decorative building features such mullions and windows
- utility buildings (i.e. pump stations, electrical and telephone kiosks) not exceeding an area of 200 m<sup>2</sup>
- accessory buildings not exceeding an area of 50 m<sup>2</sup>
- building additions which are not visible from an existing road or adjacent development as determined by the Manager of Planning and Development
- interpretive or directional signage

**Development Permit Area # 11A General:**



Development Permit Area #11A General

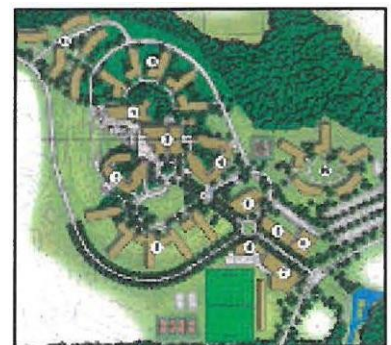
**A1 Development Permit Area #11A Description**

**A1 Description and Designation**

The development permit 11A guidelines are general guidelines that apply to all lands designated development permit area 11. They are intended to establish continuity in form and character between development permit areas 11B and 11C.

**A1.1 Objectives**

- **University as Landmark**  
A highly recognizable campus taking advantage of a raised position in the site topography to become a focus of the arrival experience with the bridge as the western gateway to the campus.
- **Walkable University Village**  
A central campus and village centre within a brief walk of the surrounding residential villages through a clearly defined pedestrian



Campus Concept Plan



network that offers a diversity of experiences in forest, meadow, village, campus and neighbourhoods and makes the most of level changes.

- **University as Community**

The university's presence and essence informs every aspect of development-physical, visual, and economical. As a student, you enjoy the village atmosphere, the day to day activity of a real animated and lively place. As a resident, you appreciate the multitude of amenities afforded by this academic environment. As residential developer, the university offers marketing values and opportunities for innovative products. The university itself will become the heart of and integrated with a diverse and exciting community.

- **A Distinctive New Vernacular**

An architectural expression capturing the essence of this remarkable natural setting and its ruggedness through materiality and a close relationship with the surrounding landscape while reflecting the university's intellectual aspirations in a new vernacular of sophisticated simplicity.

- **Compact and Diverse Neighbourhoods**

Clearly identifiable neighbourhood enclaves defined by existing site features.

- **Environmental Stewardship**

Locating the campus at the central knoll with student residences around the adjacent forested area provides the opportunity to lead the way in environmental planning.

- **Early Established Identity**

First phase of the development will be a strongly identifiable entity that stands on its own, creating a gateway and a sense of place.

- **Capitalizing on Views**

Commanding views from the campus to the spectacular Coast Mountain terrain, framed by the campus buildings.

- **Value Adding Innovation**

Innovative approaches to cultivate the integral relationships between the university and the private sector such as privately-run services located on campus and in the commercial village and residential zoning encouraging the opportunity for guest and student quarters.



Walks will follow the contours wherever possible



Bridges will be used to access some campus residences



View from Campus

## **A2 Landscaping**

### **A2.1 Planting**

#### **A2.1.1 Objective:**

Emphasize and augment the natural forest and riparian landscapes through the careful selection of appropriate deciduous and evergreen vegetation.

#### **A2.1.2 Plant Selection to Enhance Native Environment and Strengthen Campus**

- Choose native plant materials.
- Vary material depending on location to reflect different ecologies.
- Plantings should provide habitat for birds and wildlife by providing food, shelter and nesting sites.
- Native plant material should be complemented with ornamental shade trees, specimen trees, and hardy perennials and shrubs.
- Deciduous materials, especially trees should be used along residential and campus streets to help define neighbourhood character. Highly active open spaces such as plazas, courts, semi-private and private spaces can also be enhanced with flowering, ornamental plant material.
- Plant material must be hardy with low water, fertilizer and pesticide requirements.

#### **A2.1.3 Tree Retention and Protection**

- Each tree to be retained should be properly protected from damage during all phases of construction.
- The drip line (the point at which water running off the outermost tips of the branches drips to the ground) is considered to be a minimum setback distance for development activities.

#### **A2.1.4 Visual Function Guidelines**

- Plant material should help to frame or define open spaces.
- Planting should frame views and encourage passive surveillance of open space.
- Enhance the visual quality of open space through contrasting textures and colours.

#### **A2.1.5 Environmental Amelioration**

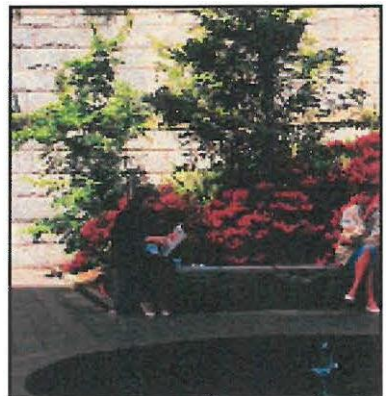
- Deciduous trees should be used on the south sides of buildings and as partial shading on east and west facades, where views are not desired.
- Planting trees, especially coniferous evergreens, near the north sides of buildings should be avoided in order to maximize exposure to natural light.



Environmental Preserve



Native Shrubs



Ornamental shrubs and trees can create interest and excitement



- Lawns should consist of hardy, durable grass species with minimum watering requirements in sunny areas, and shade tolerant groundcovers in north facing locations to reduce moss and dieback of grass. Tough grass species requiring less water should be used.

## **A2.2 Site Furniture, Lighting and Paving**

### **A2.2.1 Objectives:**

- High quality furnishings, paving, lighting and signage should maximize comfort and safety and be in keeping with natural and sophisticated theme of the development. Wherever possible, natural materials should be used such as timber, stone and metal to reinforce the development's relationship to the surroundings. Safety and security are also key factors in designing a successful public realm.

### **A2.2.2 Furnishings**

- Where possible, furnishings should be applied on a site-wide basis, to contribute to site consistency and identity.
- Benches, trash receptacles, and other furnishings should be of durable finish and designed for public use. They should be firmly fixed into place to minimize vandalism.
- Materials should be from a natural palette such as timber, stone, and metal and must fit with overall development character.
- Colours should complement the natural setting, e.g. slate green, beige, warm reds, and soft blacks.

### **A2.2.3 Lighting**

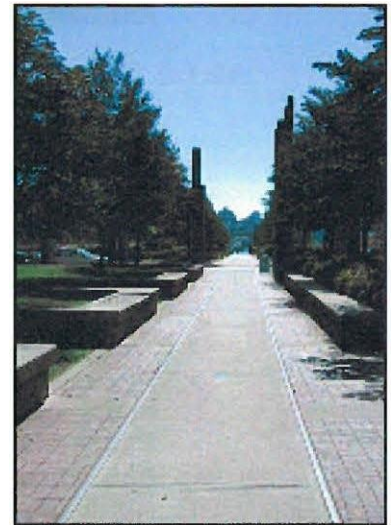
- Site lighting and select lighting styles should be designed to illuminate public areas with adequate light levels and gradual lighting transition for safety, while minimizing the amount of light pollution or spillover from the site. Specific pedestrian pathways may be selected for night pathway lighting to maximize safety and security aspects.
- Light fixtures should be contemporary, durable and sensitive to the natural setting and architectural character of the development.

### **A2.2.4 Paving Materials**

- A consistent paving scheme should be used that reinforces the hierarchy of both vehicular areas and pedestrian sidewalks.
- For primary pedestrian routes that include sidewalks and ramps, textured and broom finished surfaces are encouraged.
- Unit pavers should be used as much as possible



Benches, trash receptacles and other furnishings should be of a durable finish



Broom finish and textured surfaces are encouraged

to increase the overall permeability of the site and to create a more fine-grain character in the pedestrian driveways and pedestrian crosswalks. Parking in plazas or courts at less than 5% gradient should be surfaced in permeable pavers, wherever appropriate, to allow for water microstorage.

- Overflow surface parking areas should be surfaced with permeable pavers or a reinforced turf system, to allow for microstorage.
- Select a standard for drainage grates and manhole covers to be used consistently throughout the site. Find opportunities to integrate public art into the design of these coverings. Grates with slots that run parallel with the street should not be used, as they can catch bicycle wheels.

#### **A2.2.5 Walls, Fences and Trellises**

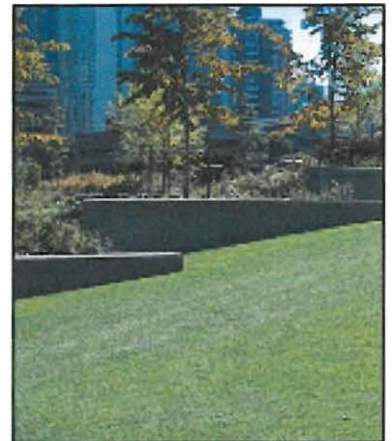
- Landscape walls and fences should be used to resolve grade changes and to define open spaces.
- Landscape walls should be in low sections for visibility between landscape areas. Encourage the use of low walls designed to serve as informal seating.
- Walls may be used in stepping, curved or straight configurations.
- The use of stone (face or whole) and/or metal (guard rails, metal panels with stone or masonry columns) should be encouraged. Poured in place concrete or concrete block walls with rendered concrete can also be employed when they reference adjacent architecture.
- Natural colour stained timber can be used for pergolas, trellises and fences. The use of stucco, vinyl, plastic, or non-decorative concrete blocks (especially for retaining walls) should be discouraged on site.
- Stepped low walls should be encouraged to resolve grade changes.
- Where appropriate or required, higher walls may be used.

#### **A2.2.6 Signs and Interpretation Displays**

- The primary function of signs is to assist in site orientation, way-finding and demarcation.
- Signs throughout the site should be of consistent character.
- Signs should be located at intersections of open spaces and pedestrian pathways, neighbourhood entrances and site entrances.
- Signs should be mounted on natural materials such as stone, metal and timber.
- Signs or interpretation displays should be encouraged that are integrated with public art.



Overflow surface parking should be permeable paving



Concrete can be used for landscape walls where it references the architecture

## **A3 Pathways**

### **A3.1 Pedestrian Circulation**

#### **A3.1.1 Objectives**

Provide a clear hierarchy of pedestrian circulation throughout the site that ensures high quality, safe and pleasant person oriented environments. Pedestrian access should also be equitable, by providing a barrier free environment, as well, pedestrian pathways should connect the public open space to the surrounding community.

#### **A3.1.2 Primary Path**

Primary pathways are the major pedestrian connections throughout the site. They provide orientation and link the residential neighbourhoods, campus, retail areas, and public open space, on and off site. They should be wheelchair accessible as much as possible.

#### **Surfacing**

To maximize accessibility, the dominant material chosen may be bordered by unit pavers, etc. for aesthetic reasons.

#### **Width**

Primary pathways should have a width of 3m (2m minimum) to allow for pedestrians, strollers, bicycles and small maintenance vehicles (if necessary).

#### **A3.1.3 Nature Trails**

Nature trails can be used where they enhance public enjoyment of the site's natural open space.

#### **Surfacing**

Nature trails must be environmentally sensitive and therefore avoid all impervious surfacing materials (i.e., asphalt or concrete). Permeable surfaces such as porous pavers, gravel, decomposed granite, native material, or stabilized mulch should be used on pathways.

#### **Width**

Trails width minimum is 1.0m, with 1.4m clearing width and 2.0m clearing height. Trail areas that are in steep terrain can narrow to a minimum of 1.0m and areas in flatter terrain with more intensive use could widen to 2.0m.

#### **Layout**

- Trail construction should be inconspicuous and blend with the surroundings.
- Trails should have a variety of experiences, take advantage of views, traverse ridges and



Primary path may combine material uses



Trails should have a variety of experiences



Interpretive Signage



valleys, include different types of vegetation by crossing through meadows and forest areas, and wherever possible run along water bodies.

- In order to reduce potential erosion problems, continuous gradients should not exceed ten percent, where possible. A selection of trails should be sustained side-hill construction to reduce the need to ascend or descend steep and difficult terrain. Flatter trails are generally more accessible to a greater portion of residents, especially children and the elderly.
- Avoid road crossings, unstable slopes and other potential dangers.



Alternative transportation should be encouraged

### **Drainage**

Water should be managed to prevent erosion damage and to keep the trail usable throughout the season.

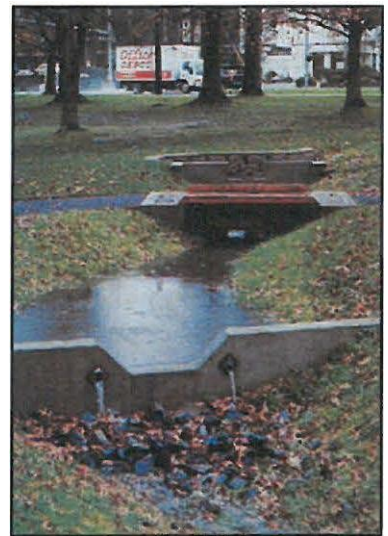
### **Signage**

Interpretation is essential at trail heads, intersections, and at locations on the trail where the direction is unclear. Signs should contain information about trail length, points of interest, and interpretation of the natural or historic environment.

## **A3.2 Bicycle Circulation**

### **A3.2.1 General**

- Bicycle circulation may be accommodated within road right of ways.
- Major public open spaces should accommodate pedestrian and bicycle use and connect neighbourhood, campus and community. Where appropriate bicycle use may include provision for scooters, skateboards, roller blades and other personal wheeled activity devices.



Silt dam

### **A3.2.2 Bicycle and Pedestrian Facilities**

Bicycle and pedestrian facilities including bike racks, benches and trash receptacles should be provided at and integrated into building entrances.

### **A3.2.3 Mountain Bike Trails**

Mountain bike trails may be located where appropriate, or existing trails retained wherever possible. All trails should be designed and built to the following characteristics:

- Trails should be located to provide safe off road access.
- Trails should be designed to 'singletrack' standards. Consult with SORCA (Squamish Off-Road Cycling Association for standards).
- Trails should be designed to minimize erosion.
- Use durable construction materials such as stone and wood.



Creative use of permeable paving

## **A4 Sustainability Initiatives**

### **A4.1 Objectives**

#### **A4.1.1 Optimize Building Envelope**

Optimal design criteria for insulation and windows to be encouraged based on considerations of building orientation, sunshading, thermal mass and reflectivity. Maximizing natural light is a goal for all buildings and daylighting models can be used to achieve this.

#### **A4.1.2 High Efficiency Lighting**

High efficiency lamps and remote ballasts, reduced ambient lighting and smart controls such as occupancy sensors and daylight dimming to be encouraged in all commercial and institutional buildings to create a substantial reduction in energy usage.

#### **A4.1.3 Indoor Air Quality**

Fresh air intakes and exhaust to be located to avoid contamination of air supply.

#### **A4.1.4 Water Conservation and Waste Water Management**

Water saving equipment including low-flow toilets and showers to be encouraged throughout the project.

#### **A4.15 Building Materials Selection**

Materials should be selected based on their life cycle cost- considering raw material, production, packaging and shipping, installation and use and disposal or reuse.

#### **A4.16 Manage Storm Water**

Drainage systems to be designed to district approved designs. On-site retention where necessary to decrease the intensity of runoff and maximize groundwater recharge should be encouraged. Impervious surfaces should be minimized through compact development and pervious paving materials.

#### **A4.17 Occupant Recycling**

Facilities for recycling to be considered in the building design.

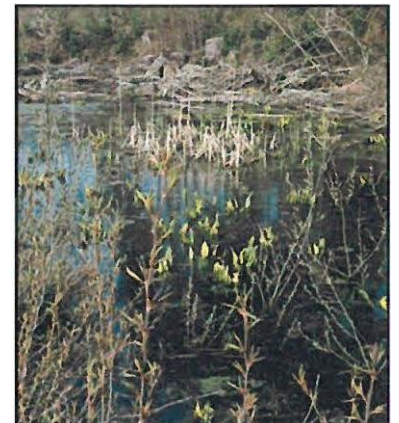
## **A5 Wildland Wildfire Interface**

### **A5.1 Goals**

Whenever residential, industrial or agricultural developments are located within or near wildland settings with natural



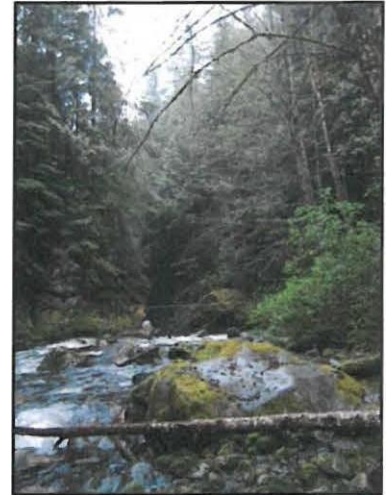
Drainage swale



Natural Wetlands can act as firebreaks as well as supply water for fighting wildfires.

vegetation, they are at risk from wildfire. These areas are called wildland/urban interface, or interface for short. The economic and social impact of interface fires is immense. To reduce the risk of the an interface fire the following is recommended for development directly adjacent the interface:

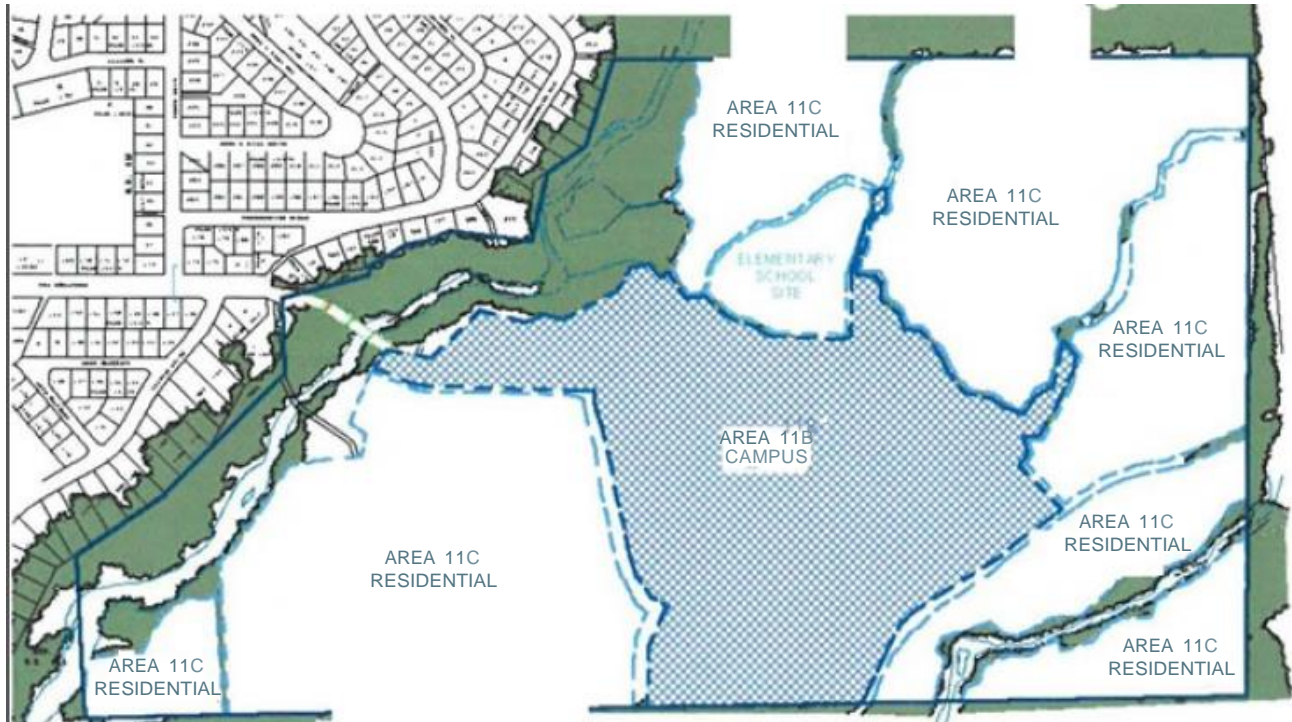
- Wherever possible, subdivision shape should minimize development perimeters.
- Areas of traffic congestion, such as bottlenecks and long cul-de-sacs should be avoided.
- Space between buildings is desirable, as is the use of fire resistant dwelling materials.
- Roads and road networks should provide for simultaneous access for emergency equipment and for evacuation of residents.
- Wherever appropriate, ravines and naturally occurring drainage courses may be provided as environmental reserves.



Ravines and naturally occurring waterways may be provided as environmental reserves.



## **11B Development Permit Area** **#11B: Campus**



Development Permit Area #11B-Campus

### **B1 Campus Permit Area #11B Description**

#### **B1.1 Description and Designation**

The development permit area #11B guidelines apply to all development within the University Campus and neighbourhood commercial areas to regulate the form and character of campus development. These guidelines will additionally ensure the distinctive new vernacular of the campus.

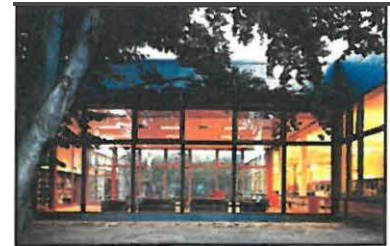


Consistent use of material

#### **B1.2 Objectives**

The initial experience of the campus will provide an overall impression of a landmark facility carefully integrated with its natural surroundings and the surrounding community. The following characteristics will contribute to this experience:

- Campus as a distinctive grouping of related buildings.
- Landmark buildings create immediate identity
- Cohesive character through overall architectural expression and consistent use of materials (e.g. extensive use of stone, glass, wood and concrete)
- Campus centre may be identified by a large wayfinding element such as a tower.
- Highly transparent indoor public spaces where applicable.
- Extensive network of weather protection between and at buildings.



Highly transparent public spaces

### **B1.3 Siting Considerations**

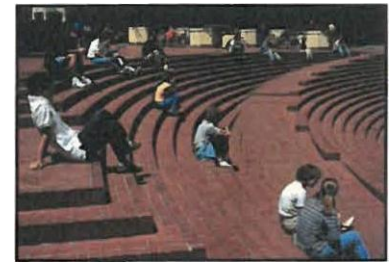
The design of the SSU Campus focuses on integrating the buildings with the site.

Supporting this are a number of siting considerations that aim at protecting specific site characteristics including:

The existing stand of woods between the academic and the residential buildings is a valuable asset and should be protected where possible.

Wherever possible, buildings should reflect the natural grade, e.g. stepping down slopes.

Place buildings and orient landscape to take advantage of views.



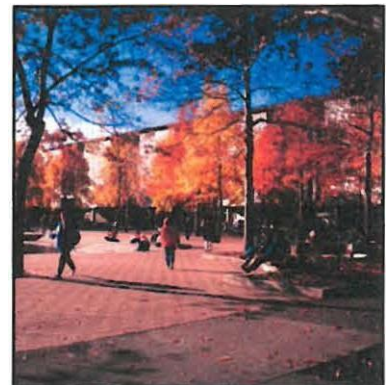
Curved plaza accommodates an accessible path

### **B1.4 Open Spaces**

#### **B1.4.1. General**

The open spaces of the Campus play a significant role in establishing the overall character and in accommodating a broad variety of campus activities. The following considerations should inform the design of these spaces:

- Open spaces should contribute significantly to the diversity of campus experience.
- The specific character of each open space - ranging from natural landscape that retains a young stand of rainforest to a more formal, hard-surfaced plaza providing opportunities for special events to the courtyard gardens should be enhanced and reinforced.
- Building configurations should be used to make the most of views, providing a foreground to frame and orient views.



Character of open space to vary depending on use



### **B1.4.2 Surfaces**

Surfaces for plazas and walkways will be chosen to integrate with the architectural character and the landscape.

### **B1.4.3 Grades**

- Respect existing topography as much as possible
- Where paths negotiate sloping grades, maintain a slope to allow easy access to all.
- Use grades to enrich open space and create opportunities for informal interaction for groups of varying sizes.

### **B1.4.4 Weather Protection**

The campus is intended to encourage outdoor trips between buildings. While not every step of the way is out of the rain, weather-protection should be provided over the prime pedestrian network for the campus, where appropriate. This would also provide a shaded route for hot, sunny days.

- Each open space should be provided with several opportunities for enjoying outdoor spaces in the rain as well as hot summer sun.

Protection may include:

- Pergolas: Wood structures with wood or glazed roof; integrated night lighting to allow continuous illumination.
- Covered terraces: Extensions of building roofs or unique, stand alone structures.
- Building arcades: Robust supports of stone or concrete, integrated with the facade of the building.

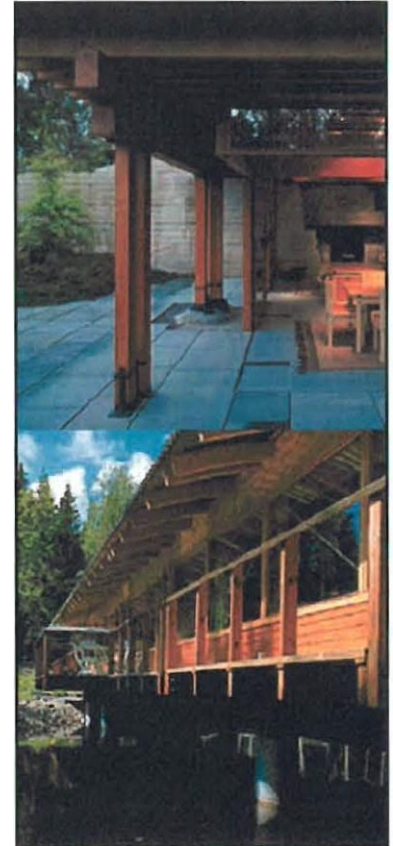
### **B1.4.5 Materials**

Retaining walls:

Material selection for retaining walls should be made to complement the surrounding architecture and integrate into the landscape. Examples of materials may include stone, concrete and timber.

Trellises:

Trellises should generally consist of timber, concrete, stone and glass.



Weather protection



Retaining walls to use natural materials and respond to architecture

### **B1.4.5 Landscape**

- Flowering and ornamental plants may be more prevalent in the campus area wherever appropriate to reinforce the sophisticated, urban spaces.
- Soft landscape should be carefully integrated with the paved surfaces and exterior walls to create a sense of buildings and spaces being 'in the landscape'.
- Wherever appropriate, existing conifers should be retained.

## **B1.5 Campus Pedestrian Circulation**

### **B1.5.1 Stepped Campus Walk**

Extends central visual access. Links the terraces of the buildings through a casual set of steps. Where appropriate, ramps could be incorporated into the stairs.



Stepped Campus Walk will be a series of connected terraces

### **Surfacing**

Consistent material with academic plazas.

### **B1.5.2 Campus Walks**

Campus walks are walks connecting campus residential to the education, commercial and sports facilities.

### **Surfacing**

To maximize accessibility, hard surfacing materials such as concrete or concrete unit pavers should be used. Because these walks are adjacent campus buildings, materials used should reflect the campus aesthetic.



Walks to reflect architecture

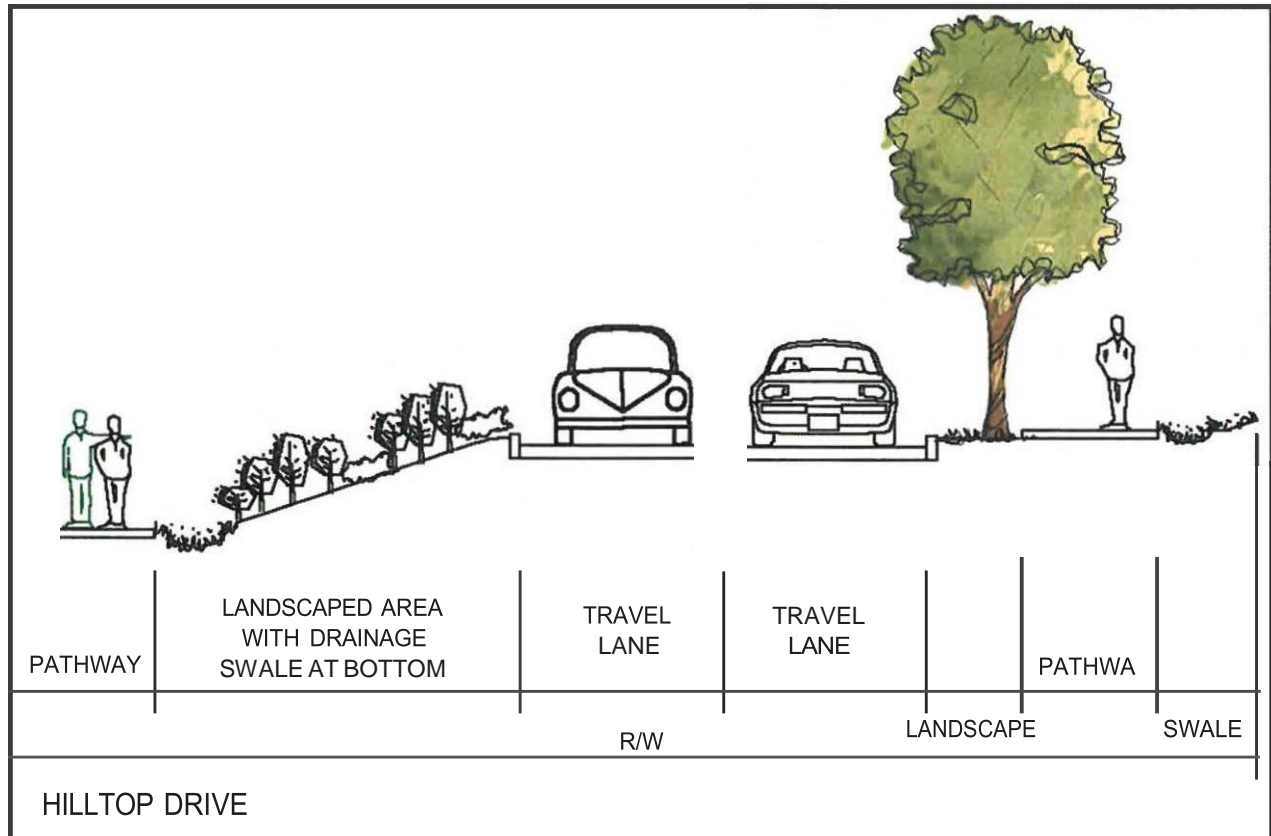
### **B1.5.3 Informal Pathways**

Informal pathways will be a combination of informal routes created by pedestrians travelling on desire lines, and more formal pathways connecting residences and the other pathways.

### **Surfacing**

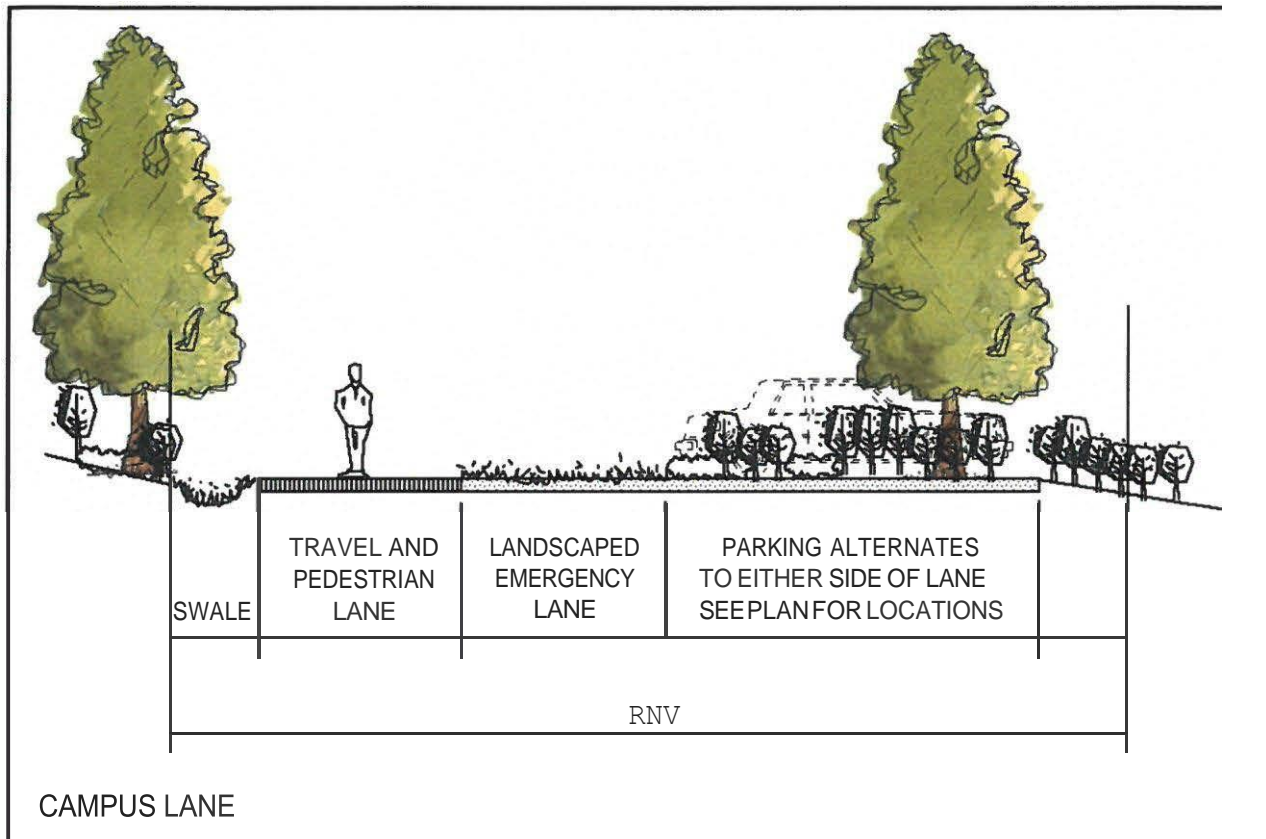
Because of the nature of these pathways, materials used will be less formal, typically gravel, decomposed granite, native material, or stabilized mulch.

## **B1.6 Campus Street Typologies**



### **Hilltop Drive**

- One lane of traffic each direction.
- No on street parking.
- Cyclists share the travel lanes or pathways.
- Tree plantings outside of street lane.
- Paved pedestrian sidewalk continuous on one side set back from road by a planted/lawn buffer.
- Limited driveway crossings.
- Pedestrian scale lighting.
- Drainage swales to manage surface stormwater.



**Campus Lane**

- Surfaced Lane for two-way vehicular traffic and for pedestrian path.
- Landscaped emergency lane reinforced for emergency vehicles.
- Perpendicular parking located in small groupings.
- Pedestrian share traffic surface.
- Drainage to be achieved with swales on both sides.



### **B1.7 Campus Parking**

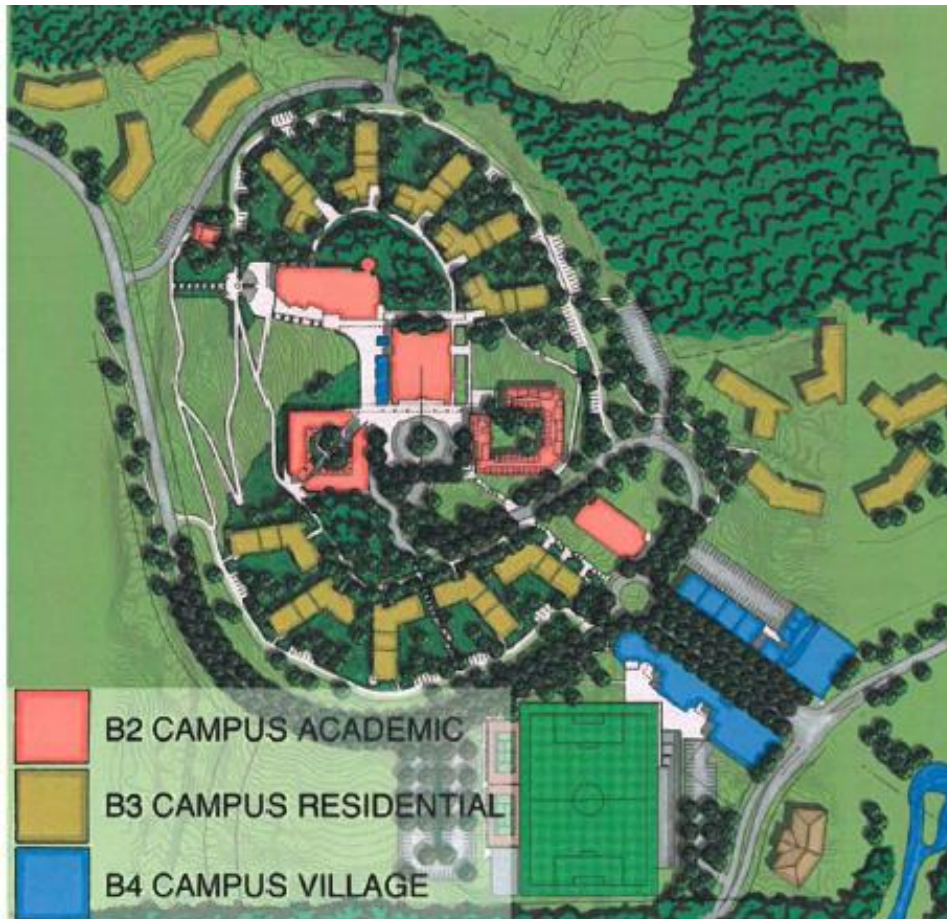
The amount of parking spaces supplied will be to Bylaw requirements. In keeping with the current understanding of sustainable development, it is the desire of the University that the opportunity to review future parking numbers based on the amount of parking required, not by preset parking calculations be considered to minimize the amount of parking.

### **B1.8 Transit**

Transit will be accommodated on the public roads where appropriate. In conjunction with the City of Squamish, transit stops will be provided where desired.



Parking should contribute to the site amenity



Campus building key Plan

## **B2 Campus Academic**

### **B2.1 Campus Buildings**

#### **B2.1.1.1 Foundation**

Should include a combination of stone and concrete with the occasional use of wood struts.

#### **B2.1.1.2 Walls:**

Materials used for walls will address specific solar orientation. To this effect, horizontal shading may be included where appropriate. Additionally, extensive use of glass with stone, concrete and or wood treatments is to be encouraged.

#### **B2.1.1.3 Roofs:**

Roof systems to be appropriately designed and may include standing seam roof systems.

#### **B2.1.1.4 Glazing:**

Where appropriate glazing may include high efficiency glass with frit glass to address glare and solar loading.

### **B2.2 Campus Building Form and Character**

- Use of stone, natural cladding and extensive use of glass.
- Campus founded in the landscape
- Creating a strong sense of shelter from the weather (sun and rain)
- Perimeter covered walks, entrance canopies.
- Accommodate outdoor circulation year round, create a lower scale at perimeter open spaces.
- Highly transparent public space.
- Common areas, dining, cafes, etc are highly visible at night and allow generous views to the surrounding landscape. This would also create a warm nighttime ambience.
- Extensive use of overhead doors where appropriate.
- Garden Courtyards, where appropriate.
- Carefully integrated into the sloped site.



Natural Materials



Highly Transparent Public Spaces



Concrete, stone, wood, glazing and standing seam roof

## B3 Campus Residential

### B3.1 Campus Residential Buildings

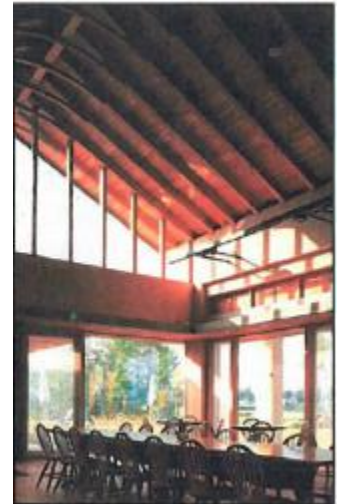
#### **B3.1.1 Materials**

##### B3.1.1.1 Foundation:

Should include a combination of stone and concrete with the occasional use of wood struts.

##### B3.1.1.2 Walls:

Should include extensive use of glass at transparent areas. Stone, concrete and wood treatments throughout.



Open and transparent public spaces

##### B3.2 Residences Form and Character

landscape with large glazed common rooms on the inside access ring. Each common room should be unique to the building. Colouring and other features of the common rooms may vary from building to building. The buildings may have a multi-storey character by stepping down the hill. Some buildings may be accessed by bridges across small rainforest gardens.

Should include:

- Use of strong stone walls.
- Campus founded in the landscape
- Creating a strong sense of shelter from the weather (sun and rain)
- Encourage Perimeter covered walks, entrance canopies.
- Accommodate outdoor circulation year round, create a lower scale at perimeter open spaces.
- Highly transparent public space.
- Common areas are highly visible at night and allow generous views to the surrounding landscape. This would also create a warm nighttime ambience.
- Encourage daylighting where appropriate.



Bridges may be used to access the group 'B' residential



Design with the site



## **B4 Campus Village**

### **B4.1 Materials**

#### **B4.1.1.1 Foundation:**

The foundation of the buildings will generally be concrete, with some pre-finished metal and or cement board.

#### **B4.1.1.2 Walls:**

Should include extensive use of glass at transparent areas. Concrete and cement board throughout, with some pre-finished metal.

#### **B4.1.1.3 Roofs:**

Heavy timber roofs with a standing seam metal roof system

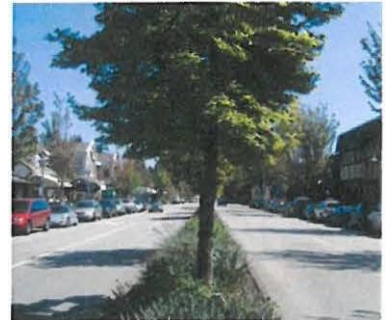
### **B4.2 Village Form and Character**

The Sea to Sky neighbourhood is not expected to support extensive retail, however, convenient uses would provide for some commercial activity and the opportunity for the residents of campus and community to meet on daily errands.

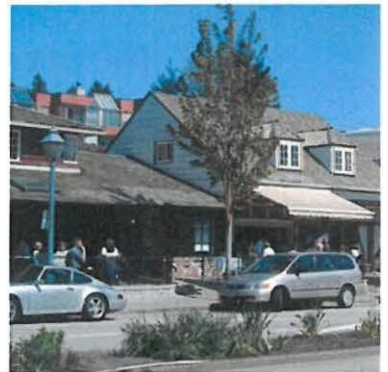
- Buildings will be integrated with and form part of the University character
- Focuses connection to the main arrival to the University and frames its view.
- Intimate street character.
- Canopies and weather protection
- Distinctive Signage.
- Tree planted median down the middle of the road to augment the street tree plantings, creating a 3rd row of street trees.
- The face of the buildings can vary relative to the set back to create seating areas.



Open and transparent public spaces



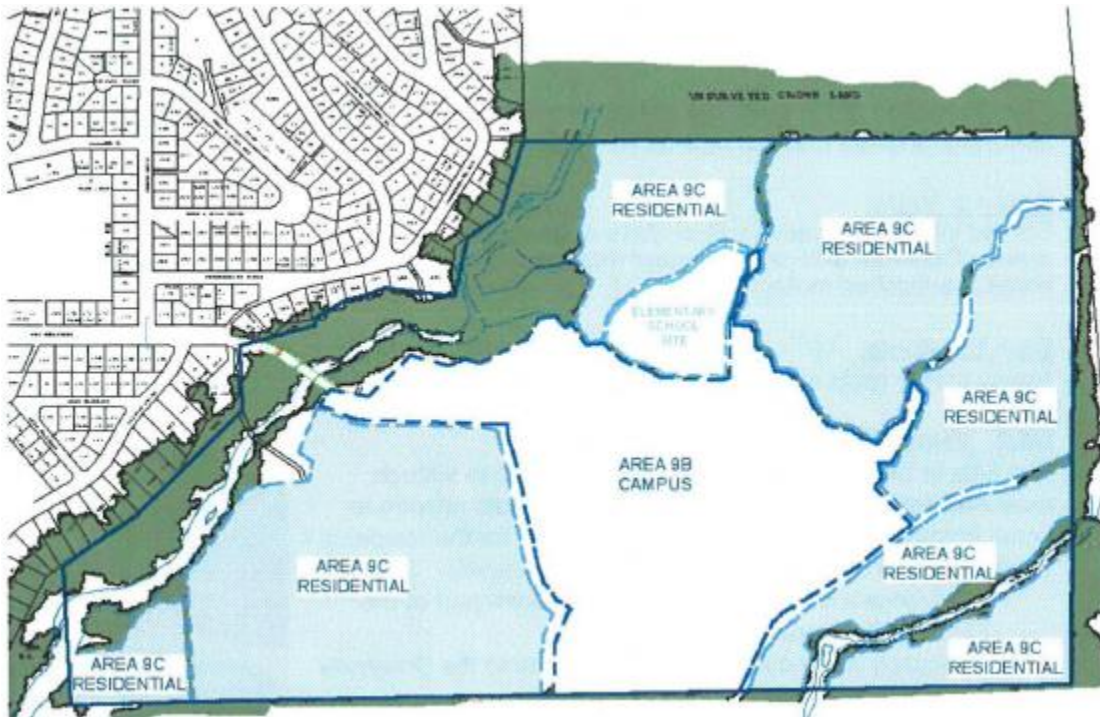
Trees may be used in the median on Village Drive



Varying building location with respect to set back will create outdoor seating opportunities



## **11C Development Permit Area #11C: Residential**



Development Permit Area #11C-Residential

### **C1 Common Residential Permit Area #11C Description**

#### **C1.1 Description and Designation**

Development Permit #11C relates to intense single family and multi-family housing sites in the community. Multi-family housing specifically refers to 3 units or more per lot. The permit area designation includes all sites and lands outside the campus that are developed as intense single family (lots less than 6000 sq. ft.) and multi-family housing. These lands are subject to the designation Development Permit Area #11C and are subject to these Development Permit Area Guidelines in order to:

- establish objectives relative to the form and character of development for residential housing and its associated landscape ; and
- protect aspects of the natural environment on a site which possesses ecologically sensitive qualities and offers important community benefits and amenities.



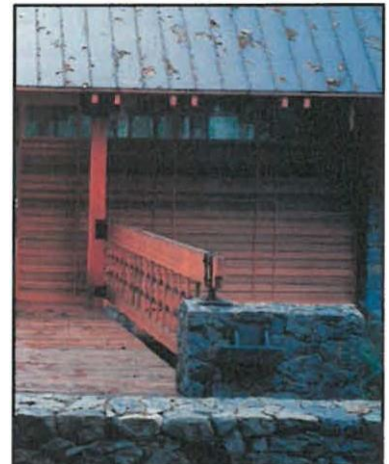
Protect environmental aspects of the site

## **C1.2 Objectives**

- Existing landform to be retained as much as feasible to preserve the varied nature of the area and to reduce cut and fill.
- Scale, massing, and the relationships between buildings should contribute to a sense that buildings are 'sitting lightly' in their surroundings.
- Residential housing shall be encouraged to fit into the Coastal BC Forest Environment of Squamish by retaining and augmenting landscape features and vegetation.
- Unified architecture and landscape elements are encouraged to contribute to a cohesive character within each neighbourhood and between neighbourhoods.
- Neighbourhood residential housing and campus architecture should be encouraged to create a unified theme of contemporary and sophisticated character that focuses on natural materials and colour tones.
- The integration of usable, attractive and diverse open spaces, including public, private and semi-private open spaces, may contribute to a strong sense of community stewardship.
- Encourage sustainability and respect economic goals of residential housing through the innovative use of resources, water efficiency and energy consumption.
- Architecture should be encouraged to respond to climate by utilizing energy efficient solutions.
- Residential housing should be people-oriented by promoting pedestrian access, cycling, and reducing the need for vehicular transportation.
- Residential housing should promote safety and security for residents.
- Stormwater system is to be ecologically sensitive and integrated into the overall development.



Build to the site



Natural materials should be encouraged for walls



Materials should relate to the campus palette

## **C1.3 Neighbourhood Character**

Neighbourhood residential areas within the community may have distinct site and building characteristics, giving rise to a variety of defined neighbourhoods which will evidence built form and massing suited to each area. Each neighbourhood should be based upon an architectural and landscape approach emphasizing the concept of housing set into the natural landform and environment.

As a whole, the residential development is intended to build on and complement the style and character of the campus with thematic variations evident in

each neighbourhood. This approach includes siting arrangements of buildings, which should correspond with the campus atmosphere to form a village feel, such that the community conveys a sense of several smaller villages.

There are distinct residential neighbourhood areas. Each neighbourhood will include a mix of multi-family and single family residences, each of which will build on the neighbourhood form and character.

#### **C1.4 Landscape**

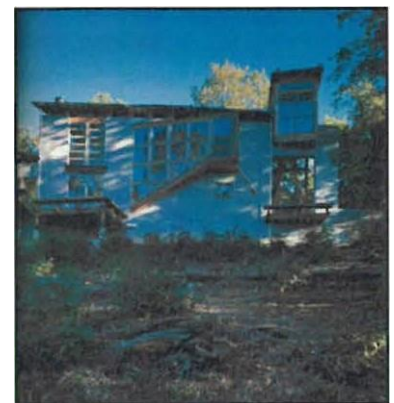
Should include :

- Emphasis on limiting number of driveway access points along the entry roads and collector roads.
- Landscapes should be dominated by natural plant species, augmented by local plant species.
- Encourage natural landscape character to extend to the edge of buildings such that buildings appear to be 'set onto the land' rather than the landscape 'coming up to the building'.
- Landscape walls and retaining structures to utilize onsite rock exposed during construction when available.

Residential walks including walkways between private space and semi-private space in residential neighbourhoods, and sidewalks adjacent to residential and neighbourhood streets should be composed of permeable materials, where appropriate, such as porous gravel or decomposed gravel. The width should be approximately 1.5m with a minimum width of 1.2m.



Residential Walks will have a less urban texture



Small windows on the north side and larger windows on the south sides of buildings should be encouraged

#### **C1.5 Materials and Colour**

##### **C1.5.1 Materials**

- High-quality, durable materials are encouraged to create a cohesive development character and unify the public realm.
- Materials should be encouraged that relate to the material palette selected for the Campus areas.
- Natural materials such as timber, stone, galvanized metals, and clear or lightly tinted glass should be dominant so that buildings are integrated into the natural environment.
- Concrete and tiles may be used as accent features but should be avoided as dominant building materials.
- Reuse, or recycle building materials when possible. Materials should be encouraged from sustainable sources.



Natural materials such as stone and wood



### C1.5.2 Colours

- An earth-tone colour palette of light and medium hues should be encouraged. Darker hues and deeper tones help integrate the development with the environment and climate of the Pacific Northwest.
- Encourage buildings to use a range of tones and hues from the same colour family to provide visual interest in facades.
- Neighbourhood identity can partly be established by selecting different colour schemes and subtly playing with the relationships to open space and topography. For example, steeper neighbourhoods could have cooler, darker tones that relate more to the lush forest, where as lower neighbourhoods could use subtler, warmer and lighter tones that relate more to arid, rolling landscapes.



**Earth tone palette**

## **C2 Multi Family (MF)**

### **C2.1 Common ME Neighbourhood Characteristics**

#### **C2.1.1 Site Sensitivity**

- Medium high landscape features define semi-public space between streetscape and building.
- Plant material such as medium high shrubs can also define semi-public space in the front yards of units.
- Use of high screen fencing or walls should be discouraged-engage streetscape by maintaining sightlines and surveillance of the street.
- Steepness of topography may limit semi-private open space opportunities, so maximize private and semi-private decks and terraces.
- Encourage courtyards and other shared semiprivate open space along sides and rears of buildings, where appropriate.
- Access control such as gates should be discouraged.



#### **C2.1.2 Building**

- Buildings should generally sit lightly on the ground rather than a sense of making hard contact, using grade level decks as a visual transition between building wall and landscape.
- Encourage ground level units to have individual front door entry access into 'front yards' and onto the street or trail and open space network.
- Encourage shared indoor and outdoor amenity spaces within each building cluster.
- Buildings should be designed to suit the extremes of weather prevalent for the site with emphasis on sloped roofs, large overhangs providing shade and rain protection.
- Building massing should be stepped to accommodate and respect grade changes.
- Overall massing may be reduced in scale through the use of top floor accommodation within larger roof areas.
- Roofs predominantly sloped, with generous overhangs.
- Roof massing is of particular importance to many sites, which given the slopes may be near eye or street levels and below vantage points elsewhere in the community.
- Roof forms should be designed to break up the massing of building length.
- Mechanical equipment should be predominantly accommodated within the roof massing with balance of exposed equipment to be screened and integrated architecturally.



Zero bt line multi-family buildings can create excitement



Multi-family buildings in steep terrain

## **C2.2 Access and Parking**

### **C2.2.1 Access**

Access requirements are a major determinant in the relationship between the private residential units and the streetscape. Pedestrian access, vehicular access and parking comprise residential access. This access should connect the public open spaces throughout the site.

#### **C2.2.1.1 Pedestrian Access Guidelines**

- Planning for access should emphasize pedestrian and cycling circulation.
- Residential housing should be well connected visually and physically to the street and should be encouraged to contribute to the universal accessibility of the public domain.
- To ensure that residents including users of strollers, wheelchairs and people with bicycles are able to reach and enter their unit and use communal areas via minimum grade ramps, stairs, paths, access ways and elevators, where applicable.
- Building entrances are a major factor in determining the identity of residential neighbourhoods by defining the threshold between the public street and private areas within the building. They may lead into a common entry or directly into the private space of an unit from the street.

#### **C2.2.1.2 Universal Accessibility Guidelines**

- Encourage high quality accessible routes to public and semi-public areas of the building including major entries, lobbies, and parking areas.
- Design ground floor units to be accessed from the street, where applicable.
- Maximize accessibility by encouraging more than one accessible entrance in unit developments with clusters of buildings.

#### **C2.2.1.3 Building Entrances Guidelines**

- Entrance design can contribute to a desirable residential identity for each neighbourhood.
- Separate and clearly distinguish between pedestrian access ways and vehicle access ways.
- Locate entries so they relate to the existing street patterns, pedestrian network, and street tree planting.
- Provide as direct a physical and visual connection as possible between the street and the entry.
- Provide sheltered and highly visible spaces to enter the building, meet visitors and collect mail.



Duplex share garage



Semi-open space can become outdoor community gathering space



Connect pedestrian access to public open space

- Secure bicycle parking shall be encouraged in close proximity to key building entries.

#### C2.2.1.4 Vehicular Access Guidelines

- Vehicular access encouraged to integrate car parking and servicing access without compromising street character, landscape or pedestrian safety.
- Vehicular access to encourage the active use of street frontages.
- Minimize potential conflicts by encouraging separate entries for pedestrians and vehicles.
- Limit the width and number of vehicle access points.
- Provide clear sight lines at pedestrian and vehicle crossings.
- Utilize traffic calming devices at vehicular entries.
- Ensure adequate separation distances between vehicular entries and street intersections.
- Optimize the active street frontages by encouraging vehicular access points as narrow as possible.
- Locate parking access from secondary streets and lanes whenever possible.
- Screen garbage collection, loading and servicing visually away from the street.
- Parkade entries should be setback or recessed from the main facade line.



Maximize accessibility wherever possible

#### **C2.2.2 Parking**

The need for car-based activities should be minimized, in keeping with current sustainable understanding by promoting walking and cycling.

Provide adequate car parking for the building's users and visitors.

Integrate the location and design of car parking with the design of the neighbourhood and the residential buildings.

##### C2.2.2.1 Underground Parking Guidelines

- Give preference to underground parking, whenever practical.
- Provide natural ventilation to underground parking areas, where possible.
- Provide safe and secure access for building users, and where possible include direct access to residential units.
- Limit the number of visitor parking spaces underground, by keeping them above ground.
- Provide bicycle parking, which is easily accessible from ground level and from units.

##### C2.2.2.2. At-Grade Parking Guidelines

- At-grade parking should be integrated into the streetscape and contribute to the street amenity.
- At-grade parking is especially important in mixed-use retail and residential areas.



Entries can contribute to residential identity



Carefully integrate pedestrian and vehicle circulation



- In residential areas, locate parking on the side or rear of the lot away from the primary street frontage when possible.
- Allow for safe and direct access to building entries.
- Paving, plant material, screening walls and fences should be employed to screen cars from the streets and buildings.
- Plant material and shade structures can also be employed to protect cars from sun and snow.

### **C2.3 Siting of Buildings**

#### **C2.3.1 Site Setbacks**

##### **Street Setback Guidelines**

- Street setbacks create the proportions of the street and can contribute to the public domain by enhancing streetscape character and the continuity of street facades.
- Provide visual privacy to units from the street, where appropriate.
- Create good quality entry spaces to lobbies, foyers or individual dwelling entrances.
- Allow an outlook to and surveillance of the street.
- Use different setback controls to differentiate between different neighbourhoods and different types of housing (see Single Family Housing Section).
- Zero-lot lines may be used where a consistent street edge needs to be reinforced, where approved by the District of Squamish.
- In general, no part of a building or above ground structure should encroach into a setback zone except for underground parking, awnings, balconies and bay windows.

##### **Side and Rear Setbacks Guidelines**

- Side and rear setbacks can create usable land, which contributes to the amenity of the side and rear of the buildings through landscape design.
- Side setbacks can help create a rhythm or pattern of development that positively defines the streetscape so that space is not just what is left over around the building form.
- Rear setbacks can help retain existing vegetation, provide semi-private and private open space to users and increase surveillance.
- Design side and rear setbacks in conjunction with building separation and open space considerations.
- Where the desired character is for a continuous street frontage, zero side setbacks are appropriate as approved by the District.
- Where setbacks are limited by lot size and



Use underground parking where appropriate



Use permeable paving for parking and lanes where appropriate



Enhancing public domain



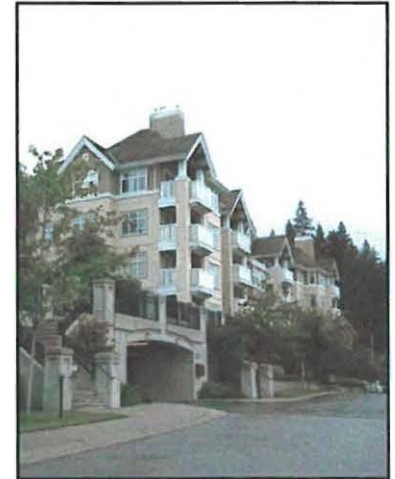
adjacent buildings, 'step in' the plan on deep building to provide internal courtyards and to limit the length of walls facing boundaries.

- In general, no part of a building or above ground structure should encroach into a setback zone except for underground parking, awnings, balconies, and bay windows.

### C2.3.2 Building Separation

#### Building Separation Guidelines

- Residential buildings should be scaled to support the desired area character with appropriate massing and spaces between buildings.
- Provide visual and acoustic privacy for residents.
- Control overshadowing of adjacent properties and private or shared open space.
- Allow for the provision of open space with appropriate size and proportion for recreational activities for building occupants, where feasible.
- Zero building separation can be appropriate for some residential designs.
- For buildings over three storeys, it is recommended that building separation increase in proportion to building height to ensure appropriate building form, adequate amenity and privacy for building occupants.
- Coordinate building separation controls with side and rear setback controls.
- Coordinate building separation controls with controls for daylight access, visual and acoustic privacy.
- Protect the privacy of neighbours who share a building entry and whose units face each other by designing internal courtyards with greater building separation, where appropriate.



Accommodate parking underground where appropriate



Use of side setbacks can create usable land

### C2.3.3 Relationship to Public Open Spaces

#### Open Space

- Open space provides 'breathing space' for residential development.
- Provides attractive landscape amenities to residents.
- Provides ventilation access to units.
- Provides visual privacy between units.
- Provides opportunities for passive and active recreation and social activities.
- Provides stormwater management.
- Provides environmental benefits including habitat for native fauna, native vegetation and mature trees, a pleasant microclimate, and rainwater percolation.

#### Semi-Private Open Space

- Private open space should be provided for each unit capable of enhancing residential amenity, in the form of balconies, decks, terraces, gardens,



Rear setbacks can help retain existing vegetation

yards, courtyards, and/or roof terraces, where appropriate.

- The perception of public and private separation can be accomplished through the use of low fences, walls, hedges or grade changes.
- Should be accessible from all units that it serves, where practical.
- Should afford views to public spaces, where appropriate.
- Each semi-private open space within a particular neighbourhood should be encouraged to have elements that create a different character.

#### Private Open Space

- Private open space can take the form of patios, terraces, stoops, or yards.
- Separation devices, from semi-private and public open space can include low fences, walls or hedges, grade changes, and garden gates.
- Ornamental shrubs and small trees should be included in these spaces where appropriate.

#### **C2.3.4 Orientation**

The following considerations should be balanced when considering building orientation:

- Maximize the number of units with southern orientation to increase optimal solar access.
- Maintain a desired streetscape character
- Provide for enjoyment of views.
- Fit with the site's topography.
- Minimize shading from adjacent buildings.

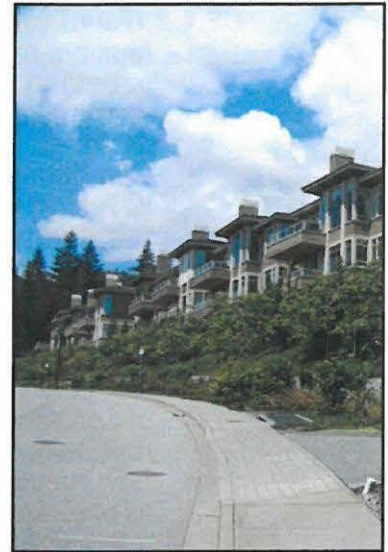
#### Orientation Guidelines

- Position and orient buildings to maximize south facing walls where possible, providing adequate building separation within the development and to adjacent buildings.
- Align buildings to the street on east-west streets.
- Use courtyards, L-shaped configurations and increased setbacks to southern (side) boundaries on south-north streets.
- Optimize solar access to living spaces and associated private open spaces by orienting them to the south.
- Small window openings should be encouraged to the north and larger windows encouraged on southern facades to maximize daylight exposure and minimize heat loss in winter.

### **C2.4 Form and Massing**

#### **C2.4.1 3-Plex and 4-Plex Dwellings**

- Single family units attached in patterns of 3 and 4 units.
- Shared semi-private open space to have strata ownership where feasible.
- Buildings can have appearance of being one larger residence and therefore fit well on a street



Residences should engage the street



Open space provides 'breathing space'



Open space provides opportunities to retain native vegetation

with other larger single-family residences.

#### **C2.4.2 Townhouses**

- Multiple attached units, each with at-grade streetfront entry along a street and with garage structures along a lane or in an underground parkade.
- Combination of shared semi-private open space with strata ownership (where feasible), and private open space that is owned by the private homeowner.
- Encourage townhouse form and character that is compatible

#### **C2.4.3 Low Rise Units**

- Multiple attached units, accessible by a single entry lobby at the street and with parking usually provided in an underground garage.
- Strata ownership (where feasible), with no individual able to change or alter the building except limited alterations to interiors of units.
- Generally 3 to 4 storeys in height.



Maximize the number of units with southern orientation

#### **C2.4.4 5-12 Storey Buildings**

- The buildings should reflect the character of the lower scale multiple family buildings.
- Roofs that respond to traditional sloped roofed forms should be encouraged.
- The building should be well articulated and fenestrated and large scale balconies should be encouraged.
- Centralized building entries contain elevators to units and semi-private communal space such as swimming pools, podium gardens, laundry facilities, garbage facilities, etc.
- Secure underground or garage parking should be encouraged.
- Buildings may take advantage of the sloped site by tucking into the hillside and minimizing the blockage of views.



Small window openings should be used to the north

### **C3 Single Family (SF)**

#### **C3.1 Common Intense SF Neighbourhood Characteristics**

##### **C3.1.1 Site Sensitivity**

- Encourage laneways, garages at street level and



potential for granny flats in rear yard or above garage.

- Steep driveways should have slip resistant surfaces.
- Limited semi-private front yard may contain retaining walls and steps to front door.
- Side and rear yards may have medium to high screening fences that may need to slope or step up or down in the terrain.
- Encourage a transitional zone in area fronting onto open space that incorporates native plant material that is utilized in open space zone.
- Transitional zone to public space to have lower and more transparent fence to mark boundary.
- A screening fence may be erected between transition and private zones by the homeowner if they want to create more privacy.



Townhouses

### **C3.2 Access and Parking**

#### C3.2.1 Access

Access requirements are a major determinant in the relationship between private residential buildings and the streetscape. Pedestrian access, vehicular access, and parking comprise residential access.

##### Pedestrian Access

- Planning for access must emphasize the importance of pedestrian and cycling circulation.
- Residential housing should be well connected visually and physically to the street and should contribute to the universal accessibility of the public domain.
- To ensure the residents, including users of strollers, wheelchairs and people with bicycles are able to reach and enter their homes via minimum grade ramps or stairs.
- Building entrance designs are a major factor in determining the identity of residential neighbourhoods. They define the threshold between the public street and private buildings.

##### Universal Accessibility Guidelines

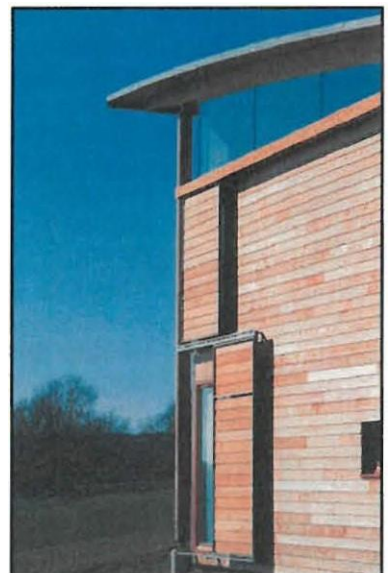
Provide high quality accessible routes to single family residences wherever possible.

##### Building Entrances Guidelines

- Entrances can contribute to a desirable residential identity for each neighbourhood.
- Separate and clearly distinguish between pedestrian access ways and vehicle access ways.
- Entrances should help orient the visitor.
- Locate entries so they relate to the existing street



Low rise apartments



High quality architecture

patterns, pedestrian network and street tree planting.

- Provide as direct a physical and visual connection as possible between the street and the entry.

#### Vehicle Access

- Vehicular access is the ability for cars, maintenance, and service vehicles to access the residential dwellings. It is important that vehicle access is integrated with site planning to balance any potential conflicts with streetscape requirements and traffic patterns and to minimize potential conflicts with pedestrians.
- Vehicular access shall integrate adequate car parking and servicing access without compromising street character, landscape, or pedestrian amenity and safety.
- Vehicular access shall encourage the active use of street frontages.
- Street-fronting driveways should be kept to a minimum and garages should be accessed from laneways where possible.
- Limit the width and number of private driveways.
- Ensure adequate separation distances between driveways and street intersections.
- Laneways should be provided where possible for access to garages and garbage.
- Where feasible, driveways should use porous paving to reduce impervious surfacing in development and to maximize stormwater absorption.



Take advantage of the southern exposure where appropriate



Use of timber in building facades. Form and design should respond to the climatic requirements and reflect the overall theme of the development where appropriate

#### C3.2.2 Parking

Minimize the need for car-based activities and associated parking by promoting walking and cycling. Provide adequate car parking for residents.

Integrate the location and design of garages and on-street parking with the design of the neighbourhood and the residential buildings.

##### Private Garage Parking Guidelines

- Provide safe and secure access from garages to residential buildings.

##### At-Grade Parking Guidelines

- At-grade parking should be integrated into the streetscape and contribute to the street amenity.
- Locate parking on the side or rear of the lot away from the primary street frontage when possible.
- Allow for safe and direct access to building entry points.
- Paving, plant material, and screening walls and fences should be encouraged to screen cars from the streets and buildings.
- Plant material and shade structures can also be employed to protect cars from the sun and snow.



Grass panels can increase permeability of site

### **C3.3 Siting of Building**

#### **C3.3.1 Site Setbacks**

Street setbacks are measured from the street boundary to the outside edge of the building. Street setbacks :

- Create the proportions of the street and can contribute to the public domain by enhancing streetscape character and the continuity of street facades.
- Create a clear transition between public and private space.
- Provide visual privacy for building residents from the street.
- Create good quality entry spaces to front door.
- Allow an outlook to and surveillance of the street.

#### **Street Setbacks Guidelines**

- Use different setback controls to differential types of housing.
- Proposed setbacks shall range from none (zero-lot line) to ten metres (10m).
- Proposed zero-lot lines can be used for narrower lots or higher density areas.
- In general, no part of a building or above ground structure may encroach into a setback zone except for parking, awnings, balconies and bay windows.

#### **Side and Rear Setbacks Guidelines**

- Side and rear setbacks can be used to create usable land, which contributes to the amenity of the side and rear of the buildings through
- Side setbacks can help create a rhythm or pattern of development that positively define the streetscape so that space is not just what is left over around the building form.
- Bear setbacks can help retain exiting vegetation, provide semi-private and private open space to users and increase surveillance.
- Single-family residential that backs onto open space should have a transition zone. This zone could have restrictions such as provisions for planting native plant material and to prevent
- the building of landscape structures. Transition zones help the residential areas embrace the open space
- Areas instead of creating hard and fast boundaries along fence lines.
- Design side and rear setbacks in conjunction with building separation and open space considerations.
- Where the desired character is for a continuous street frontage, zero side setbacks are appropriate where approved by the district.
- Where setbacks are limited by lot size and adjacent buildings, 'step in' the plan on deep buildings to provide internal courtyard and to



**Connect the single family housing to the open space**



**Driveways should be kept to minimum widths and use porous paving materials**



**Wherever appropriate, buildings should be designed to suit the climate**



- limit the length of walls facing boundaries.
- In general, no part of a building or above ground structure may encroach into a setback zone except for parking, awnings, balconies and bay windows.

### **C3.3.2 Relationship to Open Space**

#### Private Open Space

- Private open space can take the form of sideyards, rearyards, internal courtyards, patios, decks, terraces, or stoops.
- Should be separated from both semi-private spaces and public open spaces. Separation devices can include fences, walls or hedges, grade changes, and garden gates.
- Ornamental shrubs and small trees should be included in these spaces as appropriate.

### **C3.3.3 Orientation**

The following considerations must be balanced when considering building orientation:

- Maximize the number of buildings with southern orientation to increase optimal solar access.
- Maintain a desired streetscape character.
- Provide for enjoyment of views.
- Fit with the site's topography.
- Minimize overshadowing from adjacent buildings or trees.

#### Orientation Guidelines:

- Position and orient buildings to maximize south facing walls where possible providing adequate building separation within the development and to adjacent buildings (see Side and Rear Setbacks).
- Align buildings to the street on east-west streets, where possible.
- Use courtyards, L-shaped configurations and increased setbacks to southern (side) boundaries on south-north streets.
- Optimize solar access to living spaces and associated private open spaces by orienting them to the south, where possible.

### **C3.4 Form and Massing**

#### **C3.4.1 Single Family Residential-Typical**

10-30 units per net hectare.

A single legal lot owned independent of neighbouring lots.

Fronting onto a street and possibly a lane.

One free-standing dwelling (garage may be separate).

Lots may be permitted a 2<sup>nd</sup> infill unit such as a granny flat, or lock-off area.



Zero lot lines can be used to engage the street



Incorporate architectural features such as canopies



Side setbacks can help create rhythm

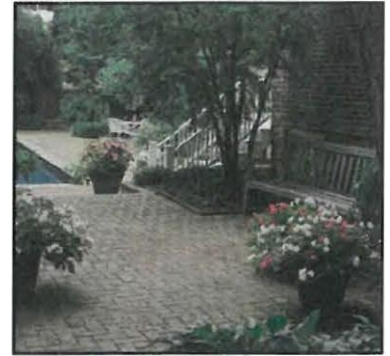
**C3.42 Single Family Residential-Zero Lot Line (where approved by the District)**

Up to 30 units per net hectare.

Single family, detached units situated with a continuous pattern along the street of one side wall on the property line.

Provide one wide sideyard instead of two narrow and unusable sideyards per lot.

Generally applied in high density narrow lots of 10m and less.



Private open space can take the form of rear-yards

## IMPLEMENTATION

As a means of implementing this Plan, the following measures will be considered by Council:

### 6.1 Zoning Bylaw

The District Council will prepare an amendment to the Zoning Bylaw that will have the effect of:

- a) zoning sufficient land to accommodate a 1200 student campus;
- b) permitting up to a maximum of 960 residential dwelling units.

The bylaw amendment will be drafted in such a way to provide flexibility to the University with regards to expanding the boundaries of the campus.

### 6.2 Restrictive Covenant

The District Council will enter into a restrictive covenant agreement with the Howe Sound Educational Society that will address the following issues:

- a) the preparation of a **Development Permit Area package** for insertion within the Sub Area Plan at a later date and the inclusion of the Campus lands within a Development Permit Area;
- b) the preparation of Conceptual Area Plans that will demonstrate to the Municipality the general manner in which the **remaining allowable development** will be distributed on the non Campus Lands;
- c) the dedication of land for **park and trails** as a condition of subdivision approval generally in accordance with Figure 5 – Conceptual Open Space Plan, and the provision of park facilities and the construction of the trails. *(This land will then be designated Park, or Environmental Preserve by the District..)*;
- d) the reservation of land for an **elementary school**, the location of which is acceptable to the District and agreed to by the University, unless the School District has decided that a school site is not required for this neighbourhood;
- e) the requirement that the **university facilities** available to the public will need to be completed before the total number of market dwelling units exceed certain thresholds; and
- f) the requirement that a **Fire Protection Study** will need to be completed as a condition of subdivision approval or the issuance of building permits that particularly focuses on whether a new fire hall is needed to service the neighbourhood.

### 6.3 Area Development Plan

In support of site specific development proposals, be they for Development Permit Applications or Subdivision Applications, the Council will require the applicant to prepare an Area Development Plan. This Plan is intended to indicate the University's proposed overall

development concept. The Area Development Plan shall be prepared to reflect the policy framework of the overall Official Community Plan and this Sub Area Plan.

#### **6.4 University / District Agreements**

The District and the University will enter into various agreements to address servicing and shared facility issues.

#### **6.5 University and District Working Relationship**

The District will strive to maintain a close working relationship with the University during the evolution of the University and the surrounding neighbourhood.

#### **6.6 Liaison with Neighbourhood**

The District will liaise with the residents of the existing and new neighbourhoods regarding park, trails, traffic and general land use matters.

#### **6.7 Liaison with School District**

The District will continue to liaise with the School District with respect to their interest in a new elementary school in the University Neighbourhood.

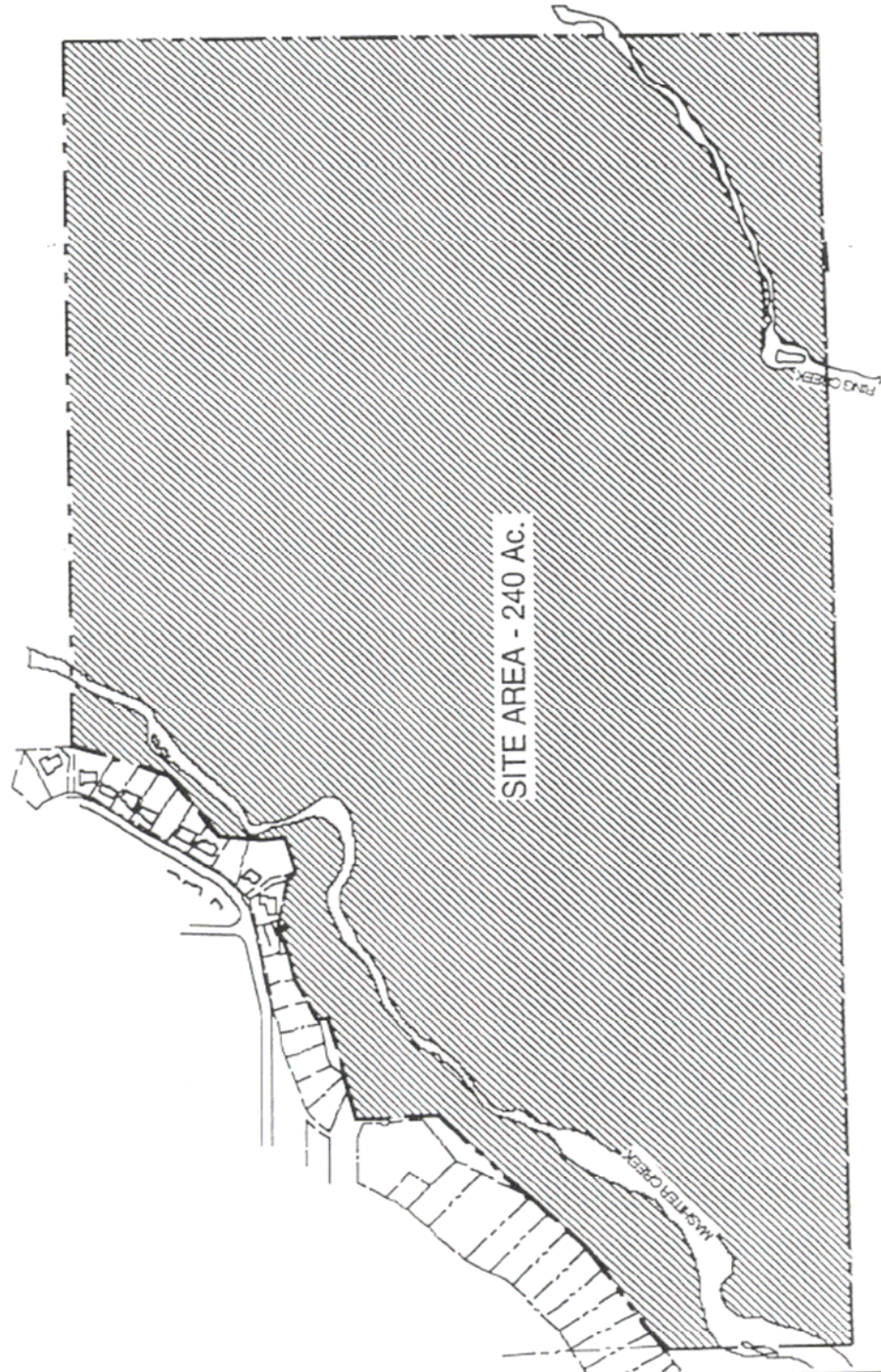
#### **6.8 Sub Area Plan Review**

This Sub Area Plan will be updated every 5 to 10 years, or earlier if the need arises.



**Figure 1 - PLANNING AREA**  
Sea to Sky University Sub Area Plan

4  
NORTH  
March 1, 2002



information from Vaughan Landscape Planning & Design









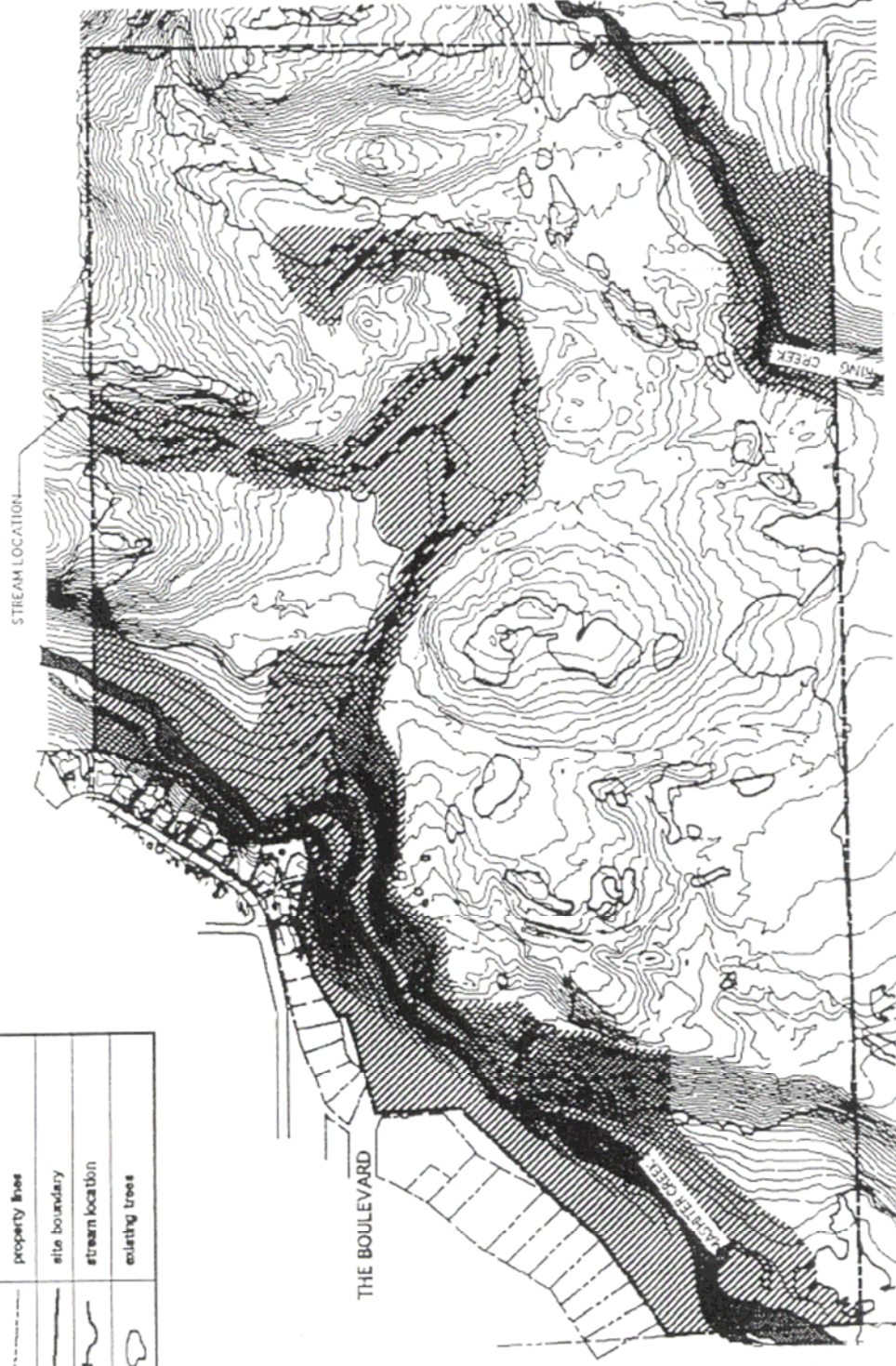
Figure 2 - Environmental Sensitive Areas & Natural Features

Sea to Sky University Sub Area Plan

NORTH  
March 1, 2002

LEGEND

	DFO stream setback
	existing contours at 2.5m interval
	property lines
	site boundary
	stream location
	isolating trees



DFO stream setback information from Cascade Environmental Resource Group Ltd.

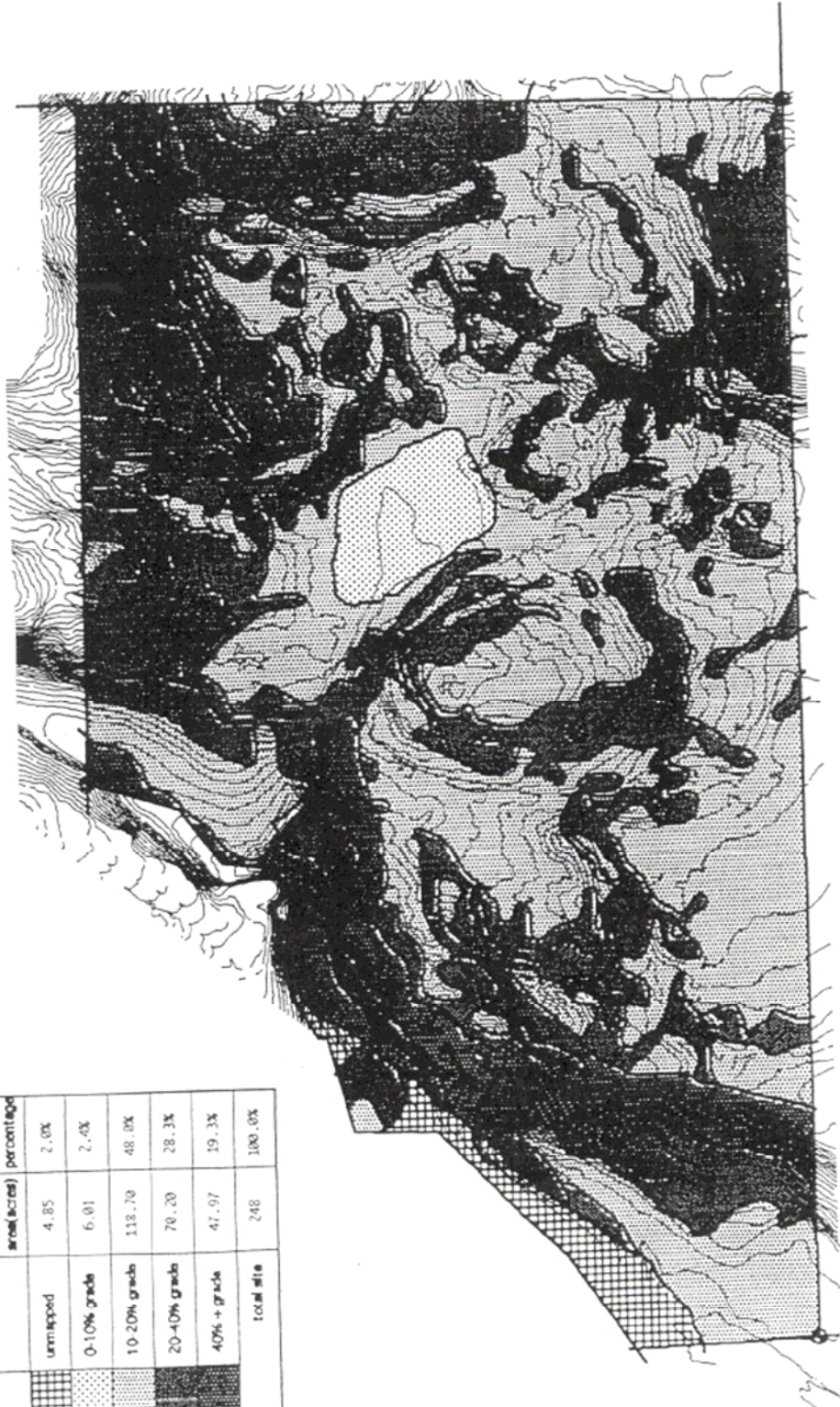


Figure 3 - SLOPE ANALYSIS  
 Sea to Sky University Sub Area Plan

NORTH  
 March 1, 2002

Pattern Legend






Pattern	area( acres)	percentage
unmapped	4.85	2.0%
0-10% grade	6.01	2.4%
10-20% grade	118.70	48.0%
20-40% grade	70.20	28.3%
40% + grade	47.97	19.3%
total site	248	100.0%



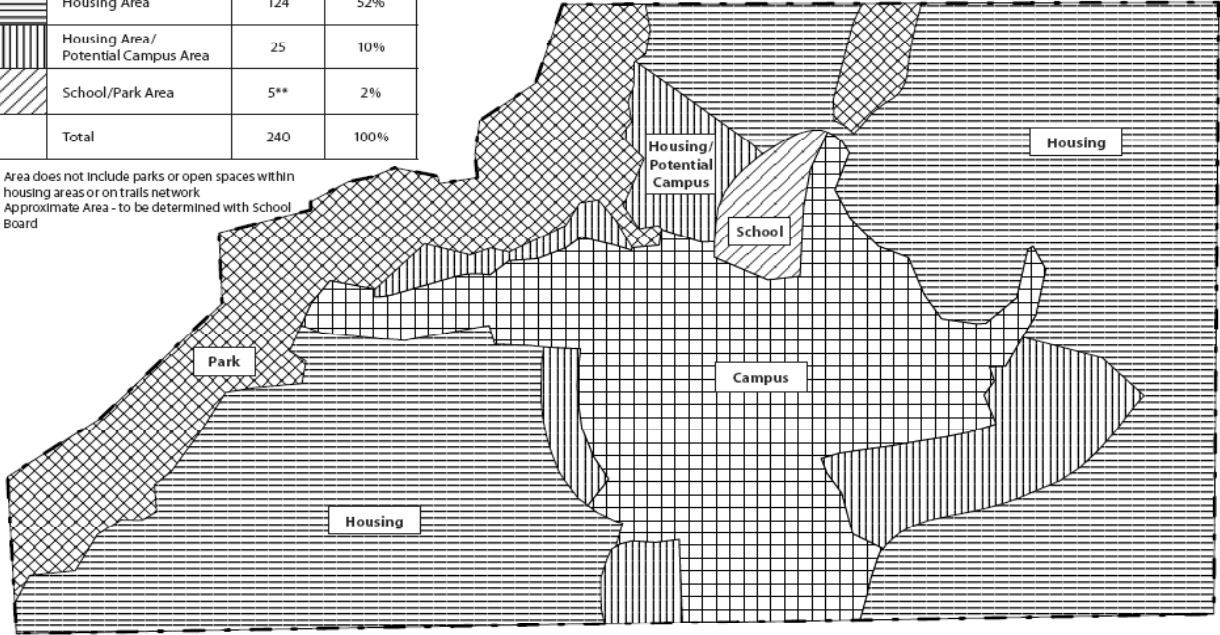
Slope information obtained by Webster Engineering

**Figure 04 – Land Use Plan**  
Sea to Sky University Sub Area Plan

↑  
North  
17 April 2003

Land Use Distribution (based on sub-area plan definitions)		
Land Use Type	Acres	% of Site
 Park	31*	13%
 Campus Area	55	23%
 Housing Area	124	52%
 Housing Area/ Potential Campus Area	25	10%
 School/Park Area	5**	2%
Total	240	100%

\* Area does not include parks or open spaces within housing areas or on trails network  
 \*\* Approximate Area - to be determined with School Board



scale 1:6000

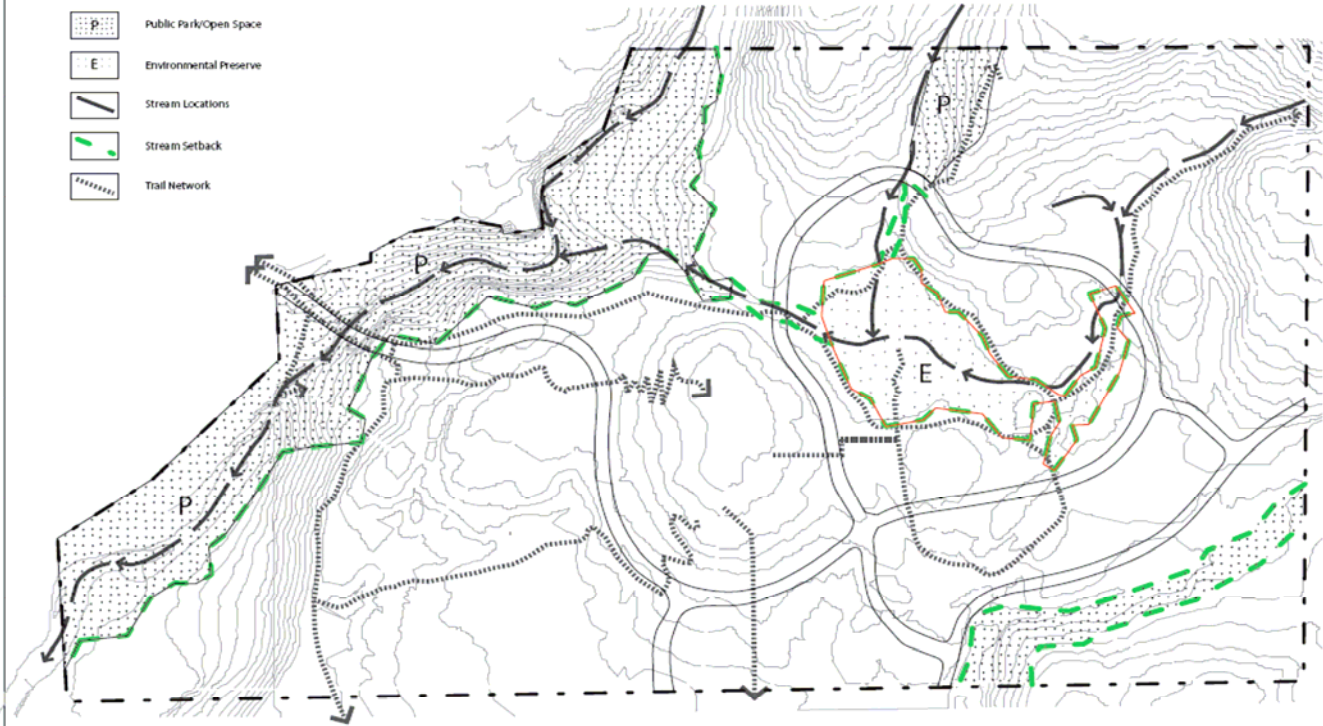
Information from Civitas Urban Design & Planning Inc.

Figure 05 – Conceptual Open Space Plan  
Sea to Sky University Sub Area Plan

North  
17 April 2003

Open Space/Ecological Network

-  Public Park/Open Space
-  Environmental Preserve
-  Stream Locations
-  Stream Setback
-  Trail Network



scale 1:6000

Information from Civitas Urban Design & Planning Inc.