District and Neighborhood-Scale Sustainable Development in the Pacific Northwest

A Review of Best Practice Case Studies

February 2015
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At EcoDistricts, we believe the most efficient and effective means of transforming cities is through district-scale projects that build governance, embed rigorous sustainability metrics, and encourage innovation. The timing couldn’t be more critical. Change in the form of an unstable climate, stressed infrastructure, shifting demographics, and social inequality is challenging policy makers, planners and developers alike.

Through the support of the Bullitt Foundation, EcoDistricts reviewed six neighborhood development projects in the Pacific Northwest, or Cascadia Bioregion, to learn from current best practices so we can share those findings with a wider audience to help drive district-scale change. In addition to serving as a resource for other projects across North America, and globally, this report will inform the next iteration of the EcoDistricts Protocol. The Protocol is EcoDistricts’ integrated delivery model for sustainable urban regeneration.
The review undertaken was predominantly desk-based, focused on assessing the range of existing documentation available. To supplement this, interviews were conducted with several key stakeholders on a select number of the projects to enable a more detailed understanding of both process and outcomes achieved.

The projects included in the review were:

- Dockside Green (Victoria, British Columbia, Canada)
- Southeast False Creek Olympic Village (Vancouver, British Columbia, Canada)
- Yesler Terrace (Seattle, WA)
- High Point (Seattle, WA)
- Capitol Hill Ecodistrict (Seattle, WA)
- New Columbia (Portland, OR)

EcoDistricts identified this selection of projects as representing a diversity of urban typologies, stakeholder interests, and technical issues and solutions.

**Case Study Structure**

Each case study summarizes the project, and offers insights on the development process. We used the EcoDistricts Protocol four-step Implementation Model as an organizing frame, and identified features of each project that address the EcoDistricts Performance Areas (listed below). The review also took a closer look at integrated green infrastructure issues, and provides notes highlighting key observations.
The EcoDistricts Protocol is a simple tool that supports and rewards district-scale projects in two key areas: institutionalizing effective “process management” and setting rigorous performance goals. At its core, the Protocol is a powerful “integrated design and delivery” process to align key stakeholders and investors interests, build robust governance, promote rigorous and holistic assessment, and accelerate catalytic district-scale projects over time. The process is organized into four steps, and the performance areas are addressed within these steps.

1. District Organization

District stakeholders organize to create a shared vision and governance structure to ensure that a neighborhood has the capacity and resources to implement its vision. Community engagement and active citizen participation are fundamental for ongoing district success. It includes the creation of a neighborhood governing entity with the explicit charge to manage district sustainability, and the next steps of district formation, over time.

2. District Assessment

To achieve the ambitious goals for each performance area, a neighborhood assessment is essential to determine the most effective project priorities for a unique district. An assessment enables districts to determine strategies of greatest impact and prioritize the most appropriate projects.

3. District Projects

Successful district projects require careful alignment and coordination between district stakeholders, private developers, public agencies and utilities. Integrating infrastructure and building projects and community-led programs to meet ambitious performance goals may require new joint ventures, comprehensive financing, effective governance models and extensive community involvement.

4. District Management

As district projects are planned and built, ongoing monitoring is essential to understand the full range of social, economic and environmental impacts. EcoDistrict performance standards can be used to regularly collect data to show the overall value of particular project interventions. In addition, qualitative documentation and lessons learned about EcoDistrict implementation will be essential to refining the EcoDistricts approach.
The Performance Areas

EQUITABLE DEVELOPMENT

Goal: Promote equity and opportunity and ensure fair distribution of benefits and burdens of investment and development

Objectives:

• Ensure neighborhood investments provide direct community benefits through job creation and investment opportunities
• Provide quality and consistent local job opportunities through EcoDistricts projects
• Mitigate the forced displacement of existing residents and businesses
• Ensure diverse stakeholder involvement in all EcoDistricts activities and decision-making

HEALTH AND WELLBEING

Goal: Promote human health and community well being.

Objectives:

• Provide access to safe and function local recreation and natural areas
• Provide access to healthy, local and affordable food
• Ensure safe and connected streets
• Expand economic opportunities to support a socially and economically diverse population
• Improve indoor and outdoor air quality

ACCESS AND MOBILITY

Goal: Provide access to clean and affordable transportation options

Objectives:

• Provide accessible services through mixed-uses and improved street access
• Prioritize active transportation
• Reduce vehicle miles traveled
• Use low and zero emission vehicles

COMMUNITY IDENTITY

Goal: Create cohesive neighborhood identity through the built environment and a culture of community

Objectives:

• Create, beautiful, accessible and safe places that promote interaction and access
• Foster social networks that are inclusive, flexible and cohesive
• Develop local governance with the leadership and capacity to act on behalf of the neighborhood
ENERGY
Goal: Achieve net zero energy usage annually
Objectives:
• Conserve energy use by minimizing demand and maximizing conservation
• Optimize infrastructure performance at all scales
• Use renewable energy

WATER
Goal: Meet both human and natural needs through reliable and affordable water management
Objectives:
• Reduce water consumption through conservation
• Reuse and recycle water resources wherever possible, using potable water only for potable needs
• Manage stormwater and building water discharge within the district

HABITAT AND ECOSYSTEM FUNCTION
Goal: Achieve healthy urban ecosystems that protect and regenerate habitat and ecosystem function
Objectives:
• Protect and enhance local watersheds
• Prioritize native and structurally diverse vegetation
• Create habitat connectivity within and beyond the district
• Avoid human-made hazards to wildlife and promote nature-friendly urban design

MATERIALS MANAGEMENT
Goal: Zero waste and optimized materials management
Objectives:
• Eliminate practices that produce waste wherever possible
• Minimize use of virgin materials and minimize toxic chemicals in new products
• Optimize material reuse and salvage and encourage use of regionally manufactured products or parts
• Where opportunities for waste prevention are limited, maximize use of products made with recycled content
• Capture greatest residual value of organic wastes (including food) through energy recovery and/or composting
The selected projects creatively implemented a number of solutions using a variety of processes and implementation models. Strategies included affordable housing to district heating systems, inclusive community engagement process to on-site stormwater management. While the particular accomplishments varied from project to project, they all shared a strong vision and the requisite commitment to see the vision through to the end.

Most the projects selected were planned, and largely executed, by a single owner. This model of development demonstrated that successful conditions for advancing sustainable practices can be created, albeit with common challenges faced with urban redevelopment – from differing stakeholder interests to political sensitivities and to funding security.

In two cases, Dockside Green and Southeast False Creek’s Olympic Village, redevelopment evolved from remediated brownfield sites. Three projects, New Columbia, Yesler Terrace, and High Point, were large-scale redevelopments initiated by housing authorities. The final project, Capitol Hill, presents an alternative model for sustainable development, which is working within an existing neighborhood and building relationships with a multitude of property owners and stakeholders to advance a roadmap of strategies.

In all cases, the project teams were committed to a community engagement process and were well served by it. A key component of all projects were sustainable stormwater management systems that sought to mimic pre-development conditions by reducing the volume and flow of stormwater runoff, benefiting local watersheds. In some cases, rainwater was captured and used on-site for irrigation and other uses. The green infrastructure features of each project have been highlighted throughout the case studies, along with other strategies that cover a holistic sustainability spectrum.
DOCKSIDE
GREEN
At a Glance

LOCATION: Victoria, British Columbia, Canada

SITE: 15-acre former industrial site

DEVELOPMENT: 1.3 million square feet (30,000 square feet currently built)

TYPE: Mixed-use development; primarily residential

POPULATION: Approximately 2,500

OWNERSHIP: Vancity

STATUS: Phase I completed, commencing on Phase II

UNIQUE FEATURES: Brownfield redevelopment
- LEED-NC and LEED-ND Platinum
- Integrated resource recovery system as heat source district energy system
- Membrane bioreactor package wastewater treatment plant

Project Summary

Built upon a former industrial site, Dockside Green is sustainable neighborhood located on the Inner Harbour in Victoria, British Columbia. The 2005 Master Plan called for two phases of development with three neighborhoods, with a total of 1.3 million square feet (73% residential) in 26 buildings, housing 2,500 residents. The owners and developers at the time, Vancity Credit Union and Windmill Development, pledged to build LEED-Platinum buildings, the first to do so for a master planned community. In fact, the developers agreed to pay a potential $1 million penalty if they didn’t achieve this goal. The developers were successful in meeting LEED-Platinum for their first two residential phases, “Synergy” and “Balance,” and the first phase of commercial development, “Inspiration”. Not only was the goal achieved of LEED-Platinum, they built the highest scoring LEED building in the world. Dockside Green was also the first applicant when LEED-ND was released and went on to achieve Platinum status.

Dockside Green includes a robust plan for infrastructure and amenities. Public amenities and environmental benefits were part of the sale agreement negotiated between the city and developers in exchange for a reduced price of $8.5 million for the land. A range of benefits were achieved. With a goal to be greenhouse gas neutral, the developers pursued a district energy system fueled by biomass, which allowed Dockside Green to be the first North American community to be “greenhouse gas positive.” Developers also built a membrane bioreactor package wastewater treatment facility that treats all wastewater on-site and then reuses the treated water for toilets and landscape irrigation, an anticipated reduction of 65% over baseline water usage.

Dockside Green today includes a substantial network of open spaces that connect the site to the river and adjacent neighborhoods. Open space covers 50% of the site when including green roofs. The open space network, called the “Greenway,” is the site’s stormwater treatment system and included a constructed stream and series of pools. The new Point Ellice Park was constructed with a beach and tidal pools. A regional bicycle trail, the Galloping Goose, was also integrated into site design.
Thirty thousand square feet of residential and commercial space, the wastewater treatment system, the district energy system, and Phase 1 of the Greenway (including Point Ellice Park) had been built when the market downturn hit in 2008. For four years, there was very little activity on the site. In addition to slowing sales and development, this meant that the district energy was generated from a back up boiler powered by natural gas until the requisite heating demand (residential density) was achieved.

In 2012, the development team re-assessed their approach moving forward. They held another round of community meetings and a design workshop to envision the remaining development on the site. The developer, Vancity, (who had bought Windmill Development’s 25% ownership) was still committed to executing the master plan, which meant another 966,000 square feet of residential, 66,000 square feet of commercial and retail, and 44,000 square feet of office space was still be constructed.

As of September 2014, an updated vision for the master plan was evolving with rezoning changes and changes to other agreements. The developers emphasize that they are not pursuing additional density, but distributing the density over the parcels differently, to offer greater market flexibility.

**Green Infrastructure Focus**

Dockside Green’s membrane bioreactor package wastewater treatment plant treats sewage (blackwater) and bath water and dishwasher (greywater). The treated effluent will be used in buildings to flush toilets and irrigate landscaping. After years of dumping its raw sewage directly into the Straits of Juan de Fuca, Victoria has finally begun construction of a new municipal treatment system, costing homeowners approximately $500 a year in assessments. Because Dockside Green manages its own wastewater, its residents are exempt from such fees. Up to 70,000 gallons of potable water was estimated to be saved, a reduction of 65% over typical projects.

Dockside’s central greenway, with a constructed stream and terraced ponds, is an organizing feature of the landscape. The greenway manages stormwater and provides habitat. In addition to the greenway, most paved surfaces are permeable and most flat roofs are vegetated (which also serves to insulate the buildings). Dockside Green manages all stormwater on-site by slowing and treating the water before it enters the bay, thereby avoiding the municipal storm system.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

The funding partnership established between Windmill Development and Vancity was collaborative in nature, lending to the success of the early phases in such an innovative project. Initially, Vancity provided funding, but later became development partners with Windmill, creating Dockside Green Ltd., and finally bought Windmill’s 25% to become the sole owners creating Dockside Green PLC.

An innovative design and development team was pulled together for the project. Joe Van Belleghem from Windmill Development has been frequently cited as a visionary leader willing to go above and beyond minimum requirements. Furthermore, the design team used an integrated design approach to creatively meet the far-reaching goals.

The city also pulled together an interdisciplinary project team to help overcome the typical silos that are common to many city organizations, which helped to usher the project forward, although the introduction of novel technologies did slow the permitting process. Additionally, the City of Victoria provided a dedicated staff member for the development process and Dockside Green Ltd. paid for part of the costs. The city also allowed the developers the defer payment for the land to enable construction to begin quickly without significant bridge financing.

Early on the city engaged the adjacent neighborhood, Victoria West Community Association, and at various stages of the process, such as helping to development the evaluation criteria in the RFP. The city involved them only at key milestones to avoid consultation fatigue.
DISTRICT ASSESSMENT

The City of Victoria began with an ambitious vision for Dockside Green, using a comprehensive Triple Bottom Line set of criteria to evaluate proposals (the assessment grid was based on a total of 300 points, with 100 points allocated to each of the three components - economic, environmental, and social. The developers who were awarded the project, Windmill Development, embraced the challenge and were in fact renown for their green development. All of Windmill’s projects have been LEED Platinum.

In addition to the aggressive vision outlined in the RFP, the development of Dockside Green was guided by a number of goals:

• LEED Platinum certification for New Construction and Neighborhood Development
• Bioremediation of brownfield lands through green infrastructure and open spaces
• Restoration of Point Ellice Park Shoreline was a key undertaking
• Use of renewable energy to lower GHG emissions
• Water and energy efficiency
• Healthy indoor environments
• Water and waste recycling
• Sustainable transportation and reduced car dependence

After a detailed environmental assessment, the city concluded that it was feasible to rezone the industrial Dockside site to support greater density, assuming the developers took over the necessary environmental remediation. The city then prepared a development concept in May 2004 after extensive community engagement, the RFP that was released in September 2004 included the concept plan as its foundation, as well as the inclusion of triple bottom line criteria.
DISTRICT PROJECTS

Regulation and Zoning
Once the RFP was awarded to Windmill Development, the city began to initiate the necessary zoning changes. With a development concept already in place, a “sandbox” approach was taken where zoning was applied to the master plan, allowing for experimentation rather than following a conventional development process where the project must conform to existing zoning.

Financing
Initially, the City of Victoria bought the Dockside site from the province for $1 due to the environmental liabilities on the site. Because the city had invested a significant amount into site remediation, they needed to make sure they did not take a loss on the transaction. The city’s break-even point was slightly less than $6 million, although the market value of the land was likely higher. Windmill West and Vancity purchased the site for $8.5 million and agreed to develop it according to an approved master plan. Theirs was the lowest of the received bids from the RFP, but which offered greater environmental and social benefits, requirements explicitly made by the city.

The cost of the development for Dockside Green Ltd. is estimated at $600 million. Capital for the project was raised through the Vancity (75%) and Windmill Development (25%) partnership. They received other grants and loans, including a Federation of Canadian Municipalities grant for $350,000 to support the development of innovative sustainable infrastructure.

The developers created a holistic costing method that could address the synergies of site and community infrastructure costs and benefits, such as multiple functions of the stormwater management system, which simultaneously reduces infrastructure costs and reduces heat-island effects.

DISTRICT MANAGEMENT

Developers produce reports, intended annually, that measures actual results against projected targets, outline accomplishments and identify areas for improvement. They also undertake building commissioning to monitor building performance, with an emphasis on the mechanical systems. Studies show that building commissioning can improve energy efficiency by 5-15%. Per LEED-ND, they have third-party verification of the site location and design performance.
The following are key features of Dockside Green, listed according to each EcoDistricts Performance Area.

**EQUITABLE DEVELOPMENT**
- Mix of uses and active engagement strategy to encourage locally owned and operated retail.
- Development strategy that supports light industrial mixed-use with loft style housing at Harbour Road and the Dockside Commons, a dense, small-scale marine industrial development celebrating the site’s history.
- Mix of housing types for varied income groups.

**COMMUNITY IDENTITY**
- Site anchored around a greenway running parallel to the coast with village plaza positioned as a focal point.
- Plan comprised of three distinct neighborhoods: Dockside Village featuring diverse mix of homes, offices and locally owned shops; Dockside Commons with street-oriented townhouses, garden flats and light industry; and Dockside Wharf built around a central mixed-use plaza.
- Pedestrian friendly public realm with green recreational areas.
- Public art with ecological, historical and cultural context.

**ENERGY**
- Planned integrated resource recovery of waste wood to energy biomass gasification facility will provide heat to district heating system, saving 100% energy on heating. System currently powered by natural gas.
- Energy efficient buildings, several of which are LEED-NC platinum and anticipated reduction of energy consumption 45-55% below the national energy code.
- Maximized daylight into buildings.
- Solar lighting in landscape areas.
- Individual metering provided in each home, monitoring real time information for hot and cold-water use, heating and electricity usage.
- Building commissioning undertaken to verify proper functioning of mechanical systems upon completion, with scheduled retesting.
- High levels of insulation, averages of R17 in walls and R22 in ceilings.

**HEALTH AND WELLBEING**
- Network of trails and walkways encouraging healthy and active recreation.
- Naturalized creeks and waterways creating healthy urban environments.
- Indoor air quality within buildings providing 100% fresh air through central or individual heat recovery ventilators.
- Use of low or no Volatile Organic Compounds (VOC’s) in paints, sealants, and adhesives and avoids urea-formaldehyde composite wood products.

**ACCESS AND MOBILITY**
- Range of alternative transportation strategies to reduce reliance on private vehicle use, including upgraded bike trails and bike racks in each building, harbour ferry dock, transit and a mini-transit shuttle bus.
- One Smart Car leased from the Victoria Car Share Co-Op and car share stalls located both in Synergy and Balance developments.
- City buses with optimized day and night frequency.
- Network of trails, walkways and bikeways.
- Connectivity to the Galloping Goose regional bike
trail, providing onsite, non-vehicular access between BC Ferries, Sooke and points in between.

**MATERIALS MANAGEMENT**

- GHG neutral tiles, carpets with low emissions and environmental qualities.
- Bamboo flooring and cabinets, with upgrade options to more sustainable materials like cork flooring.
- Salvaged wood products to promote sustainable harvesting practices.
- Recycle / reuse of 90% of construction waste.
- Bio-solids from STP used as compost for landscape and could possibly fuel biomass gasification plant.

**WATER**

- Water-recycling scheme provides for 100% on-site sewage treatment and use of treated water for flushing toilets, landscape irrigation and water features.
- Water consumption 65% lower than conventional developments.
- High performance water fixtures and appliances.
- Rainwater harvesting integrated into stormwater management system.

**HABITAT AND ECOSYSTEM FUNCTION**

- Stormwater management is enhanced through green roofs, and flow via a series of connected naturalized creeks and waterways result in a 50% reduction in discharge.
- Indigenous plant species in landscaping reduces reliance on irrigation.
- Extensive tree planting (goal of 1,000 trees) provide shade and cooling, promote urban ecology and habitat, with 137 trees planted in Point Ellice Park alone.
- Introduction of crayfish to improve water quality, as well as introduction of dragon larvae and stickleback fish.
- Rehabilitated shoreline along Point Ellice Park includes a new sand beach and tidal pool and all native or adaptive plant species.
- Participation in the Green Shore Initiative.

sitelines.org
Key Observations

The Request for Proposals developed by the City of Victoria contained sustainability targets that were embedded into the contractor’s response and subsequently throughout all aspects of the development. The role of the city in helping set stringent sustainability targets, and being supportive of innovative strategies, was a key success factor. As a very high-profile project with community support, Dockside Green was featured prominently in the news and captured the attention of the green building industry.

Affordable housing was not originally incorporated into the agreement; it was later added by city council and adopted into the master plan. As such, it was not as well integrated as it could have been and has proven to be difficult to include. However, the development team is committed to delivering the promised units. Developers have learned that it was more challenging to include the units within the same structures as market-rate units and moving forward they will develop purpose-built affordable housing in their own buildings.

Early community engagement was focused on adjacent communities, particularly Victoria West Community Association (Vic West), and not the remainder of the city. This limited engagement may have contributed to later demands for affordable housing, as neither the city nor the Vic West participants had expressed concern about it previously.

In the face of the recession, the developers needed to recalibrate their approach. Below are four aspects of development intended for change, some of which have implications for zoning and have been submitted to the city for approval:

- Change the business model. Rather than act as master developer and builder, Vancity became a “neighborhood builder” and intends to partner with others to execute further development.

- Smaller parcels. Smaller parcels of land allow for greater flexibility in different market conditions. Vancity would like to redistribute the density to provide this flexibility.

- Shift from building-focus to community-focus. Vancity has embraced LEED-ND (Neighborhood Development), which was not available at the commencement of the development.

- Stage delivery of common amenities. Dockside Green has fully built out its energy system, but has only delivered 25% of the built form, which has resulted in a lot of ‘sunk-cost’. The city had required the delivery of amenities within certain time frames. This became difficult to deliver upon when the recession came, and Dockside Green recommends aligning the delivery of community amenities to development phasing.
References


Case-Study-Environmental-Planning-of-Dockside-Green-Victoria-BC


At a Glance

**LOCATION:** Vancouver, British Columbia, Canada

**SITE:** 17-acre former industrial site

**DEVELOPMENT:** 1.2 million square feet

**TYPE:** Mixed-use development, primarily residential

**POPULATION:** 12,000 – 16,000 for False Creek

**OWNERSHIP:** City of Vancouver

**STATUS:** phase 1 completed 2010 (next phase up to 2020)

**UNIQUE FEATURES:** Brownfield redevelopment
- LEED-ND Platinum and LEED-NC Gold
- Community benefits agreement and local employment and training support
- Habitat creation and urban agriculture
- Net-zero energy building
- Neighborhood energy utility using heat from the sewage system
- Radiant capillary mat heating system

Project Summary

At the center of Southeast False Creek (SEFC) in Vancouver, BC is Olympic Village, an approximately 1.2 million square-foot mixed-use development that was built in anticipation of housing athletes from the 2010 Winter Olympic and Paralympic Games. On eight city blocks, Olympic Village contains 1,100 units, 250 of which are affordable. Of the 850 market-rate units, 120 are rentals and 730 are market sales. The affordable housing was funded by the City of Vancouver and developed by Millennium Properties Ltd., the developers of Olympic Village.

All SEFC buildings, including those in Olympic Village, have achieved LEED-NC Gold certification, with the exception of the Creekside Community Centre and the Net-Zero Energy Senior Housing project, which achieved LEED Platinum. The LEED-Platinum buildings helped push the neighborhood rating to LEED-Platinum in 2010 (LEED-Silver was the original target).

In contrast to the podium-tower style of development that dominates Vancouver’s downtown, the design intent of the Olympic Village and SEFC was more of an “ambient scale” similar to some European cities like Barcelona, with narrower, pedestrian-oriented streets, and a mix of low-, mid- and high-rise housing. Referencing the industrial history was important to the city and engaged stakeholders. As such, the Works Yard, the Ship Yard, and the Rail Yard emerged as design themes for the relevant portions of the site. Olympic Village is located within the Ship Yard; an art piece styled after ship ribs rises up in the plaza in front of the historic Salt Building. The Salt Building, which once received salt from the San Francisco area and refined it, was renovated and now houses a brewpub and coffee roaster. The Salt Building also happens to mark the edge of original shoreline.
A city-owned Neighborhood Energy Utility reclaims waste heat from the sewer system and uses it to warm coolant water via a heat exchange. The warmed water then circulates through buildings’ innovative radiant capillary mat heating system. The Neighborhood Energy Utility’s five exhaust pipes are hung with LED lights (the visual effect being “fingernails” atop the pipe fingers) that can be programmed to changed colors. The city projects the Neighborhood Energy Utility will supply 70% of the neighborhood’s annual heating and hot water energy demand, and will produce 50% less greenhouse gas emissions compared to conventional energy sources. [Trent Berry, Reshape Strategies]

Olympic Village is well situated with regard to transportation access, most immediately with its location on the seawall pedestrian and bicycle route that follows the shoreline of False Creek. Additionally, two other bike routes pass through SEFC and a pedestrian ferry links SEFC to city beaches and other destinations. Vancouver’s new light rail, the Canada Line, stops at SEFC and Skytrain, an elevated light rail system, is within walking distance. A planned streetcar route runs through SEFC as well.

**Green Infrastructure Focus**

Green roofs and rooftop gardens were key in meeting the requirement for the site area to be 50% green. Every parcel included opportunities for urban agriculture, with roughly 1,000-1,500 square feet of urban agriculture provided per parcel.

Rain that falls on building roofs is stored in cisterns for reuse, and when full, discharges into False Creek. The “dirtier” rainwater that falls on streets is either collected and treated in the wetland in Hinge Park, where it is cleaned by plants, or into infiltration galleries underground, which use layers of gravel and sand to remove contaminants before the water enters False Creek. On the site’s eastern edge, water flows into a bioswale on Ontario Street that runs into False Creek.

Hinge Park, which treats the stormwater from the west side of Olympic Village, features a winding wetland, songbird houses, and several bridges. The naturalistic child-friendly landscape has big boulders for climbing and a water play structure, which uses potable water to feed the wetland during the drier summer months. Plant species chosen for the park are native to the south coast of BC and priority was given to planting pollinators and fruit bearing plants to support local birds.

In exchange for manipulating part of the shoreline, the federal Department of Fisheries and Oceans agreed to let the developers build a habitat island, resulting in a net increase in intertidal fish habitat. The island and naturalized portions of the shoreline provide aquatic, riparian and upland habitat that is popular with bald eagles and other waterfowl. Testament to the power of restored ecologies, herring returned to spawn in 2008, the first time recorded in 80 years.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

The city released an RFP to develop Olympic Village in 2005, which was awarded to Millennium Properties Ltd. in 2006. Millennium bought the property from the city for $200 million, including an additional parcel of land not included in the original RFP. For development and design, the site was divided into different parcels that were overseen by different architects. This helped to meet an inflexible deadline (the approaching Olympics) and encouraged design diversity.

The team also used an integrated design process (IDP) to bring all members of the design team together to explore synergies, generate solutions and perhaps most importantly, improve the efficiency of the design process. A collaborative approach proved critical in fostering the innovation required for the sustainability goals, as well as to meet the deadlines.

DISTRICT ASSESSMENT

Although built to accommodate Olympic athletes, the origins of Olympic Village are much earlier. The city had designs on Southeast False Creek as an innovative neighborhood for years. As early as 1998, the city organized a design charrette to envision the future of SEFC (zoned industrial at the time). By 1995, the city rezoned the land to residential and determined that the site should be a model sustainable neighborhood. Following many reports and design debates, the city issued the SEFC Policy Document in 1999 that outlines sustainable development guiding principles.

Consistent with the vision for SEFC, the City of Vancouver adopted a SEFC Green Building Strategy in 2004 that requires buildings to be built to at least LEED-Silver and establishes a baseline for environmental performance in the areas of energy, parking, landscape and water, and waste management. In 2005, the city adopted the Official Development Plan for Southeast False Creek that created urban design and sustainability principles, a policy framework for implementation, and recommended strategies. A January 2006 amendment reduced affordable housing requirements to 20% of the units from 1/3 market housing, 1/3 “modest” market housing and 1/3 affordable housing (see District Projects below).

DISTRICT PROJECTS

While the Olympics had not instigated the development of the Olympic Village and Southeast False Creek, it did catalyze it. In preparation for the Olympic bid, the city took advantage of the opportunity to secure funding for the first phase of development in SEFC by siting the Olympic housing at SEFC. The city agreed to build Olympic Village, contingent on a $30 million contribution from the Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC).
Regulation and zoning

Millennium’s rezoning proposal recommend changes to the Official Development Plan (ODP) with regard to massing, heights and programming to take advantage of views and sustainable design initiatives. One of those strategies was passive design, which often requires additional space (e.g., wider stairwells, thicker walls) so the city granted area exclusions for any additional floor area required to meet passive design requirements. As such, the developer was able to include these strategies without losing developable area. Another element brought back into the proposal was “modest market” housing, which had been stripped from the ODP in 2006. A vague term, modest market came to mean rental housing; Millennium received bonus density for providing it. Millennium also received a 5% increase to total residential density for emphasizing family housing.

Owing to the tight timeline, the city did not have time to develop specific design guidelines for each type of building (i.e., low-rise, mid-rise, tower) so the city’s Urban Design Panel proposed ten design guidelines for the whole of SEFC.

Financing

Olympic Village was conceived as a project funded largely by private sources and sold as market housing (typically Olympic housing is used as low-income or senior housing), an arrangement agreeable to the city who could sell the land, turn over development responsibilities, and still generate a profit. However in 2008, the lender, Fortress, withheld advances to the developer, Millennium, citing that spending was out-of-balance. It should be noted that this unique lending arrangement was the result of certain titling needs required by the International Olympic Committee. As guarantor of the loan, the city needed to step in to finance the project to meet deadlines. To borrow and lend money, the city had to amend the city charter, which required approval by the provincial government. Because of this bailout, the city reduced the amount of low- and middle-income housing it had originally pledged.

In the end the city purchased the loan from Fortress so they were the ultimate lender to the developer, the costs to be recovered from sales after the Games. Millennium Development defaulted and the city placed SEFC in receivership with Ernst and Young. By the end of 2011, Olympic Village had been rebranded and landed major commercial tenants. As of April 2014 the City of Vancouver has officially paid down the entire $630 million debt of the Olympic Village development and recovered an additional $70 million.

Economic Development

As part of Vancouver’s first Community Benefits Agreement, Millennium Development Ltd. provided $750,000 for entry-level construction job training, which was administered by Building Opportunities with Business (BOB), a nonprofit organization that has been active in Vancouver’s Downtown Eastside and other inner-city neighborhoods. The employment program has successfully placed 87 trained individuals at the Olympic Village and 33 people on other construction sites. Millennium also exceeded its local procurement goals, facilitating the purchase of over $41 million in goods and services from more than 25 local businesses and suppliers.
Performance Areas

The following are key features of Olympic Village, listed according to each EcoDistricts Performance Area.

**EQUITABLE DEVELOPMENT**

- Community Benefits Agreement provided 100 inner city jobs, $15 million investment in inner city procurement opportunities and funding for job training and employment support for residents and businesses.
- Social housing comprising 250 affordable housing units and 100 units of modest market housing aimed at middle-income singles and families (approximately 33% housing).

**HEALTH AND WELLBEING**

- Extensive waterfront walkway, public plaza and network of open spaces provide access to natural and recreation opportunities.
- 1,000-1,500 square feet of urban agriculture space per parcel distributed as rooftop community gardens and ground-level community gardens.
- Adjacent to Hinge Park is a demonstration community garden for use by schools, the community center and entire neighborhood.
- A permeable street grid with public throughways between blocks and network of bikeways creates a walkable neighborhood.

**COMMUNITY IDENTITY**

- Community plaza developed as the heart of the village, fronted by shops, at the intersection of three bikeways and overlooking the waterfront.
- Parks, public places and shared amenities provided, including large and small parks, town square, farmer’s market, interfaith spiritual center, community demonstration garden, plazas, streetcar stations, and waterfront greenways/bikeways.
- Preservation of site’s historic buildings like Salt Building, along with other symbolic public art connected to the site, providing a unique identity to the neighborhood.
- Cooperative Housing Corporation established to build community capacity in sustainable living, including bee-keeping and composting.

**ACCESS AND MOBILITY**

- Mixed use, pedestrian friendly urban design with small permeable blocks.
- Movement system to reflect city’s transportation priority, with highest preference to pedestrian, cyclist and public transportation.
- Access to the Canada Line (light rail), Skytrain (elevated light rail), and multiple bus lines.
- Three bikeways connect neighborhood to surrounding city amenities and waterfront.
- Reduced car ownership has been encouraged through parking and neighborhood transportation demand management.
- All residential parking at the Olympic Village is underground.

**ENERGY**

- Radiant heating efficient capillary mat system
- Passive design strategies
- One residential building Net-Zero Energy
- Neighborhood Energy Utility (NEU) draws heat from sewer system to provide heat and hot water to all of Southeast False Creek.
- Heat recovery systems, using heat pumps, from buildings, parkades and commercial spaces used to pre-warm potable water
• Renewable technology, such as roof mounted solar thermal arrays, support the NEU.

• Hydronic (pumped water) radiant energy systems used for cooling and heating. The Community Centre is cooled using the sun.

• Going beyond ASHRAE standards for buildings and setting net-zero energy and net-zero GHG targets resulted in an increase in efficiency by 30-70%.

• Energy efficient lighting and appliances

• Energy resource metering and display in every Olympic Village residential unit

• Lighting in SEFC’s public spaces designed to reduce light pollution to the sky and excess light on the ground.

WATER

• Two-tier stormwater management system featuring cisterns, a constructed wetland, bioswales, and infiltration galleries.

• ‘Valley Street Design’ captures stormwater in center of street eliminating need for curbs.

• Water “banked” from rainwater harvesting in cisterns, used for irrigation and flushing, reducing the potable water demand by 40%. Water continuously circulated to courtyard water features, aerating it, exposing it to sunlight and inhibiting bacterial growth.

• Extended roof structures for collecting additional rainwater.

• Each building parcel has a water feature (rooftop stream, reflecting pond or waterfall) to prevent cistern water stagnation and maintain it recreational standards.

HABITAT AND ECOSYSTEM FUNCTION

• Watershed protection by allowing stormwater to flow and infiltrate through green infrastructure before reaching False Creek.

• Ecological restoration of waterfront and construction of a habitat island, creating intertidal, riparian, and upland ecologies.

• Exceeded green roofs requirement of 50% of roof area.

• Intensive (deeper than 8”) roof gardening on some buildings, allowing the growing of a wide variety of plants and trees.

• Urban design framework supports biodiversity, habitat corridors, and landscaping that supports ecological function.

• Use of “silva-cell’ technology under sidewalks and roads allows for larger root balls and therefore larger trees. In some cases crown maples are expected to grow 100 feet tall.

MATERIALS MANAGEMENT

• Buildings adhered to LEED NC principles for materials management as follows:

• Storage and collection of recyclables

• Construction waste management

• Materials reuse

• Recycled content

• Regional materials

• Rapidly renewable materials

• Certified wood
Key Observations

Radiant Heat
The introduction of novel technologies, such as the radiant capillary mat heating system, created a learning curve for designers and construction trade workers. “This system is integral to the drywall ceiling,” says Peter MacLellan of Olympic International. “So the mechanical contractor had to work very closely with the guys doing drywall – not something that usually happens. And the capillary mat installers had to work with the folks doing the lighting – all the trades really had to work together.” Ultimately, the process helped build capacity: now five different mechanical contractors are familiar with the systems and are prepared for future installations. Another benefit of the capillary mat system is that vertical space for each floor is recaptured because there are no air ducts. Developers could either offer suites with higher ceilings (commanding an increased sales price), fit more stories into a building, or reduce the overall height and attendant cost of materials of the building, making capillary mat systems economically attractive as well as more efficient and sustainable.

Stormwater Management
The area available for stormwater treatment was limited, so the system was reverse-engineered, in a sense, to work with the area provided. As a result, the two-tiered stormwater was devised to manage the rainwater: the “clean water” captured in cisterns for re-use and the “dirty” rainwater cleaned in Hinge Park, underground galleries, or bioswales before being released to False Creek.

References

YESLER TERRACE
At a Glance

LOCATION: Seattle, WA
SITE: 30-acre public housing redevelopment
DEVELOPMENT: 4,500 housing units, 900,000 square feet commercial, 150,000 square feet retail
TYPE: Mixed-use development, mixed-income housing, primarily residential
POPULATION: Approximately 1,200 (2014)
OWNERSHIP: Seattle Housing Authority
PROJECT SUMMARY: Choice Neighborhoods Initiative
Local employment and training support
Urban agriculture

Project Summary

Created in 1941 as the first racially integrated public housing development in the United States, Yesler Terrace is a 561-unit community owned by the Seattle Housing Authority (SHA). The SHA adopted a mixed-use, mixed-income redevelopment plan for Yesler Terrace in 2011 to address rising building and infrastructure maintenance costs as well as expand affordable housing opportunities (as of 2013, SHA had a list of 22,000 people that they were unable to serve). The redeveloped Yesler Terrace will have up to 4,500 housing units, including 561 very-low-income units to replace the existing housing and 1,240 income-restricted units at a variety of affordability levels, up to 900,000 square feet of office, medical services, and lodging, and up to 150,000 square feet of retail and services. To minimize resident disruption caused by relocation, 281 units will be operational at all times.

The 561 very-low-income units (30% area median income or AMI) will be prioritized for existing residents who wish to return. In addition, the SHA will build another 290 units at 60% AMI, which they or a nonprofit agency will own. For all of the above, the bedroom mix will match the existing family-friendly mix (approximately one third to one half of Yesler Terrace households have children compared with one in five citywide). Another 850 moderate-income units (80% AMI) – rental or ownership – will have the same bedroom mix as the market-rate housing and will be built via land sales, either by for-profit or nonprofit developers. Potentially another 100 extremely low-income units (≤ 30% AMI) will be built depending on availability of vouchers and capital subsidies; if the full 100 can’t be provided at 30% AMI, the balance could be provided at 80% AMI.

A new street plan, which vacates some streets and dedicates others, will provide a net increase in right-of-way and create better connections to the Central District and Little Saigon. The resulting “green street loop” will feature street trees and rain gardens (required by the Cooperative Agreement, see below). A new streetcar line, already under construction, will serve Yesler Terrace by 2015.
Pedestrian paths and woonerf-style shared access drives will break up the large blocks. Better connectivity and active living will be made possible through new bike facilities, better sidewalks, and a landscaped stairway to Little Saigon, the 10th Avenue South hill climb. Views to Mt. Rainer and the historic Marine Hospital on Beacon Hill will be preserved through the adoption of height limits. A historic steam plant will be renovated and house a range of educational services, including Head Start and job readiness training programs.

**Green Infrastructure Focus**

Seattle Housing Authority’s donation of 1.8 acres adjacent to Yesler Community Center to Seattle Parks for the development of a neighborhood park (with views to Mt. Rainer) will improve the neighborhood’s parks-deficient status. It is proposed that Seattle Parks will own, develop, and maintain the park (contingent on Parks Levy funding). Each of the four community sectors will have a pocket park no smaller than 12,000 square feet.

A planned action ordinance requires a tree protection plan, which preserves 40 trees and requires 1:1 replacement of removed trees (standard code requirements would only require the preservation of 22 trees).

New streets created through the redevelopment will be green streets. The capture and control of stormwater through green stormwater infrastructure and hybrid systems are planned to meet Seattle’s stormwater management code.

Individual development proposals would normally be required to meet a minimum score of 0.30 with Seattle’s Green Factor; the Cooperative Agreement specified that a score of 0.50 would be required for each section of Yesler Terrace. Pocket parks and pedestrian ways are playing a key role to count toward these requirements.

SHA is exploring the concept of district scale sustainable water infrastructure to lower the demand for potable water, and support stormwater reuse and “black water” treatment and reuse.

During the engagement process, residents repeatedly emphasized the importance of community gardens. Before redevelopment, there were approximately 0.3 acres of community garden space. Throughout development, the SHA will ensure that 0.3 acres of gardens will be available at all times. In the end, the site will have one acre of community garden space. Low-income residents will have priority for use of the garden.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

The Seattle Housing Authority and the City of Seattle entered into a Cooperative Agreement, which spelled out, among other things, the amount and timing of affordable housing construction, type and amount of green space, the City’s financial commitments and Seattle Parks’ partnership with SHA. As part of the SHA-City relationship, the SHA works with city departments during the annual budget process to explore opportunities where departmental priorities align with Yesler Terrace redevelopment.

Yesler Terrace is the last of the Seattle Housing Authority’s major properties to be developed under a mixed-income, mixed-use model. While previous redevelopment was funded through the HOPE VI program, Yesler Terrace received about $30 million from the Choice Neighborhoods Initiative, the successor to HOPE VI. Rather than focusing on the physical development, the Choice Neighborhood Initiative recognizes that the provision of services is integral to community revitalization.

To that end, the SHA is partnering with the city and county to improve transportation infrastructure and services and with the nearby Bailey Gatzert elementary school and Seattle University to address issues relating to educational attainment for children who live in Yesler Terrace. SHA is also working with potential employers like Swedish and Harborview Medical Center to target training for residents towards employment opportunities, and have committed to hiring qualified residents.
DISTRICT ASSESSMENT

In 2006, the Yesler Terrace Citizen Review Committee (CRC) was formed, composed of Yesler residents and other community stakeholders. The CRC developed a set of guiding principles for the redevelopment process:

Social Equity
Human development that meets essential needs and improves the quality of life for current and future generations living within the Yesler Terrace community regardless of racial, cultural, economic or other status, through access to employment, education, medical care, social services, nutritious food and quality affordable housing, especially to those with very low incomes, and gives priority to those most in need.

Economic Opportunity
Improve the overall economic conditions, opportunities and quality of life for current and future generations living within the Yesler Terrace community by fostering access to jobs, transportation, community services and safe, low-income affordable housing and financial tools.

Environmental Stewardship and Sustainability
Integrate sustainable design and implement equitable environmental and economic practices to achieve a positive and healthy community for current and future generations living within the Yesler Terrace community while preserving housing affordability.

One-for-One Replacement Housing
Replace or exceed the current number of very-low-income and low-income housing units at Yesler Terrace that serve public-housing-eligible residents and provide choice, options, site integration and affordability in a dense and culturally and economically diverse community. In addition, consider redevelopment options that would guarantee no net loss of very-low-income housing serving public-housing-eligible residents on the current site of Yesler Terrace.

In 2010, the Seattle Housing Authority commissioned a Sustainable District Feasibility Study to explore district level designs and conservation opportunities across all major infrastructure systems. The study found that the potential was greatest for energy systems, the most promising of which was a geo-exchange and solar hot water heating and cooling system. The study also recommended further study for a district water reuse system. Further analysis was recommended, as the site’s development program was still underway at the time of the study and the study was conceptual in nature.

In 2010, the Seattle Housing Authority commissioned a Sustainable District Feasibility Study to explore district level designs and conservation opportunities across all major infrastructure systems. The study found that the potential was greatest for energy systems, the most promising of which was a geo-exchange and solar hot water heating and cooling system. The study also recommended further study for a district water reuse system. Further analysis was recommended, as the site’s development program was still underway at the time of the study and the study was conceptual in nature.

In the context of Seattle’s efforts to be carbon neutral by 2050, the city commissioned a study to analyze potential district energy projects and found that First Hill (including Yesler Terrace) had high, near-term promise. At the same time, the city acknowledged that it does not have the expertise to own and operate district energy systems and that its codes and policy may make it difficult to develop district energy. The study suggested that the city could expand its district energy systems without owning or operating the system by developing strategic partnerships on First Hill. The city subsequently issued a Request
for Qualifications to explore the interest in a third-party operator of a district energy system, which was awarded to Corix Utilities in 2012.

**DISTRICT PROJECTS**

Phase One did not require relocation of any existing Yesler Terrace residents. In the area east of Boren Avenue, SHA produced 98 replacement units and 20 low-income units. Construction of replacement units in this area provide opportunities for some current residents to move directly to new housing within the neighborhood, reducing the number of residents displaced during construction west of Boren. A private developer, Spectrum Development Solutions, is building an apartment building in this area, 20% of which will have moderate-income units (≤80% AMI). Also part of Phase One development is a new community garden space, the construction of the 10th Avenue South hill climb, affordable retail space, the renovation of the historic steam plant, education support, and public safety data collection. Phase Two of Yesler Terrace redevelopment is intended to occur from 2013 through 2019.

**Regulation and Zoning**

In April 2011, Seattle City Council adopted a Master Planned Community designation in their Comprehensive Plan. Yesler Terrace was the first to apply the designation, which is called MPC-YT. The Master Planned Community designation combines standards of other similar zones, such as Midrise and Highrise Multifamily Residential, Neighborhood Commercial, and the Seattle Mixed zone. The Community Design Guidelines specific to Yesler Terrace, inspired by successful examples in Portland and Vancouver, BC, were adopted with the new zoning. Other legislation included a planned action ordinance, street vacations, new street designations, and the Cooperative Agreement between the city and SHA.

Yesler Terrace was the first project in Seattle to use the planned action ordinance, a planning tool created from Washington’s State Environmental Policy Act. A planned action ordinance reviews planned phased development through an Environmental Impact Statement, identifies all impacts, and creates a detailed mitigation plan, such that when individual projects in the planned development are ready they are not subject to further environmental assessment and review. The Yesler Terrace planned action ordinance and development standards offer additional sustainability features, including shared parking agreements with neighboring developments, parking maximums, landscape amenities, and community gardens.

“Typically in Seattle’s zoning, all development standards are applied at the parcel scale, i.e. development on each lot or building site must meet all minimum and/or maximum requirements. This works well for infill development projects in established neighborhoods. The same approach will apply for certain standards at Yesler Terrace, including maximum height limits. But to take advantage of the unified ownership and extensive planning at Yesler Terrace, some development standards are proposed on a site-wide, block or sector basis, to be allocated among lots as SHA and other owners may elect. Also, residential amenity area and parking may be pooled between lots. For example, a large play area in the courtyard of a building on one lot can meet the amenity space requirements of a building on a neighboring lot if it is big enough to meet the minimum amenity space requirements for both buildings and is accessible to residents of both buildings. While this approach would allow greater flexibility and can encourage better urban design outcomes (e.g., bigger and more appealing amenity spaces, more substantial plantings and garden areas,
and less overall parking), it would require ongoing coordination, tracking, and accurate reporting. To ensure that developments within a block or sector meet their cumulative development standards, SHA must allocate aggregate limits when it creates new lots through platting, and DPD (Department of Planning and Development) must carefully review development over time to ensure that proposed projects comply with all minimum and maximum requirements.”

“Applied as maximums for the zone, the overall floor area limits encourage a variety of heights and building forms. The proposed maximum floor area is approximately 80% of the floor area that would otherwise be allowed by setbacks, height limits, and floor plate limits alone. This means that a building built to its maximum height and width will result in a smaller building somewhere else in the MPC–YT zone, leading to more varied architecture (The proposed floor area limits that apply to the MPC-YT zone are comparable to a site-wide floor area ratio (FAR) of 6.)

Financing
Yesler Terrace received about $30 million from the Choice Neighborhoods Initiative. SHA submitted a second application for Choice Neighborhoods funding to HUD on April 10, 2012. If awarded, funding will support the production of replacement housing units, low-income units, other community capital improvements and social service programs. The city is supportive of this grant application and will consider committing $500,000 of Community Development Block Grant funding and up to $4.72 million in other housing funding. [DPD Director’s Report]

Due to decreases in federal funding for low-income housing development, Yesler Terrace’s redevelopment plan is contingent in part on land sales revenues, an anticipated $145 million. So far, the SHA has sold property to Spectrum Development Solutions and Vulcan Real Estate (Vulcan paid $22.062 million for 3.7 acres on the northern portion of the site). As of October 2014, SHA is marketing 4.41 acres for office development.

DISTRICT MANAGEMENT

SHA is required to submit annual reports to the city to track the progress of development and consistency with code and planned action conditions. These reports, which track numerous items such as floor area by use, Green Factor landscaping, and parking maximums, are in addition to the reporting performed as part of each Master Use Permit and building permit application. SHA also reports annually to the mayor and city council regarding replacement housing and other affordable housing production.

As part of the Cooperative Agreement, the city specified that the production of affordable housing keep pace with the market-rate residential development; to that end, the Department of Planning and Development and the Office of Housing meter out residential floor area based on the amount of affordable housing built. That is, until certain affordable housing targets are met, SHA will not be allowed to use the full increase in residential density allowed by the new zoning.
Performance Areas

The following are key features of Yesler Terrace, listed according to each EcoDistricts performance area.

EQUITABLE DEVELOPMENT

- Goal to improve overall economic conditions, opportunities and quality of life by fostering access to jobs, transportation, community services.
- Support training, apprenticeship and living wage job opportunities for residents and adjacent communities.
- Preserve and promote local small businesses.
- Programs to provide access to capital to support residents entrepreneurial businesses.
- Partnerships to help homeless families obtain stable housing and increase household income.
- Extensive relocation plan for existing community with choice to move back to new housing after completion.
- Address barriers to employment such as transportation, education, training, language and child care.

HEALTH AND WELLBEING

- Neighborhood park and four pocket parks provide access to nature and enhance livability.
- Design ensures community access to open spaces and gathering places by open space relationship and green street loop that connects pocket parks.
- Pedestrian friendly urban design that fosters community interaction and public safety
- Tree buffer to screen interstate highway to enhance public safety. Lots located within 200’ of highway to have HEPA filtration systems at air intake locations.
- “Breathe Easy” homes for asthma sufferers.
- Maintain 0.3 acres of community gardens at all times, with a final count of 1 acre of community gardens. Priority to low-income residents for community garden spaces.

COMMUNITY IDENTITY

- Interconnected network of green streets, parks, plazas, gardens, access drives and pedestrian pathways facilitate community interaction.
- Distinct designs at gateway locations and way finding kiosks. The high-rise buildings consider citywide visual impacts.
- Safe, healthy and inclusive community providing variety of housing styles, sizes, and configuration.
- Community governance structure promotes involvement in decision making by all residents.
- Neighborhood park supported by residential, community, and cultural activity serve as neighborhood center.
- SHA to donate 1.8 acres of land adjacent to Yesler Community Center for a neighborhood park. Seattle Parks to develop, own, and maintain the park, given funding is approved.
- Highlights unique history and cultural mix of site by art and architecture.
- Maximum height limits based on a horizontal plane to keep views from locations along 9th Avenue and Broadway open to Mt. Rainier and historic Marine Hospital on Beacon Hill.
ACCESS AND MOBILITY

- Streets vacations and rededication of new streets to provide for better circulation and access, creating net increase in right-of-way.
- Walking, bicycling and transit use enforced by entry location and relationships, street design and network planning.
- First Hill Streetcar to serve Yesler Terrace by 2015.
- Access to car pools and vanpools and provision of transit passes.
- MPC-YT zoning has parking maximums to prevent an oversupply of parking.
- Larger developments are required to submit transportation management programs.
- Unbundled and shared parking, with parking reservations for car sharing programs.
- Pedestrian walkways through large blocks, some are shared access drives. Network of pedestrian walkways supported by active frontage and outdoor activities.
- Bicycle network plan supported by way finding signage and bicycle racks.
- 10th Avenue South hill climb landscaped stairway to provide access down the slope from Yesler Terrace to Little Saigon.

WATER

- Capture and control stormwater through green stormwater infrastructure and hybrid systems.
- Exploring district scale sustainable water infrastructure to lower demand of potable water, and stormwater reuse and “black water” treatment and reuse.
- Greywater (sinks, showers and laundry) reuse to reduce flushwater demand.

ENERGY

- City awarded contract to assess development of a system to deliver thermal energy in the First Hill area, including Yesler Terrace and nearby medical campuses.
- Consider ideal siting and orientation of buildings to reduce energy demand (as per Seattle Design Guidelines).
- Sunlight access and natural ventilation.
- Maximize daylight into the buildings.

HABITAT AND ECOSYSTEM FUNCTION

- Seattle Green Factor encourages trees, food cultivation, rain gardens, and green roofs.
- Maintain site topography reflected in design of open spaces and buildings.
- Preserves on site trees and open spaces optimize health and visibility of preserved trees and new vegetation. Tree protection plan preserves 40 trees and requires 1:1 replacement of removed trees.
- Fosters education, awareness programs to promote earth friendly practices.

MATERIALS MANAGEMENT

- Investigation of the use of three-bin district composting system
- District garbage and recycling to be maintained
Key Observations

The planned action ordinance approach provides greater predictability, and may expedite project review, establishing a consistent set of mitigation conditions intended to address impacts of individual developments as well as cumulative effects of site development.

References


NEW COLUMBIA
At a Glance

LOCATION: Portland, OR

SITE: 82-acre public housing redevelopment

DEVELOPMENT: 854 housing units, 85,000 commercial, 3,600 square feet retail, community campus

TYPE: Mixed-use development, mixed-income housing

POPULATION: Approximately 1,200

OWNERSHIP: Housing Authority of Portland (HAP)

STATUS: Completed

UNIQUE FEATURES: HOPE VI
  - Relocation plan
  - Local employment and training support
  - Urban agriculture

Project Summary

Built in 1942 as housing for shipyard workers, Columbia Villa was converted to barrack-style public housing after the war. The Housing Authority of Portland (now named Home Forward) pursued redevelopment that would address the aging buildings, inadequate infrastructure and needs of the residents, who were physically, socially, and economically isolated from the rest of the city. In 2001, HAP applied for and received a $35 million grant through the U.S. Housing and Urban Development HOPE VI program, which offered grants to reconstruct aging public housing sites into new, mixed-income communities. HAP supplemented the redevelopment of Columbia Villa into New Columbia with other funding sources, bringing the total to $151 million.

The 462 housing units at Columbia Villa were replaced with 854 units at a variety of income levels. There are 370 replacement units at New Columbia, 297 with a public housing operating subsidy and 73 units with a project-based Section 8 subsidy. An additional 92 low-income units were built off-site to ensure no net loss of affordable housing. Sixty-six new elderly rentals (managed by NW Housing Advocates) and 186 new affordable rentals (60% Median Family Income or MFI) were also built. Of the 232 new ownership units built, 98 were built by nonprofit builders such as Habitat for Humanity, 128 were market-rate homes, and eight homes were developed using a cohousing model.

The intention of the master plan was to create a pedestrian- and family-friendly community with abundant open space that was better integrated into the neighborhood. Principal among the changes in the redevelopment was an improved street network. Columbia Villa was plagued by a curvilinear street pattern with numerous dead-ends that didn’t connect to adjacent streets, literally isolating residents from the city. The new street alignment featured a modified grid, responsive to site conditions, which connected to adjacent streets. Many streets were “green streets” and central to function of the on-site stormwater management system.
Four-acre McCoy Park is located at the center of New Columbia, which contains a community garden, a basketball court, children’s play area, and a plaza. Additionally, four quarter-acre pocket parks are distributed across the site. To promote neighborly interaction and keep “eyes on the street,” buildings were designed with front porches so that living room and kitchen windows overlooked open spaces or the street.

The new Rosa Parks Elementary School, built to LEED-Gold, is full with 450 students or about half the community’s students (the other half attend a neighboring elementary school). The school is part of the Community Campus, a $20.2 million project that also includes a Boys and Girls Club and a new recreation wing for the city-owned University Park Community Center. A double gymnasium was built in the recreation wing and is used by the club and the school, a sharing agreement made possible by a street vacation between the school and the community center.

Mixed-use development along the new “main street,” Trenton Street, houses 85,000 square feet of office space occupied by New Columbia management offices and a Portland Community College classroom, and 3,600 square feet of retail space featuring a coffee shop and community-run corner store. Retail rents are subsidized; the corner store is subsidized in part because alcohol and tobacco sales are not allowed.

**Green Infrastructure Focus**

New Columbia was the largest green street development in Portland at the time. New Columbia uses 80% less stormwater piping than a conventional neighborhood and is able to manage 98% of stormwater on-site, removing the stormwater burden from the environmentally stressed Columbia Slough. It accomplishes this through 101 pocket swales, 31 flow-through planter boxes, and 40 public infiltration dry wells (used as overflow during larger rain events). New Columbia also features one of Portland’s largest demonstration areas of porous pavement. Seven blocks of residential alleyways use porous pavers where rainwater filters through 30-foot deep drywells before returning to the aquifer.

Over half of the 430 trees at New Columbia were preserved, many with diameters greater than 48 inches (minimum code required 35%). A street realignment was discarded to save the biggest tree on the site—a silver maple with a breast-height diameter of 64 inches. Trees that could not be saved onsite were donated to streambed restoration projects or relocated to McCoy Park.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

An 18-member Community Advisory Community (CAC) met monthly to address topics such as project design, financing, and supportive services. Because relocation and return was such an important issue to residents, tenant advocates, city officials, and other stakeholders, the CAC appointed a 15-member Relocation Task Force (RTF) to focus solely on resident relocation. Owing to federal timelines, the time for the RTF to develop and submit the Relocation Plan to HUD was just two months. To meet this timeline, HAP created an internal committee to respond to RTF questions in a timely manner and get internal procedures in order.

In response to RTF concerns about the ability for HAP to deliver the promised services on time, the assistant director agreed to budget funds to hire seven relocation specialists and four community and supportive services specialists, almost twice the number initially budgeted. Some HAP staff were recruited for the positions and others were drawn from Columbia Villa households. HAP also hired a local nonprofit organization, the International Refugee Center of Oregon, to serve as case managers for families whose native language was Vietnamese, Cambodian, or Hmong.

The CAC design taskforce worked with design team and lead architect to formulate the master plan. On a monthly basis, the design team also held design workshops with the community, which consistently attracted 80–100 people. The design team worked closely with the Bureau of Planning and the Police Bureau on New Columbia’s urban form. The site design called for alleys as a way to minimize the visual impact of automobiles. To address police concerns about the site design, and alleys in particular, the team worked with North Portland police officer Mike Reese (now the Portland Police Chief) to design alleys that worked for emergency response.

DISTRICT ASSESSMENT

The vision for New Columbia was to create a new neighborhood with a mix of housing types affordable to people at all income levels. HAP and CAC created the following development goals for New Columbia:

- Mixed-income housing
- Support for residents
- Economic development and opportunity
- Livability
- Sustainability
- Building community
- Homeownership
• Public involvement and community process
• Leveraging of financial resources

The ability for the existing residents to easily relocate and return was a top priority for community stakeholders, including residents, neighbors, tenant advocates, and city officials. As a result, the Relocation Task Force created the HOPE VI Relocation Plan with the following guiding principles:

• Residents will be supported in their moves
• Residents will have a choice of housing options
• Residents will have the opportunity to return

DISTRICT PROJECTS

The Housing Authority of Portland set aside $4.25 million, or 12%, of the HOPE VI grant for relocation services. Extensive community engagement informed the Community and Supportive Services (CSS) Work Plan, which included the following components:

• HAP allocated funds to CSS for relocating residents, case management, employment assessments, education, workforce training, rent and utility assistance, family counseling, and resident workshops.
• CSS staff supported relocated residents for five-year period; before, during and after relocation providing services such as transportation assistance, childcare services, basic education enrollment, high school equivalency, and English (ESL) classes.
• CSS facilitated employment assessment, linking residents to jobs, construction training opportunities and some residents gained employment for on-site construction jobs.
• HAP’s GOALS (Greater Opportunities to Advance, Learn and Succeed) program provided assistance to 51 participants, 25 of which completed home preparation classes and 10 purchased homes.

Residents were given the choice either to move to other public housing or to receive a Section 8 voucher, a rent assistance subsidy that HAP pays directly to private landlords. Approximately 74% of the residents chose Section 8 rent vouchers, 23% elected to move to other public housing, and the remaining 3% moved to unassisted housing.

Regulation and Zoning
Previously entirely residential, one portion of the site was rezoned to neighborhood commercial to support neighborhood-serving retail and office space. Designers also used the “common green” option in the Portland Zoning Code, an infrequently used tool that allows front doors to open onto green spaces instead of the street (typically required); designers reached for this tool in instances when it would help preserve trees.

Financing
New Columbia was financed through a variety of funding avenues: the HOPE VI fund and other federal funds, Oregon Housing and Community Development LIHTC program, tax credits, donations and loans
repaid by tax increment financing by Portland Development Commission, City of Portland infrastructure funds, community development block grant, and HAP funds derived from market rate housing. The largest source of funding, $58.8 million, came from the sale of affordable housing tax credits, a rental housing development subsidy program administered by each state’s housing finance agency. HAP donated the land necessary for the new Rosa Parks elementary school. The school was the first in the nation to be built with New Market Tax Credits, a financing tool used to spur redevelopment in designated areas.

**Economic Development**

One of HAP’s goals was to use the development process as a way to foster local economic development and job opportunities. Through strategies such as targeted outreach to disadvantaged, minority-owned, women-owned, and emerging small business (D/M/W/ ESB) and technical assistance to emerging contractors, HAP met its goal of having at least 20% of construction and services contracts for D/M/W/ ESB, with 24% of all contracts, $27.6 million, going to these businesses.

HAP also wanted to make construction trade jobs available to community residents. HAP’s Evening Trades Apprenticeship Preparation (ETAP) job-training program prepared residents, and graduates received first preference for jobs. TAP graduates and local residents filled 103 jobs, and apprentices accounted for 20% of the total construction hours, exceeding HAP’s target of 17%.

**DISTRICT MANAGEMENT**

In September 2002 city staff canvased Columbia Villa to get input via surveys. They discovered that nearly 70% of those responding wished to return to New Columbia. A Portland State University study followed up with residents to determine how the relocation process worked. Two thirds of the households were able to find replacement housing in their preferred location. Eighty-six percent of respondents indicated that they were either very or somewhat satisfied with relocation services. By the end of December 2006, 29% of the households that had been relocated from Columbia Villa returned to New Columbia, 110 in rental housing and 2 as new homeowners.
Performance Areas

The following are key features of New Columbia, listed according to each EcoDistricts performance area.

**EQUITABLE DEVELOPMENT**

- Fostered economic development by granting service and construction contracts to disadvantaged, minority owned, women owned, small businesses and employing local community in construction jobs.
- Well-planned relocation opportunities for displaced households to move back.
- Collaborative process built into all aspects of project.
- Partnerships fostered for workforce development, employment preparation, and programs for youth and financial support.
- Public housing, affordable rentals, senior housing, and both market rate and affordable homes for sale.

**HEALTH AND WELLBEING**

- High-density development with ample park space and open space (50% of site) including pocket parks giving residents access to healthy recreation and natural areas.
- New traditional street grid and small blocks creates a safe, connected and walkable neighborhood. A city-owned community garden and a nonprofit community garden with community building and job-training program.
- Low-VOC or VOC-free interior finishes.
- Use of construction methods that minimize the risk of mold and mildew for healthy indoors.

**COMMUNITY IDENTITY**

- Mix of residents, representing diverse cultures, age groups, and income levels.
- Art installations in public areas celebrate local culture and diversity by local artists.
- “Main Street” offers variety of recreational, cultural and educational events.
- McCoy Park forms the heart of the neighborhood featuring children’s play area, basketball court, event plaza, community garden, lawns and water features.
- Community Campus, including elementary school and Boys and Girls Club, offer education and recreation activities for youth.
- Community Center and Work Force Center offers employment, workforce training, and cultural and recreational events, including movies, lectures and get-togethers.

**ACCESS AND MOBILITY**

- New street grid connects to existing neighborhoods, and provides easy pedestrian and bicycle access.
- Location efficient design maximizes accessibility and affordability by linking housing to job centers through high quality transit systems, and cycling and walking infrastructure.
- Located on a Tri-Met’s high ridership bus lines and in proximity to Interstate Max Light Rail, providing access to the Metro region.
• Easy access to community services and small, locally owned businesses, and a small grocery.

• Secure indoor bicycle storage for apartment residents, and showers for commercial tenants.

ENERGY

• Energy Trust of Oregon funded Energy Star appliances, windows, water heaters and light fixtures to help lower energy costs for low to middle income housing residents

• Blower door tests to identify leaks and enhance energy efficiency.

• Solar water heating systems supplies 1/3 of hot water demand for 2 apartment buildings.

• Landscaping and building envelopes designed to reduce heat islands.

WATER

• Low-impact development to slow, retain, and filter stormwater on site which resulted in 80% less stormwater piping than a traditional neighborhood and 98% stormwater retention.

• Water efficient plumbing fixtures.

• Centralized irrigation control system saves water by monitoring rainfall, humidity and rainfall.

• Individual water sub-meters allow individual residents to monitor water use.

HABITAT AND ECOSYSTEM FUNCTION

• Watershed protection by controlling quality of runoff through green streets, porous pavement, drywells before returning to aquifers.

• Over half of original trees on site preserved and others were donated to local restoration projects or relocated to McCoy Park.

• Native tree and shrub species planted on site, which are drought resistant.

• Environmentally-friendly lawn seed mix requires little water, no fertilizer, is fragrant, and attracts butterflies.

MATERIALS MANAGEMENT

• Construction waste management.

• Demolition contractors salvaged and recycled 82% of building materials on-site and diverted more than 28,500 tons of waste from landfill.

• 100% of concrete and asphalt rubble, 22,000 tons, crushed and reused on-site as road base and structural fill around building foundations.

• 23 of Columbia Villa’s duplex buildings purchased and relocated by local house moving companies.

• 3,200 tons of wood debris ground into chips and reused on-site for erosion control or sold to farmers and ranchers as hog fuel.

• Locally manufactured products from Western Oregon and Washington.

• Low to zero VOC content materials, and plywood instead of particleboard.

• Certified sustainable lumber purchased locally from Oregon.

• Advanced framing techniques to reduce lumber required.

• Recycled-content fiber-cement siding and high-recycled fiber content batt insulation.

• LEED-certified drywall made of 100% synthetic gypsum with a recycled paper face.
Key Observations

Getting the Community and Supportive Service Work Plan approved in a short period of time would have been a big challenge for the team, not even accounting for community engagement. Both staff and residents knew that many previous HOPE VI projects had a poor track record in providing meaningful community input as part of relocation planning. Not wanting to repeat the mistakes of previous efforts, HAP was committed to having meaningful community input, making the deadline even more demanding. As an example of the commitment, the Relocation Task Force met ten times, rather than the scheduled five meetings, and continued to serve in an advisory role after the Plan was approved.

The Housing Authority of Portland identified several key factors, particularly with regard to the relocation process, that made the project a success. HOPE VI staff earned the respect of community members by being honest, even about making mistakes, and not dodging tough questions. They also went above and beyond scheduled meetings to respond to issues, sit on subcommittees or otherwise make suggestions.

The Housing Authority of Portland also hired an objective facilitator to chair the RTF meetings, which allowed HAP staff to participate fully. HAP also engaged with HUD early on, and unlike other HOPE VI projects whose relocation plans took a year to approve, New Columbia's plan was approved in 60 days. The green streets at New Columbia were created in advance of any city standards for green street design; as such, they helped inform the subsequent green street standards. Because it was early in the city’s understanding of green streets, early engagement between the Bureau of Environmental Services and Bureau of Transportation was important for resolving design issues. New Columbia’s green street doubled as erosion control during construction. To prevent the facilities from clogging with construction sediment, a layer of matting and sand was placed over the street beds (not yet planted) and accumulated sediment could be easily removed.
References


Rodgers, K. (2014, November 25). Steve Fancher, then-Project Manager at the City of Portland, Bureau of Environmental Services. Personal communication.

At a Glance

LOCATION: Seattle, WA

SITE: 120-acre public housing redevelopment

DEVELOPMENT: 1,600 housing units

TYPE: Mixed-use development, mixed-income housing

POPLULATION: 4,000 (at completion)

OWNERSHIP: Seattle Housing Authority

STATUS: Nearing completion

UNIQUE FEATURES: HOPE VI
- Urban agriculture
- Local employment and training support
- Breathe Easy homes to reduce asthma

Project Summary

High Point was built as public housing in 1942 and initially populated by workers for Boeing and other defense industries. After the war, ownership shifted to the Seattle Housing Authority (SHA). While considered livable in the 50s, 60s, and 70s, the neighborhood deteriorated rapidly in the 80s with the availability of crack cocaine. By the 1990s 140 of the original 400 buildings had been demolished. The SHA took advantage of $35 million in HOPE VI funding and their own experience with HOPE VI on other SHA projects to redevelop High Point into a mixed-use, mixed-income development, improving open space and doubling the density on site. SHA managed the $550 million redevelopment, which includes approximately $285 million in private investment, to provide more than 1,600 mixed-income housing units and enhanced community services.

The previous street pattern was confusing, with curvilinear streets and cul-de-sacs, making orientation and wayfinding challenging. It was also disconnected from the adjacent street network, not only physically isolating residents, but also making it difficult for law enforcement to navigate the site. The new plan, while keeping some of the original streets, linked more closely to the surrounding streets. Furthermore, the streets were designed to be livable according to New Urbanist principles: most streets were narrow, traffic circles at some intersections reduced speeds, and bioswales buffered pedestrians from vehicular traffic.

High Point has the largest collection of Energy Star certified houses in the country and all houses were built to a Built Green 3-star standard (a regional building and neighborhood certification program established by the governments of King and Snohomish counties in partnership with the Master Builders Association). A resident brought the issue of indoor air quality to the attention of the design team. In response, the development team pioneered the construction of 60 Breathe Easy homes. Based on a study funded by HUD and National Institute of Environmental Health Sciences, researchers found that Breathe Easy homes increased the number of asthma-free days experienced by children, reductions in the percentage of children needing urgent clinical care, and improvements in health quality.
According to the SHA, 505 of the original 716 households chose to continue living in some form of publicly subsidized housing, and of those 505, about 180 households live at High Point.

“Other nonprofits, including some with long histories at the site, offer services at High Point. The High Point community center was founded to work with new immigrants, though it is now a large and diversified social service provider. It does or will offer grant-supported safety net services, self-sufficiency, community-building, and health-related services. It is also the lead agency for the planned neighborhood center, where services will be focused. The 18,500-square-foot neighborhood center has received commitments for about 70% of its almost $10 million budget from sources including the SHA and the Gates Foundation. In keeping with the rest of the development, it will be environmentally friendly, so that the building itself can form the basis for environmental awareness classes.”

The 18,500-square-foot LEED-Gold Neighborhood Center houses two Head Start classrooms and spaces for a diverse number of social service providers, including services related to self-sufficiency, community building, and health.

**Green Infrastructure Focus**

Twenty acres of open space are distributed with a thoughtful design hierarchy: three major parks, neighborhood parks every two blocks, and pocket parks. Every dwelling has private open space, such as a small yard.

High Point is located in the Longfellow Creek watershed, a salmon-spawning stream, and had a substantial impact on the creek, accounting for % of its runoff. The city was interested in piloting a sustainable stormwater management design. Initially reluctant (it would be the largest sustainable stormwater pilot in the country), the SHA agreed with four conditions in place. First, the Seattle Public Utilities Commission would pay for the difference between the conventional system and the natural drainage system. Second and third, the streets would be 25 feet wide and look like “normal” streets, SHA wanted High Point to look like a regular neighborhood. The last condition was that the city would be an active partner and help expedite plans through the approval process.

The stormwater management system features constructed swales along one side of every street. Runoff finds its way to a retaining pond that doubles as an open space amenity. The pond settles the water before it drains to the stream. Porous surfaces were another part of the sustainable stormwater strategy, including porous concrete on all streets and sidewalks (the first porous public streets in Seattle), gravel beds, and pavers set with gravel.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

SHA, carrying the vision for High Point as a model sustainable neighborhood, acted as master developer and recruited project team members known for their sustainable development practices. SHA and its consultant team approached community engagement as a mutual education process, rather than designers simply presenting plans for resident review. A resident design committee met with architects every two weeks for four months. One of the design team employed was a visual preference survey so residents could indicate what housing styles, open spaces, and street patterns they preferred (more traditional housing styles won over the “avant garde”). In addition, the Pomegranate Center, an art and design nonprofit organization, led community-based art projects, including decorative fences, a garden shelter, and sculptures. Artist Bruce Meyers helped residents create sculptural cast concrete splash blocks and decorative patterns in sidewalks.

DISTRICT ASSESSMENT

SHA learned from its previous redevelopment projects that community engagement was key to long-term success. A planning framework emerged from community meetings, with the following core principles:

- Reintegrate High Point into West Seattle
- Create a vibrant community at High Point
- Build diverse and safe housing
- Create a community of open spaces

SHA evaluated a district heating system, solar hot water heating, integrated photovoltaics and greywater reuse, but these systems were rejected as too expensive. However, SHA incorporated other green features at additional cost, such as a closed-loop hydronic system, flash water heaters, marmoleum floor covering, and retention of mature trees. Other features cost more, but were reimbursable, such as Energy Star appliances. Some green features added no cost or were low cost: low VOC paint; native and drought resistance plants; airtight dry walls; and advanced framing techniques. Finally, some green decisions actually cost less, such as minimizing grading, stockpiling and reusing topsoil, reusing demolished paving for trench backfill and constructing narrower, 25-foot wide local streets.
DISTRICT PROJECTS

Regulation and Zoning
The site was rezoned to accommodate greater densities and some regulations were changed to facilitate the development of the sustainable stormwater system. A new site plat was required due to the new street pattern, and the city used it as an opportunity to codify the amount of impervious surface allowed on each block. A High Point Design Book, with detailed information on SHA’s development standards, provided High Point builders with guidance as they built their projects. The regulations and allowed architectural styles vary by lot and block; community members did not want the housing to look institutional.

Financing
“High Point garnered more than $550 million in financing over more than 10 years, of which $285 million came from the private sector. Of the remaining financing, $35 million came from the initial HOPE VI grant, $106 million came from other public funding sources, $68 million came from tax-exempt borrowing, and $56 million came in tax credit equity.”

To pay for the extra cost of a Breathe Easy home (an additional $5,700 per house), SHA partnered with Neighborhood House, the University of Washington, King County public health officials, and other nonprofit organizations to get a Healthy Homes grant from HUD and additional funding from the National Institute of Environmental Health Sciences and Enterprise Community Partners to implement the program.

DISTRICT MANAGEMENT

SHA and other nonprofits offer social services at High Point, such as ESL and citizenship classes (both are popular). Job referrals are provided as well. Some agencies also offer advice for managing income, such as avoiding expenditures that might be overly burdensome.

Enterprise Community Partners commissioned a study to evaluate High Point’s resource efficiencies relative to New Holly, another SHA HOPE VI project built to Seattle’s energy-conscious code, and Yesler Terrace prior to redevelopment, representing the condition of typical public housing. Among other findings, the study found that residents at High Point used 37% less space and water heating compared to New Holly and 54% less water than Yesler Terrace. This, of course, translates into savings for the residents: High Point residents saved $11.52 per capita relative to New Holly and $89.40 per capita compared to Yesler Terrace. In aggregate, costs were 56% below the Seattle average, for a total savings of $500,000. The success of this energy-efficient design set a precedent for subsequent SHA housing; the redeveloped Yesler Terrace is now expected to perform as well as High Point.

Enterprise Community Partners also commissioned a survey to gauge High Point, New Holly and Yesler Terrace resident attitudes about conservation and how active a role they felt they had in conserving resources, among other things. The survey found that 95% of residents liked their home and community at High Point. High Point and New Holly residents, who paid for their utilities, took “extra steps” to conserve. At Yesler Terrace, where residents do not pay for their utilities, that number was 16%. At all communities, many residents had difficulty paying their bills and would be willing, by huge majorities, to take further steps if it would save them money.
Performance Areas

The following are key features of High Point, listed according to each EcoDistricts performance area.

**EQUITABLE DEVELOPMENT**

- Development exceeded existing number of below-market units replaced.
- Neighborhood features 1700 housing units for very low income and low income in addition to market-rate rental and for-sale housing.
- Relocation counseling and assistance services provided to all residents with opportunities to move back.
- Access to community services and programs for “opportunities to succeed”: education, job connections, citizenship and language classes.
- Broad community, residents and stakeholder engagement supported by partnerships of diverse groups.

**HEALTH AND WELLBEING**

- 20 acres of parks and open space provide access to natural recreational areas with integrated stormwater management, view corridors and diverse experiences within a connected public realm.
- New small and connected street grid with pedestrian-friendly infrastructure.
- Community garden connect residents to food.
- Low VOC paint in all homes.
- All homes built to improve indoor air quality as well as 60 Breathe Easy Homes.
- Quiet whole house fan with 2-speed timing to remove moisture.
- Ultra-low sulfur biofuel during construction.

**COMMUNITY IDENTITY**

- Network of open spaces supported by pedestrian friendly infrastructure provides places for community interaction and activity.
- Park and pond are central features and serve as a gathering place for community.
- Array of community services: health clinic, library, senior programs, walking groups, community newsletters and activities.
- New neighborhood center serves as gathering place and home to programs for youth, family, and jobs, and helps navigate health, employment, education, and social services.

**ACCESS AND MOBILITY**

- New streets realigned and reconnected to adjacent neighborhoods and integrate with West Seattle grid.
- Community services and neighborhood facilities located at inviting locations, with easy accessibility.
- Access to 2 bus transit lines
- Safe and traffic calmed streets.
- Narrow streets and short blocks promote walkability.

**ENERGY**

- All houses, townhouses, condominiums, and apartments built to Built Green standards achieving 3-star rating.
- Closed loop hydronic systems.
- Tankless hot water heating.
WATER

- Natural drainage system designed to manage stormwater on site, improve water quality, and protect salmon habitat.
- Dual-flush toilets.

HABITAT AND ECOSYSTEM FUNCTION

- Plan preserved 100 mature trees (valued at $1.5 million) and added 2,600 new trees.
- Low impact development strategies manage stormwater on-site: porous sidewalks, bio-swales, parks and retention pond.
- Habitat continuity is maintained by Bataan Park linked directly to Longfellow Creek with a design that supports a healthy watershed.
- Native, drought-resistant plants.

MATERIALS MANAGEMENT

- More than 20 old units were deconstructed, materials were salvaged and sold or reused.
- Use of materials with low or no VOC content and recycled content in construction (for better indoor air quality).
- Topsoil was preserved and reused.

Key Observations

Some challenges for High Point are typical of any HOPE VI redevelopment, including tenant selection, provision of social services, staffing of the management team, and maintenance procedures. Another lesson was the importance of community involvement, strong local leadership and public-private partnerships. Many of the project innovations are the direct result of these collaborations (e.g., Breathe Easy homes, natural drainage system). A lack of early engagement with certain stakeholders slowed down the project. Enterprise Community Partners, which commissioned a case study of High Point, concluded that collaboration between landlords, tenants, and policy makers can also generate significant environmental benefits and as such, programs to encourage behavior change over incentives for technology should be considered.

Seattle Housing Authority’s project manager, Tom Phillips offered additional observations. First, green thinking must be incorporated from the very start. A second and related consideration is that green design must be high quality; SHA wanted green to be “normal” and attractive. It was important to bring everyone along in the design process, including contractors. It was not enough to have a compelling vision, it needed to be a shared vision. The firm responsible for master planning, Mithun, also had experience in designing production housing and was able to bring that experience to High Point. By having systems in place that were suited to large-scale development, they were able to keep prices down. Phillips also notes that the impact of a walkable mixed-income community on resident health cannot be underestimated. Lastly, civil engineering is least cost-effective and not well understood, particularly in the case of High Point where porous pavement and other not well-tested strategies were applied.
References


Illustrative Plan of Proposed Physical Development

Floor Area Ratio = 1.79

capitolhillecodistrict.org
At a Glance

LOCATION: Seattle, Washington, US
SITE: Multi block existing neighborhood community development
TYPE: Predominantly residential (multifamily) with mixed retail and civic uses
OWNERSHIP: Public, private and institutional
STATUS: Ongoing
UNIQUE FEATURES: Existing neighborhood
Shared parking district
Energy and water retrofits
Pollinator Pathway
Community solar
Community engagement

Project Summary

In 2011, Capitol Hill Housing (CHH), a Public Development Authority and Community Development Corporation (CDC), received funding from the Bullitt Foundation to create the Capitol Hill EcoDistrict. The Bullitt Foundation had completed its “Living Building Challenge” certified headquarters on Capitol Hill and saw an opportunity to extend their lessons learned to the neighborhood.

Other opportunities signaled the readiness of an EcoDistrict for Capitol Hill, including a new Sound Transit-owned LINK light rail station and the success of other cooperative initiatives, such as Sustainable Capitol Hill. The Bullitt Foundation approached Capitol Hill Housing to spearhead the effort not only because they were a respected organization in Capitol Hill, but also an organization that operated at a neighborhood scale, making it a natural fit for EcoDistrict governance.

Capitol Hill EcoDistrict has four goals for 2014, with several projects underway to advance them:

• Develop a community solar program
• Create a Shared Parking District
• Build a Pollinator Pathway
• Retrofit existing buildings for greater energy and water efficiency

Capitol Hill is a dense mixed-use neighborhood with 95% of its residents living in multifamily housing, with a strong retail and arts presence. The Capitol Hill EcoDistrict boundary was drawn specifically to capitalize on the higher-density development, as their aim is to make density livable for a variety of people.

Of all the case studies featured in this document, Capitol Hill EcoDistrict has been the most recently created. Unlike the others that are largely under a single ownership or privately developed with city directive and
wholesale re/development, the Capitol Hill EcoDistrict, while organized by Capitol Hill Housing, is composed of a multitude of property owners, institutions and residents. While catalytic opportunities with the light rail station area exists, much of the work will require the coordination among various property owners, making incremental change through retrofits of existing buildings and interstitial public spaces. The Capitol Hill EcoDistrict will create a good model for existing neighborhoods throughout North America.

**Green Infrastructure Focus**

Under the Habitat Performance Area, Capitol Hill EcoDistrict’s objectives are to protect and regenerate habitat, prioritize native vegetation, create habitat connectivity, promote nature-friendly design, and prioritize habitat-creating, flexible open spaces. Capitol Hill EcoDistrict’s partnership with Sarah Bergmann to create a Pollinator Pathway helps to advance this goal. Sarah Bergmann created the Pollinator Pathway project six years ago to mitigate the fragmentation of complex, connected ecosystems by rebinding isolated green spaces into connected habitat for native pollinators. CHH is helping complete the first Pollinator Pathway on Columbia Street, as well as create a stewardship plan for its long-term care. They are also working on creating a second Pollinator Pathway that runs north-south through the Capitol Hill EcoDistrict.
EcoDistricts Protocol Methodology

Below is further explanation of the development process, using the EcoDistricts Protocol four-step methodology as an organizing frame.

DISTRICT ORGANIZATION

CHH has been active since 1976, primarily focused on affordable housing, and enjoys a high level of respect in the community given their long history there. They own and manage 45 properties and manage another three properties. However, as a Community Development Corporation (CDC), they have a larger mission to create neighborhood health and vitality, particularly for low-income populations. So, while CHH is a major property owner in the neighborhood, they are also building connections between properties to promote health and resilience.

CHH is not a nonprofit organization, like many CDCs, it is a Public Development Authority, a quasi-governmental organization that is chartered under the city. As a quasi-governmental entity, it is subject to government agency transparency and disclosure regulations. The Public Development Authority (PDA) Board, which governs all program and fiscal decisions, has members appointed by the mayor.

To provide further guidance on EcoDistrict policy and programs, CHH formed a steering committee in 2012. Major stakeholders serve on the committee, including property owners, developers, environmental interest groups, neighborhood groups and public health representatives. Working groups have been formed to guide specific projects.

DISTRICT ASSESSMENT

- The Bullitt Foundation’s first grant to the EcoDistrict initiative funded an assessment conducted by GGLO that recommended a vision and goals for the neighborhood. Among other things, the report noted some precedents in Seattle for adaptation in Capitol Hill:
  - Adaptation of the City’s Priority Green permitting program to fast track permitting for projects that meet sustainability requirements established by the neighborhood
  - Application of lessons learned from the Bertschi School’s Science Wing and Bullitt Foundation’s Cascadia Center, both projects pursuing Living Building certification
  - Application of relevant policy developed for Yesler Terrace
  - Pilot project for energy-use metering to demonstrate compliance with the city’s reporting requirements

The assessment report also recommended a set of goals and performance areas, which provided a good foundation for the Capitol Hill EcoDistrict. The goals were refined by the steering committee and PDA, an exercise that generated a sense of ownership among members. In particular the committee expanded the performance areas related to social sustainability, creating three categories (culture, health, and equity) out of one originally titled “community.” The steering committee and CHH continue to work on the details of the performance metrics.
Performance areas developed for the neighborhood include the following:

- **Water**: Conserve potable water; reduce blackwater production and polluted runoff
- **Habitat**: Enrich urban habitat within the EcoDistrict and surrounding neighborhoods to promote biodiversity
- **Culture**: Foster neighborhood identity through a well-designed built environment and support of local arts and artists
- **Energy**: Reduce non-renewable energy use and associated greenhouse gas emissions
- **Materials**: Reduce the negative environmental impacts of materials through conservation and diversion
- **Transportation**: Maximize opportunities for walking, biking and transit use
- **Health**: Promote human health and community wellbeing
- **Equity**: Ensure the fair distribution of benefits and burdens of investment and development

A study performed by Resource Media evaluated neighborhood assets and concerns, including interviews with focus groups to draw out relevant issues. They identified a number of assets, such as cultural diversity, strong retail presence, buildings in various states of maintenance and repair, good transit, progressive activists, and good parks. The issues people were most concerned with were affordability (by a large measure), public safety, and a sense of powerlessness in the face of neighborhood change. From these topics, some big opportunities and priorities emerged:

- Small business and art preservation
- Preservation of existing buildings, for the sake of building embodied energy and community character
- Promote green construction
- Build upon high transit, walk and bicycle use in the district
- Facilitate community engagement to combat sense of disenfranchisement

**DISTRICT PROJECTS**

The Capitol Hill EcoDistrict prioritized projects that would advance multiple goals at once instead of single-purpose efforts to build momentum and visibility for the EcoDistrict. They also wanted to capitalize on the relationships with other partners. The partnership with Sarah Bergmann to create the Pollinator Pathway is an example of the kinds of partnerships Capitol Hill EcoDistrict is establishing.

The first of its kind in the country, the Community Solar Program is a project where participants can invest in photovoltaic solar panels (the first set to be placed on an apartment building), and get their money back via credits on their Seattle City Light bill.
Capitol Hill EcoDistrict has a few initiatives related to improving building performance. One is a partnership with the Seattle 2030 District to increase energy and water efficiency in existing buildings, with participation from Seattle University, Seattle Central College, Capitol Hill Housing, Bellwether Housing, and Hunters Capital. CHH has also joined the Better Buildings Challenge, a national leadership initiative for energy efficiency for multifamily housing. CHH is committed to reducing energy intensity by at least 20% within 10 years. The EcoDistrict also has partners with the Preservation Green Lab, a program of the National Trust for Historic Preservation, to pilot America Saves!, a program to support small business energy efficiency improvements.

One of the biggest issues in sustainable transportation relevant at a district scale is parking. The Capitol Hill EcoDistrict is developing a district shared parking system under which parking can be leased across buildings, a system that enables a daytime office worker and a local resident at night to share one space rather than two. As an early step, the EcoDistrict is currently studying the existing parking supply. This initiative is seeking to promote an outcome in the neighborhood where parking efficiency can be maximized and reduce future expenditures on parking within the neighborhood.

Support for the arts is also a key element of other projects within the neighborhood. CHH is partnering with the City of Seattle, art groups, local business and community leaders to create the 12th Avenue Arts development, a block with 88 new apartments and two theater venues, office space for community organizations and street-level retail. CHH is also working to create the Capitol Hill Arts District, in partnership with the Chamber of Commerce, City of Seattle, and neighborhood art organizations and artists. This initiative is intended to build local identify for the neighborhood, promote local jobs, and foster creativity and entrepreneurship.

**DISTRICT MANAGEMENT**

In 2014 CHH worked to establish a baseline of performance of the existing neighborhood against the projects identified performance metrics. This work enabled the development of a set of indicators to track neighborhood progress, prepared in collaboration with key stakeholders, the City and peer reviewed by the University of Washington. The result is the EcoDistrict Index, which will be used to track and communicate performance over time.

More recently, CHH continued to strengthen its stakeholder collaboration and ability to continually enhance the opportunities to implement innovative projects in the neighborhood by facilitating a resolution by the City. This Resolution states, “the City of Seattle will support the Capitol Hill EcoDistrict as a framework and agent for advancing City sustainability goals within the EcoDistrict boundaries.”
Performance Areas

The following are key features of Capitol Hill EcoDistrict, listed according to each EcoDistricts performance area.

**EQUITABLE DEVELOPMENT**
- Family-friendly housing at 12th Avenue Arts development
- Inclusive planning
- No displacement of existing community
- Goals to support small and local businesses

**HEALTH AND WELLBEING**
- Urban farm plot at the new TOD development

**COMMUNITY IDENTITY**
- Local leadership and community representatives for neighborhood governance
- Partnership with community organizations to develop Capitol Hill Arts District and leverage arts into place-making
- 12th Avenue Arts development with focus on neighborhood arts

**ACCESS AND MOBILITY**
- Increase population and employment density near station areas.
- Transit: Provide transit passes to tenants; Install real-time arrival monitors at transit stops
- Vehicles: Minimize installation of new parking stalls; Convert parking stalls and street parking to new uses; Create a parking management district; Increase car-sharing stalls and stops; Separate parking stall cost from rent or lease costs; Plan a “Guerilla Parking Day”; Campaign to remove subsidies for restricted parking zones
- Walking/Pedestrians: Develop neighborhood wayfinding program and install wayfinding signage; Create an EcoDistrict pedestrian zone; Create annual pedestrian count program; Conduct neighborhood walkability audit; Improve alleys and repair/replace inaccessible sidewalks; Install woonerfs, convert low traffic streets or alleys to woonerfs; Advocate for pedestrian infrastructure and funding
- Biking: Install more bike boxes at major intersections; Install creative bike racks; Implement bike-sharing program; Open bike station on Capitol Hill

**ENERGY**
- Partnership with Seattle 2030 for improving energy and water use in existing buildings
- CHH joined the Better Building Challenge to improve energy efficiency in their properties, including solar
- Partnership with the Preservation Green Lab on the America Saves! initiative to support small businesses improve energy efficiency

**WATER**
- Stormwater management through green roofs and walls (new and retrofit), swales and raingardens

**HABITAT AND ECOSYSTEM FUNCTION**
- Complete Pollinator Pathway, create a stewardship plan, and develop second Pollinator Pathway
- Create habitat through parks, right-of-way, green roofs and walls, and backyards
Key Observations

Capitol Hill Housing’s high level of transparency and engagement and long history in the neighborhood has translated to a high level of credibility, helping advance efforts to implement diverse and effective initiatives. The use of clear metrics and indicators to track progress and inform investments seems to have placed the neighborhood in a place where it can clearly engage stakeholder support in project delivery.

References


Sustainable Capitol Hill [website], Retrieved from http://sustainablecapitolhill.org/