Burnaby Mountain Community

DESIGN TEAM SELECTION CHARRETTE

The Burnaby Mountain Community design charrette was initiated to assist in the selection of a design team that would eventually complete a development plan for a new community for 10,000 residents at the top of Burnaby Mountain. A charrette was considered an ideal strategy for addressing a number of difficult site issues as well as for providing a relatively open design selection process. Four design teams (made up of Vancouver's top architects, landscape architects, and engineers) competed over an intensive two-day period to produce four design proposals for the 160 acre site.

Charrette date
February 2000

Charrette Client
Burnaby Mountain Community Corporation, Michael Geller, President

Charrette Type
Design Team Selection

Charrette Participants

Team One:
Henriquez Partners Architects/IBI Group
Perry + Associates
Urbanics Consultants Ltd.
Enkon Enrionmental Ltd.

Team Two:
Davidson Yuen Simpson Architects in association with Matsuzaki Architects Inc.
Vaughan Landscape Planning and Design Ltd.
McElhanney Engineering Ltd.
Coast River Environmental Services Ltd.
N.D. Lea Associates
Brook Development Planning Inc.
Harris Hudema

Team Three:
Hotson Bakker Architects, in association with Cornerstone Planning & Architecture
Coriolis Consulting Corp.
Enkon Environmental
CH2M Gore & Storie Ltd.
Lanarc Consultants Ltd.
Hunter Laird Engineering
Phillips Farevaag Smallenberg Inc.
The Sheltair Group Resources Consultants Inc.
Urban Systems Inc.
Ramsay Worden Architects
Nowarre & Badkerhanian Illustrations

Team Four:
Architectura, in association with Barry Downs Architect and Joseph Hruda of Civitas Inc.
Philips Wuori Long
Main Street Communications
Harris Hudema
Bunt & Associates
Kerr Wood Leidal Associates; Pottinger Gaherty Environmental Consultants Ltd.

Above
SFU was designed in 1963 by architects Arthur Erikson and Geoffrey Massey. Their concept integrated the campus into the fabric of the mountain top, where buildings, playfields, roads and paths were designed to reflect the natural terrain of the mountain, cutting and stepping down the hillside terraces, spreading into the surrounding landscape. The main spine is laid out in an east-west direction, following the ridge line. Along this ridge, all academic and social components align to meet with the university quadrangle, which anchors the east portion of the campus. The main circulation "ring road" both surrounds and connects the 1,000-acre university lands within its circumference.

On 26 November 1995 the provincial government, the City of Burnaby, and Simon Fraser University (SFU) announced the transfer of 332 hectares of land from SFU to the City of Burnaby. This undeveloped and largely forested land lay outside of the SFU "ring road" and was to remain as publicly accessible parkland in perpetuity. The transfer created one of the most significant natural reserves in the Lower Mainland region. In partial exchange for this land, the City of Burnaby approved an OCP for SFU that authorized the university to develop the "Burnaby Mountain Community," a new mixed-use community with housing for up to 10,000 residents.

The development of the Burnaby Mountain Community is the responsibility of Burnaby Mountain Community Corporation (BMCC), an entity established in 1998 to oversee the planning and development of a 160 acre portion of land immediately south and east of SFU. The SFU Board of Governors created the BMCC to achieve two goals: (1) to establish a complete community that complements existing and future university development, and (2) to establish an endowment fund and other sources of revenue to support the university.

The BMCC principles state that the community would "closely integrate with the existing and future University facilities, and build on the architectural and academic success of the University in a manner worthy of international acclaim." Most important, the community would be designed with full respect for the surrounding forest and streams and their ecological functions.

The Design Charrette Process

Early in the year 2000, as a first step towards implementing the SFU Official Community Plan, the BMCC planned and conducted a week-long community design charrette for the site. The objectives of the BMCC design charrette were:

1. *To generate a wide range of ideas to guide future planning options*
2. *To provide a basis for interaction be-tween the design teams, the university community, other special interest groups, and the BMCC*
3. *To test the SFU Official Community Plan and zoning by-law requirements as the basis for a sustainable community*
4. *To assist in the selection of an interdisciplinary team to oversee the preparation of a development and land-use plan as well as a subdivision application for the first phase of development*[1]

This last objective distinguishes the SFU charrette from the others reviewed in this manual. BMCC planned to hire one of the four teams of professional planners, landscape architects, architects, and engineers to develop a detailed master plan for the community after the charrette. This team would also help the BMCC secure whatever development permits were required as a precondition to developing the land.

Guiding Policy

This charrette, like the others featured in this manual, showed what would be the result if a community were built in conformance with previously approved public policies. Instructions in the design brief were distilled from hundreds of disparate policy objectives contained in a variety of pertinent public policy documents. Of these documents, those listed below were the most important.

The Simon Fraser University Official Community Plan (OCP) (1996)

The OCP [2] sets out the basic governing principles for the community and will form the basis for rezoning lands to enable development within the SFU ring road. The plan establishes the parameters for new residential development, including an allowance for up to 4,536 housing units in two major neighborhoods (East and South Neighbourhoods). The OCP also stipulates requirements for new school sites, parks, community facilities, and commercial services. It gives special attention to environmental issues related to watercourses, trees, vegetation, and wildlife. It also addresses the provision of new services, including roads, pedestrian and bicycle networks, water supply, sewers, waste collection, and watercourse and stormwater management.

A Vision for a Community on Burnaby Mountain

Extensive consultation with key stakeholders led to the creation of the BMCC. Prior to the establishment of the BMCC, there was ongoing consultation with various stakeholders at SFU. This process spawned a vision statement for the new community, which expressed the needs, desires, and aspirations of SFU community members and SFU's related constituents. The vision contains specific principles for creating an environmentally sensitive, socially diverse community that complements the one foreseen in the original campus plan. These principles informed the core design principles contained in the design charrette brief.

Environmental Reports[3]

The design brief also incorporated the core principles from a number of important reports focusing on identifying and protecting special features of the area's aquatic, avian, and terrestrial habitat. These reports highlighted the need to protect a number of stream headwaters located near the university and to preserve, as much as possible, existing forested areas.

Burnaby Mountain Community Corporation Planning Principles

Within the context of its broader mandate, the BMCC, under the direction of Michael Geller, developed the following planning principles to guide the development of the 160 acre site:

- *Provide a wide range of housing choices including rental housing, cooperative housing, individual ownership, and condominium ownership in order to appeal to a wide range of households*
- *Create a "complete community" by integrating a variety of retail, service, office, healthcare, and recreational uses with residential and research/university uses*
- *Develop a range of transportation options that: encourages transit over personal automobile use; identifies means for managing transportation demands, especially of commuters; reduces the importance of the automobile in the design of roads and parking provisions; and emphasizes bicycle and pedestrian networks as valid components of the community's transportation strategy*
- *Respect the architectural integrity of SFU by: developing a pattern of streets and buildings that responds to the original master plan and its primary circulation axis or spine; developing building forms and massing that complements and enhances the architectural character of the university; integrating new building designs into the mountainside setting*

Design Brief
Using the visions and policy objectives for the site, the design brief was divided into four broad topics: (1) Equity and Vibrancy, (2) Ecological Function, (3) Economy, and (4) Education. Specific objectives and performance targets under each of these categories included:

1. Equity and Vibrancy: Create a vibrant "university community" that fits the site.

- *Design a pedestrian friendly, ecologically responsible, and mixed-use "university community;"*
  - *100% of residents should be within 350 to 400 metres of shops, services, and transit*
  - *Reduce VMT by an average of 40% as a result of an integrated, mixed-use community pattern*
- *Provide a wide range of housing densities, types, and tenures;*
  - *East Neighbourhood: 1.7 FSR (60 u.p.a.) = 3,049 units*
  - *South Neighbourhood: 0.9 FSR (30 u.p.a.) = 1,488 units*
- *Provide for a finely grained and integrated blend of human activity that includes opportunities for work in the home and in job locations not presently provided by SFU;*
  - *Target at least 35% as family-oriented housing (i.e., households with children)*
  - *A proportion of housing units should be live-work units*
- *Establish urban typologies for building, community design, and circulation that respond to the original university master plan;*
  - *Building heights in the East Neighbourhood should not exceed 10 storeys or 33.5 m. (109.9 ft.)*
  - *20% of the site should be "green streets"*
  - *Future auto traffic should not exceed the peak commuter traffic currently occurring at SFU*
  - *Devote 60% of street surface to non-car modes*

2. Ecological Function: Produce "fish and people friendly" designs that protect and enhance the site's streams and forest.

- *Produce "fish friendly" designs that protect and enhance all environmen- tally sensitive and/or degraded areas;*
  - *Protect and maintain existing major watercourses as per DFO and Provincial Ministry guidelines*
- *Enhance the integration of the community into the forest edge;*
  - *Preserve significant trees and tree groupings*
  - *Preserve, create, and link public spaces*
  - *Preserve forest blocks, parks, and recreation areas. Maintain and enhance public access to riparian corridors where there is low risk of damage;*
  - *60% of open space should have habitat value*
- *Incorporate "green infrastructure," where road, utility, and storm-drain systems are integrated and compatible with the stream and habitat systems of the site;*
  - *No more than 50% of the site should be impervious*
  - *Ensure that at least 80% of all water that falls on the site during an average year is absorbed by the soil*

3. Economy: Build a community that is profitable, attractive, and that serves both the university and wider community.

- *Identify market-responsive design ideas to ensure that development secures a financial legacy for SFU*
- *Explore ways of reducing immediate and lifecycle costs of site infrastructure;*
  - *Cut total energy use of buildings to the target of 285 kWh/m² per year (about half of the norm)*
  - *At least 10% of the energy used on site should come from on-site renewable sources such as solar voltaics, passive solar, solar hot water, and geothermal energy*
  - *75% of buildings should have good solar orientation*
- *Demonstrate the relationship between liveability, affordability, and ecological compatibility in community form*

4. Education: Continue and extend the legacy of SFU as an educational leader and innovator.

- *Further the role of SFU as a leader of innovative architectural and community design and environmental stewardship;*
  - *Designs should communicate a spirit of holistic and continuous living and learning*
- *Provide a model for a "university community" that updates yet respects and extends the original SFU campus vision;*
  - *Built form should emphasize integration, communication, and education throughout the community*
- *Promote design concepts for the Burnaby Mountain Community as a twenty-first century model that will influence and shape new communities worldwide;*
  - *Render the working functions of the university and the natural environment highly visible*
  - *Schoolyards should be envisioned as interactive outdoor learning spaces for the entire community and should inspire children and adults alike*

Conclusions and Lessons Learned
The four proposals shown on pages 36 and 37 were produced over an intensive three-day period using the design brief as a guide. The process helped identify the tradeoffs between various, and sometimes conflicting, policy goals. It also fulfilled its purpose of assisting the BMCC in selecting a design team that would carry forward the development plan for this new community. Each of the four teams produced a bold vision for the community while meeting all the requirements of the design brief. This being said, it is important to note that the bylaws of the Architectural Institute of British Columbia prevent architects from competing for a commission by preparing plans concurrently. To address this, the Corporation retained an advisor, familiar with architectural competitions, to develop a set of guidelines to ensure that the process did not contravene the Institute's regulations. The result was a more collaborative process which further enhanced the success of the charrette.

The BMCC Board of Directors selected the Hotson Bakker team for their success in balancing the multiple goals of the design brief. The project team is currently preparing neighbourhood concept plans and detailed engineering and stormwater plans for the site in a manner that remains true to its original charrette proposal.

The following points summarize key attributes of, and lessons learned from, the BMCC designer selection charrette process.

- Designer selection charrettes are an excellent way of establishing equality among members of a team. (Without the charrette component the leader of the design team often closes out the creative input of key individuals on important plan strategies)
- Designer selection charrettes allow the design team to "hit the ground running" when and if they are selected to continue the planning project
- Teams that have a breadth of experience and in which participants are treated as equals tend to do better than others in this type of charrette
- Making changes to status quo development practices is easier on sites that are wholly owned by one entity than on sites that are owned by multiple entities

Notes:

[1] Patrick Condon, Joanne Proft, and Sara Muir, Burnaby Mountain Community Design Charrette Design Brief (Burnaby, BC: BMCC, 2000).
[2] City of Burnaby. Simon Fraser University Official Community Plan (Burnaby, BC: City of Burnaby Planning and Building Department, 1996).
3 City of Burnaby, Design Principles for Environmentally Sensitive Areas (Burnaby, BC: City of Burnaby Planning and Building Department, 1996); ENKON Environmental Limited. Tailed Frog Survey for the Simon Fraser Development Plan Concept Area (Surrey, BC: ENKON Environmental Limited, 1997); Garnder Dunster Associates, The Nature of Burnaby: An Environmentally Sensitive Areas Strategy, Draft. (Burnaby, BC: City of Burnaby Planning and Building Department, 1992); Kerr Wood Leidal Associates Ltd., "Appendix D: Discussion Paper on A Stormwater Management Strategy for Burnaby Mountain," in Development Plan Concept for Simon Fraser University, Final Draft (Burnaby, BC: Simon Fraser University, 1996).

Illustrative Plans

Burnaby Mountain Community

Team One: ***Connecting the Mountain to the Region***
Team One's proposal emphasized both experiential and physical connections between the mountain summit and the surrounding metropolitan region. Its plan provides a direct connection between the new university SkyTrain station (located at the base of the mountain) and various other types of transportation systems within the community, thus dispelling a feeling of isolation and encouraging alternatives to cars. Residential expansion and development of the east neighbourhood is organized around a road and block pattern that radiates out from the central spine of the university to frame significant views both to the north and south, and to allow buildings to have maximum access to sunshine. The mixed-use core merges with higher-density residential neighbourhoods along the east and north edges, which are served by curvilinear roads that respect the natural contours of the site. In a unique departure, this team chose to intensify the western portions of the site in order to achieve a balance between the land uses at the east and west reaches of the campus. The Discovery Park research facility in the south neighbourhood becomes the core of a mixed-use development where medium- and lower-density housing and an elementary school surrounds live/work housing and research facilities.

Team Two: ***An Urban Centre with a Preserved Edge***
Team Two gave top priority to preserving the forest edge and its associated stream systems. It concentrated development at the centre of the site, along the existing university axis, and maintained a healthy, forested edge along the south slope. "The Promenade" serves as the village "Main Street" and extends off the prominent main axis of the existing university, providing a strong organizing element for the community. Cross streets set perpendicular to this axis create a uniform system of urban blocks. Mixed-use buildings with at-grade commercial buildings line the promenade, while on either side are residential courtyard buildings; together, these create densely populated urban neighbourhoods. While this team fit most of the residential development into the east neighbourhood, it also included smaller increments of commercial and residential development in the western neighbourhood. A system of open spaces and trails connects all portions of the site. A new elementary school, located on the south slope, provides a key focal point for the plan. Here the large green open spaces provide a key stormwater function, while offering space for habitat preservation and traditional recreational activities.

Burnaby Mountain Community

Team Three: ***Town and Gown by Nature***
This Team's plan, "Town and Gown by Nature," attempts to forge connections between the university campus and the proposed community. Ground floor commercial uses line the "Main Street" spine, while upper floors change from academic uses to residential uses as one moves from west to east. This creates a seamless transition between the academic-focused western portion and the more commercial eastern neighbourhood. The pivot point between the two districts is a collection of civic buildings, which include Convocation Hall and a convention centre. The higher density neighbourhood is located along the upper portions of the site, with lower density residential areas located on the south and west slopes. A "flowing grid", which follows the contours of the site, allows easy and efficient connections between residential neighbourhoods, whether on car, bike, or foot. The streets of this grid are designed to minimum widths and include wide green boulevards that serve both for bio-infiltration and parking. Forest fingers of new growth, interspersed with more valuable mixed coniferous/deciduous forest, allow for a penetration of nature into the more urban reaches of the community.

Team Four: ***A Town Called Festival***
The image and form of the town of 'Festival' takes cues from the University's existing structure and the unique alpine location. Like the other teams, this team proposed a concentrated core along the eastern spine where the university fabric embraces the new community. A secondary axis intersects this primary spine and provides a strong north-south green boulevard that combines stormwater management functions within the context of a visually powerful boulevard. Extending out and beyond this green boulevard spine are a series of distinct neigbourhoods: "the blocks," "the forest," "the farm," and the "meadows." These neighbourhoods provide a diversity of housing types: 10-storey towers and terraced townhouses in the upper neighbourhoods, street oriented town houses further south, live-work and cohousing options in the central core, and tree-top and meadow housing in the southern and eastern portions of the site. Team Four's system of "green" streets provides for bio-remediation and infiltration of stormwater while "blue streets" provide pedestrian-oriented, rain-protected mews. Most of the south slope forest is maintained in this plan for habitat and as an area for faculty research and student learning.