



March 2009

The latest news from Seattle's Department of Planning and Development
(formerly the Department of Design, Construction and Land Use)

Vol. 7
No. 3

Interim Tree Protection Ordinance Passed by Full Council

The Seattle City Council voted on February 23, 2009, to approve interim tree protection legislation to limit tree removal on properties not subject to development. This legislation will be effective 30 days after the Mayor's signature. Council Bill 116404 established the following limits on tree removal, except when associated with a development permit or when the tree is found to be a hazard:

- **Exceptional trees:** Exceptional trees may not be removed on single-family-zoned lots of 5,000 square feet or more and on all lowrise-, mid-rise-, and commercial-zoned lots.
- **Non-exceptional trees 6 inches in diameter or greater:** No more than three non-exceptional trees 6 inches in diameter or greater may

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Monthly Highlights

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New recommended green building policies will make commercial and multi-family projects more energy-efficient. These policies include permit incentives for building green.

See page 4 for details.

New Report Maps the Health of Seattle's Shorelines

DPD has completed a report assessing the ecological state of Seattle's marine and freshwater shorelines. This study, titled *Seattle Shoreline Characterization Report*, provides a comprehensive look at the health of Seattle's shorelines along the Duwamish River, the Ship Canal, Lake Union, Lake Washington, Green Lake, and Puget Sound.

To create this report, DPD collaborated with King County to apply a characterization model to existing spatial GIS data on water quality, land use, vegetative cover, shoreline armoring, and other factors relevant to ecological functions. This process resulted in data quantifying the health of eight

see **shoreline** on page 5

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Client Assistance Memos

NEW

■ **CAM 326**, *Environmentally Critical Areas: Wetlands and Fish & Wildlife Habitat Conservation Areas*, describes regulations that may affect the maintenance and redevelopment of property in or adjacent to these areas.

UPDATED

■ **CAM 221**, *Single Family Side Yard Easements and Accessory Structure Agreements*, was updated to reflect new Single Family Code provisions.

Director's Rules

DRAFT

■ **SDOT Director's Rule 2-2008**, *Sidewalk Cafes*, is available for review through 5:00 p.m. on Wednesday, March 4, 2009. For more information, contact Angela Steele, SDOT, (206) 684-5967, angela.steele@seattle.gov or Mark Troxel, DPD, (206) 615-1739, mark.troxel@seattle.gov.

■ **DR 5-2009**, *Transportation Concurrency Project Review System*, is available for review through 5:00 p.m. on Wednesday, March 4, 2009. For more information, contact John Shaw at (206) 684-5837 or john.shaw@seattle.gov.

New Intake Appointments for Street Improvement Permitting

Seattle Department of Transportation (SDOT) Street Use is redesigning the Street Improvement Permitting (SIP) process with the goals of reducing the cost and permit issuance time frames of Street Improvement Permits, increasing the predictability of the process, and improving customer satisfaction.

Effective April 27, 2009, applicants must schedule a SIP intake appointment when applying for acceptance of 90-percent-complete Street Improvement Plans for formal circulation and review. SDOT will screen the application materials and determine if the Street Improvement Plan meets all criteria of the "base map checklist" and "ready for formal circulation checklist."

Workshops will be conducted to help Street Improvement Permit applicants and stakeholders prepare for the new SIP intake appointment process and plan requirements. Revised application materials, checklists, and Client Assistance Memos will be distributed during the workshops.

Workshops will be held on:

Monday, March 30, 2009, 1:00 – 3:00 p.m.

Tuesday, March 31, 2009, 9:00 – 11:00 a.m.

Wednesday, April 1, 2009, 1:00 – 3:00 p.m.

RSVP for one of the workshop time slots by calling (206) 733-9876 or emailing Jamie.Holland@Seattle.gov.

Milestones in the SIP process redesign are posted online on the SDOT Street Use Street Improvement Permit web site. Visit www.seattle.gov/transportation/stuse_sip.htm to stay informed about the redesign efforts and changes to Street Improvement Permitting processes and requirements.

Mary Rutherford, P.E.
Street Use Operations Manager, SDOT
206-615-0774
Mary.Rutherford@Seattle.gov

DPD Permit Turnaround Times

DPD is committed to providing good customer service to its applicants. The permit turnaround data is updated monthly online and can be viewed at www.seattle.gov/dpd/resourcecenter (go to "Turnaround/Approval Times 2009").

Type of Permit	Goal	Jan. 2009 Performance
Simple Building IP*	80% in 48 Hours	97.4%
Medium Construction IP	80% in 2 Weeks	88.5%
Complex Construction IP	70% in 6 Weeks	84.0%
Construction Issuance	90% in 120 Days	91.3%
Master Use Permit Decisions	80% in 120 Days	74.6%

*IP: Initial Plan Review by DPD staff

IMPORTANT: Notice of Draft Director's Rules comment periods is provided in *dpdINFO* as a courtesy to readers. Official legal notice regarding Director's Rules is published in the Daily Journal of Commerce. Land use rules are also published in DPD's **Land Use Information Bulletin** (formerly known as the General Mail Release or GMR). To view the bulletin online or to receive an email alert when it is posted online, visit www.seattle.gov/dpd/notices.

2008 Seattle Electrical Code to be Adopted

DPD proposes to adopt the *2008 Seattle Electrical Code*. The proposal is comprised of the *2008 National Electrical Code (NEC)*, existing Seattle electrical code amendments and new amendments. Many of the existing amendments from the *2005 Seattle Electrical Code* work well and are carried over into the 2008 code. The new amendments: add a requirement for permit plan sets when applying for an electrical permit to install a renewable energy system; require that wiring not pass through one dwelling to supply power to a different dwelling; and requires ground fault interrupter (GFI) protection testing of new electrical additions before they are energized. Staff elected to adopt the new NEC requirements for arc-fault circuit interrupters.

With an eye to the future, new amendments anticipate a need for recharging electric vehicles by requiring that capacity calculations include electric vehicle (EV) charging systems. One amendment adds a new table to assist in calculating the additional electrical load of an EV charging system. Additionally, the service panel shall have room to add a feeder to serve EV charging outlets. A location for the feeder panel must be designated to ensure the required working areas are available when an EV charging system feeder is added.

The proposed code amendments also add exceptions to all of the selective coordination sections in

the code. The exceptions allow an electrical engineer to design and stamp calculations documenting that over-current protective devices are coordinated for fault occurrences having a duration of 0.1 seconds and longer.

All of the proposals are approved by the Seattle Construction Codes Advisory Board and the Electrical Advisory Committee. Questions or comments about the code language may be sent to Vicki Baucom via email at vicki.baucom@seattle.gov.

The State Environmental Policy Act (SEPA) review resulted in a determination of non-significance (DNS) decision indicating that the proposed amendments do not have a significant adverse impact upon the environment. Comments regarding this determination of non-significance may be sent to Colin R. Vasquez by March 9, 2009, via email at colin.vasquez@seattle.gov.

Comments or questions regarding the code language (Attn: Vicki Baucom) or the DNS (Attn: Colin Vasquez) may be mailed to:

City of Seattle, DPD
 Attn: _____
 PO Box 34019
 Seattle, WA 98124-4019

New Charges for Multiple Code-Enforcement Inspections

On January 1, 2009, new code provisions became effective that add charges for multiple inspections in code enforcement actions. These changes affect actions relating to violations of the *Land Use Code* (SMC Title 23) and the *Housing and Building Maintenance Code* (SMC Chapter 22.206).

The new code provisions provide that a violation-compliance-inspection charge of \$166.00 will be charged for the third inspection and for all subsequent inspections in a given case, until compliance is achieved.

There will be no charge for the first two inspections in a case. The inspection sequence is as follows:

- Generally, the first inspection in the case will identify a violation.
- The inspector will issue a warning, notice of violation, or other applicable enforcement document.

- The second inspection will occur on or after the date given in the warning or notice.
- If the property is in compliance at that time, no inspection charge will be imposed.

The inspection charge will accrue only if the property is not in compliance at the time of the second inspection and a re-inspection is necessary to verify compliance.

This inspection charge is in addition to any per-day or other penalty imposed by the enforcement sections of these codes.

For more information about the new inspection fees, contact:

Diane Davis, Code Compliance Manager
 (206) 233-7873, diane.davis@seattle.gov

New Permitting Process Encourages Deconstruction

A new demolition permitting option provides contractors and developers the critical time needed to salvage reusable building materials from housing that is being removed. The new permitting process provides early site access to applicants who agree to remove a structure through deconstruction rather than through a standard demolition process. Deconstruction is the systematic disassembly of a building in order to, first, maximize the salvage of reusable building materials and, second, recycle materials. Salvaging reusable building materials reduces the amount of construction waste routed to landfills and reduces the demand on virgin resources. Deconstruction and salvage are more labor and time intensive than standard demolition. Many developers opt to demolish existing structures rather than incur the delay imposed by deconstruction and salvage.

Previously, a demolition permit for housing could be issued only when an associated permit for new housing had also been issued. Now, if housing is to be deconstructed and materials salvaged for reuse, DPD may issue a demolition permit prior to issuing the associated new construction permit. This gives developers more time to deconstruct an existing structure and will increase the salvage of reusable building materials. The deconstruction option may be used if: A) a complete building permit application has been submitted



(rather than issued); B) no other reviews are required; and C) the director has approved a Waste Diversion Plan. The Waste Diversion Plan, described in Director's Rule 4-2009, needs to document that:

- A minimum of 20 percent of the building materials, by weight and excluding asphalt, brick and concrete, will be reused
- A minimum of 50 percent of the building materials, by weight and excluding asphalt, brick and concrete, will be reused, recycled or beneficially used
- 100 percent of asphalt, brick and concrete will be reused, recycled or beneficially used.

Upon completion of deconstruction, a final Waste Diversion Report will be required to identify the actual rates of salvaged and recycled materials.

Tools to assist an applicant in preparing a Waste Diversion Plan will be available on the DPD website, www.seattle.gov/dpd/Permits/deconstruction, and in the Applicant Services Center. The Applicant Services Center is open Monday, Wednesday, and Friday from 7:30 a.m. to 5:30 p.m. and Tuesday and Thursday from 10:30 a.m. to 5:30 p.m.

For more information contact:

**Applicant Services Center
700 5th Avenue, Suite 2000
Seattle, WA
(206) 684-8850**



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If you'd like to be removed from our printed mailing list, call (206) 615-1486.

shoreline, *cont. from page 1*

ecological processes: sediment delivery, nutrient inputs, toxins, light energy, hydrology, tidal influence, and wave energy.

Compiling the results of each individual process analysis, DPD has produced maps showing the relative health of different shoreline sections and rating these sections, known as “reaches,” into five categories ranging from “least impaired” to “most impaired.” While there is no question that development has substantially impacted Seattle’s shorelines, it is notable that there continue to be relatively healthy reaches along Seattle’s shorelines.

The findings of this report will be a crucial part of DPD’s ongoing update of shoreline regulations. DPD is currently revising its Shoreline Master Program, which establishes goals, policies, and regulations for Seattle’s shorelines and adjacent property, in order to meet a 2010 State Department of Ecology deadline. State guidelines direct local jurisdictions to protect water-dependent businesses, public access to shorelines, and ecological function. The *Seattle Shoreline Characterization Report* is an important first step in this process because it establishes baseline information on existing ecological conditions that will help to identify potential restoration opportunities and inform shoreline planning efforts.

To view the *Seattle Shoreline Characterization Report* or learn more about DPD’s Shoreline Master Program update, please visit www.seattle.gov/dpd/planning/SMPUpdate/.

To request a CD copy of the report or ask for additional information, please contact:

Maggie Glowacki
(206) 386-4036
margaret.glowacki@seattle.gov

New Client Assistance Memo on Wetlands, Streams, and Shorelines

DPD has published a new Client Assistance Memo (CAM) to aid applicants in understanding environmentally critical area (ECA) regulations for areas containing wetlands and fish and wildlife habitat conservation areas. These areas include shoreline habitats, streams, and small lakes. CAM 326, *Environmentally Critical Areas: Wetlands and Fish & Wildlife Habitat Conservation Areas*, describes regulations that may affect the maintenance and redevelopment of property in or adjacent to these areas. This CAM provides resources for applicants seeking development permits.

All CAMs are available at www.seattle.gov/dpd/cams/.



City Planning, a part of Seattle’s Department of Planning and Development, is responsible for the following planning- and design-related activities:

- Area Planning
- CityDesign—the City’s urban design function
- Comprehensive Planning
- Green Building
- Growth Management
- Land Use Policy
- Seattle Design Commission
- Seattle Planning Commission

“Working together to articulate, advocate and advance our community’s vision for an exceptional and vibrant Seattle.”

trees, *cont. from page 1*

be removed within any 12 month period on single-family-zoned lots of 5,000 square feet or more and on all lowrise-, midrise-, and commercial-zoned lots.

- **Non-exceptional trees less than 6 inches in diameter:** No new requirements

Tree removal associated with a development permit will continue to be reviewed under existing regulations in the tree protection ordinance; however, additions will no longer be exempted. Hazard trees may be removed through the Hazard Tree Removal Application process outlined in CAM 331B. The interim tree protection legislation also makes minor changes to the notice of violation process to make it more consistent with the process used for other City code violations. The structure for fines has been modified to allow triple damages where tree removal is willful or malicious.

Updates to Director’s Rule (DR) 6-2001, draft DR 16-2008, defining the term “exceptional tree,” are being finalized and are anticipated to become effective at the same time the interim tree protection legislation goes into effect in late March or early April. The purpose of these updates is to redefine the term “exceptional tree” to include more individual trees with significant canopy, as well as groves of trees.

Information on the interim tree protection legislation approved by the Council can be found at: www.seattle.gov/council/conlin/.

Information on further efforts the City is undertaking to protect trees is posted at www.seattle.gov/dpd/planning/trees. The draft rule DR 16-2008 can be downloaded from that website.

For further questions, contact:

Brennon Staley
DPD Planner
(206) 684-4625
brennon.staley@seattle.gov



Capital Case Study Series Unveiled

City Green Building is pleased to announce the publication of its Capital Case Study Series. City of Seattle projects showcase a variety of green building approaches, design strategies, materials, and lessons learned that can help with your next project. Visit www.seattle.gov/dpd/GreenBuilding/default.asp click on City Projects, and search under Resources, Case Studies. Or call (206) 684-8880 to have a full, printed set mailed directly to you.

New Seattle Capital Green Building Project Case Studies

- Airport Way Center, Building C
- Carkeek Park Environmental Learning Center
- Cedar Water Treatment Facility
- City Hall
- Fire Station 10
- Fisher Pavilion
- Justice Center
- North Cascades Environmental Learning Center
- Northgate Civic Center
- SPU’s Operations Control Center

Seattle celebrates **12 LEED-certified** capital projects by adding the **North Cascades Environmental Learning Center**.

Staff Issues Green Building Task Force Draft Recommendations

The final meeting of the Green Building Task Force (GBTF) was held on January 13, 2009. This was the culmination of a series of 14 meetings held since July 2009. The meetings were attended by 50 stakeholders and members of the public. The GBTF has been meeting to provide feedback on policies the City can adopt to meet the goals of the Green Building Capital Initiative:

- Improve the energy efficiency of residential and commercial buildings
 - Improve energy efficiency in existing buildings by 20 percent by 2020
 - Improve energy efficiency in new buildings and major retrofits consistent with the intent of the 2030 Challenge
- Create job opportunities in the green economy
- Save Seattle residents and businesses money on energy costs

City staff are now preparing the final recommendations report, based on public comments received during this process. The complete draft recommendations report is posted on the GBTF web site at www.seattle.gov/environment/GBtaskforce.htm.

The draft recommendations presented to stakeholders at the January 13 meeting included the following:

- Mandatory disclosure using Energy Star Portfolio Manager's benchmarking program for existing large multi-family, commercial and institutional projects
- A major pilot program to roll out energy performance score (EPS) audits and disclosure for existing single-family residential units

Staff are also exploring opportunities to utilize existing loan products, as well as other innovative financing tools, that homeowners could access before—or at—the time of sale to pay for energy efficiency upgrades.

The draft report also outlines a suite of recommendations for new buildings. These policies primarily address the commercial and multi-family residential sectors, with policy elements anticipated to be phased in at different times based on their complexity and anticipated implementation challenges.

- Priority Permitting – develop a Green Q permitting program to provide expedited permit

review of projects striving for higher levels of energy efficiency.

- Encourage Innovation – provide a venue to provide early review and guidance on permitting of innovative technologies.
- Energy Code Improvements – advocate for 30 percent improvement in the next update of the Washington state energy code, and move to greater promotion of whole-building analysis for future code compliance.
- Energy Efficiency Rebate – identify funding opportunities, and/or state legislative changes needed to implement a self-funded rebate program.
- Neighborhood Energy Strategies – develop city-wide strategy and recommendations for neighborhood-scale energy solutions, and implement pilot district energy systems in appropriate areas.

These draft recommendations are still being evaluated, and many of the details of policy design and the time line for implementation are yet to be determined. The final recommendations report will be posted on the GBTF web site at www.seattle.gov/environment/GBtaskforce.htm when it is released in March. There will be an additional opportunity for public comment after these recommendations are distributed.

For more information about the final recommendations report, contact:

Jayson Antonoff
Policy Advisor
(206) 386-9791
jayson.antonoff@seattle.gov

Don't forget to visit DPD on the web!

At www.seattle.gov/dpd, you can:

- Apply for an electrical permit
- Request an inspection
- Check the status of your permit
- Report a code violation
- Comment on land use actions
- Download codes, forms and publications
- Catch up on news & events
- Review properties using GIS mapping feature
- Follow progress on city planning projects
- And much, much more!

City Projects Case Study

North Cascades Environmental Learning Center

– Seattle City Light

Benefits

- Zero water used for irrigation and zero storm-water runoff
- 20 percent reduction in energy use—\$5,784 in annual savings
- 84 percent of wood is FSC-certified from well managed forests
- 52 percent of products and materials from regional sources
- 100 percent of occupied areas have outdoor views

Project Overview

The North Cascades Environmental Learning Center (NCELC) is a field-based educational and cultural center, on Diablo Lake in the North Cascades National Park.

The facility includes an administration building, a classroom, two teaching labs and a library. Three lodges and three duplexes are located a short distance away, along with a single cabin for one full-time staff member.

A dining hall renovation, an amphitheater, and maintenance and recycle buildings complete the campus. A learning shelter, boat dock and trails are nearby.

Excepting a full-time staff of one plus one cook, occupancy varies daily and weekly, with more in the summer months. NCELC lodges provides accommodations and services for over 60 when filled. The dining hall, which is used for all meals and some special events, seats 50. Duplexes are inhabited by 10-12 students in a graduate program hosted by the North Cascades Institute.

Sustainable Sites

The North Cascades Environmental Learning Center is located within the upper Skagit River watershed, near one of three dams on the river. These dams provide hydroelectric power serving 25 percent of Seattle's electricity needs.



The 15-building complex is located about 65 miles northeast of Burlington, Washington on a remote site inside North Cascades National Park, near the shore of Diablo Lake above Diablo Dam. North Cascades Park is one of several contiguous protected areas in the North Cascades, extending across the border into Canada.

The first buildings on the site housed construction crews for nearby Ross Dam before becoming part of a small fishing resort. The project grew out of the 1995 federal re-licensing of Seattle City Light's Skagit River dams. It is intended to mitigate the impact of hydroelectric projects on the Skagit River environment. While the NCELC is owned by Seattle City Light, it stands on public lands managed by North Cascades National Park. The North Cascades Institute supplies, maintains and operates the buildings themselves; offering educational programs for all ages.

In their unique partnership, the North Cascades Institute, National Park Service and City of Seattle are supported by the North Cascades Conservation Council, Upper Skagit Tribe, Swinomish Indian Tribal Community, Sauk-Suiattle Tribe, USDA Forest Service, Washington Department of Fish and Wildlife and the Office of the Superintendent of Public Instruction.

The footprints of NCELC buildings cover the pads of previous cabins, and the design for the campus includes the renovated restaurant associated with the old resort. Existing roads and paths were reused, with some pavement replaced by gravel. The campus is now virtually car and pavement free. Buses and cars drop off visitors and gear, then park off-campus. Gravel paths serve entries, outdoor common spaces and terraces.

Designing a complex of 15 smaller buildings instead of a few larger ones minimized excavation and ground disturbance. New buildings are set into the rocky mountainside, taking advantage of the site contours to

provide forest and mountain views, while respecting the sensitivity of the lake shore. Building footprints follow the vertical rise of the site, well buffered from both an existing creek and the possibility of future creek debris flow.

The administration building, classroom, teaching labs and library form the heart of the campus. Three lodges and two duplexes are located uphill and at a short distance away in order to minimize shoreline impact. Despite an 80-foot rise in the slope of the site, all buildings in the complex are ADA accessible.

Tree-like concrete columns and steel struts support cantilevered overhangs that mimic the forest canopy, and provide protection from the elements. Wood structure is expressed throughout interiors. Buildings, trails and walkways enhance the experience of the natural environment.

All sizeable trees were inventoried and saved where possible, some coming within a few feet of roof edges. The landscape plan went beyond reliance on native plant species. All plantings in the project were actually propagated locally or grown from seed collected on the site itself and held until construction was completed.

Because of the remoteness of the site and its scenic beauty, the threats of light pollution and heat island effects are important. Light pollution is controlled with low-footcandle light bollards for path lighting. Large overhangs bounce interior lighting back down to the ground.

Abundant shade from the many mature and preserved trees helps to prevent heat from escaping the site. In addition, all the roofs are high-emission ENERGY STAR compliant metal, reducing the amount of heat retained.

Water Efficiency

Stormwater from roofs is channeled, slowed and filtered at the ground level so that it can infiltrate rather than leave the site. Splash-pads, rockeries, swales and drywells are placed strategically along the path of the flow. Traditional gutters are precluded because of snow loads in the area. Instead, on the uphill sides of large buildings, specially designed ground troughs catch runoff and channel it around the foundation, adding a pleasant water feature to the NCELC.

High-efficiency fixtures minimize potable water use indoors. No potable water is used for irrigation as the native plants do not require additional watering once established.

Energy and Atmosphere

The unique position of the NCELC in a forested location near a source of nonpolluting electrical power makes it an ideal site for demonstrating energy efficiency. The projected, combined energy performance for all buildings exceeds ASHRAE 90.1 by 20 percent. This amounts to \$5,784 in annual energy savings and over 100,000 kilowatt hours of electricity per year, enough to serve the entire complex for over three months in the summer.

Lodges and staff housing meet Seattle City Light's Built-Smart standards, with extra insulation and triple-pane, low-e argon windows.

The North Cascades Institute

The North Cascades Institute (NCI) provides all of the educational programming and day-to-day management for the North Cascades Environmental Learning Center (NCELC); serving organized groups of school children and adults as well as individuals and families. Funds for facility maintenance and operation are provided through an endowment set up by Seattle City Light in connection with the construction of the NCELC. The operation is overseen by City Light and by the National Parks as land owner.

Sedro Woolley-based North Cascades Institute was founded by director Saul Weisberg in 1986, with the mission of conserving and restoring the Northwest environment. On Fourth of July weekend in 2005, the institute hosted its first family program at the NCELC with current director Jeff Muse. Since that summer, North Cascades Institute programming at NCELC has expanded to offer special opportunities for environmental education, along with specialized hospitality and recreation, for diverse groups.

School kids (grades 3-12) come to the NCELC for Mountain School, and high school students participate in North Cascades Wild and Girls on Ice. Teacher education is an important part of NCI's contribution to the larger Northwest regional community. Courses in climate change and nature mapping are part of a master's degree for education in environmental administration program offered by Western Washington University, Bellingham. NCELC also hosts environmental stewardship programs including Eagle Watchers, Mountain Stewards, and Native Plant Stewards.

The North Cascades Institute has won multiple awards for environmental education and advocacy, including the Organizational Excellence Award from the Environmental Education Association of Washington (2006) and the Best U.S. Environmental Protection and Education Group from Charity Navigator (2006).



Roofs are insulated to R-38 instead of the required R-30 and exterior walls to R-26 instead of R-19. The U-value for windows is 0.34.

To help conserve energy, different heating systems were used in different building types. In the large lodges, each room has an individually zoned radiator, controls and separate fans for ventilation. All three lodges share a central boiler, for reduced maintenance. Main service buildings, where people open doors frequently, are heated with a hydronic radiant floor system, also with a single boiler. The thermal mass of the floor helps to keep temperatures constant. Forced air heat is used in staff housing for independent control and fast heat up. Forced air is also used in the dining hall.

The entire complex is naturally ventilated and cooled. Generous overhangs and window shading help to keep rooms cool in summer, and prevent heat gain. High, operable windows provide stack ventilation. Along with abundant cross ventilation, this precludes the need for air conditioning, and heat gain is limited.

In classrooms, photo-sensors measure natural light levels and dim lights accordingly. Occupancy sensors turn lights on and off.

Materials and Resources

Based on dollar value, approximately 11 percent of all the construction products for the project are made with recycled materials. Those with recycle content include cellulose insulation, Trex decking, flyash in concrete, structural steel and rebar, metal roofing, gypsum wall board, ceramic tile, plastic bathroom partitions, and linoleum. Rocks from the site are used in retaining walls.

Again based on dollar value, 53 percent of total materials were manufactured within 500 miles of the

site, and 57 percent of those were made from materials that were harvested locally.

Wood is used extensively in NCELC construction; 84 percent, by dollar value, is certified by the Forest Stewardship Council (FSC) as grown and harvested in sustainably, well-managed forests. Wood includes rough framing, glue-laminated beams and column, cedar siding, flooring, oriented-strand board, decking, wood doors, and custom casework.

A total of 411 tons of construction waste was recycled and diverted from landfills. Separated at the site, 260 tons of wood, 83 tons of steel, 39 tons of gypsum board, 14 tons of asphalt, nine tons of concrete and six tons of plastic were saved.

An existing restaurant near the shoreline was renovated for the NCELC, retaining or reusing 75 percent of the structure and recycling 87 percent of the construction waste. A recycling building near it houses two earthtubs for recycling food waste and bins for sorting and recycling paper, cardboard, glass, metal and plastic.

Salvaged wood was used for the front gate, service gate, maple flooring in classrooms, heart-pine flooring in staff housing, and some trim. Rapidly renewable, regionally sourced wheatboard was used for the wainscot in many of the buildings and as the core material for cabinet doors.

Indoor Environment

Several measures support excellent interior air quality at NCELC. Only low emitting paints and finishes were used on the campus. Cabinets are made with plywood that has no added formaldehyde. In the dining hall, CO2 sensors monitor and give feedback to the ventilation system. During high occupancy, more fresh air is automatically brought in.

Every building has multiple operable windows on more than one side. Some windows are very high, so as to provide a chimney effect in warmer weather. Cross ventilation and ample insulation make air conditioning unnecessary. Natural light reaches 85 percent of the building area, and all of the occupied areas have outdoor views.

Walk-off grates at entryways improve indoor air quality by keeping dirt and contaminants out of buildings.

Innovation and Design

- Education Program
- Exemplary Performance in Locally Manufactured Materials
- Exemplary Performance in Locally Harvested Materials

Lessons Learned

A project team with very high environmental goals and ambitious standards for LEED certification must mesh LEED criteria, environmental goals specific to the site, standard contract language, and contractor orientation. In the case of the NCELC, the remote site and low-bid contract environment both added enormously to the challenge.

Required courses in sustainable construction methods for potential bidders, now offered through several agencies and institutions, could help to head off similar conflicts in the future.

When building in a highly sensitive and remote site, in-the-field activities must be carefully planned and confined, including concrete mixing and storage of materials. Concrete mixing at the remote site had to be done in small batches.

Use on-site guides to confine construction activities. Bright colored fencing was used to keep excavation and other construction activities within 40 feet of building pads. As a result, many important trees stand very close to new building walls, even though the contractor was inexperienced in tree conservation.

Match construction waste categories with the actual opportunities for recycling within the immediate area. Some pre-sorted materials at the NCELC construction site had to be recombined because county recycling centers would not process them separately.

When considering an electrified heating system for a campus of separate and sporadically occupied buildings, consider the efficiencies of infrared panels with separate controls and metering. The electrified boiler system at the NCELC has made heat control for individual buildings problematic.

Although the cost may be surprisingly high for pioneering projects, setting environmental goals can begin to transform the market. Setting a goal of 100 percent FSC-certified wood for the project was ultimately unattainable despite the strong commitment of the project team. However, as a result of the project the local supply and manufacture chain for sustainable wood products was enhanced. One local cabinet maker, Baywood Cabinets, became FSC-certified for the project. The architects negotiated with Columbia Forest Products to make what is believed to be the first plywood produced with no added formaldehyde.

Rating and Awards

- 2006 Washington State Civic Design Award, Merit Award
- 2005 Merit Award, American Institute of Architects Northwest Washington Chapter
- 2006 Designing and Building with FSC Award, Forest Stewardship Council

The Team

Owner

Seattle City Light
www.seattle.gov/light

Architect

HKP architects
www.hkpa.com

Landscape Architect

Richard Haag Associates
(206) 325-8119

Mechanical Engineer

Berona Engineers
www.beronaengineers.com

Civil Engineer

SvR Design Company
www.svrdesign.com

Structural Engineer

Martens/Chan, Inc.
www.ahbl.com

Electrical

Path Engineers/Travis, Fitzmaurice & Associates
www.patheng.com
www.travisfitzmaurice.com

Lighting

Radiance Lighting & Design
www.radiancelightingdesigninc.com

Landscape Restoration

Springwood Associates

General Contractor

Dawson Construction
www.dawson.com

For More Information

City Green Building promotes green building through education, technical assistance and incentives. www.seattle.gov/dpd/greenbuilding

Seattle City Light provides stable, competitively priced and environmentally sound electricity to customers. www.seattle.gov/light

North Cascades Institute inspires a closer relationship with nature and conserves and restores Northwest environments through education. www.ncascades.org

LEED® is the national benchmark for high performance green buildings developed by the US Green Building Council. www.usgbc.org
US Environmental Protection Agency and US Department of Energy ENERGY STAR Program helps citizens and businesses save money and protect the environment through energy efficient products and practices. www.energystar.gov

HOW TO REACH US AT DPD

Permits

General Applications (<i>Applicant Svcs Ctr</i>)	206-684-8850
Address Assignment	684-8850
Cashier	386-9780
Design Review Program	233-3823
Drainage & Sewer Review (<i>incl side sewer</i>)	684-5362
Master Use Permits	684-8467
Plans Routing	684-8169
Over-the-Counter (OTC) Permits	684-8464
Plumbing & Gas Piping Permits	296-1175
Sign Permits	684-8419

Inspections

Inspection Requests: General	684-8900
Inspectors: General	684-8950
Preconstruction Meetings (<i>projects with special inspections</i>)	684-8860

Planning

CityDesign (urban design office)	615-1349
Comprehensive Planning	233-0079
Land Use Policy	684-8880
Seattle Design Commission	615-1349
Seattle Planning Commission	684-0433

Administration

Office of the Director	684-8899
Community Relations	233-3891
Accounting	684-4175

Violation Complaint Hotline

Construction, Housing & Land Use Complaints ... 615-0808

Information

General Department Information	684-8600
Applicant Services Center (ASC)	684-8850
<i>Hours: M,W,F: 7:30am-5:30pm; Tu,Th: 10:30am-5:30pm</i>	
Code Compliance Division (<i>enforcement info</i>)	615-0808
Events & Classes	684-8443
GIS Maps & Services	684-0965
Licensing & Testing (<i>gas piping, steam eng, refrig</i>) ...	684-5174
Media Relations	233-3891
Microfilm Library	233-5180
<i>Hours: M,W,F: 9am-4:30pm; Tu,Th: 10:30am-4:30pm</i>	
Property Owner/Tenant Assistance	615-0808
Public Resource Center (PRC)	684-8467
<i>Hours: M,W,F: 7:30am-5:30pm; Tu,Th: 10:30am-5:30pm</i>	
Publications	684-8467
Site Development	684-8860
Sustainable (Green) Building	684-8880
Tech Support: Building Code (<i>1-4:15pm</i>)	684-4630
Tech Support: Electrical Code (<i>7am-4:30pm</i>)	684-5383
Tech Support: Energy/Mech Code (<i>1-4:15pm</i>)	684-7846
Zoning Info (<i>general, not site-specific*</i>)	684-8467
Zoning Info (<i>site-specific Single Family*; 1-4:15pm</i>)	684-8850

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