CASE STUDIES

Case studies enable us to show that there are several possible solutions to a particular problem and to identify those conditions and processes that will achieve a successful outcome. For practitioners and policy makers, case studies offer strategies for, and solutions to, difficult problems. For citizens and community leaders, case studies are a rich source of information and a tool for developing useful evaluation strategies.

Each of the four charrette case studies includes the following baseline information:

- charrette location
- charrette date
- charrette type
- site type
- charrette client
- charrette participants

The text description of each charrette includes:

- a description of the political con text and background of the charr-ette
- an outline of the guiding policy that informed the charrette design brief
- a summary of charrette objectives
- a description of the design brief objectives
- a summary of key thresholds and performance measures
- a summary of conclusions and lessons learned

Illustrative plans show how the charrette teams resolved the multiple challenges posed by each of the charrette design briefs.

FURTHER RESEARCH

For a more detailed description of the history and use of case study methodology in the design professions, please see: Francis, "A Case Study Method for Landscape Architecture."

For further research on design charrettes, please see: Crofton, *Sustainable community planning and development: Design charrette planning guide;* Condon, *Sustainable Urban Landscapes: The Surrey Design Charrette*; Kelbaugh, *Common Place: Toward Neighbourhood and Regional Design*; and the National Charrette Institute at http://www.charretteinstitute.org/charrette.html.

Charrettes as a Process for Integration

Four Case Studies

This section features four case studies of community design charrettes that have incorporated sustainable principles. They are:

1. Southeast False Creek, Vancouver, BC
2. Burnaby Mountain Community, Burnaby, BC
3. Riverwalk on the Coquitlam, Coquitlam, BC
4. East Clayton, Surrey, BC

These four case studies are intended to show that there is no single formula for achieving more sustainable communities. Rather, just as there are many types of sites, so are there many potential solutions.

What is a Charrette?

The term "charrette" was coined over a hundred years ago at the Ecole des Beaux Arts in Paris. Students enrolled in the School of Architecture were expected to meet strict deadlines for the completion of design projects. When the deadline arrived, a small cart (in French, a "charrette") trundled down the aisle. Students had to toss their drawings onto the cart whatever their state of completion, for to fail to do so was to get a zero for the project. Much of this spirit of intensity is retained in our more modern and collaborative use of design charrettes. We would define the charrettes used to produce the designs in this section as a time-limited design event in which a diverse group of people strive to produce a mutually agreeable answer to a complex community design problem.

Why Use Charrettes?

Citizens, planners, and design professionals have recently come to regard design charrettes as an exceptionally effective tool for creating more sustainable new and retrofitted communities.[2] Sustainable communities are, by definition, integrated communities where ecological, social, and economic realms function together harmoniously and synergistically. The models for sustainable communities are found in healthy ecological systems, where each element contributes to the health of other elements.

In the past, issues of housing equity, stream protection, or capital planning were dealt with in a piecemeal and dis-integrated fashion. Charrettes were not necessary within such a context. However, if our objective is to reintegrate the elements of our urban ecology, then an integrated and ecological design and planning method is required.

All issues are "on the table" at a well designed charrette, and human creativity ensures that it is possible to integrate the elements of a complete and sustainable community. Design charrettes most often produce, if not a perfect answer to all of the issues on the table, at least a very good one. Our region and our world are in need of good answers to the complex and pressing challenges before us.

The charrette case studies that follow profile four different applications of design charrettes within the context of four distinct sites. The charrette sites include an urban brownfield site, a mountain-top site in a first-ring suburb, a river bluff at the foot of a mountain, and a flatland suburban greenfield site. The Southeast False Creek "visioning" charrette was a response to the need to develop visionary models for the retrofit of an urban waterfront site within the context of city planning policy. The Burnaby Mountain "design team selection" charrette was also highly visionary and facilitated the selection of the design team that would develop the master plan for the new community. The Riverwalk "consultant charrette" involved an integrated team of design, engineering, and environmental specialists in the development of a green infrastructure-based community plan for a sensitive hillside site on the shores of the Coquitlam River. Finally, the East Clayton "implementation charrette" was initiated to develop a regulatory and physical model for demonstrating principles of sustainability in an actual community in Surrey. This last point is key as the East Clayton charrette was intended both to provide a clear vision for a new type of community and to create a replicable model for developing similar communities in other areas, regionally and beyond.

Below
Charrettes are interdisciplinary, creative events in which participants strive to reach a mutually agreed upon solution to a set of complex problems within a short period of time. Charrettes focus on many things, ranging from reaching a consensus on a community's long-term vision to finding workable agreements to site-specific projects. They are an increasingly effective way of getting public support for some of the most challenging planning issues such as increasing density, protecting and restoring natural systems, establishing a mix of uses and a diversity of housing, and creating a vibrant public realm.

Near right: East Clayton implementation charrette (pgs. 41-49).

Far right: Southeast False Creek visioning charrette (pgs. 26-31).

Above
1 ***Southeast False Creek:*** Visioning Charrette
2 ***Burnaby Mountain Community:*** Design Team Selection Charrette
3 ***Riverwalk on the Coquitlam:*** Consultants Charrette
4 ***Headwaters Project:*** Implementation Charrette

Southeast False Creek

VISIONING CHARRETTE[1]

The Southeast False Creek Design Charrette was initiated to assist the City of Vancouver's Central Area Planning Division in clarifying a vision for a sustainable neighbourhood on the southeast shores of False Creek within the context of existing policy for the area. A charrette was considered an ideal way to test the feasibility of existing policy objectives for the site while exploring innovative urban design scenrios that could be used both here and on other sites.

Charrette Date
October 1998

Charrette Client
City of Vancouver Planning Department

Charrette Type
Visioning

Charrette Participants

Team One: Bob Yaro (New York); Bob Worden; Patrick Condon; Chris Phillips; Cynthia Mitchell (Australia);David Negrin; UBC Students: Varouj Gumuchian; Lisa Kwan; Sara Muir; Michael Wilkes

Team Two: Ian Carter; Doug Polland (Ottawa); Jane Durante; Moura Quayle; Lee Hatcher; Jeff Harold; Ray Spaxman; UBC Students: Baldwin Hum; Michael Toolin; Alex Kurnicki; Dimitri Samaridis

Team Three: Nigel Baldwin; Ron Walkey ; Catherine Berris; Bill Wenk, (Denver);Ian Theaker; Krish Krishnan; Ralph Segal; UBC Students: Pamela Phillips; Luc St. Laurent;Ceclia Achiam; Peter Walsh

Above
Southeast False Creek against the backdrop of downtown Vancouver, Stanley Park, and the North Shore mountains. The almost forty hectare parcel is the last remaining undeveloped portion of the False Creek waterfront.

On 26 October 1995, Vancouver City-Council voted to rezone the last remaining thirty-six hectares of industrially zoned False Creek shorefront for largely residential uses. This rezoning had been occurring for about thirty years, and, with this last parcel, a waterfront that had been 100% industrial (containing everything from rail yards, to shipyards, to sawmills, with only night watchmen for permanent residents) was to become home for over 20,000 Vancouverites. This last thirty-six-hectare parcel – referred to as Southeast False Creek (SEFC) – would complete the circle of high-density residential development surrounding False Creek; a ring of urban development that has become North America's most closely watched urban brownfields redevelopment initiatives. However, Vancouver City Council was to do something a bit different when it came time to authorize the development of SEFC, the last major parcel on the creek. It directed its planning staff to place an extraordinary emphasis on meeting a higher standard of environmental sustainability and energy efficiency than had been met at other areas within the city. Specifically, the council identified seven priorities for the Southeast False Creek neighbourhood:

1. *The land should be mostly used for housing.*
2. *In contrast to other portions of False Creek, where housing for singles and couples predominates, housing for families should be a priority.*
3. *Buildings and transportation systems should be designed to save energy.*
4. *The area should become a place to learn about building more sustainable communities.*
5. *A streetcar line should be incorporated.*
6. *Job sites should be integrated into the community in order to reduce the need for commuting.*
7. *Housing should be increased adjacent to Vancouver's Central Area.*

Guiding Policy
With council authorization, City staff set the wheels in motion to produce the planning and policy documents that would be the "rules for the game" during the development of SEFC. These documents included:

The Creekside Landing Plan (1997)[2]
This plan, submitted to council by the development consultant Stanley Kwok Consultants Inc. at the behest of the City of Vancouver Real Estate Department, argued that the urban design for SEFC should, in most respects, mimic the pattern of development taking place on the north side of False Creek. The consultants proposed a plan dominated by twenty-story-plus residential point towers. They felt that only by employing the urban development formula that was used successfully on the north shore of False Creek could the city generate enough capital to pay for cleaning up this polluted site.

Visions, Tools, and Targets: Environmentally Sustainable Development Guidelines for Southeast False Creek (1998)[3]
The City of Vancouver Planning Department commissioned the Sheltair Group to produce this study, partly in response to misgivings about the Creekside Landing Plan discussed above. The study was designed to provide: a working definition of sustainability for City staff, consultants, and the wider community; performance targets to guide sustainable planning and development; a data bank of exemplary sustainable community precedents; and a framework for full-cost accounting as a basis for redeveloping economic information regarding alternative building and neighbourhood designs. While this study was not an official policy document, the City Planning Department later incorporated much of its information into the official Southeast False Creek Sustainable Neighbourhood Policy Statement.

Southeast False Creek Sustainable Neighbourhood: A Policy Statement to Guide Development (1999)[4]
Using the previous documents as a foundation, the city developed an official SEFC policy document to help guide future development. The policy document was developed over several months through an extended, facilitated discussion with a multistakeholder Advisory Group.The document is unique in that it marked the first time that the City of Vancouver gave environmental, social, and economic sustainability objectives equal weight with density, open space, transportation, and land-use objectives. The vision for the site, as expressed in the policy statement, embodies a holistic and dynamic approach to sustainability: It stated that SEFC would become a neighbourhood "designed to maintain and balance the highest possible levels of social equity and livability, ecological health and economic prosperity, so as to support [residents'] choices to live in a sustainable manner."[5]

Charrette Goals and Objectives
The policy framework provided the context for launching the SEFC design charrette. In the spring of 1998 the City of Vancouver Planning Department engaged the ORCAD Group Inc. and PMC Associates to organize and run a four-day design charrette. The primary goal of the SEFC charrette was:

To provide council, staff, consultants and the larger community with different visions of what a community built in conformance with the proposed policies would be like.

This goal, and the October 1995 directives from city council discussed above, suggested the following more specific objectives for the charrette:

- *To test the efficacy of those aspects of the proposed policy statement and the performance targets that would be manifest in urban design before any attempt is made to apply them*
- *To create a setting in which leading BC designers can exchange ideas and viewpoints with outside experts in the field of sustainable design*
- *To establish new, more sustainable urban typologies in order to guide the planning and design of this site (these typologies would then be used as prototypes for other sites)*
- *To illuminate the connection between sustainability and liveability*
- *To make the sustainability functions of the site both transparent and didactic so that SEFC can serve its residents as well as educate the world*

Design Brief[6]
The SEFC Design Brief was developed from the policy documents outlined above. This point is key, as the charrette was conceived as a tool for exploring the implications of policy that had been developed through years of professional and citizen input. Charrette organizers extracted performance objectives and principles that had direct physical consequences for the site and translated them into a set of design instructions for charrette teams. Design team members were

challenged to meet or exceed objectives in the following four categories: (1) Land and Water, (2) the Built Environment, (3) Building Design and Performance, and (4) Cycles of Growth and Decay. A summary of these objectives is provided below.

1. Land and Water
Design team members were challenged to maintain the ecological health of the site. Objectives included:

- *Hold and absorb 100% of rainwater on the site or clean completely before discharge*
- *In order to allow for infiltration, ensure that at least 50% of the site is pervious surface*
- *Ensure that 80% of foreshore has habitat value*
- *Design buildings so that at least 25% of roofs are planted*
- *Ensure that 60% of green space has habitat value*
- *Provide 2.75 acres of "sustaining" open space/1,000 people*
- *Ensure that 25% of solid waste is treated on site*

2. The Built Environment
Design team members were to propose street, block, building, and parcel design strategies that would:

- *Accommodate an overall site density of forty-five units per acre with a net Floor Space Ratio (FSR) of 3 (300,000 square feet of residential space) and a gross FSR of 1.6*
- *Provide 200,000 square feet of office space (one foot of commercial space for each fifteen feet of residential space)*
- *Provide space for at least 1,000 jobs*
- *Provide a mix of housing types and tenures (i.e., 20% low-income housing and 35% family housing)*
- *Consider possibilities for integrating the community heart and commercial core along a pedestrian-friendly "High Street"*
- *Provide a maximum of one parking space per residential unit*

3. Building Design and Performance
Key objectives in this category addressed the incorporation of more sustainable site design, building technologies, and construction methods. Teams were instructed to:

- *Ensure that 75% of buildings on the site have good solar orientation*
- *Maintain existing and/or create new view corridors within the site so that people can see the surrounding landscape*
- *Propose building height limits that address solar orientation, views, and ground orientation while also meeting density targets*
- *Ensure that 90% of energy is from renewable sources*
- *Ensure that at least 5% of renewable energy is produced on site (i.e., through solar vol taic, solar hot water, and geothermal energy)*

4. Cycles of Growth and Decay
Design team members were to anticipate and capitalize on the cycles of growth and decay inherent in the urban system and to propose ways of meeting the following:

- *Reduce solid waste going to landfills to 20% of the per capita average for the city*
- *Consider placement of neighbourhood composting system*
- *Return all green waste (i.e., grass clippings, foliage) to soils*
- *Provide space and support for residents to grow 12.5% of their yearly consump tion of produce on site*

Conclusions and Lessons Learned
The SEFC visioning charrette provided a means through which an existing policy framework could be tested, explored, and potentially enriched through design. As should be the case with all well-conceived charrettes, the SEFC charrette was well grounded in research and policy, of which the Development Guidelines and the Policy Statement documents were two of the most important expressions.

While distinct in form, each urban design proposal conforms to the city's policy framework for a sustainable SEFC community while also provoking continued discussion and debate about the possibilities for a sustainable site. For example, while extending far beyond the scope of the event itself, issues such as economic feasibility and life-cycle costing were wrestled with by each of the charrette teams, who were informed by a careful reading of the design brief and existing policy directives. Thus the charrette became a venue for exploring how to reconcile the gap between currently established practices for determining the economic potentials of a project and emerging economic models grounded in sustainability theory. This is a particularly important issue in the case of brownfield sites, which often have additional costs for cleanup – costs which can put unexpected pressures on a development project to produce short-term economic gain in order to finance expensive cleanup activity.

In addition, brownfield sites are often very prominent and valued sites at the heart of mature communities. Consequently, gaining unanimous support for development of these sites at high but sustainable urban densities is often quite difficult. The charrette has been an effective tool for exploring how to meet multiple policy objectives for an area.

In sum, visioning charrettes such as SEFC allow a region's best minds to collaboratively produce scenarios for more sustainable communities. The SEFC charrette produced three design proposals, which allowed community stakeholder groups, city officials, and developers to evaluate existing policy and to more clearly envision a picture of alternative sustainable futures for the site. Citizens and elected officials can now use these proposals as policy tools to guide future efforts towards more sustainable urban growth.

Notes:

[1] Within the context of participatory community planning theory, the term "visioning" commonly connotes a specific stage of community involvement, in which community stakeholders articulate broad goals, aspirations and future directions concerning their community as one means of informing policy. In the SEFC process, the community visioning stage began long before the charrette event, involved a wide range of stakeholders, and resulted in the extensive policy base that informed the charrette design brief. We use the term to emphasize how this charrette was used to test this existing vision through an informed, exploratory design process, and to use the resulting plans and proposals to further refine the vision and thus inform future policy. For more discussion on the SEFC charrette process, please see: City of Vancouver and The ORCAD Consulting Group Inc. "Southeast False Creek Design Charrette: Exploring High Density Sustainable Urban Development." CMHC Research Highlight Socio Economic Series – Issue 81 (Ottawa: Canada Mortgage and Housing Corporation, 2001).
[2] Stanley Kwok Consultants Inc., "Creekside Landing – Southeast False Creek" (Vancouver, BC: Stanley Kwok Consultants, Inc., 1997).
[3] Sheltair Group Inc., "Visions, Tools and Targets: Environmentally Sustainable Development Guidelines for Southeast False Creek" (Vancouver, BC: Sheltair Group Inc. and City of Vancouver Planning Department, 1998).
[4] City of Vancouver Planning Department, *Southeast False Creek Policy Statement* (Vancouver, BC: City of Vancouver Planning Department, 1999).
[5] Ibid., 8.
[6] The ORCAD Consulting Group Inc. and PMC Associates, *Southeast False Creek Charrette: Design Brief* (Vancouver, BC: City of Vancouver, 1998).

Illustrative Plans

Southeast False Creek

Team One: Something Borrowed, Something New*

Team One accepted the standard grid street pattern of the surrounding urban fabric but shifted the angle of orientation at the mid-west point of the site. Less linear pedestrian and cyclist routes provide opportunities to "get off the grid" and to acquire a more intimate sense of individual neighbourhoods. Team one viewed the site as a "Town for the Post-Motor Age," and it saw streets as places where the car is "embraced, not banned" without neglecting the needs of pedestrians and cyclists. Many of the residential units were designed as four-storey townhouses along a traditional block pattern. These residences provide ground access to gardens, courtyards and streets and are attractive to families with children. Higher density residential dwellings are accommodated in mid-rise five- to six-storey blocks at the southern edge of the site facing First Avenue, and two twelve-storey high-rise towers at the southeast corner of the site. The design accommodates a broad range of live-work opportunities, making the entire development a "virtual incubator" for new industries that will form the core of the city's future economy. The preserved historic Domtar Building will function as the town hall, and a new boathouse/multipurpose centre will be situated on the waterfront. Green spaces reach into every portion of the community and link every district with the seawall, which is redesigned to offer a "softer" and more natural edge that will provide habitat for a range of birds and small mammals.

Team Two: Idiosyncrasy – Exploring the Spaces Between

Team Two accepted the existing grid pattern at the entry of the site but, once past the grid edge, ensured that paths/roadways quickly became "idiosyncratic." Traditional linear routes are transformed into more meandering passageways that provide opportunities for different kinds of engagement with the site and that echo the edges of shore and inlet. By providing a hierarchy of accessibility routes that serve to quickly reduce vehicle access as one moves further into the site, Team Two created a design that is "car-tolerant, not car-driven." This team designed a range of building heights on the site – ranging from ten- to thirty-storey high-rises in the eastern portion of the site, to two- to four-storey townhouses in the west. They divided the community into three primary subdistricts – high-density residential to the east, a "community focus" (with the school being part of a mixed-use building) at the centre of the site, and lower-density residential and parkland to the site's west. The team explored energy issues in detail, estimating that, with the right building orientation and design, 50% to 60% of domestic hot water could be supplied by solar energy.

Team Three: Embracing Traditional Form

Team Three's design continues the north-south, east-west city grid pattern throughout the site, creating unbroken vistas between their points of origin and termination. This team's approach to automobile access was to "accept the car but control it ... [not to] be mastered by it." The proposal uses a traditional Vancouver city block as the basic "building block." Blocks contain sixteen to twenty parcels, with each parcel accommodating four to eight building units (primarily in the form of three-and-a-half-storey townhouse complexes). Up to 128 to 160 dwelling units could be accommodated per building block, providing a high proportion of ground-oriented residences attractive to families with children throughout the site. Seven- to eight-storey buildings with double loaded corridors and internal courtyards provide for higher density accommodation. An east-west phased development approach is suggested, resulting in a "holding pattern" for the ecologically sensitive western zone that could utilize quickly evolving soil remediation technology for the latter stages of the development. Commercial life will eventually exist along First and Second Avenues and will congregate at several nodes (e.g., around the community centre) within buildings designed as flexible space that can adapt to meet market demand.

*Charrette team summaries adapted from: Fiona Crofton, *Charrette Synopsis: Southeast False Creek Vancouver, BC* (Vancouver, BC: The ORCAD Consulting Group Inc., 1998).

Southeast False Creek