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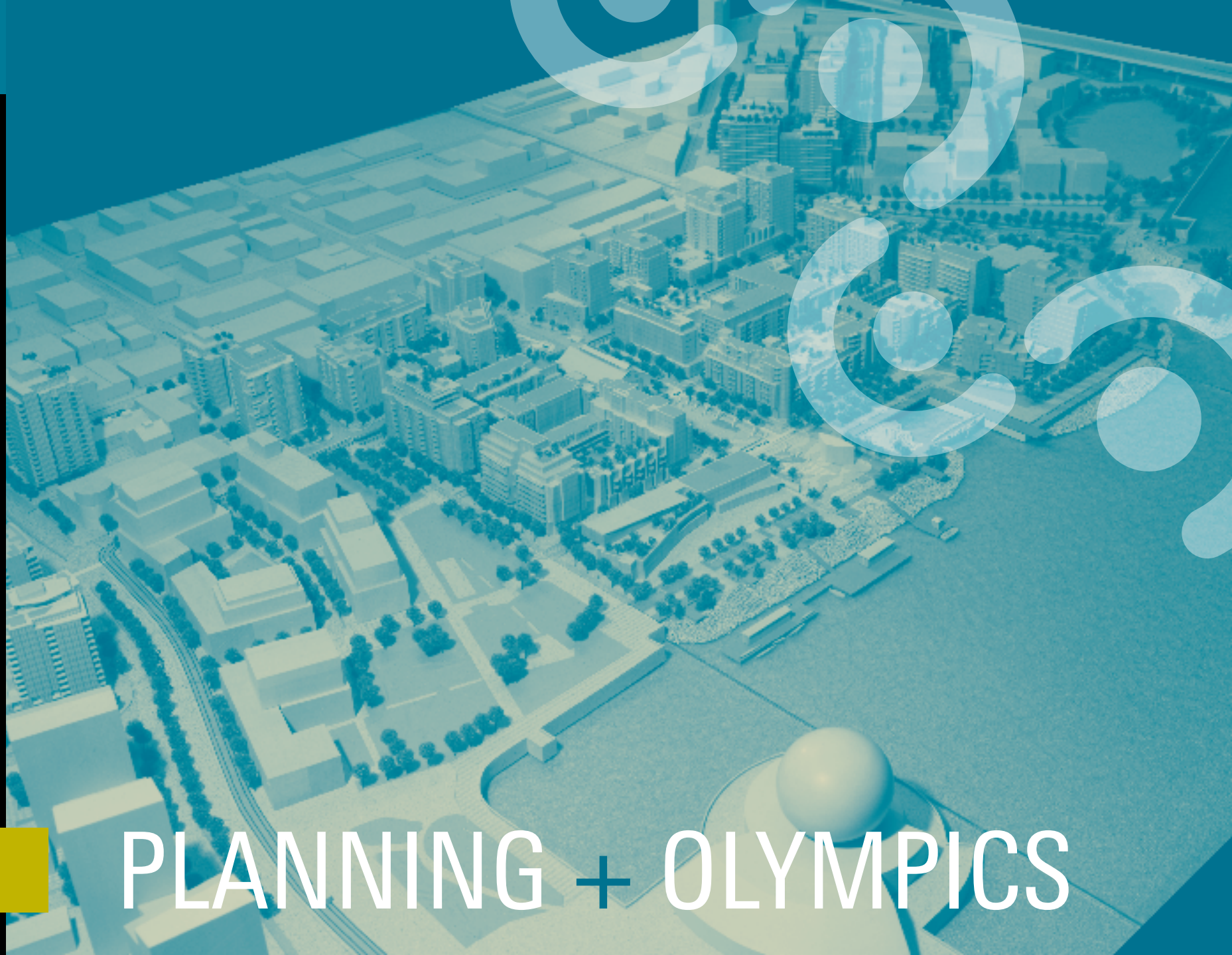
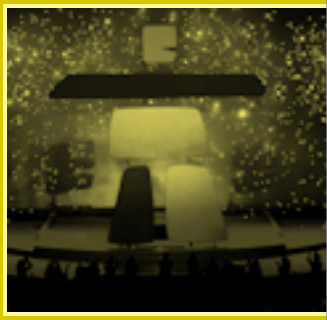
Millennium Water:
The Southeast False Creek Olympic Village
Vancouver, Canada



PLANNING + OLYMPICS

THE CHALLENGE
SERIES



"The International Olympic Committee has the honour of announcing that the 21st Olympic Winter Games in 2010 are awarded to the City of… Vancouver."

THE OLYMPIC VISION:
SPIRIT OF THE GAMES FUELS COLLABORATION AND INNOVATION

With those words, spoken at 8:41 Pacific Time on July 2, 2003, President Jacques Rogge of the International Olympic Committee defined the next evolution of Vancouver. At that moment, the Official Development Plan for Southeast False Creek transformed into the plan for the Vancouver 2010 Winter Olympic and Paralympic Village.

The Olympic Village plan moves beyond the Vancouver model of urban development, typified by high-rise towers on a street scale residential podium. Encouraged by architects seeking a new direction, City planners and the Council of the day instead turned to a more European form – lower-scale buildings with an extensive public realm and shared amenities.

The intent was to reflect the heart of a European village, focused on trade, gathering and entertainment, while seeking an effective balance between social, environmental and economic "well-being," as reflected in Vancouver's bid to host the Games. The synergy between these goals was supported by an unprecedented commitment from private enterprise to contribute a substantial subsidy to the Olympic program while striving to meet the City's aspirations for an innovative, livable and resilient community.

The Olympic commitment also created the driving force of innovation, technical excellence and bureaucratic cooperation that has become the hallmark of the project. An absolute schedule and demanding functional program forced collaboration and problem solving. These strengths allowed the team to design, document, approve and construct a total of 1.5 million square feet of new development – comprising some 1,100 units of housing aimed at all income levels, supported by a real village centre, unsurpassed urban public realm and livable amenity services – in just three-and-a-half years.

As Mayor Philip Owen noted in his November 15, 2002 letter to Dr. Jacques Rogge:

"Our City looks forward to hosting an exciting, peaceful and prosperous Games. Vancouver is a multi-cultural and diverse society, ideally suited to hosting the Olympic Family and the rest of the world. The commitments for sustainability and inclusiveness will ensure a Games event like no other and set an example for future Games."

The building of the Southeast False Creek Olympic Village demonstrates what can come from vision, collaboration and high ideals. It realizes a new paradigm in urban development and fulfills Vancouver's continued evolution as a livable city.

The logo and mascot of the future 2010 Vancouver Winter Olympics is based on the Canadian Inuit inukshuk. The stone marker used by the Inuit to guide themselves through the Arctic terrain for centuries has become a symbol of leadership, cooperation, friendship and the human spirit. Designer Elena Rivera MacGregor's intention with Ilanaaq (which means "friend" in Inuktitut) was to represent the culture, environment and people of Canada.

Planning + Olympics Timeline

October 1999
SEFC Policy Statement approved by Vancouver City Council

2002
Sustainability background reports submitted to the City of Vancouver to inform the SEFC Official Development Plan (ODP)

2003
ODP process begins

May 2003
ODP preliminary submission to the City of Vancouver

July 2, 2003
Vancouver wins bid to host 2010 Olympic and Paralympic Winter Games

February 2004
ODP supplement submission to the City of Vancouver

April 2004
The architects' letter to Vancouver City Council

July 2004
SEFC Green Building Strategy approved by Vancouver City Council

July 2004
City of Vancouver requests revised ODP urban design framework

October 2004
Final ODP urban design framework submission

March 1, 2005
Vancouver City Council approves ODP

December 21, 2005
City issues request for proposals to develop the Olympic Village

April 6, 2006
City Council selects Millennium SEFC Properties Ltd. as developer of the Olympic Village

April 26 + 27, 2006
SEFC integrated design process kickoff workshop

August 10, 2006
Millennium submits rezoning application for Olympic Village site

On Your Marks, Get Set...

And, they're off! The selection of Vancouver as host city for the 2010 Olympic and Paralympic Winter Games in July 2003 activated Vancouver's Olympic planning and catalyzed the development of the Southeast False Creek (SEFC) lands. Eight city blocks (17 acres) at the centre of SEFC were designated to be the Olympic Village. The village would house approximately 2,800 Olympic athletes from around the world and be a centre of activity and celebration for the duration of the Games. The Olympic Village designation took the planning process for SEFC to the next level, requiring rapid goal-setting, decision-making and above all, action.

The SEFC Official Development Plan, which established a foundation for urban design and sustainability principles, was approved by Vancouver's City Council in March 2005. Later that year, the City posted a call for proposals in search of a developer for the Olympic Village site. Proposals from each prospective developer had to take into account the interim use of the development as the Olympic Village as well as the sustainable design guidelines for the site. Millennium SEFC Properties was selected to develop the market residential and commercial areas and to design and build both the community center and affordable housing for the City, while the City undertook to develop the public realm and parks. This chapter details the timeline, conditions and constraints that led to the ultimate design of the Olympic Village.

Mike Harcourt: Vancouver's Offbeat Approach Leads Back to the Future

I got involved in urban development issues in the 60s, when I helped a citizens' group stop the freeway slated to cut through Vancouver's historic Strathcona neighbourhood. At the time, mainstream thought was that downtown was for working, not living, that you should be able to drive anywhere you wanted, and that oil would last forever. The "planned city" was big, tall and beautiful. Urban renewal advocates wanted to "clean out" old neighbourhoods and replace them with Stalinist-design social housing and fast roads to the suburbs.

The trouble was, the old neighbourhoods didn't want to be fixed up, and the freeway would destroy the ability of Chinatown shop owners to live where they worked. Vancouver said no to the freeway, and yes to a 24-hour downtown.

We've always had an offbeat approach to development in Vancouver, and it's why it's such a great city today. "Livability" – coined by Walter Hardwick – was the buzz phrase of the 70s and 80s. We retained local street shopping and invested in neighbourhoods – community centres, branch libraries, parks, neighbourhood houses, seniors' centres. So the community of Kerrisdale has a distinct flavour, as does Kits and Commercial Drive.

To me, developments like the new Olympic Village are "back to the future." This is the way we used to live – in apartments over shops, walking everywhere – it's the old medieval city. Most of us are social; we like interaction, the personal touch. True, some people want to live in a McMansion and go everywhere in their car. But with peak oil and climate change upon us, the necessity of integrated sustainability practices is changing cities dramatically. Besides, I think in 20 years McMansions and Hummers won't be cool anymore. People will look at that lifestyle as crazy, with so much money squandered. Cost, climate change and a desire for community – these are the drivers shifting sustainable development from the fringe to the mainstream.

We're at a point now where there's a lot of awareness and acceptance of sustainability values. But we face a huge challenge: how are we going to rapidly shift so that all communities are built this way?

I see this challenge as two-fold: training, and marketing. Over the next few years we need to train thousands of architects, engineers, construction trades, developers, lawyers, accountants and others to be sustainability managers.

And we need to make sustainable communities cool, to market this lifestyle.

The 1950s car-oriented world came to a halt in Vancouver when we stopped the freeway. Livability came to the forefront as we strengthened neighbourhoods and brought life to the downtown. With leading projects like Millennium's Olympic Village, we're proving that we can integrate all aspects of sustainable communities into a single development. Now, we must meet our challenges, build on these successes and create resilient cities for a sustainable future.

Mike Harcourt
Vancouver City Councillor and Mayor, 1973-1986

British Columbia MLA and Premier, 1986-1996

"This is the way we used to live – it's the old medieval city."

Scot Hein:
Following Context, Creating Place

Vancouver's recent urbanism renaissance is recognized for the invention of high density/mixed use development that enhances streetlife by infusing residential energy. This strategy has proved successful in the downtown, where the West End and Central Business District are generally characterized by towers and podiums.

However, as attention turned to the southeast shore of False Creek, where much of the land is owned by the City of Vancouver, it became important to determine whether form should follow finances (the creation of value) or follow context (the creation of place). City staff had explored this critical city-building question prior to the awarding of the 2010 Olympic Games. During that time, advocates from the design professions recommended new approaches to density and form as an extension of SEFC's industrial heritage – qualities that had not been evident in the downtown peninsula. The design profession challenged staff, and City Council, to deliver urban densities while reinforcing the identity of the lower-scaled context prevalent on this last undeveloped tract of land on the creek.

Notwithstanding the challenging Olympic timeline, Council agreed, concluding that "authentic placemaking must drive design intent." The invention of new lower-scaled mid-rise buildings was coupled with innovative approaches to public realm design. This has produced a distinctive Olympic Village neighbourhood centre (The Shipyard) whose identity will be reinforced by subsequent neighbourhoods (The Worksyard and the Railyard) towards an honest and contemporary expression of Canadian West Coast urban life.

Scot Hein
Senior Urban Designer
City of Vancouver

The European development model (narrow streets, low- and mid-rise but highly dense residential spaces, inner courtyards, open public space and vibrant street life) has played an influential role in the planning and design of Southeast False Creek.

False Creek North boasts high-density, high-rise residential living and community amenities. SEFC's unique approach demonstrates a shift to low- and mid-rise density with a focus on environmental and community benefits.

EXPERT STUDIES GUIDE SUSTAINABILITY FEATURES The 1999 SEFC Policy Statement contained a number of high-level sustainability principles to guide the neighbourhood's development (see chapter one). To translate these ambitious principles into actions for SEFC, the City commissioned consultant reports in four key areas. Select action items from the reports were incorporated into the Official Development Plan for the neighbourhood. In addition, the studies themselves became key reference materials that informed the site's design. The reports focused on the following overarching aspects of urban sustainability:

ENERGY
WATER + WASTE MANAGEMENT
URBAN AGRICULTURE
TRANSPORTATION

Energy

The SEFC energy study looks at energy conservation and supply options, and reviews proposed energy-related performance targets. Of particular interest is its investigation of embodied energy. Embodied energy is the total energy that goes into the manufacture of a product, including energy used in growing, extracting, manufacturing and transporting it to the point of use. The study recommends using alternative materials with lower embodied energy in the construction of buildings, municipal infrastructure, parks and open space. Other recommended strategies include:

- Increasing the energy efficiency of buildings
- Increasing the use of local, efficient and renewable sources of energy
- Implementing enhanced energy management programs
- Establishing a micro-grid and pooled power back-up solution
- Reducing energy use for transportation

Water + Waste Management

WATER MANAGEMENT The water management plan explores potable water consumption, reuse of stormwater and greywater, sanitary sewage treatment and stormwater management. The report recommends implementing a monitoring system to evaluate the success of water conservation policies over time. Specific conservation strategies include:

- Installing efficient fixtures and appliances
- Using green roofs, permeable pavement and constructed wetlands
- Using rain barrels to store rainwater
- Reusing greywater for landscaping and toilet flushing
- Treating sewage on-site using solar aquatics or "living machines"

WASTE MANAGEMENT The waste management plan focuses on the four "Rs" of waste management: reduce, reuse, recycle and manage residual waste. Waste that is not diverted by the first three "Rs" is referred to as "residual waste." Conventional waste management plans focus on how to manage residual waste, but in recent years increased attention on the other "Rs" has helped to significantly reduce the proportion of residual waste. The plan recommends waste reduction and diversion strategies, including reusing, recycling and composting, for five levels of waste management:

- Construction and demolition
- Community waste infrastructure
- Multi-family residential buildings
- Industrial, commercial and institutional facilities
- Public parks and open spaces

Urban Agriculture

The SEFC urban agriculture strategy focuses on the role of food-related activity and urban agriculture in neighbourhood planning. This study defines urban agriculture broadly as a complete system, including on-site food production, processing and distribution. The proposed overarching objectives include:

- Increasing the physical capacity to support the growing of food
- Increasing the amount of on-site food production, privately and commercially
- Increasing food-related economic development initiatives
- Supporting local food security initiatives
- Increasing technical capacity, skills and knowledge of urban agricultural systems
- Encouraging the celebration of food and the local food system

Transportation

The SEFC transportation study identifies a range of transportation options to support the vision of SEFC as a model sustainable community. The overarching aim is to "balance" the transportation system by improving transportation choices and reducing the environmental, social and economic costs of an automobile-dependent transport system. A monitoring and evaluation program will measure the success of the sustainable transportation efforts. Specific recommendations include:

- Incorporating streetcar, ferries and improved bus service into site planning
- Designing safe, comfortable and convenient transit stops
- Creating pedestrian- and bicycle-friendly streets
- Promoting opportunities for car-sharing
- Implementing parking management and traffic-calming strategies

THE OFFICIAL DEVELOPMENT PLAN TAKES SHAPE

Preliminary Proposal

MAY 2003

MAY 2003

Proposal Supplement

MARCH 2004

Commitment to Sustainability and Livability

In May 2003, VIA Architecture submitted an official development plan proposal for SEFC to the City of Vancouver. Rooted in sustainability and livability, the proposal presented a rethinking of "standard" building forms in Vancouver. It promoted enhanced comfort and high-performance green design. The design featured low-rise buildings of up to six storeys built on an east-west axis. Units would draw upon north-south natural ventilation and benefit from solar access. The plan showed several mid-rise terraced buildings oriented north-south. These buildings were designed for optimal efficiency and offered the opportunity for large roof gardens. The submission explored the possibility of reducing building heights while increasing overall density. The average unit size was 900 square feet on a 6,500 square foot floor plate.

Commitment to Flexibility and Neighbourhood Character

In February 2004, VIA Architecture submitted a proposal supplement to augment its 2003 submission. This plan refined the neighbourhood's massing and density while maintaining the opportunity for flexible development. The supplement also addressed the neighbourhood's three areas of distinct character: worksyard, shipyard and railyard. An emphasis on family housing enabled a five per cent increase to total residential density. Of the proposed 2.1 million square feet of development, less than 20 per cent was above 12 storeys. This reflected a decrease in the square footage above 12 storeys from the original 2003 submission.

"Erickson recommended using building form to 'reflect the natural topography of the False Creek basin.'"

Final Proposal

MARCH 2004

DECEMBER 2004

JANUARY 2005

The plan demonstrated a building form that was distinct from Vancouver's downtown towers, displaying a more slender upper superstructure built on a mid-rise base. The approach to "place" was inspired by the diversity of the city's West End neighbourhood – human-scale, with a diversity of heights – as opposed to the uniformity of the high-rise residential model.

In response to the proposal supplement, the City directed the VIA team to animate the waterfront, move some of the parklands to the east, leave heritage buildings in their original locations and decrease overall building heights.

1 ODP preliminary submission by VIA Architecture
2 ODP submission supplement by VIA Architecture
3 ODP preliminary submission by SEFC Urban Design Team

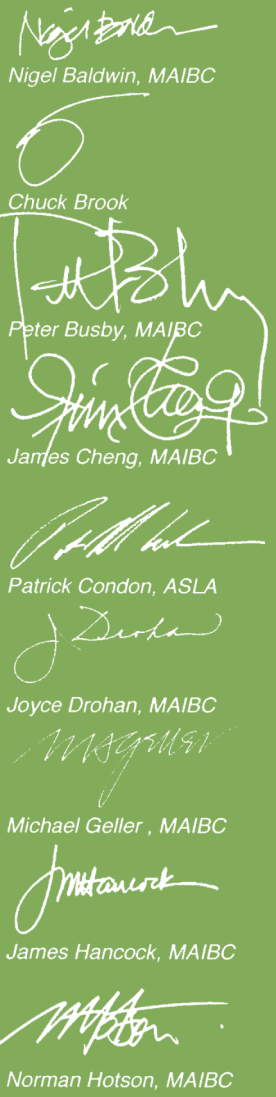
Commitment to Low- and Mid-Rise Forms and the Natural Topography

The preliminary submissions were reviewed by City staff and subject to public consultation. Following the review, five themes were identified for further exploration: park integration, water experience, chronicling history, small grain development and distinctive urban form. During this period, the City moved to incorporate the private lands south of First Avenue into the SEFC site area.

In the fall of 2004, in response to a series of reviews of the prior submissions (see page 10, The Architects' Letter), the City hired Hotson Bakker Boniface Haden Architects, VIA Architecture, Stantec Architecture and Philips Wuori Long Partnership Landscape Architects Inc. to submit a further revised urban design framework. The City gave the team three months to create the updated submission, which was ultimately adopted as part of the approved ODP. Maximum tower heights were set at 13 storeys, with three locations allowing "signature" buildings to reach up to 17 storeys. What drove this approach was the advice that renowned architect Arthur Erickson gave to the City of Vancouver's director of planning at the time, Larry Beasley. Erickson recommended using building form to "reflect the natural topography of the False Creek basin." As a result, the plan showed buildings stepping down from 13 storeys on the south end of the site to three or four maximum on the waterfront. Unfortunately, this sense of the "basin" was ultimately diminished as higher densities were sought on the Olympic Village site.

The "Architects' Letter" to City Council

A group of local architects compose this letter to Vancouver's City Council, suggesting an alternative to the ODP's proposed approach to urban design:



Mayor and Council
City of Vancouver
453 West 12th Avenue
Vancouver, BC V5Y 1V4

06 April 2004

Dear Mayor and Council,

RE: SOUTHEAST FALSE CREEK

We are a group of dedicated professionals and concerned citizens committed to a better Vancouver.

Our interest in writing Council at this time is to further the dialogue started in the City's Urban Design Review initiative for the planning and design of South East False Creek. Every effort should be made to ensure that this important public site achieves the goals established by Council at the outset of the planning process to create a sustainable community and a unique neighbourhood that sets a new standard for development in Vancouver.

In order to provide constructive guidance, our group has collectively developed a set of key design and planning principles that we feel are important to achieving an appropriate strategy for this site. We trust that they will be constructive to the planning process. It is not our intention to undermine in any way the substantial effort of the many committees, staff, consultants and public groups and individuals involved in the planning to date.

Significant progress has been made in the past several weeks on the design proposed for Official Development Plan approval. However, it does not go far enough. A much clearer strategy is required, one that establishes a strong framework for development and one that is less dependent on specific architectural solutions to make the plan work.

The south shore of False Creek is different from its north shore. Your site is part of the basin of the Creek, sloping down from the heights of Central Broadway to the water's edge. The character of Mount Pleasant, Fairview Slopes and lands surrounding the site suggests a lower form of development. We believe that a predominantly high-rise approach is the wrong point of departure for SEFC, and that a low- to mid-rise strategy would produce better urban design at little, if any, sacrifice to the economics of the project.

SEFC should become a unique neighbourhood, not a copy of the West End, Concord Pacific Place, or anywhere else in Vancouver. The planning should include the private lands south and east of the site such that a comprehensive design is developed for an entire neighbourhood. In the longer term, this plan may inform the I-C zone south of 2nd Avenue, and the False Creek Flats east of Main Street.

The planning principles are attached for your consideration. We will be pleased to continue the dialogue on the future of this outstanding property with the hope that the plan taken forward for final ratification will be of the highest order.

Respectfully submitted,

Nigel Baldwin, MAIBC	James Cheng, MAIBC	Michael Geller, MAIBC
Chuck Brook	Patrick Condon, MAIBC	James Hancock, MAIBC
Peter Busby, MAIBC	Joyce Drohan, MAIBC	Norman Hotson, MAIBC

Cc Judy Rogers, Brent McGregor, Bruce Maitland, Larry Beasley, Dave Rudberg, Graham McGarva

"We are a group of dedicated professionals and concerned citizens committed to a better Vancouver."

Planning and Design Principles for SEFC

- Create a distinct new neighbourhood, unlike other places in Vancouver, founded on a clear, bold concept.
- Integrate the planning and design of the public lands of SEFC with the adjacent private lands to the south and east of the site, and ensure that this new neighbourhood is well integrated with the Mount Pleasant community.
- Develop 2nd Avenue as the neighbourhood boundary with the proposed streetcar line as part of the grand boulevard design linking with Quebec Street and Pacific Boulevard. In turn, the function and width of 1st Avenue can become that of a local street.
- Adopt principles of sustainability in all aspects of planning and building, including an on-site demonstration project, or feature.
- Design a 'town' form of development, consistent with the surrounding context, with buildings that are principally low- to mid-rise in height, defining street frontages.
- Apply a small-scale block pattern to encourage diversity, incremental development and the participation of many developers.
- Terrace building heights down from south to north to reinforce the "urban basin" form of the south shore of False Creek.
- Engage the waterfront with active uses and open spaces for the enjoyment of all Vancouverites, while being mindful of the environmental issues associated with building close to the edge.
- Consider reducing the park space requirement from 26.4 acres to a lesser size to achieve density objectives, while ensuring that a significant park is maintained to serve the Mount Pleasant community.
- Develop a series of smaller public park spaces, plazas and squares, evenly distributed throughout the development, to serve the needs of local residents.
- Introduce additional north-south vehicular, bicycle and pedestrian greenway routes to connect the broader community to the waterfront.
- Engineer intimate, humanly-scaled streets with a differentiation in character between the north-south and east-west streets.
- Locate retail uses on Manitoba Street and along the waterfront to create a highly active, main street character, with active uses on the ground floor of other project streets.
- Consider how this 'new town' could inform the future land use planning and design of the I-C zone, south of 2nd Avenue, and the False Creek Flats, east of Main Street.

THE SOUTHEAST FALSE CREEK OFFICIAL DEVELOPMENT PLAN

Illustrative plan for Southeast False Creek, updated June 2009

A place "where people live, work, play, and learn"

The Official Development Plan (ODP) for SEFC set the bar high for integrated neighbourhood sustainability. The plan embraced the vision from the SEFC Policy Statement, incorporating an unprecedented level of commitment to sustainability. The plan established a foundation for urban design, determining the configuration of the neighbourhood's parcels, parks, rights-of-way, public amenities, densities and massing. The SEFC ODP bylaw was approved by Vancouver City Council at a public hearing on March 1, 2005 and enacted on July 19, 2005.

The City's goal was to develop a mixed-use neighbourhood with a diversity of residential uses. The development was to accommodate people of all incomes and all ages, with family housing as a priority. The City's ambitious vision was to create "a place where people live, work, play, and learn in a neighbourhood designed to maintain and balance the highest possible levels of social equity, livability, ecological health and economic prosperity."

Twelve urban design principles detailed in the ODP provided a basis to govern the site's physical form and character:

- Overall basin form legibility
- Distinct neighbourhood precincts
- Integrated community
- Street hierarchy
- Connected public open spaces and parks
- Integrated transit
- Vibrant commercial heart
- Waterfront animation
- Clustered community services
- Heritage recognition
- Incremental varied development
- Demonstrated sustainability

The sustainability principles in the SEFC Policy Statement informed the approach to sustainability in the ODP. The plan encompasses social, economic and environmental sustainability with each Policy Statement principle addressed at length and integrated throughout.

Social sustainability: goals include affordable housing and access to nutritious food, health care, safety and childcare facilities. In addition, employment, education, arts, culture and recreation are discussed under the umbrella of "enhancing human capacity."

Economic sustainability: includes a focus on long-term economic viability and security, local self-reliance, an ecological economy that supports green business and technology, and economic advantage linked to the benefits of social and environmental sustainability.

Environmental sustainability: the ODP, with the SEFC Green Building Strategy (see page 14), provides specific guidelines to inform the approach to land use, buildings and environmental sustainability.

PROFILE

Norm Hotson

MAIBC, OAA, FRAIC, RCA
Principal, Hotson Bakker Boniface Haden architects + urbanistes

Norm Hotson became involved in the SEFC planning process at a pivotal moment in the inception of the urban design framework. In 2004, he spearheaded a peer review of VIA Architecture's plan, and, together with a group of local architects, drafted a letter to Vancouver's City Council saying there was a better way to design SEFC. This proposed alternative was based on low- and mid-rise building forms rather than the high-rise approach that had been pursued for several years. Council responded positively to the architects' letter, instructing the City's planning department to pursue this scaled-down alternative. Hotson was subsequently hired by the City in the fall of 2004 to conceive a redesign and solicit approvals in a three-month time frame. This formidable task was accomplished. The revised plan was approved and became the basis of the Official Development Plan for the site, its parameters largely informing what is being built today.

Norm Hotson has been practicing architecture and urban design in Vancouver since 1973 and is the founding partner of Hotson Bakker Boniface Haden architects + urbanistes.

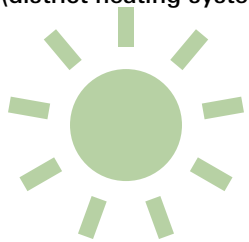
A Proactive Approach, from Parking to Plants

With the SEFC Green Building Strategy, the City of Vancouver took a proactive approach to environmental building design in SEFC, one that would affect the environmental performance of buildings citywide. Adopted as policy in 2004, the strategy establishes a minimum baseline of environmental performance for building design and construction. It applies to all new medium- and high-density residential, mixed-use, commercial, institutional and industrial buildings in SEFC.

The SEFC Green Building Strategy required that all buildings be designed to meet a minimum of LEED Silver certification. In addition, the City added mandatory baseline requirements to ensure that sustainable design was addressed comprehensively, across all aspects of building and site design. The following are recommendations from the SEFC Green Building Strategy in the areas of Energy, Parking, Landscape and Water, and Waste Management:

Energy

- Meet an overall energy performance baseline (equal to two LEED energy points)
- Specify energy-efficient appliances
- Use metering, smart controls and occupancy sensors
- Utilize the neighbourhood energy utility (district heating system)



Parking

- Provide preferred parking for co-op and car-share vehicles
- Relax minimum quota for parking stalls
- "Unbundle" parking from the sale of a residential unit (the purchaser has the option to opt in or out of ownership of a parking space)

Landscape and Water

- Specify low flow toilets, faucets and showerheads
- Use drought resistant and/or native plant species (goal of zero potable water use in irrigation)
- Install green roofs on 50 per cent of roof area
- Create space for urban agriculture in landscaped areas
- Implement on-site stormwater management practices

Waste Management

- Provide space for three streams of waste collection: garbage, recycling and organics
- Implement composting capacity in gardens and landscaped areas
- Divert 75 per cent of construction waste from landfill

Many Voices, One Plan

Community consultation and engagement is a key part of building sustainable communities. The vision of creating a model sustainable community in SEFC came from concerned citizens who wanted to see a vibrant, ecologically sound and socially cohesive community. Despite the shifts caused by successive Councils, the Olympic bid and various interests and pressures, this vision has held strong.

Many groups have been involved in the SEFC planning process, including the Southeast False Creek Working Group, Designers for Social Responsibility, and the Southeast False Creek Stewardship Group, a City advisory committee established in 1997. In addition, a comprehensive public consultation program included numerous open houses, public workshops and public hearings, as well as input from adjacent business improvement associations and residential associations.

Members of these groups invested significant amounts of volunteer time visioning, researching and developing recommendations. Within the general goal of "building livable neighbourhoods," citizens considered a wide variety of issues, including adequate housing, health care, education, employment, mobility, urban agriculture and environmental restoration. Since there is no single approach to sustainable community development, the rich scope of discussion, diverse points of view and comprehensive input to the City – as well as the challenges of defining the input and guidance process and outcomes – were all critical elements in the SEFC process.

CHALLENGE

For municipal authorities and elected officials to encourage and support sustainable community development by ensuring comprehensive environmental, social and economic criteria are set and met in the design and approval of Official Community Plan frameworks.

Olympism's Third Pillar: Environment

The Olympic movement, with one of the most recognizable brands on the globe, has the power to make a significant impact – an impact that reaches beyond sport into other aspects of our lives. The two central pillars of Olympism have traditionally been "sport" and "culture." In the 1990s, the International Olympic Committee (IOC) officially added "environment" as the third pillar of Olympism. The IOC objective is "not only to see to it that the staging of the Games does not have a negative impact on the environment, but also to help improve the environment and leave a green legacy." Although the Olympic Games are primarily about sport and athletes, the IOC recognizes that "the Games can also be used to provide sustainable environmental legacies, such as rehabilitated and revitalized sites, increased environmental awareness, and improved environmental policies and practices."

The Vancouver Organizing Committee for the 2010 Olympic and Paralymic Winter Games (VANOC) embraced this challenge by expanding beyond the environmental impacts and benefits of the Games to also include the social and economic dimensions of sustainability. The seeds of VANOC's integrated approach to sustainability were sown prior to 2003, in Vancouver's bid to host the Games.

Vancouver's Bid: Sustainability Commitment

Determined to win the right to host the Games and demonstrate its commitment to a greener future, the City of Vancouver positioned itself as a sustainability trailblazer in its Olympic bid. Sustainability was written directly into many of the Bid commitments and, ultimately, once the Bid was awarded, into the vision for the Vancouver 2010 Winter Games: "A stronger Canada whose spirit is raised by its passion for sport, culture and sustainability."

Sustainability in Action: VANOC

According to VANOC, sustainability means:

"Managing the social, economic and environmental impacts and opportunities of our Games to produce lasting benefits, locally and globally."

VANOC has demonstrated an unprecedented commitment to sustainability. Sustainability is integrated across all aspects of the organization, and performance is tracked, measured and reported upon in annual sustainability reports. VANOC's commitment to social and economic sustainability is demonstrated through its official partnership with the Four Host First Nations and its effort to make the Games accessible. VANOC has implemented programs aimed at creating economic opportunities for inner-city businesses and residents. In addition, VANOC has instituted a sustainable purchasing program called Buy Smart, which aims to create value through Games-related spending. A final example of VANOC's proactive approach to sustainability is its commitment to green design and construction for all new venues, as demonstrated at Vancouver's Olympic Village.

This illustrates VANOC's comprehensive approach to embracing the three 'legs' of sustainability.

Green Legacy: Vancouver's Olympic Village

In preparing its bid to host the Games, the Vancouver Bid Corporation (VBC) needed to identify a location for Vancouver's Olympic Village. One option was to build a temporary village that would be erected and deconstructed for roughly $30 million. As an alternative, the VBC explored the possibility of directing the available funds toward constructing a permanent village that would constitute a real and lasting development project. The village would remain as a legacy following the Games, offering permanent housing. The City of Vancouver saw an opportunity to use the allocated funds toward developing the first phase of SEFC. The City's offer of the SEFC lands for the village was ultimately accepted and included in the bid.

"... The Vancouver Olympic Village will overlook the sparkling waters of the Pacific Ocean and the urban heart of one of the world's most livable cities... Locating the Olympic Village here will contribute significantly to revitalizing this underdeveloped part of the city, and will serve as a catalyst for this sustainable community development." —Excerpt from Vancouver's Olympic Bid Book

An artist's rendering of Vancouver's Olympic Village with its spectacular view looking north to downtown and beyond the city's limits to the North Shore mountains.

80 Nations, 2,800 Athletes, One Home

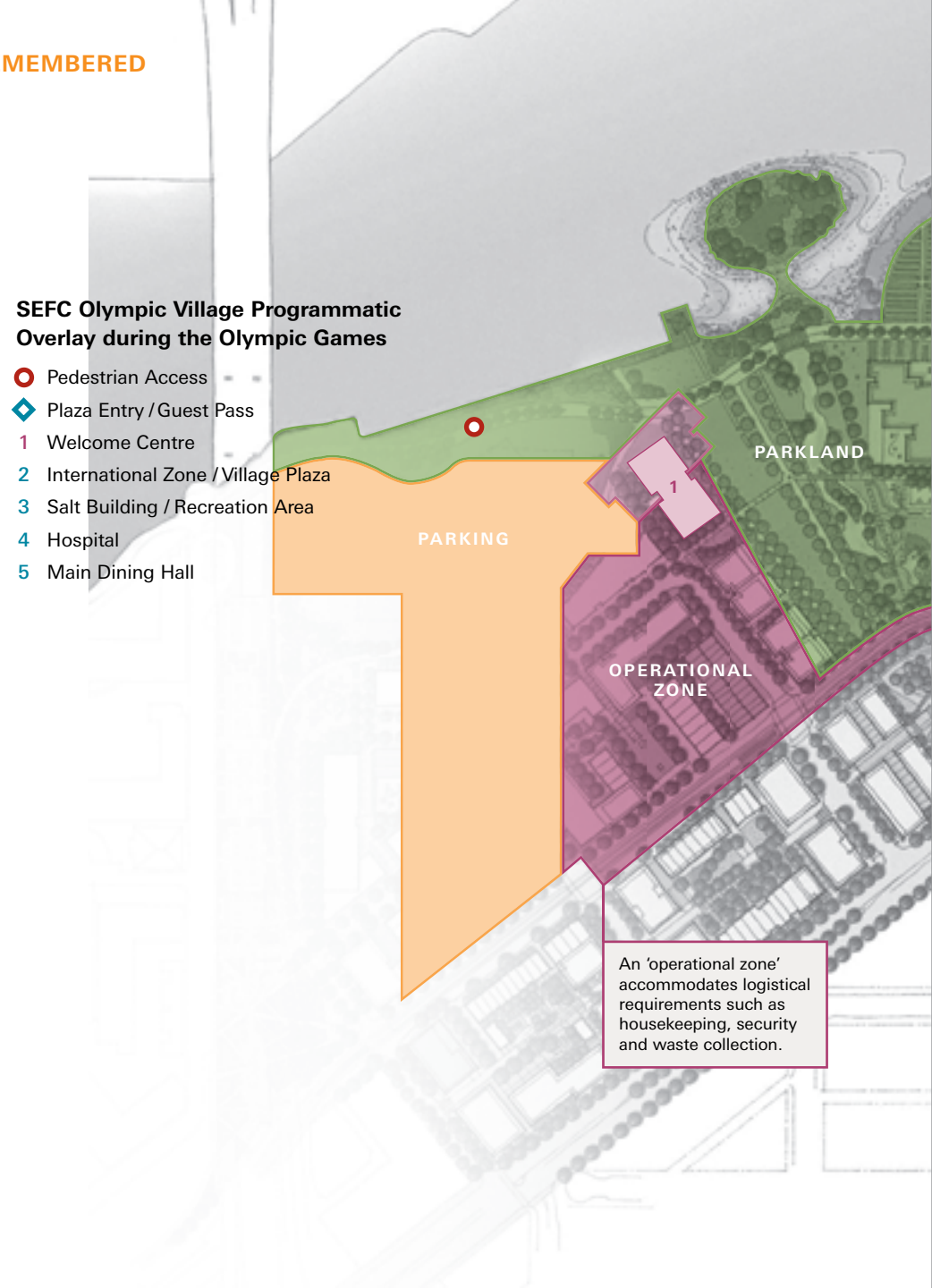
Olympic villages are places where athletes and their delegations come together to meet, celebrate and enjoy a unique international experience. The Vancouver village, with its spectacular setting, will be an area of energy and excitement in 2010. It will house some 2,800 athletes, representing 80 national teams. During their stay at the village, athletes will have access to a full range of amenities and essential services. They will eat together in a dining hall, relax and mingle in the Salt Building and attend celebrations on the waterfront.

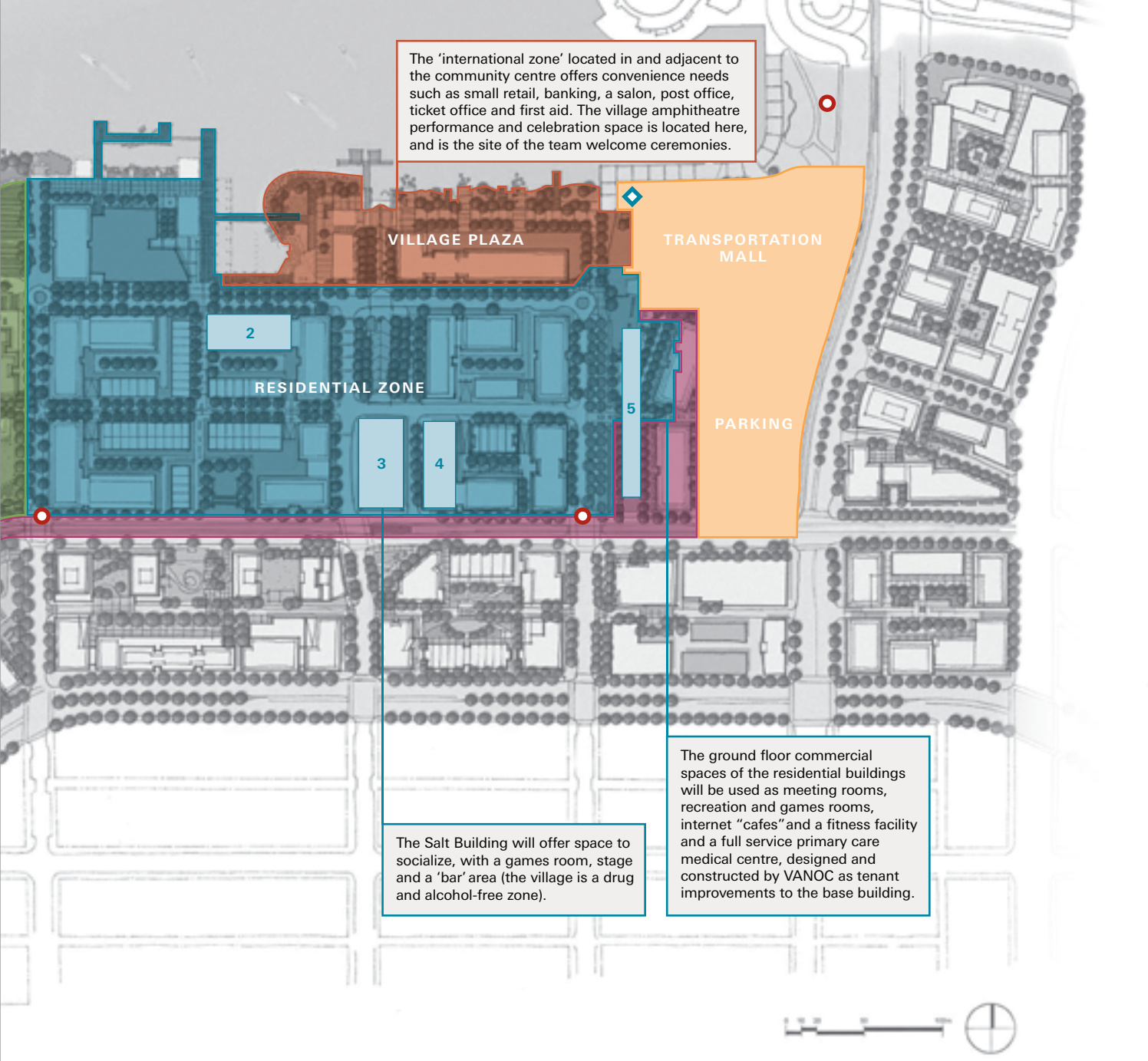
Through an agreement with the City of Vancouver, VANOC retains the right to control the Olympic Village site for six months in 2009-2010, during what is termed the "exclusive use" period. In addition to its requiring bed spaces for athletes, VANOC will use the site to accommodate a host of activities and uses required by the IOC and International Paralympic Committee (IPC).

By way of a collaborative management structure, VANOC took part in the design process for the Olympic Village to ensure that the IOC and IPC requirements could be accommodated. For example, accessibility modifications required for Paralympic athletes were achieved, the process made simpler by the adaptable housing design standards required by the City of Vancouver. The Olympic Village site plan provides an overview of IOC and IPC operational requirements.

SEFC Olympic Village Programmatic Overlay during the Olympic Games

- Pedestrian Access
- Plaza Entry / Guest Pass
- 1 Welcome Centre
- 2 International Zone / Village Plaza
- 3 Salt Building / Recreation Area
- 4 Hospital
- 5 Main Dining Hall





PROFILE

John Furlong

CEO, VANOC

VANOC CEO John Furlong and his team are working to create a truly spectacular Olympic experience for athletes and spectators alike. “The Vancouver 2010 Winter Games will leave an indelible mark on Canada, British Columbia and the host communities of the Games,” says Furlong. His mission is to convene sustainable Games and produce positive legacies that reflect VANOC’s green-sensitive culture and its partnerships with organizations and municipalities that share the same goal. From the beginning, Furlong saw Vancouver’s Athletes’ Village as one of the jewels of the Games bid. Now as it reaches completion, the Vancouver Athletes’ Village is set to realize that vision. Says Furlong, “this village will be a complete community where athletes in 2010 will enjoy unprecedented comforts in an extraordinary location set against a magical backdrop.” Furlong sees the Games as an opportunity to express the best of Canadian values and ingenuity on the world stage. The thoughtful and detailed work that has gone into making the Vancouver Athletes’ Village an icon of sustainability is an example of that ingenuity. “It is truly an achievement worthy of the word Olympic,” says Furlong, “and one that I hope will live on as a model for future development.”

THE CITY'S REQUEST FOR PROPOSALS

The Requirements

After more than a decade of hard work and dedication, the effort to develop SEFC had only just begun. In early 2005, the City of Vancouver called for expressions of interest from the development community, seeking a developer to take on the gargantuan task of building a 17-acre neighbourhood in just over three years.

Respondents were challenged by a number of requirements. They had to demonstrate the capacity to complete construction by a fixed deadline in 2009. The site design had to meet VANOC's specifications. Proponents had to provide a strategy for meeting sustainability requirements, including LEED Silver for all buildings. Finally, the development was to be a walkable and diverse community that encouraged vitality, diversity and cultural richness while preserving heritage spaces in a way that recognized their historic industrial use.

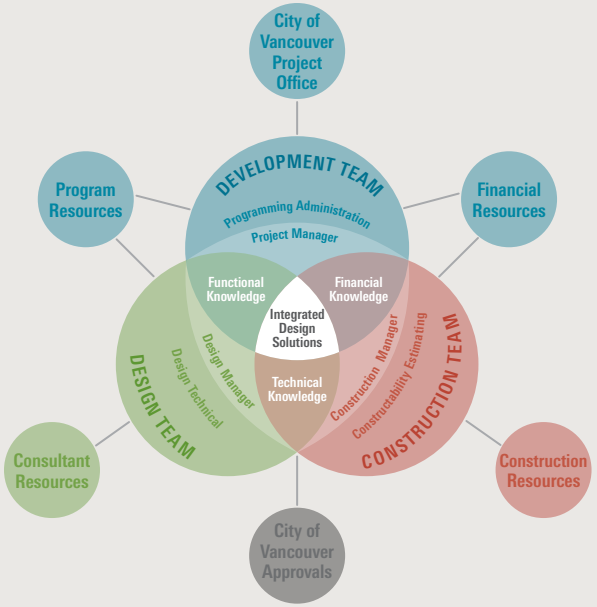
Adding to the complexity, proponents had to create a development model that could support a diversity of housing types: 1/3 market housing, 1/3 "modest" market housing and 1/3 affordable housing. However, civic elections were held during the period when proposals were being prepared, bringing a change of leadership. Mayor Sam Sullivan and the 2005 City Council amended the housing requirement to 80% market housing and 20% affordable housing, affecting the development proposals in progress.

The Proposals

The City's initial request for expressions of interest in August 2005 brought forward five developers – Concord Pacific Ltd., Concert Properties Ltd., Millennium SEFC Properties Ltd., Wall Financial Corporation and Windmill Developments Ltd. The five were all asked to submit a full proposal, but before the final March 2006 proposal deadline both Concert and Windmill withdrew from the competition, leaving just three respondents: Concord, Millennium and Wall.

All three proposals were credited as being remarkably high in calibre. "All three respondents showed a strong commitment to the project, assembled impressive teams, invested a significant amount of resources, and submitted comprehensive and well thought-out proposals that addressed all of the ODP [Official Development Plan] and RFP requirements," states an administrative report to City Council outlining their recommendation. Following a tight competition, on April 16, 2006, the City awarded the contract to Millennium SEFC Properties Ltd., whose proposal offered the "best value to the City."

BUILDING A TEAM



Building the diverse team that would realize the vision of SEFC.

"the capacity to meet the challenges, including sustainable design and an inflexible deadline"

In preparing their proposal, the challenge for Millennium was to assemble a team of designers and consultants that would stand out. The project team had to exhibit the capacity to meet the challenges inherent in the project, including its sustainable design requirements and an inflexible deadline. Millennium's Hank Jasper was chosen to represent the development team and provide linkage to the City of Vancouver's Project Office team. Roger Bayley, professional engineer and founding partner of Merrick Architecture, stepped into the role of design manager, responsible for coordinating a consultant team of roughly 150 people.

With the management positions filled, Millennium sought a sustainability champion to lead the team's green efforts. Millennium asked Andy Kesteloo of Victoria's Thornley BKG Consultants to bring his passion and expertise in sustainable design to complement the team's technical capabilities. Millennium worked with GBL Architects and Merrick Architecture to assemble the proposal. They sought to keep the team of architects small, while maintaining a diversity of styles. Cobalt Engineering was brought in as mechanical engineer due to their interest in innovation and sustainability, and Glotman Simpson would provide structural engineering services.

In the interest of efficiency and expediency, construction work was divided between three teams: two seasoned and experienced general contractors, ITC and MetroCan, and Millennium's own project management division. After the proposal was finished, a number of additional architects, engineers and consultants were added to the team, each vital to the success of the project. Trish French, Scot Hein and Larry Beasley of the City of Vancouver became allies in Millennium's push to get approvals from within City Hall, helping to guide the process and ensure the project remained on track.

Sustainability One of the notable accomplishments of this project was the level of green design achieved by the team, applied on an unprecedented scale. Though prior to this proposal Millennium had not competed a LEED project, the team embraced the challenge of developing a project that would meet the highest standards of sustainability. Millennium's proposal outlined the adoption of a "sustainable solutions audit" that would be undertaken during the planning phase. The purpose of the audit was to evaluate the costs and the long-term value of the sustainable design features. The results would help determine the optimum set of sustainable design strategies to be included in the project. The audit assessed the following nine sustainability principles:

1. Development of buildings in a way that fosters respect for open green space, the creation of habitat for wildlife, and sensitivity to rainfall and storm water collection and distribution.
2. Reduction in use of potable water within landscape and buildings.
3. Reducing energy use through appropriate orientation to the sun and evaluating alternate "communal" energy sources, including a district heating system, and evaluating the potential for making the community carbon neutral.
4. Reducing the use of non-replaceable virgin building material in the construction process.
5. Creating design guidelines that create a lasting and flexible set of buildings that can be easily maintained, renovated and modified over time in response to changing demographics.
6. Creating a healthy indoor living environment – with a focus on light, air quality, sound and community.
7. Implementing green roofs for urban agriculture.
8. Designing the community in such a way that it encourages live, work and play to be achieved without using an automobile.
9. Taking advantage of the larger False Creek area in implementing energy, stormwater, agriculture and transportation alternatives.

An early "form and character" illustration of SEFC by architect Paul Merrick.

CORE employment and training programs gave inner-city residents, like Jose R., a real chance to advance in life.

Building Opportunities with Business

Millennium demonstrated a commitment to capacity building and social sustainability that produced tangible community benefits before construction was complete. In 2007, Millennium began to work with the City of Vancouver and Building Opportunities with Business (BOB), a non-profit organization that supports local business development and increases job opportunities for inner-city residents. Millennium and BOB created a "Community Benefits Agreement" through which Millennium committed to awarding $15 million in contracts to inner-city businesses and suppliers.

As another part of their agreement, Millennium established a $750,000 legacy fund for an employment and training program to offer entry-level construction jobs to inner-city residents. These funds allowed BOB to create the Construction Orientation to Retain Employment (CORE) training program. This comprehensive program begins by providing participants with basic life skills training such as math and communication through a program called Tradeworks. Following this, participants pursue a skills training course with the Vancouver Regional Construction Association. Upon completion, students will have accrued seven industry certificates, including first aid and fall safety. The program provides breakfasts and lunches for participants, and basic equipment such as boots and hardhats. Millennium committed to creating 100 construction jobs for inner-city residents who completed the training program.

To date, Millennium has far exceeded its procurement goal, facilitating the purchase of over $41 million in goods and services for Millennium Water from more than 25 local businesses and suppliers. The employment program has successfully placed 87 trained individuals at the Olympic Village and 33 people on other construction sites. According to BOB, one of the most positive outcomes of this partnership was the legacy of construction training capacity that was developed through the program. The initiative has the advantage of being transferable to future partnerships, and will therefore create continuing benefit to the community.

PROFILE

Hank Jasper

Millennium SEFC Properties Ltd.

With 40 years and $2 billion of development management experience, Hank Jasper was a natural choice as project manager for Millennium Water. Still, he says, this project was special.

"We loved the location, and the opportunity to build an Olympic Village," he says. "Then there was the challenge of zoning, designing and building eight city blocks and 1.5 million square feet in just 36 months."

The public profile of the project added pressure, with 20-30 requests for media interviews a month, and world financial problems pushing the project into headlines.

"The scrutiny has been a challenge," Jasper agrees. "But we've kept going, we haven't scrimped." Jasper says the work and commitment on the project have been exceptional.

"A lot of talented people have made this happen," he says. "My role is like being an orchestra conductor. If everyone's playing the right tune then you don't have problems, but you need to listen carefully and make sure this great team of talented people is functioning as one. With eight projects that all overlapped, the sheer volume of communication was a major issue."

"Has everything gone as planned?" Jasper chuckles. "No. But everything we said we were going to do, we've stepped up and done."

The Kickoff

In order to achieve a task of such magnitude, the team needed to set a clear path to success. To do this, it employed an approach known as the "integrated design process" (IDP). The goal of this process is to bring all members of a design team together to explore synergies, generate solutions, and, in general, to improve the efficiency of the design and the design process. The IDP encourages a holistic "systems-based" approach to design from initial conception through to construction. The necessity of collaboration brought on by the sustainability targets increased the level of innovation applied to the project's design.

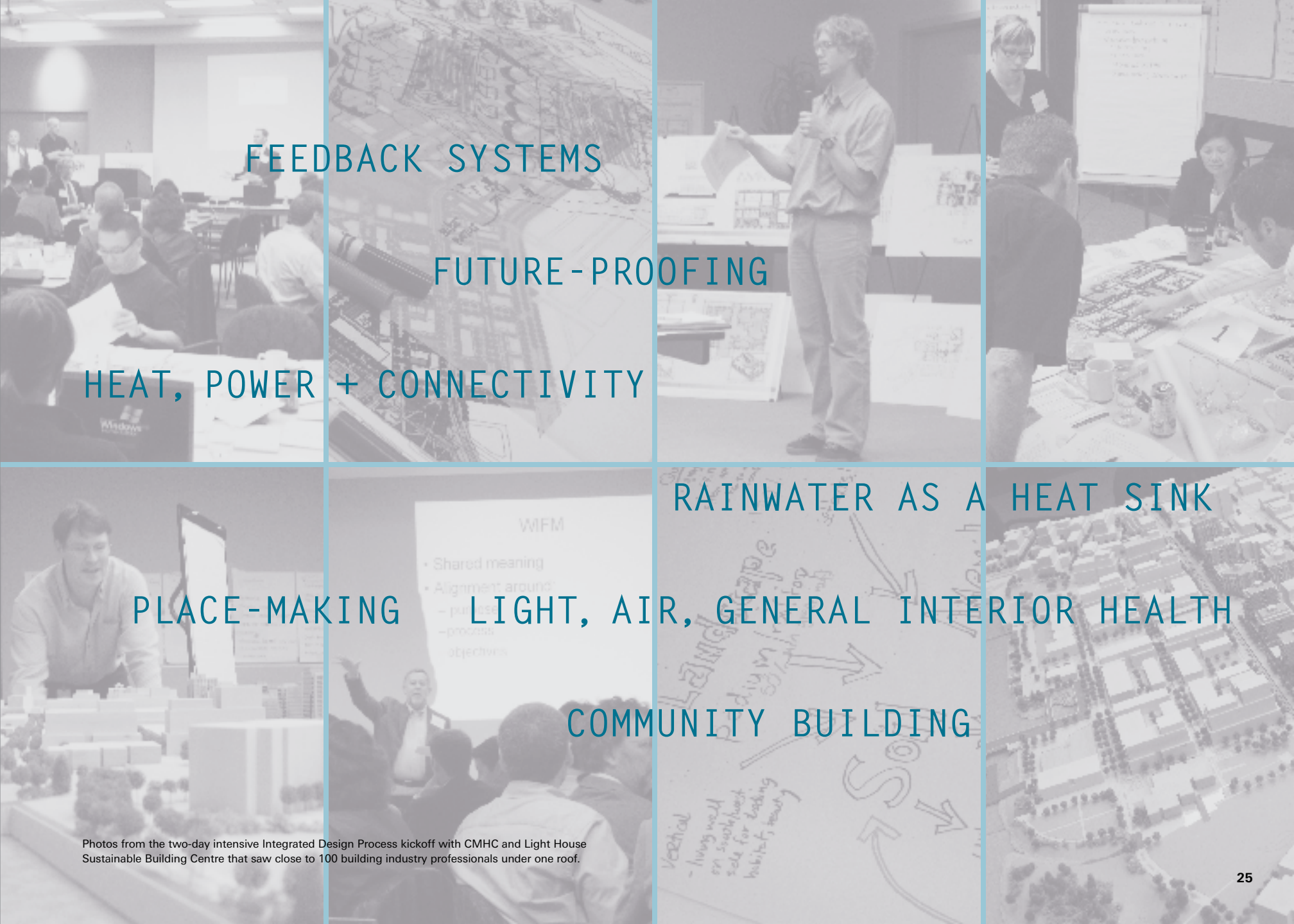
The purpose of the SEFC Integrated Design Process kickoff meeting was to build consensus and establish a common vision for the project.

Organized by Vancouver-based not-for-profit Light House Sustainable Building Centre, more than 80 people participated in the kickoff meeting. Participants ranged from design team members to municipal staff to seasoned "guest" experts in sustainable development. The IDP kickoff was a two-day event sponsored by Canada Mortgage and Housing Corporation that took place in Vancouver in April 2006. The workshop was led by Bill Reed, an internationally recognized sustainability practitioner who works as a consultant, design process facilitator and lecturer.

The IDP workshop focused on site design and structure, buildings and their systems, and infrastructure. Team-building exercises involved identifying critical green building and site design goals and objectives, flagging critical design issues and streamlining the design process by establishing common values. Eight teams were created, each including a balanced sample of representatives. After introducing integrated design, systems thinking and sustainability, site-specific topics were assigned to each group who then investigated and reported on common points and differences of opinion. Key concepts were developed in the pre-design activity, which were then incorporated into all aspects of the design, construction and commissioning process. Participants generated a schedule of defined priorities and delegated tasks to move the project forward.

The key outcomes of the IDP kickoff event were:

- establishing a core management team to incorporate the goals and metrics,
- committing to develop an indicator feedback system and a range of performance targets for energy, water, materials and other areas and
- adopting benchmarks including "net-zero" energy use, greenhouse gas neutrality and other parameters to maximize sustainability.



Photos from the two-day intensive Integrated Design Process kickoff with CMHC and Light House Sustainable Building Centre that saw close to 100 building industry professionals under one roof.

"NEW WAYS OF LIVING IN A CITY"

New Ways of Living in a City

The design team's desire to demonstrate "new ways of living in a city" influenced the focus and direction of Millennium's rezoning submission for the Olympic Village site. In response to the City's ODP, the team set out to find a new paradigm that would balance urban lifestyle and well-being with a "respectful sense of the planet, its resources and climate." In terms of building form, this played out in the effort to incorporate a sense of open space into a dense residential development. The team proposed "vertical streets," where the experiences of a neighbourhood sidewalk – greenery, fresh air and a sense of community – are shifted to the upper levels of the buildings. This would be achieved by creating accessible green spaces on terraces, roofs and courtyards.

The rezoning proposal suggested a number of significant refinements to the massing, heights and programming suggested in the ODP. The changes supported the design team's interest in improving views, enhancing the public and private realms and maximizing sustainable design initiatives. One of the major changes, supported by a stakeholder consultation process, involved changing the location of the community centre. Slated to occupy waterfront property, the planned location of the community centre was at the northwestern edge of the site. The rezoning proposal shifted the community centre to the northeastern waterfront edge, where it retained proximity to planned boating facilities, had better access to parking and would be integrated with the waterfront park and public plaza. The northwestern parcel was reprogrammed to accommodate the development of two "showcase" residential buildings, designed by architects Arthur Erickson and Nick Milkovich.

Besides residential development and community amenities, this mixed-use community was to accommodate 82,000 square feet of commercial space, according to the ODP. The retail strategy focused on providing "a broad range of retail goods and services that effectively serve the essential needs of the SEFC community." The proposed key commercial anchor tenants would be a supermarket, a drugstore and a liquor store, comprising approximately half of the commercial floor area. Smaller tenants would include two restaurants, a specialty food store, a video store, specialty retail and personal and professional services. Sidewalk widths were to be in the range of 10-12 feet to allow adequate space for business activity to spill out onto the street. The diversity of retail options supported the vision of a self-sufficient community.

This south elevation drawing illustrates the close connection between the low- and mid-rise buildings and the waterfront and public plaza.

The rezoning proposal advocated for "vertical streets," where "experiences of a neighbourhood sidewalk – greenery, fresh air and a sense of community – are shifted to the upper levels of the buildings.

Passive design uses a building's form and orientation to reduce energy consumption and improve thermal comfort. The passive design approach reduces reliance on mechanical systems and improves the quality of the indoor environment. Examples include improved insulation to reduce heat loss, enhanced natural lighting to reduce electricity loads and effective shading to reduce reliance on mechanical air conditioning.

Building Design that Responds to the Local Climate

In their analysis of energy reduction strategies, the Millennium Water team looked at how to best design the buildings to respond to their environment within the existing site and climatic constraints. Four areas were explored:

- Building orientation, massing and configuration – addressed in early energy studies and building configuration schemes.
- Façade treatments – protecting buildings and helping them respond to rain, wind and solar radiation through balconies, screens, window areas and views.
- Quality envelope options – envelopes should eliminate heat loss and increase air tightness to maximize insulation effectiveness.
- Building mass – materials can be chosen based on their ability to influence heat gain and loss. For example, concrete slabs absorb heat and release it over time.

Innovation: Passive Design Toolkits

The City of Vancouver's Sustainability Office is using its Olympic Village experience to encourage passive design in new buildings citywide. In 2009, the City published passive design "toolkits" detailing best practices to educate the industry. View them at www.vancouver.ca/sustainability/building_green.htm.

City of Vancouver Encourages Passive Design

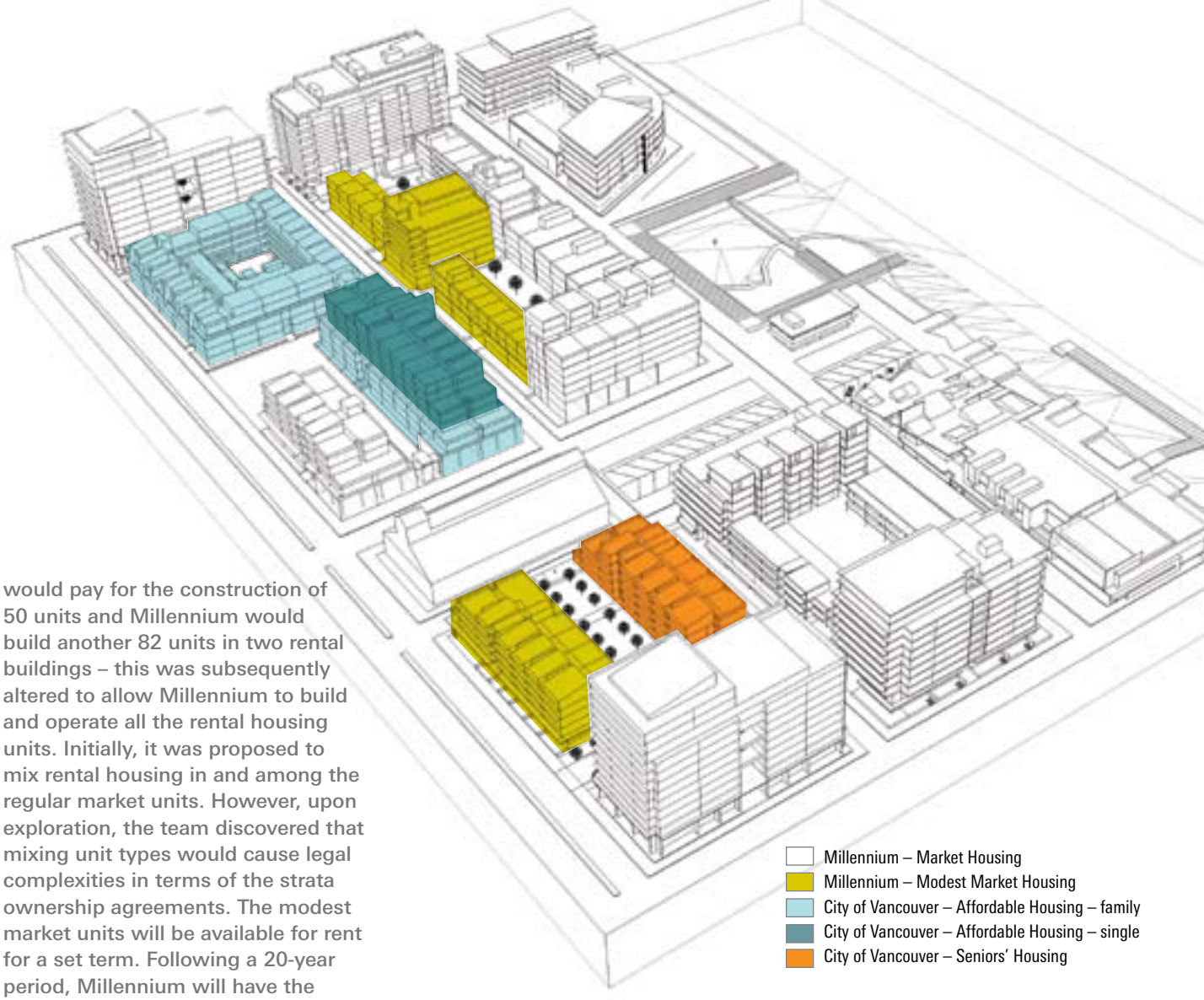
This project paved the way for future sustainable design in Vancouver through an unprecedented agreement between the City and the developer. To encourage passive design strategies such as thicker walls for improved insulation, wider stairwells and corridors for daylighting, and deeper balconies for shading, the City granted area exclusions for any additional floor area required to meet passive design requirements. The developer was thus able to include passive strategies without forfeiting developable (and saleable) area.

Shading is a key passive design strategy that can be achieved by incorporating balcony overhangs, plants and trees, and active blind systems.

Housing Mix: "Modest Market" Housing

One of the provisions in the SEFC Official Development Plan was to develop a mixed-use neighbourhood that accommodates a diversity of residents with a range of incomes. This goal supports the aspiration of maintaining a sense of balance and promoting social equity. Market condominiums would be complemented by the development of "affordable" (subsidized) housing and "modest market" housing. Modest market housing refers to a middle ground between regular market and affordable housing. For the purposes of this project, modest market came to refer to rental housing, which would welcome a demographic that is not in the position to purchase but is not eligible for subsidized housing.

In their rezoning proposal, Millennium brought back the notion of modest market housing that the new Council had removed from SEFC's housing requirements. In return for this additional housing type, the neighbourhood's social mix was augmented and Millennium received bonus density. Under the original plan, the City of Vancouver would pay for the construction of 50 units and Millennium would build another 82 units in two rental buildings – this was subsequently altered to allow Millennium to build and operate all the rental housing units. Initially, it was proposed to mix rental housing in and among the regular market units. However, upon exploration, the team discovered that mixing unit types would cause legal complexities in terms of the strata ownership agreements. The modest market units will be available for rent for a set term. Following a 20-year period, Millennium will have the option to sell the units or continue the rental program.



This wireframe drawing illustrates the mix of market housing, modest market housing and affordable housing that was proposed in the August 2006 rezoning.

CHALLENGE **For Federal, Provincial and Municipal authorities to enact planning, development and building regulations that facilitate sustainable community development based on the implementation of passive design and the application of incentive programs aimed at securing compliance with both Green Building strategies and carbon emission reduction targets.**

VANCOUVER'S URBAN DESIGN PANEL

It Takes a Village to Design a Village

The design challenge of delivering a combination of high densities at the prescribed low- and mid-rise scale of building at Millennium Water was daunting, especially with an aggressive project schedule driven by Olympic commitments. Given this time constraint, the City lacked sufficient time to prepare design guidelines that typically inform use, density, form of development and character, and generally facilitate the design development process. The City's Urban Design Panel was therefore critical in identifying effective, approvable design strategies through their leadership in a series of collegial design workshops. The Urban Design Panel is a group of appointed individuals representing the City's design, engineering and development community. The panel gives impartial and professional advice to City staff and Council on any proposal, policy or large development affecting Vancouver's physical environment.

Early Urban Design Panel sessions for Millennium Water focused on form and scale, including the proposed courtyard formats, which were uncommon in Vancouver's residential market. Given the village's "green ethics," the panel was also able to offer specific technical solutions to building, landscape and engineering challenges. With respect to the question of character and expression, the panel sought design responses that were "distinctly Vancouver" in character. Their key question, "What is authentic placemaking?", became the focus of later workshop sessions, noting the challenge of delivering an innovative 21st century green community, in the west coast Canadian context, on a prominent waterfront site with a rich industrial history, under the auspices of a single developer in such a short period of time.

The Urban Design Panel's advice, and the creative response from Millennium's architects and landscape architects, was critical to the invention of a contemporary building expression that was borne out of planning, shared sustainable values and historical identity. The creative results produced distinct buildings, articulated as a series of smaller components (to manage "superblock" scale), expressive of passive green systems and human activity, all contributing to the village's identity.

Scot Hein
Architect and Senior Urban Designer
City of Vancouver

This axonometric view of Vancouver's Olympic Village captures the dense mid-rise building typologies, inner courtyards, community centre, active waterway and bustling pedestrian spaces.

The following principles, introduced by Stu Lyon of GBL Architects at a session of the Urban Design Panel, helped delineate non-prescriptive design "constraints." The principles would guide the group of architects toward a cohesive neighbourhood design.

1) VERTICAL STREETS
- Exposed circulation
- Social opportunity
- Useful stairs
- View down to street
- View into the building
- Green edges to circulation

2) DAYLIGHT INSIDE
- Daylight from two sides of each home, apartment or townhouse
- Daylight to as many rooms as possible
- Daylight to circulation

3) AIR THROUGH
- Corner or through suites wherever possible
- Large or multiple opening windows
- Open corridors where possible

4) HORIZONTAL STREETS ABOVE GRADE
- Corridors with green edges where possible
- Suite entry doors with presence
- Corridors with daylighting where possible

5) RESPONSIVE BUILDING FACE
- Solar screening on south and west sides
- Bigger windows on north sides
- Smaller windows or shading on bright sides
- Acknowledge different types of view
- Differences between bottom and top

6) USEFUL OUTDOOR TERRACES
- Space for table and chairs
- Privacy control
- Integrated with unit layout

7) RESPONSIVE STREET LEVEL UNITS
- Private street/public street response
- East side/west side response

8) INTEGRAL AMENITY SPACES
- Interior amenity spaces that are integrally connected to common outdoor space
- Amenity spaces are creatively designed
- Amenity spaces are integrally associated with circulation and preferably with vertical streets
- Amenity spaces are the "public plazas" of the interior circulation

9) VIEW FROM EVERY FLOOR
- Every floor in every building should have a common outlook over outdoor green space in concert with common access to natural daylight

10) DAYLIGHT TO UNDERGROUND SPACES
- Daylighting via skylights, stairs and light wells should be provided to underground areas wherever possible

PROFILE

Stu Lyon

MAIBC, MRAIC
Principal, GBL Architects Inc.

Stu Lyon and GBL Architects were the first to join Millennium's team in bidding to develop the Olympic Village. Lyon and his team were instrumental in preparing the development and rezoning proposals and designed three of the eight parcels at Millennium Water.

Lyon says his experience working on this large and complex project, with its demanding timeline, has been "exhilarating." Working on Millennium Water brought the opportunity to implement forward-thinking design at the neighbourhood scale. Lyon introduced the ten design principles (opposite) during a session of the Urban Design Panel. The principles helped make space for each designer to infuse their distinct individual style, while working within similar constraints.

Lyon is most proud of the passive design features at the village. Through the design process the team has created a place where, according to Lyon, "simply coming and going from your condo will be a wonderful, pleasant experience."

ANDY KESTELOO: ENVIRONMENTAL VISIONARY AND SUSTAINABLE DESIGN ADVOCATE

The original sustainability consultant on the Millennium team, Andy Kesteloo is remembered by his colleagues as a provocateur who was uniquely positioned to help green building break through to the mainstream. Although Andy passed away on January 15, 2007, he defined the sustainability goals for the Millennium Water project and left a legacy of sustainable building learning and awareness in his wake.

Born in Edmonton, Andy studied at Dordt College in Iowa and then formed his own construction/framing company in Vancouver. His scope of knowledge, from carpentry to surveying, was what made him such an effective advocate for green building.

"Andy was one of the few people in the sustainable building industry at the time who could connect the cost implications of green components with a really good understanding of long-term value," says Roger Bayley, who took on much of Andy's role after his death.

"He always said, if green building is going to survive and prosper, you've got to demonstrate that it's cost-effective, you've got to demonstrate value. And he did, so here we all are."

In 1996, Andy began lecturing widely on green building subjects. From 2004 until his death, he sat on the Canada Green Building Council Board of Directors and chaired its Product Steering Committee.

Andy is recognized as a true pioneer, a trailblazer who helped work through status quo regulations to define the new way that buildings and entire communities can be constructed. His reputation is testament to the extraordinary impact he had on his colleagues, particularly as a mentor to many individuals as they became involved in green building.

Andy's vision, passion and enthusiasm for sustainability resound through the SEFC Olympic Village; he saw it as a huge opportunity to inspire future sustainable community development. As Andy passed the green building baton to the rest of the Millennium Water project team in January 2007, so the team now passes the challenge to all those in the building industry who can turn their skills to the task of caring for our global future and the generations to come.

"Massively inspiring."
"Engaging."
"Passionate, infectious, and a little edgy."

SUMMARY

The City of Vancouver approved Millennium's rezoning proposal for the Millennium Water site in October 2006. Millennium's design team and the City of Vancouver had three years to complete their designs and construct the buildings, infrastructure and public spaces in time for the Olympics. The next two chapters of The Challenge Series will document this process, describing the challenges that arose and how they were overcome.

Watercolour rendering of open public space in the plaza looking south to the restored Salt Building.

FEATURE PROFILE

Millennium Group

Millennium are first and foremost community builders, having built many successful developments spanning decades. The story of Millennium, and its principals, Peter and Shahram Malek, is inextricably linked to that of Canada and British Columbia, a country and province on the leading edge of design, sustainability and quality of life. It is a story of blending years of experience in high profile international real estate development with the natural beauty of the West Coast and of site-specific award-winning architecture.

At SEFC, Millennium saw a prime waterfront property, in an iconic location, ready to be developed into North America's first truly sustainable neighbourhood. The challenge of housing the 2010 Olympic athletes in the buildings, designed and built in record time, only added to the significance of the task.

This is the essence of Millennium Water: a private project used for a global purpose, providing a legacy for residents and future generations, and a showpiece for Vancouver and Canada. Shahram Malek comments, "Our goal is to create something here that is world class in every sense – architecture, sustainability and livability – enhancing the Vancouver experience."

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PLATINUM

Millennium Southeast False Creek Properties Ltd.

Millennium Group is an award-winning Vancouver-based team of professionals and the developers of Millennium Water Olympic Village. They are renowned for their disciplined commitment to high quality architecture and luxurious design. At 1.4 million square feet, Millennium Water is the largest single-phase development in Canada. It is designed to be Canada's largest LEED Gold neighbourhood and a leading model of how to build a sustainable residential community.

Metro-Can Construction (OV) Ltd.

Metro-Can Construction is among the top 50 general contractors in Canada and the top five in British Columbia. Focusing on turning visions into buildings and delivering value to their clients, Metro-Can has completed over 280 institutional, commercial and multi-family residential projects. Since placing the first foundations on the Millennium Water project in June 2007, Metro-Can has proceeded to construct 10 LEED Gold buildings incorporating 540 condominiums, 250 social housing units, 60,000 square feet of retail space and a LEED Platinum community and boating centre.

ITC Construction Group

ITC Construction Group has proven capabilities in multi-unit residential, commercial and social housing construction projects. Established in 1983, they have successfully completed over 100 projects for private developers and public initiatives in BC and Alberta. ITC is proud to be the General Contractor of the eight luxury waterfront towers at Millennium Water. These LEED Gold certified structures consist of 315 condominiums and will be complemented by 13,619 square feet of commercial/retail space at the ground level. Quality Counts.

Rennie Marketing Systems

Rennie Marketing Systems (RMS) proudly leads the sales and marketing campaign for the residential component of Millennium Water. Led by Bob Rennie, RMS works closely as 'Millennium's representative' to bring to market the most innovative sustainable community in North America. Maintaining the project's identity of environmental awareness, RMS utilizes eco-friendly elements throughout the marketing campaign. RMS marketing objectives extend beyond sales achievements and include increasing global awareness of a new standard of development.

Durante Kreuk Landscape Architects

Durante Kreuk is an award-winning landscape architectural firm with over thirty years' experience in the private and public realms of design and development. A broad perspective and diverse thinking are the key to creating a wide range of sustainable, people-focused urban places. At Millennium Water, the unique challenge of creating a sustainable neighbourhood through an integrated design process was both complex and rewarding. The result speaks for itself.

GOLD

VANOC

Merrick Architecture

Gomberoff Bell Lyon Architects Group

Cobalt Engineering Co. Ltd

VIA Architecture

Nemetz (S/A) & Associates Ltd.

Keystone Environmental Ltd.

PacBlue Printing

SunProject Toro Inc.

Storm Guard Water Treatment Inc.

SILVER

Nick Milkovich Architects Inc.

Walter Francl Architecture Inc.

Robert Ciccozzi Architecture Inc.

Glotman-Simpson Group of Companies

GeoPacific Consultants Ltd.

KD Engineering

Letterbox Design Group

Morrison Hershfield

PWL Partnership Landscape Architects Inc.

Quoin Project and Cost Management Ltd.

Recollective Consulting

Vector Engineering Services Limited

FVB Energy Inc.

Femo Construction Ltd.

Jeda Mechanical Ltd.

Pitt Meadows Mechanical

Power Drywall Ltd.

Sentrax Mechanical Contracting Ltd.

William Kelly & Sons Plumbing Contractors Ltd.

BRONZE

Aqua-Tex Scientific Consulting Ltd.

Blue Mountain Technologies, Inc.

Commonwealth Historic Resource Management Ltd.

IBI Group

Levelton Consultants Ltd.

Fraser Milner Casgrain LLP

Pioneer Consultants Ltd.

Contrada Enterprises Ltd.

Energy Aware Technology Inc.

Sandwell Engineering Inc.

FAMA Industries Corp.

Inform Projects Partnership

PricewaterhouseCoopers LLP

Trane

Olympic International Inc.

Olympic International creates comfortable, healthy and energy-conscious indoor environments. As a manufacturers' representative, they are committed to bringing the world's most innovative and sustainable technology to local markets. The Millennium Water project utilizes radiant heating and cooling technology, which will substantially reduce energy consumption and system noise, increase available ceiling height and improve overall thermal comfort and indoor air quality.

Enerpro Systems Corp.

Enerpro Systems Corp. are market leaders in intelligent energy management for new construction and infrastructure upgrades to existing buildings. Since 1996, BC's only customizable energy management programs have been providing no-cost, full-service solutions that maximize efficiencies in energy and water use, reduce consumption and provide numerous economic benefits. This groundbreaking innovation has spurred a series of firsts in energy management, such as the ability to view a real-time display of all energy and water consumption within 1,100 housing units at Millennium Water.

Keith Panel Systems

Keith Panel Systems (KPS) is North America's leader in the design, manufacture and installation of rainscreen wall systems. They are proud to be part of constructing Millennium Water. The wall systems installed by KPS will preserve the performance integrity of the exteriors, reduce the heating and cooling loads, provide an extended service life and are virtually maintenance free. Alucobond®, Swisspearl® and specialty glass are the quality exterior finish products featured on proprietary systems by KPS.

Wilco Landscape Westcoast Inc.

Wilco has become expert in the construction and delivery of built landscapes. Offering project management and landscape construction services for civil, parks and development projects, Wilco is a leader in successfully delivering complex projects to its clients. Wilco thrives on diversity and challenges and seeks out projects that require the depth of experience and knowledge that they have accumulated through the vast array of projects the company has built throughout BC and Western Canada.

PARTNERS

Canada Mortgage and Housing Corporation

Environment Canada

Next Chapter: Public Spaces + Infrastructure

Chapter Three of The Challenge Series looks at SEFC's public realm and infrastructure. It explores the project's variety of public spaces, community amenities and parks. The environmental remediation process and site preparation are presented as a foundation for the implementation of the site-wide infrastructure.

Subscribe

Be part of this historic resource. Subscribe to The Challenge Series e-bulletin to follow the story of Millennium Water: The Southeast False Creek Olympic Village.

www.thechallengeseries.ca/subscribe

THE CHALLENGE SERIES

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THE CHALLENGE SERIES

FRONT COVER The SEFC Official Development Plan area scale model invites one to walk around and visualize the spatial relationships between public and private space – to experience from a bird's eye perspective the architectural forms, the active waterfront, the parks and landscape features, the green roofs and the inner courtyards. **BACK COVER** On an average day during construction, approximately 1,500 workers were employed at the Millennium Water site.