

The goal of celebrating sustainable design was entrenched in the Public Realm Plan for SEFC. This notion was applied not only to the neighbourhood’s focal points – its parks and plazas – but also to its infrastructure, the nuts and bolts upon which the neighbourhood is built, from streets to sewers. The emphasis on demonstrating sustainability can be observed down to the smallest detail as one walks the streets of the SEFC Olympic Village. In fact, the experience of the pedestrian was what dictated the design of the neighbourhood’s public realm and infrastructure. The objective was to create a pleasurable experience through the selection of materials, street furniture and street trees, and through the design and scale of the public spaces.

Street Design

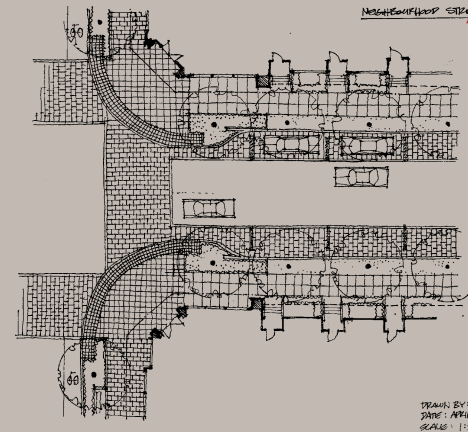
“You’ll know you’re somewhere unique as you walk the streets of SEFC,” says a City of Vancouver engineer. This is because the streets are designed to create a sense of place, achieved largely through the scale of design. All of the buildings at SEFC are “zero lot line,” meaning their facades are built up to the edge of the property lines. Residential entranceways and storefronts open

directly onto the sidewalk, inviting easy access and integration with the neighbourhood.

While streets at SEFC need to accommodate cars, the focus of their design was placed on walking and biking. This perspective was a key ingredient in creating a sense of place in the neighbourhood. The internal streets are surfaced with

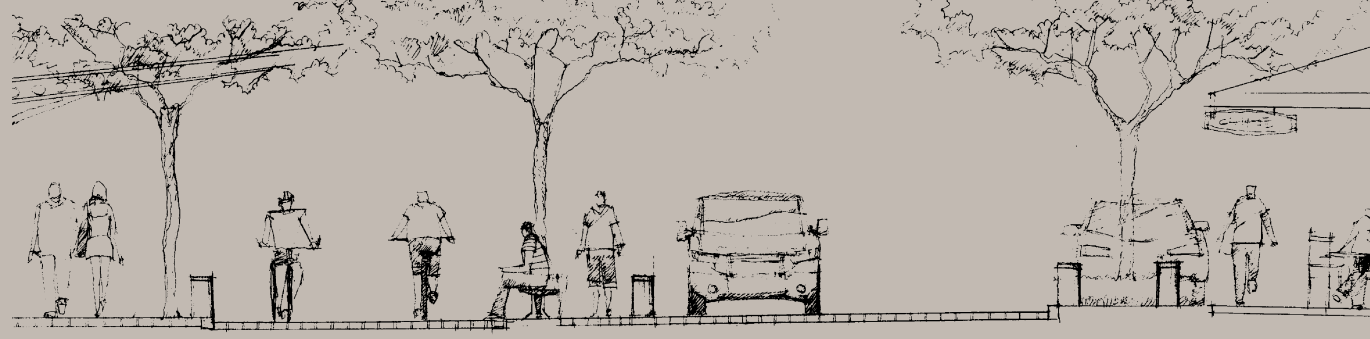
granite pavers instead of asphalt, adding to the experience of place. Street widths add another unique design element. While conventional Vancouver streets are 20 metres wide, street widths at SEFC vary between 12 and 18 metres, creating a more intimate street experience. The narrow streets presented a challenge to civil engineers, however, who were charged with

accommodating infrastructure below and above ground (pipes, cables, trees and bike lanes) within a significantly reduced area. They successfully met the challenge, and the effect – a sense of vibrancy and connectivity – presents a tangibly different urban experience from other parts of the city.

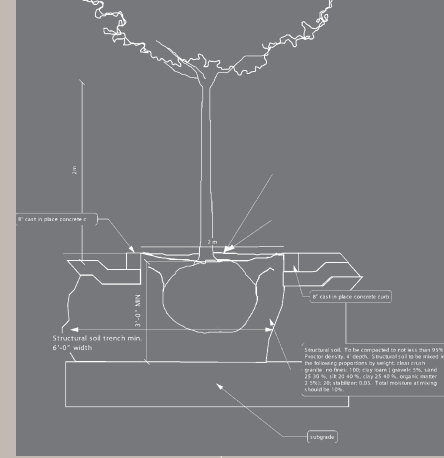


A plan view of a typical street corner. Many material details have been implemented at intersections to add to the experience of place.

**“If your infrastructure is green, it doesn’t really matter what you put on top of it – your project is green.”** Margot Long, PWL Partnership Landscape Architects



A cross section sketch shows the relationships between various modes of transportation sharing the corridors at SEFC.



INNOVATION

Large urban trees

Large trees improve the livability of dense urban environments, but maintaining healthy trees in such locations has been a challenge. Implementing soil cell technology throughout a development should enhance tree health, resistance to pests and longevity – as well as the beauty of the neighbourhood overall.

Trees as Design Element

The Public Realm Plan saw trees as significant components of the public realm design, “key to creating scale, character, and legibility of place, and (giving) a sense of permanence to a neighbourhood.” As a result, significant attention was paid to the selection of tree species. Landscape designers considered tree species’ scale and character, colour, canopy shape, hardiness, disease tolerance, sustainability attributes, allergenic risks and neighbourhood character. Beyond their contribution to the look and feel of the neighbourhood, trees provide shade, habitat and food and help sequester carbon dioxide and pollution.

Street Tree Infrastructure

One of the objectives of the SEFC Public Realm Plan was to ensure that large trees grow along the streets of the new neighbourhood. However, growing large trees in a dense urban environment can be challenging.

“A constant problem in urban sites is that trees don’t have good root development because they’re in such compact soils,” says Rob Maat, CEO of Wilco, the company that



Solar Trash Cans

As part of a year-long City of Vancouver pilot project, the SEFC waterfront is equipped with BigBelly Solar Compactors in place of conventional street-side garbage receptacles. The BigBelly units, manufactured in the US, contain sensors that trigger compaction when the volume of trash reaches a certain threshold. The compactors are freestanding and are powered by a small solar panel mounted atop each unit.

BigBelly compactors take up as much space as conventional garbage receptacles, but boast five times the capacity. As a result, there is less likelihood of overflowing waste, and garbage collection is required much less frequently, reducing noise, traffic and emissions associated with garbage trucks. The BigBelly units can operate for eight years on the equivalent solar energy it takes to drive a garbage truck 1.6 kilometres.

engineered much of the Olympic Village landscaping. “They remain stunted because they can’t grow properly, the top of the tree suffers, they’re more susceptible to insect problems and they tend to die earlier. You don’t have a healthy tree.”

To avoid these problems, “soil cells” were installed beneath the sidewalks and streets in Olympic Village. Soil cells are plastic interlocking modules assembled beneath the surface and pegged down at intervals. The cells stabilize the soil beneath the plants, enabling the root structure to develop. The cell wall acts as a semi-permeable membrane, allowing water to seep through but not soil particles. When joined together using their unique interlocking tabs, the cells form a strong matrix that becomes a permanent structure.

Big Belly solar trash compactor installed on the SEFC Seawall.

Sketch shows street tree with structural soil cell in place. The cells help protect roots from soil compaction, yielding larger trees and less pavement displacement as the tree grows.