

BRITANNIA BEACH COMMUNITY VISIONING CHARRETTE

Design Brief

Prepared by:

The University of British Columbia

The James Taylor Chair in Landscape and Liveable Environments
Centre for Landscape Research
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DESIGN BRIEF

THE BRITANNIA PROJECT

Britannia Beach is an area rich in cultural and mining history. Unfortunately, it is also an area known for tremendous environmental degradation due to Acid Rock Drainage (ARD) – the result of years of mining using unsustainable practices. These characteristics provide unique opportunities for research into mining practice, remediation, and community design.

The Britannia Community Design Charrette is a dynamic project that has evolved from its beginnings in the fall of 2002. At that time, the project focused on the design of the Canadian Environmental Mining Research Centre (CEMR) to be built by UBC at Britannia. Public consultation workshops were held, and a Design Brief for CEMR was developed.

Because of the success of the UBC-CEMR initiative, dialogue began with other groups who were interested in the Britannia Beach area. The Charrette has subsequently evolved to include several organizations and several specific projects, as well as to include the larger design/planning exercise of a sustainable community vision for Britannia North and South areas.

DEVELOPMENT OF THE BRIEF

The Design Brief provides the framework for the design team to generate a sustainable community plan for Britannia Beach. The information found in the brief is the culmination of a process involving policy documents, design standards, and public comment.

The process began with a distillation of the policy into five categories. From these categories, a goal statement and a number of objectives for Britannia Beach were extracted. These Goals & Objectives were disseminated at Workshop 1 to the many stakeholder groups involved with the project, and were further developed and debated until consensus was achieved. The result is the list of Goals & Objectives that is contained in this document.

To support the Goals & Objectives, a Design Brief Summary was developed to contain specific design requirements and targets. This Summary was given for comment at Workshop 2, and the resulting information has been incorporated into this document – the Design Brief.

GOALS AND OBJECTIVES OF THE BRITANNIA COMMUNITY DESIGN CHARRETTE

Overall Charrette Goal:

To collectively design a sustainable Britannia Beach Community – a community built around the historically significant but highly constrained mine site.

Five Issue-related Goals:

I. Mining Education and Heritage Conservation

To use the site as a whole as a means for research and education, and to communicate with the broadest possible audience.

II. Environmental Remediation and Stewardship

To restore and enhance the site's overall environmental health based on best management practices for infrastructure and building design

III. Economic Development

To create a thriving, diversified economy at Britannia Beach; one based on sustainable industrial, commercial, cultural heritage, and recreational activities that serves the long-term needs of residents and visitors.

IV. Community

To honour the spirit of the historic Britannia Beach Community by creating an inclusive place where people of all ages and incomes can feel they belong. To create a town with a strong local identity that is vibrant, diverse, safe, healthy and sustainable.

V. Synergy

To take a holistic approach that integrates resource systems for mutual benefit in a way that creates the conditions to achieve the "educational", "environmental", and "community" goals for Britannia Beach.

I. Mining Education and Heritage Conservation

The goal of federal, provincial and local public policy is to foster knowledge and appreciation of Canada's past, to ensure the integrity of historic sites, and to encourage the generation of new knowledge. The Britannia Beach site, through a sustainable vision, will provide environmental and cultural/historical subject matter for research, and will provide the facilities from which to communicate this new knowledge. The policy is clear about the necessity for cultural sustainability, with the intent to preserve and conserve valuable pieces of history that society can continue to learn from in the future.

Goal: To use the site as a whole as a means for research and education, and to communicate with the broadest possible audience.

Objectives:

1. Improve the image and understanding of mining practices internationally as we move from past and present practices to future sustainable models.
2. Use the mine to showcase B.C. and Canadian leadership in sustainable practices and mining innovations.
3. Design public spaces to demonstrate research, environmental remediation and cultural heritage.
4. Preserve the cultural integrity and heritage values of the mine and townscape for future generations.

II. Environmental Remediation and Stewardship

The goal of federal, provincial and local public policy is to protect the ecological integrity of land and water systems. Where such integrity has been compromised and natural resources degraded, the policy requires that such areas are restored and even enhanced to good environmental health. Policy also specifies the use of “best management practices” as developed and tested by industry professionals. These practices exist in the areas of building design and infrastructure systems, and are desirable as they represent the most recently developed practices that work to achieve a sustainable environment. Additionally, policy highlights the need for stewardship and places the responsibility of stewardship on all citizens.

Goal: To restore and enhance the site’s overall environmental health based on best management practices for infrastructure and building design

Objectives:

1. Use “green” building design in the construction of new buildings to optimize energy use, materials, water consumption and occupant health, and wherever possible, retrofit existing buildings with resource efficient technologies.
2. Use “green” infrastructure technologies that are compatible with contaminated and remediated sites and explore “green” energy sources available on site.
3. Identify and protect significant natural features such as important views, landforms, and key cultural heritage resources.
4. Provide safe public pedestrian access to and along Howe Sound.
5. Identify and protect all environmentally sensitive areas and enhance fish and wildlife habitats.
6. Promote non-polluting development and commercial services compatible with a remediation strategy.
7. Take measures to reduce the risk of flooding to the development area.
8. Remediate existing contamination to acceptable standards and regenerate ecological integrity.

9. Protect existing drinking water resources and explore alternate sources of community water and efficient sewage treatment systems.

III. Economic Development

The goal of federal, provincial and local public policy is to pursue strong and sustainable economic development, with access to good jobs. A positive business climate, with a specific focus on the film industry and the promotion of tourism are considered integral to achieving policy goals, as are improvements to infrastructure, improvements to the profile of industrial heritage, and the promotion of outdoor adventure activities. This policy is intended to serve the needs of residents and visitors alike, over the long term, to create an economically stable, sustainable community.

Goal: To create a thriving, diversified economy at Britannia Beach; one based on sustainable industrial, commercial, cultural heritage, and recreational activities that serves the long-term needs of residents and visitors.

Objectives:

1. Build capacity for economic cultural heritage tourism.
2. Enhance Britannia Beach village centre and waterfront as a tourist destination point.
3. Design the community to build economic capacity by restricting economic activities to those appropriate to a National Heritage Site.
4. Explore ways of reducing the immediate and life cycle costs of roads and other infrastructure improvements by implementing alternate design standards that work with the natural capacity of the site.
5. Provide good jobs for the community.
6. Ensure that the transportation strategy is compatible with and strengthens local and regional economic development.
7. Design facilities with a positive national vision that will attract responsible mining investment in B.C. and Canada.

IV. Community

The goal of federal, provincial and local public policy is to ensure that communities are places where people want to live. To this end, the policy supports land use that enhances community image and creates a vibrant community core and waterfront. As well, the policy encourages the development of strong local identities and neighbourhood character. Safety and housing equity are also key points in the policy, as diverse and stable communities where people can afford to live and feel ownership over their own neighbourhood are more stable communities and hence more sustainable.

Goal: To honour the spirit of the historic Britannia Beach Community by creating an inclusive place where people of all ages and incomes can feel they belong. To create a town with a strong local identity that is vibrant, diverse, safe, healthy and sustainable.

Objectives:

1. Strive to provide opportunities for current residents to remain in their existing homes wherever possible and work to find solutions that are respectful of the desire of residents to stay in the community.
2. With public subsidies as required, introduce a balance of new housing types that are affordable to people with different income levels and/or at different life stages.
3. Integrate residential with a variety of institutional uses such as schools, policing, and medical services, as well as commercial and other uses, to serve local residents, tourists or recreationalists.
4. Provide a mix of new buildings that reflect the local history and regional character of Britannia Mine and enhance the visual quality of the community.
5. Create a pedestrian-oriented network of streets and greenways to reduce car dependency.
6. Maximize the potential for outdoor recreation by making open spaces and waterfront areas publicly and safely accessible.
7. Ensure that communities are safe and that public amenities are distributed

appropriately based on demand between Britannia North and South. Seek collaborative opportunities to achieve complementarity between Britannia North and South developments.

V. Synergy

The goal of federal, provincial and local public policy is to encourage the sharing of resources and the creation of partnerships between organizations that would mutually benefit. Such relationships are possible in areas such as waste materials, space requirements, idea-sharing, and the programming of public spaces. The policy encourages an approach to planning that is increasingly more holistic, rather than individual and exclusionary.

Goal: To take a holistic approach that integrates resource systems for mutual benefit in a way that creates the conditions to achieve the “educational”, “environmental”, and “community” goals for Britannia Beach.

Objectives:

1. Identify and establish economic and institutional partnerships within the community, and with the adjoining Furry Creek, Squamish, Whistler, and Squamish First Nation communities.
2. Use “green” building and infrastructure systems to link community spaces, the B.C. Museum of Mining, the Centre for Mining Innovation, CEMR, the Maritime Museum, and the Provincial Water Treatment Plant while respecting conservation principles for historic sites.
3. Continue to encourage community involvement in the planning and development of new and existing areas.
4. Establish partnerships between all areas of government, academia, community organizations and the private sector to encourage development that meets educational, environmental, economic and community goals for Britannia Beach.
5. Use educational opportunities to research past economic survival strategies following natural disasters in

Britannia, to link students with new business opportunities, and to promote Britannia as an economic development model for other communities.

- Parks Canada, *Commemorative Integrity Statement (Draft 25 Feb. 02)*.

PERFORMANCE OBJECTIVES FOR THE BRITANNIA BEACH COMMUNITY DESIGN CHARRETTE

Local, provincial and federal policies for sustainable development provide the basis for the following performance criteria. Major sources used by the Charrette organizers to arrive at these performance criteria include:

- Squamish-Lillooet Regional District, *Electoral Area D Official Community Plan Bylaw No. 714, 2001, Schedule B Howe Sound East Sub-Area 3 Plan*;
- Squamish-Lillooet Regional District, *Electoral Area D Official Community Plan Bylaw No. 692, 1999, and Bylaw No. 495 Schedule A*;
- Squamish-Lillooet Regional District, *Official Community Plan, District of Squamish*;
- Resort Municipality of Whistler, *Official Community Plan, "Schedule A" September 22, 1993 (consolidated as of March 14, 2002)*.
- District of Squamish, *Squamish Tourism Marketing Plan and Development Strategy*;
- District of Squamish, *Tourism Development Plan*;
- District of Squamish, *New Horizons for Squamish: Economic Development Strategy*;
- Squamish-Lillooet Regional District, *IPP Development in the Squamish-Lillooet Regional District*;
- University of British Columbia, *Trek 2000: UBC's Vision*;
- Water Management Consultants, *Britannia Creek Flood Risk Assessment*;
- Fraser Basin Council, *Charter for Sustainability*;
- Government of B.C., *Sea-to-Sky LRMP Base Case Report*;
- Government of B.C., *Waste Management Act, Contaminated Sites Regulation*; Government of B.C., *Park Act*;
- Government of B.C., *Heritage Conservation Act*;

Policy directives included in these reports and others that have a direct and obvious impact on site and community design have been converted into design performance objectives. These performance objectives all support the goal of a sustainable community, and provide the design team with a basic framework for design. However, the criteria are often contradictory when applied independently: for example, increasing housing density may negatively affect air quality or increase surface runoff. Therefore, it will be required of the design team to interpret, expand, and integrate these criteria in ways that generate a sustainable community plan for Britannia Beach.

DESIGN REQUIREMENTS

BACKGROUND ASSUMPTIONS

The study area that is under consideration for the purposes of this design brief is Development Permit Area 1 in the Howe Sound Sub-Area 3 Plan Area of the SLRD Electoral Area D Official Community Plan. This includes lands owned by the Province of British Columbia, the Britannia Historical Society, Britannia Bay Properties Ltd., and the Makin Properties.

The boundaries of the site are clearly shown in the Britannia Beach Land Use Plan, and include Britannia North and Britannia South. Britannia North refers to the Britannia mine and existing townsite with the surrounding area. Britannia South refers to the area surrounding Minaty Bay and the adjacent private property known locally as the Makin Lands.

Development at Britannia Beach is expected to be phased in over a period of at least 20 years. Residential development will not occur in areas that are contaminated or geologically unsafe. Dwelling units in the area designated Flood Management should be avoided. Also, assume that most existing infrastructure would need reconstruction during this period, and could be realigned or reconfigured in conformance with your proposal. The Highway 99 upgrade is an example of the opportunity to realign infrastructure with the plan.

The following facilities will be integrated into the community and with each other:

- NRCan Britannia Centre for Mining Innovation
- B.C. Museum of Mining
- UBC Canadian Environmental Mining Research Centre (CEMR)
- Province of B.C. Water Treatment Plant

Specific design requirements and targets for these facilities are included.

LAND USE		DESIGN REQUIREMENTS
RESIDENTIAL		
Total Site Area		Approx. 500ha (1237 acres) ¹
Proposed Total Dwelling Units		Approx. 800-1000 units in Britannia North; approx. 850-1000 units in Britannia South*
Gross residential density		Dwelling types may include: <ul style="list-style-type: none"> • single family, 10-15 units per hectare (4-6 units per acre)* • small lot single family, 15-25 uph (6-10 upa)* • townhomes, 20-30 uph (8-12 upa)* • stacked townhomes, 30-40 uph (12-16 upa)* • residential/commercial mixed use* • live/work units*
Heritage		<ul style="list-style-type: none"> • Retain the existing residential community and community dock as part of the historic townsites[#]
Other		<ul style="list-style-type: none"> • Supply higher density housing in close proximity to commercial areas on "the flatlands."^{##} • New buildings to be 6 stories maximum[#] • Retain the 10ha (25 acre) historic community site for affordable housing* • Avoid placing new residential structures in the area designated as "Flood Management."^{##}
PUBLIC BUILDINGS		
Elementary School		1 school; locate on a not exceeding 15% slope, with no known hazards, at least 500m from transmission lines.* Ensure that the school site is easily accessible from Britannia North and South via greenway and a range of transportation modes. [#]
Child Care Facilities and Preschools		240m ² (2560ft ²) interior space, 445m ² (4800ft ²) exterior play space per 1000 population [†]
Community Centre and Library		Locate within/near the Britannia South school/park site*
Fire Hall, Police Station, Ambulance		Fire Hall to be retained in Britannia North. Locate Police Station and Ambulance in conjunction with Fire Hall ^{**}
Town Hall/ Public Offices		930m ² (10,000ft ²) maximum for community and provincial satellite health, records, social, job training and other public functions. On street or off street parking for maximum of 12 cars. [^]
Churches/ Multi Faith Centre with Assembly Hall		Reuse existing church or create multi-faith centre with assembly hall in Britannia North (at approx. 930m ² (10,000ft ²) based on 1 per 4000 population). On street or off street parking for 60 cars. [^]
Heritage		<ul style="list-style-type: none"> • The design of all new buildings within the community core should be compatible with the historic buildings in materials and massing.[#] • Consider adaptive reuse of historic buildings[#]
Other		<ul style="list-style-type: none"> • New buildings to be 6 stories maximum[#] • Demonstrate to the public through site and facility design the positive impacts of research, mining innovations, and heritage[#]
INDUSTRIAL/OFFICE		
Light Industrial/ Corporate Office Space		2300m ² (25,000ft ²) per 1000 population ²
Service Office Space		1500m ² (16,000ft ²) per 1000 population ³
Parking Standard for Light Industrial/ Corporate Office Space/ Service Office Space		37m ² or 400ft ² (1.5 spaces) per 90m ² or 1000ft ² light industrial/office ⁴
Other		<ul style="list-style-type: none"> • New buildings to be 6 stories maximum[#] • Only non-polluting industries will be allowed in Britannia North (as shown on Map B2 Britannia Beach Land Use Plan)
COMMERCIAL		
Commercial Spaces		<ul style="list-style-type: none"> • Maximum of 1500m² (16,000 ft²) of gross leaseable floor space* • Maximum of 100 bedrooms of tourist accommodation*
Parking Standard Commercial Spaces		70m ² or 750ft ² (3 spaces) per 90m ² or 1000ft ² retail space. On street and off street parking. [^]
Heritage		<ul style="list-style-type: none"> • Consider adaptive reuse of historic buildings^{**} • Promote non-polluting commercial uses of the Britannia waterfront, in particular facilities with an historic focus[*]
Other		<ul style="list-style-type: none"> • New buildings to be 6 stories maximum[#] • Provide non-polluting recreational marine commercial services (mooring facilities, canoe and kayak rentals, windsurfing shops)[#]

OPEN SPACE		
Parks		<ul style="list-style-type: none"> • Minimum of 1-1.5ha (2.2-3.5 acres) for Britannia North* • Minimum of 3.5-4ha (8.5-10 acres) for Britannia South (combined community park/elementary school site)* • Minimum of 4.9ha (12 acres) for Minaty Bay* • Provide additional streamside setbacks to accommodate trails[#] • Design open spaces to support a variety of activities and community events[#] • Incorporate a trail system with major trails for walking and cycling as well as hiking and rollerblading[#] • Plan open space areas to incorporate stands of mature forest[#] • Designate key access points from Highway to waterfront and community[#] • Maintain public pedestrian access along Howe Sound Waterfront between Britannia North and South[#]
Heritage		<ul style="list-style-type: none"> • Interpretive system for site industrial artefacts/ruins[#] • Interpretive trails to include historical features and memorials[#] • Consider inclusion of reconstructions of elements of the historic town[#]
PUBLIC TRANSIT		
		<ul style="list-style-type: none"> • Consider commuter rail service along Sea to Sky Corridor with a stop that will serve Britannia[#] • Provide a Park & Ride/ carpool lot[#] • Bus route throughout Britannia; stops should be no more than 500m from any residence or workplace[#] • Consider passenger ferry/aquabus[#]
INFRASTRUCTURE		
Roads		<ul style="list-style-type: none"> • 2-lane Highway 99 through Britannia North* • The Municipality will try to achieve the general objective of maintaining high visual quality along Highway 99 by, wherever possible, requiring a 20 metre vegetated buffer to be retained on lands that abut the highway right of way.⁵
Water and Sewer		<ul style="list-style-type: none"> • 1 water treatment system and 1 sewage treatment system to serve all of Britannia* • Explore living systems for water treatment[#] • Explore other alternative systems for water and sewer treatment[#]
		<ul style="list-style-type: none"> • Sewage treatment facility minimum of 300m from residential land use* • Sewage treatment site approx. 0.8ha* • Sewage treatment site as close to sea level as possible*
Stormwater Management		Use best management practices for stormwater, ensuring these practices are compatible with a remediation plan [#]
ENVIRONMENTALLY SENSITIVE AREAS		
		Where wetlands, watercourses or riparian areas are disturbed, restoration of the disturbance or compensation equal to 100% of the disturbed area should be provided*
		Protect any trees that contain raptor nests, along with a 50m setback where existing vegetation is not disturbed*
Stream Setbacks		30m setback from top of bank ⁶

PROPOSED BUILDING FACILITIES	TARGETS	DESIGN REQUIREMENTS
<p>Britannia Centre for Mining Innovation</p>	<p>Parking: 1/researcher or staff, plus 1 per 2 auxillary researchers; share with compatible, adjacent uses.⁺⁺</p> <p>Total Open Space: area equal to building footprint.⁺⁺</p>	<p>General requirements pertaining to all or most facilities:</p> <ul style="list-style-type: none"> • Showcase the Britannia Centre for Mining Innovation; UBC CEMR; BC Museum of Mining and integrate into the design of community • Provide facilities where public lectures on research initiatives, innovative mining practices, heritage education, etc. can be held • Demonstrate to the public through site and facility design the positive impacts of research, mining innovations, and heritage • Use green building guidelines for all buildings; refer specifically to LEED B.C. • Encourage any new structures to be compatible with the character of a historic community in terms of siting, form, scale, materials, and exterior design • Retain B.C. Museum of Mining as an education resource and tourist attraction under the designations National Historic Site and Provincial Historic Landmark • Publicly communicate the reasons for the site's National Historic Significance • Demonstrate the benefits of sustainable mining practices through world class facility design for new large government and institutional buildings • Consider synergies amongst the Water Treatment Plant, UBC-CERM3 Research Centre, Centre for Mining Innovation, B.C. Museum of Mining and residential and commercial development. • Provide lecture / conference facilities in the Britannia Centre for Mining Innovation • House all administrative, research and visitor facilities for Innovation Center, UBC- CERM3 and Mining Museum in close proximity. • Use Eco-Industrial concepts to identify opportunities to use and share resources efficiently amongst facilities and within the community (for example, share heat, energy, and other resources as appropriate between buildings.)
<p>B.C. Museum of Mining</p>	<p>Parking: 1/researcher or staff, plus 1 per 2 auxillary researchers; share with compatible, adjacent uses.⁺⁺</p> <p>Total Open Space: area equal to building footprint.⁺⁺</p>	
<p>Canadian Environmental Mining Research Centre (CEMR)</p>	<p>Total site area: approx. 0.45ha (1 acre)⁺</p> <p>Total building area: gross 2751m² (29,594ft²)⁺</p> <p>Total Population: 65 (staff and researchers)⁺</p> <p>Parking: 1/researcher or staff, plus 1 per 2 auxillary researchers; share with compatible, adjacent uses.⁺</p> <p>Total Open Space: area equal to building footprint.⁺</p>	
<p>Water Treatment Plant</p>	<p>Total site area: approx. 1.2ha (3 acres)[@]</p> <p>Access to existing 4100 level portal.[@]</p> <p>Parking: 1/researcher or staff, plus 1 per 2 auxillary researchers; share with compatible, adjacent uses.⁺⁺</p> <p>Total Open Space: area equal to building footprint.⁺⁺</p>	

¹ Area extrapolated from the Land Use Plan found in Squamish-Lillooet Regional District Bylaw No. 714.

² This number is generated as follows: assume 1 job per household (UDI) and 2.87 persons per household. The number of jobs for the entire community should be 350 per 1000 population. Assume 35% of jobs are in light industrial/corporate office: .35 x 350 = 123 jobs. 123 jobs x 19m² (minimum; 200ft² minimum) per worker = 2300m² per 1000 population.

³ 23% of 350 workers per 1000 population = 80 workers at 19m² (minimum; 200ft²minimum) per worker = 1500m² (16,000ft²) per 1000 population.

⁴ This number is one half the standard suburban light industrial/ corporate office parking space requirement cited in Time Saver Standards for Site Planning. The UDI standard is 3.5 spaces per 1000ft² of office. One half of this standard is assumed appropriate for our purposes given the assumption of walking distance to jobs, transit, or other alternative means of transportation.

⁵ Resort Municipality of Whistler, Official Community Plan, "Schedule A" September 22, 1993 (consolidated as of March 14, 2002).

⁶ This distance is considered a best management practice.

* Squamish-Lillooet Regional District Bylaw No. 714.

Generated by Workshop 1.

^ Adapted from the East Clayton Design Brief, by The James Taylor Chair in Landscape and Liveable Environments

+ Britannia Beach Environmental Mining Research Centre: Community Design Charrette: Design Brief, 2002

++ Adapted from Britannia Beach Environmental Mining Research Centre: Community Design Charrette: Design Brief, 2002. Numbers are specific to CEMR, but are translatable to other facilities.

@ Britannia Mine Water Treatment Plant Site "A" Overall Site Plan, Ministry of Water, Land & Air Protection, Nov. 21, 2002. Site area has been approximated by staff at The James Taylor Chair in Landscape and Liveable Environments.