Planning Commission Meeting Date: February 18, 2016 Agenda Item

PLANNING COMMISSION AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	**Introduction to Living Building Challenge Ordinance and Petal Recognition Program**
DEPARTMENT:	**Planning & Community Development**
PRESENTED BY:	**Miranda Redinger, Senior Planner** **Sam Wright, Living Building Challenge Manager, International Living Future Institute**

☐ **Public Hearing** ☐ **Study Session** ☐ **Recommendation Only**
☒ **Discussion** ☐ **Update** ☐ **Other**

INTRODUCTION AND BACKGROUND

On September 30, 2013, Council adopted the Shoreline Climate Action Plan, thereby committing to reduce community greenhouse gas (GHG) emissions 80% by 2050 (80x50), with an interim target of 50% reduction by 2030 (50x30). In 2014, the City reaffirmed that commitment by signing the King County-Cities Climate Collaboration (K4C) Joint County-City Climate Commitments, joining with the County and other cities in similar targets.

Since the selection of these specific targets was based on scientific consensus of what it would take to prevent the most devastating impacts of climate change, an analysis of what was feasible still needed to be completed. Through its partnership with the K4C, the City of Shoreline had the opportunity to work with Climate Solutions' New Energy Cities Program to perform a Carbon Wedge Analysis, which developed strategies for the City to achieve these "ambitious but achievable" targets. Council was introduced to the analysis and strategies at their October 14, 2014 meeting. The staff report from that meeting is available here: http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2014/staffreport101314-9a.pdf.

On September 14, 2015, the Council discussed several of the strategies identified through the Climate Action Plan, Carbon Wedge Analysis, and K4C Climate Commitments, and selected three priority recommendations for 2016-2019:

- Adoption of a Living Building Challenge Ordinance and consideration of a Petal Recognition Program
- Examining feasibility of District Energy or Combined Heat and Power in areas that are likely to undergo redevelopment, including the light rail station subareas, Aurora Square/Shoreline Place, and Town Center; and
- Conducting a Solarize campaign, including exploring adoption of Solar-Ready regulations, and building on partnerships with local educational, professional, and

Approved By: **Project Manager** ____ **Planning Director** ____

non-profit organizations dedicated to increasing solar power generation in Shoreline.

The staff report from that meeting is available here: http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2015/staffreport091415-9b.pdf.

On February 1, 2016, the Council discussed the three identified priority strategies in further detail. This agenda item included a presentation from Thomas Puttnam, President of Puttnam Infrastructure, on studying the feasibility of District Energy. Linda Irvine, Program Director for Northwest Sustainable Energy for Economic Development (NW SEED), also answered questions related to Solarize initiatives. The staff report from that meeting is available here: http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2016/staffreport020116-8a.pdf.

Living Building Challenge and Petal Recognition- The Living Building Challenge is a certification program through the International Living Future Institute (ILFI) for net zero and net positive buildings. A net zero building has zero net energy or water consumption, meaning the total amount of energy or water used by the building on an annual basis is roughly equal to the amount of renewable energy created or water captured or reused on the site. A net positive building produces more energy or water than is used on the site.

The Living Building Challenge emphasizes sustainability with regard to the following design considerations or "Petals":

- Place- restoring a healthy interrelationship with nature;
- Water- creating developments that operate within the water balance of a given place and climate;
- Energy- relying only on current solar income;
- Health and Happiness- creating environments that optimize physical and psychological health and well-being;
- Materials- endorsing products that are safe for all species throughout time;
- Equity- supporting a just, equitable world; and
- Beauty- celebrating design that uplifts the human spirit.

Attachment A is an infographic identifying the seven Petals and twenty Imperatives for full Living Building Challenge certification. Attachment B outlines documentation requirements for full certification. For buildings that are unable to meet full certification requirements, but whose design incorporates a requisite amount of the above principles, the ILFI also offers a Petal Recognition program.

A Living Building Challenge Ordinance (LBCO) may be adopted by jurisdictions to provide relief from code barriers that may preclude development of Living Buildings and/or include incentives for their development. Seattle adopted an LBCO in order to facilitate development of the Bullitt Center, the world's greenest office building.

The City of Shoreline and other K4C cities' staff are working with the ILFI to adapt existing ordinances to be applicable to smaller cities. Attachment C is a white paper drafted by King County GreenTools about the Local Ordinances Related to the Living Building Challenge. Attachment D is a rough draft of basic components for a potential City of Shoreline Living Building Challenge Ordinance. Additional details and questions about these attachments will be offered in the Discussion section of this staff report.

Justification from existing plans for adopting a Living Building Challenge Ordinance:

K4C Climate Commitments-

- Green Building and Energy Efficiency
  - Pathway: Reduce energy use in all existing buildings 25% below 2012 levels by 2030; achieve net-zero GHG emissions in new buildings by 2030.
  - Catalytic Policy Commitment: Join the Regional Code Collaboration (RCC) and work to adopt code pathways that build on Washington State Energy Code, leading the way to "net-zero carbon" buildings through innovation in local codes, ordinances, and related partnerships.

Climate Action Plan (CAP) and Carbon Wedge Analysis-

- CAP- Energy and Water
  - 1G: Promote high-performance building and energy efficiency in private construction and remodeling through education and code development.
- Analysis- Building Sector and Renewable Energy Strategies
  - Remove code barriers to Zero Net Energy (ZNE) buildings/Living Buildings and adopt LBCO.
  - Research what it would take to construct a ZNE/Living Building City facility or demonstration project.
  - Density bonuses, enabling developers to build more housing units, taller buildings, or floor space than typically allowed, as an incentive for ZNE or Living Building construction.
  - Property tax exemption for ZNE-ready developments.
  - Technical assistance for ZNE development.

185th Street Station Subarea Plan Policies-

- Promote more environmentally-friendly building practices. Options for doing so may include:
  - Adoption of International Green Construction Code.
  - Encouraging the development of highly energy efficient buildings that produce or capture all energy and/or water used on-site (Net Zero).
  - Partner with the International Living Future Institute to adopt LBCO and/or Petal Recognition Program. Petal Recognition could include achievement of at least three of the seven petals (site, water, energy, health, materials, equity, and beauty), including at least one of the following petals: energy, water, or materials and all of the following: □
    - Reduce total energy usage by 25 percent over comparable building type and/or Shoreline Energy Code. □

- Reduce total building water usage by 75 percent, not including harvested rainwater, as compared to baselines estimated by the appropriate utility or other baseline approved by the Planning and Community Development Director □
- Capture and use at least 50 percent of storm water on site.

DISCUSSION

It is important to note that there are several different codes and regulations that may present barriers to or provide incentives for the development of Living Buildings, and multiple agencies that may be involved in approval of such projects.

- Development Code-The City of Shoreline has the ability to modify this code through a recommendation by the Planning Commission and decision by Council. Potential amendments to the Development Code could include providing incentives for Living Buildings by allowing for exemptions from the following standards:
  - Permitted, prohibited, or conditional use provisions, but only for accessory uses that would directly address an imperative of the Living Building Challenge 3.0, including but not limited to uses that could re-use existing waste streams or reduce the transportation impacts of people or goods;
  - Residential density limits;
  - Maximum size of use;
  - Parking requirements;
  - Setback and lot coverage standards;
  - Standards for storage of solid-waste containers;
  - Open Space requirements;
  - Standards for structural building overhangs and minor architectural encroachments into the right-of-way; and
  - Connection to public water and sewer.
- State Building Code- Standards for commercial and multi-family buildings are regulated by the International Building Code (IBC), which Council has local authority to amend. The City's Building Official has reviewed the attached materials and participated in K4C working group discussions with regard to implementation of the Living Building Challenge Ordinance. He has not identified any barriers within the IBC that should preclude development of a project given that the associated plumbing code currently provides requirements for labeling and premises isolation needed for non-potable water systems, and other public health considerations. Single-family homes are regulated by the International Residential Code, which Council may specifically amend provided approval is gained from the State Building Code Council. The Building Official is confident that promoting the development of a Living Building would be a legitimate basis to obtain this required approval.
- Surface Water Utility-The City manages this utility, which is governed by regulations set forth in the Shoreline Municipal Code Section 13.10. Council has the ability to amend these regulations. It may be appropriate for Living Buildings or Petal Recognition projects focusing on water to receive a reduction or waiver of the Surface Water Management fee. Existing regulations currently contain a fee rebate for low-impact development components of a project, and it is possible that this will be expanded through revisions made through an upcoming update.

- Water and Sewer Utilities- Determining potential barriers or incentives related to water and sewer utilities will require discussions with North City Water District, Seattle Public Utilities, and Ronald Sewer District. However, many of the water and sewer issues with regard to Living Buildings, such as rainwater harvesting, reuse of non-potable water, and composting toilets may be more appropriately handled by Health Departments.
- Health Departments- King County Public Health and the Washington State Department of Health will need to be involved in regional discussions related to Living Buildings and Petal Recognition. The State Department of Health currently has the ability to grant relief from regulations that may be barriers to Living Buildings. The Chief Plumbing Inspector for Public Health for Seattle and Unincorporated King County has been involved in the K4C working group, and has provided insights into the current process of approval and how it may need to be modified in the future to better accommodate these types of projects.

Lessons Learned from Other Jurisdictions

The GreenTools white paper (Attachment C) outlines components of several other LBCOs, adopted in Seattle, Clark County, Bainbridge Island, and Ellensburg. The white paper includes "lessons learned" from these jurisdictions as they implemented their programs, and provides recommendations for other cities and counties as they develop new programs. The recommendations are as follows:

- Require project certification or petal recognition at a minimum;
- Clarify criteria and process for allowing code departures;
- Require project team consultation and staff training;
- Encourage participation with public health departments and other regulatory agencies; and
- Include implementation recommendations.

Staff has incorporated recommendations from the white paper into the draft ordinance to the extent feasible at this level of detail.

Questions for Discussion:

Sam Wright, Living Building Challenge Manager with the International Living Future Institute, will be available to provide more information and answer questions about the Living Building Challenge and Petal Recognition Programs. The ILFI website (https://living-future.org/lbc) also has a wealth of information, including Frequently Asked Questions, market and barrier assessments, and case studies for certified projects around the world.

To aid in tonight's discussion, staff has identified several questions with regard to a potential LBCO.

- The Seattle ordinance restricts applications for Living Buildings to a Pilot Program, limited to twelve projects.
    - ***Should Shoreline's ordinance limit the number of potential projects through a pilot program?***

  - o ***Should Shoreline's program apply to all building types in all zones and geographic locations within the city or confine potential projects to certain types or areas?***
- The draft Shoreline LBCO in Attachment D lays out a two-tiered system of incentives based on the level of certification.
  - o ***Should Shoreline consider different incentive packages for full Living Building Challenge Certification and Petal Recognition?***
  - o ***If so, are the incentive packages identified in the draft ordinance appropriate?***

TIMING AND SCHEDULE

The March 3 Planning Commission meeting will be dedicated to discussion of the 145th Street Corridor Study. The March 17 and April 7 Commission meetings will be dedicated to discussion and recommendation of a Preferred Alternative zoning scenario for Council selection for further analysis in the 145th Street Station Subarea Plan Final Environmental Impact Statement (FEIS).

Following that, there is a window of time (April 21, May 5, May 19, June 2, and possibly June 16 meetings) before the Commission begins discussing the FEIS, Subarea Plan, and adopting ordinances for the 145th Street Station Subarea Plan. Staff could schedule follow-up discussion of the LBCO and Petal Recognition Program for one or more of these meetings. This agenda item would include draft regulations that would be adopted as part of the Development Code to incentivize Living Building Challenge or Petal Recognition projects. It would also include another draft of the LBCO, reflecting guidance received at tonight's meeting and through the K4C working group.

The K4C group would like to include discussion of potential local ordinances at the next Elected Officials Summit, tentatively scheduled for early April 2016.

RECOMMENDATION

No action is required at this time. However, staff would appreciate direction regarding questions identified for a potential City of Shoreline Living Building Challenge Ordinance.

ATTACHMENTS

Attachment A- International Living Future Institute (ILFI) Petals and Imperatives
Attachment B- ILFI Living Building Challenge 3.0 Certification Requirements
Attachment C- King County GreenTools White Paper: Local Ordinances Related to the Living Building Challenge
Attachment D- DRAFT Components of Potential City of Shoreline Living Building Challenge Ordinance

PLACE | Restoring a healthy interrelationship with nature

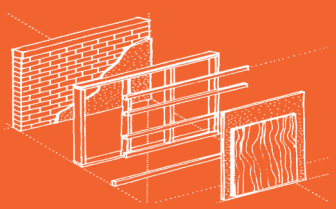
WATER | Creating developments that operate within the water balance of a given place and climate

ENERGY | Relying only on current solar income

LIVING BUILDING CHALLENGE

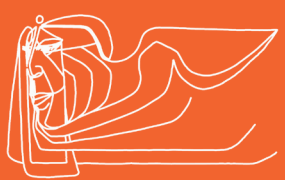
Seven Petals to Certification

HEALTH & HAPPINESS | Creating environments that optimize physical and psychological heath and well being



MATERIALS | Endorsing products that are safe for all species throughout time

EQUITY | Supporting a just, equitable world



BEAUTY | Celebrating design that uplifts the human spirit

PLACE |
01. Limits to Growth
02. Urban Agriculture
03. Habitat Exchange
04. Car Free Living

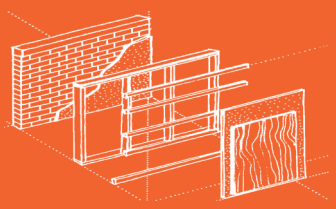
WATER | **05**. Net Positive Water

ENERGY | **06**. Net Positive Energy

LIVING BUILDING CHALLENGE

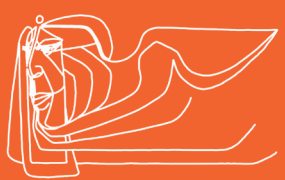
Seven Petals | Twenty Imperatives

HEALTH & HAPPINESS |
07. Civilized Environment
08. Healthy Interior Environment
09. Biophilic Environment



MATERIALS |
10. Red List
11. Embodied Carbon Footprint
12. Responsible Industry
13. Living Economy Sourcing
14. Net Positive Waste

EQUITY |
15. Human Scale + Humane Places
16. Universal Access to Nature + Place
17. Equitable Investment
18. JUST Organizations



BEATY |
19. Beauty + Spirit
20. Inspiration + Education

DOCUMENTATION REQUIREMENTS

August 2014

LIVING BUILDING CHALLENGE℠ 3.0

A Visionary Path to a Regenerative Future

INTERNATIONAL LIVING FUTURE INSTITUTE℠

3.0 Documentation Requirements

HOW THIS INFORMATION WILL BE USED

AUDIT PROCESS

This packet was compiled to provide a complete documentation requirements reference guide for teams pursuing project certification under Living Building Challenge version 3.0.

As the owner of the Living Building Challenge Program, the International Living Future Institute (ILFI) will request specific information from various members of a project team (Team) to determine compliance with the Living Building Challenge Imperatives. This data will be shared in a limited capacity with the project's assigned Auditor, a third party who is responsible for performing document review and onsite verification once the twelve-month occupancy phase is complete. When on site, the Auditor may look for additional complementary information to support the project's claims in the written documentation. Therefore, additional records may be required if further proof of compliance is needed.

ILFI and the Auditor will treat with confidentiality any/all project drawings, project manuals, and construction documents submitted by members of a Team. Twelve months following a project's certification, these project drawings, project manuals, and construction documents may no longer be stored and any existing printed copies may be destroyed.

PUBLIC EDUCATION

The Institute may use and retain other non-sensitive project documentation as deemed necessary to further the educational mission of the organization, and may share information contained within the documentation with members of the Living Building Challenge Community (Community) or the general public. ILFI retains the right to use and/or publish essays written by the Team, and will attribute the content to the members of the Team as directed.

By submitting photographs and/or 3D renderings of the project, the Team grants ILFI royalty-free use of these image(s) in promotional material, such as web-based, printed, and other presentation formats, to support the Living Building Challenge or one of its auxiliary programs. ILFI will use the image(s) in a manner consistent with a Creative Commons "Attribution-No Derivative Works 3.0 United States" license.

Project teams are required to share documentation information about the project's performance on the publically accessible ILFI website Case Study Database once the project is in its operational phase. This information must be updated with verified data after the project is certified, and additional feedback may be added to the project's case study subsequently as desired by the project team.

3.0 Documentation Requirements

HOW TO USE THIS DOCUMENT

TWO-PART CERTIFICATION

Two-Part Certification is available for projects that wish to have a preliminary ruling issued on the Imperatives that are not reliant on performance data for certification. A Preliminary Audit may take place any time after construction is complete.

The table to the right identifies Imperatives eligible for preliminary audit and those requiring audit after the twelve-month performance period is complete.

DOCUMENTATION PROCESS

Project teams should refer to this document periodically throughout every phase of their project, from pre-design through the end of the Performance Period, in order to prepare for the Audit.

Project teams are responsible for collecting and maintaining their documentation until they are ready to submit for review. Documentation should be organized, by Petal and Imperative, according to the structure shown in this document.

ILFI has an ongoing goal to reduce the documentation needed to demonstrate compliance with the Living Building Challenge while publishing robust case studies. Over time, items may be modified to reflect this effort. Teams may elect to submit information using the current guidelines at the time of project registration or later releases.

IMPERATIVE		Preliminary Audit	Final Audit
01	Limits to Growth	x	
02	Urban Agriculture		x
03	Habitat Exchange	x	
04	Human Powered Living	x	
05	Net Positive Water		x
06	Net Positive Energy		x
07	Civilized Environment	x	
08	Healthy Interior Environment		x
09	Biophilic Environment	x	
10	Red List	x	
11	Embodied Carbon Footprint	x	
12	Responsible Industry	x	
13	Living Economy Sourcing	x	
14	Net Positive Waste		x
15	Human Scale + Humane Places		x
16	Universal Access to Nature and Place	x	
17	Equitable Investment		x
18	JUST Organizations	x	
19	Beauty + Spirit		x
20	Inspiration + Education	x	

BASIC DOCUMENTATION

All projects require all Basic Documentation, unless noted otherwise.

EXCEPTION DOCUMENTATION

Projects that use Exceptions or compliance paths that are not standard for all projects require additional documentation.

3.0 Documentation Requirements

GENERAL REQUIREMENTS

G-01 General Project Information Summary

The Team should provide one document that includes all of the information below:

- Project Typology (Renovation, Landscape + Infrastructure, Building)
- Living Transect (L1-L6)
- Project Area (in square feet)
- Gross Building Area (in square feet)
- Building Footprint (in square feet)
- Project Floor Area Ratio (FAR)
- Construction documents start date
- Construction start date
- Occupancy date
- Twelve-month Performance Period start date

G-02 General Project Documentation

In addition, the following general documentation should be submitted:

- Site Plan with Project Area clearly noted
- Construction Drawings
- Project Manual (specifications)
- Records of significant changes during construction, e.g.
  - Architect's Supplemental Instructions; Construction Change Directives; Change Orders; or General Contractor's Requests for Information that are the sole record for significant product or equipment modifications during the construction process as needed to demonstrate compliance with the Materials Petal.
- At least ten color 3D renderings or photographs of the project that can be used at the Institute's discretion to publicize the project and the program.
- Project Team Roster, including the name of each organization or individual participant on the Team, role, office location, and proximity to the project (in kilometers).

CASE STUDY QUESTIONNAIRE

Project Teams must complete the I20-1 Case Study Questionnaire for each Imperative submitted for Audit. Documentation that is likely to be used as supplemental case study content is noted in that questionnaire.

3.0 Documentation Requirements

PLACE PETAL

I01 LIMITS TO GROWTH

BASIC DOCUMENTATION

I01-1 "Previously Developed" Documentation

Pre-December 31, 2007 aerial photos and/or other documents that show the following:

- The site and its adjacent properties to a minimum distance of 1000 feet beyond the project property line
- The land use on all sides of property
- "Previously developed" status
- All sensitive ecological habitats on or by the Project Area
- Third party evidence of the project development date such as county records (written descriptions and images), dated historic photos, newspaper articles, tax records, or permit documents.

Existing Buildings

Projects in existing buildings operational prior to December 31, 2007 must provide a photo showing that the project building was complete and operational prior to December 31, 2007.

I01-2 Flood Map

A FEMA-issued flood map documenting the project's location relative to any nearby flood zones. For projects outside the United States or in instances where a FEMA-issued flood map does not exist, a zoning diagram or letter from the jurisdictional authority may be submitted.

I01-3 Landscape Plan

A detailed landscape plan that lists all plants and demonstrates compliance with Imperative requirements, specifically regarding native and/or naturalized plant species..

I01-4 Landscape Narrative

A one- to three-page narrative that includes an analysis of pre-development landscape conditions and strategies used to comply with Imperative requirements, such as ongoing landscape maturation and evolution.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-01 Exception Documentation Summary Table

EXCEPTION		I01-a Conservation Docs	I01-b Technical Docs	I01-c Context Docs	I-01-d Calculations
I01-E1	Greenfields Protecting Virgin Land	x			
I01-E2	Greenfields Developed Before December 31, 2007			x	
I01-E3	Greenfields Surrounded by Development		x	x	x
I01-E4	Abandoned Brownfields	x	x		
I01-E5 – E8	Various sensitive ecological habitats	x			
I01-E9 – E10	Working farms, ports or docks		x		
I01-E11 – E12	Floodplain Exceptions			x	
I01-E13	Educational Landscapes		x		

I01-a Conservation Documentation

Official documents, from the organization responsible for the protection or interpretation of the sensitive ecological habitat, that demonstrate the project's compliance with Exception requirements.

I01-b Technical Documentation

Legal, economic or contract documents that verify Exception requirements have been met, such as:

- Official documents such as current business licenses or registrations
- Contracts or receipts showing transactions related to Exception requirements.

I01-c Context Documentation

Dated maps and/or photos demonstrating the project site meets Exception requirements.

I01-d Calculations

Calculations showing that Exception requirements have been met.

3.0 Documentation Requirements

I02 URBAN AGRICULTURE

BASIC DOCUMENTATION

I02-1 **Agricultural** Narrative

A one- to three-page narrative written by the landscape architect or other appropriate consultant describing the methods of agriculture used to meet the Imperative (crops planted, livestock raised, etc.), their intended use, and a long-term support and harvest plan. The narrative should document:

- Why the selected strategies were chosen
- That the surrounding climate is supportive of the proposed species as a harvestable resource
- Occupants' access to the infrastructure necessary for harvest & use of agriculture
- A clear plan of use for the harvest.

Single-family residential projects must also address the requirement for food storage capacity in their narrative.

I02-2 Photographs or Graphic Depictions

Representative photographs and/or diagrams showing predicted and/or actual agricultural use patterns throughout the year.

I02-3 Annotated Site Plan and Area Calculation

Annotated and dimensioned site plan, keyed to I02-1 Narrative, showing agricultural locations, and including a calculation of the agricultural area used to fulfill the Imperative.

EXCEPTION DOCUMENTATION

I-02 Exception Documentation Summary Table

EXCEPTION		I02-a Narrative	I02-b Non-edible Plant List
I02-E1	Sensitive Ecological Habitats	x	
I02-E2	Non-edibles		x

I02-a Exception Narrative

A brief narrative explaining the project's eligibility for, and compliance with, Exception requirements.

I02-b Non-edible Plant List

An annotated list of plants describing how selected plants and allotted areas comply with Exception requirements.

3.0 Documentation Requirements

I03 HABITAT EXCHANGE

BASIC DOCUMENTATION

I03-1 Receipt

Receipt for the Habitat Exchange donation from either the Living Future Exchange program or the selected Approved Land Trust reflecting the required offset amount.

103-2 Legal Documents (if following the Approved Land Trust path)

An official letter or document from the Land Trust stating the terms of the offset and confirming that the selected Land Trust is approved.

EXCEPTION DOCUMENTATION

I-03 Exception Documentation Summary Table

EXCEPTION		I03-a Technical Documentation	I03-b Volunteer Hour Records	103-c Summary Analysis
I03-E1	Conservation and Parks Organizations	x		
I03-E2	Single-Family Residences		x	
I03-E3	Local Land Trusts	x		x

I03-a Technical Documentation

Contracts, maps, legal or economic documents, usually from the Land Trust organization, that show Exception requirements have been met.

I03-b Volunteer Hour Records

Official records documenting volunteer hours spent, including the volunteer's name, and the dates and hours worked in one of the following formats:

- Volunteer log books
- Board rosters, meeting minutes or other printed/digital matter that verifies time period of participation
- A signed letter from Land Trust staff.

I03-c Summary Analysis

A comparison of Approved Land Trust requirements and proposed land trust qualifications demonstrating Exception requirements have been met.

3.0 Documentation Requirements

I04 HUMAN POWERED LIVING

BASIC DOCUMENTATION

I04-1 Calculations

Calculations that show the Project Area FAR before and after the project, or images that clearly show that the project has increased the density from the original condition.

I04-2 Mobility Plan

A document that outlines and demonstrates how all Imperative requirements have been met. The Mobility Plan must make a clear case for the amount of bike storage provided and describe how the project has supported, and will continue to support, human-powered living within the building and in the surrounding community.

I04-3 Advocacy Letter

Evidence of advocacy to promote a human-powered community. This may take the form of testimony to elected officials or a letter to the appropriate local jurisdictional authority requesting that they improve services that facilitate human-powered living.

EXCEPTION DOCUMENTATION

None time of issue.

WATER PETAL

I05 NET POSITIVE WATER

BASIC DOCUMENTATION

I05-1 Water Narrative

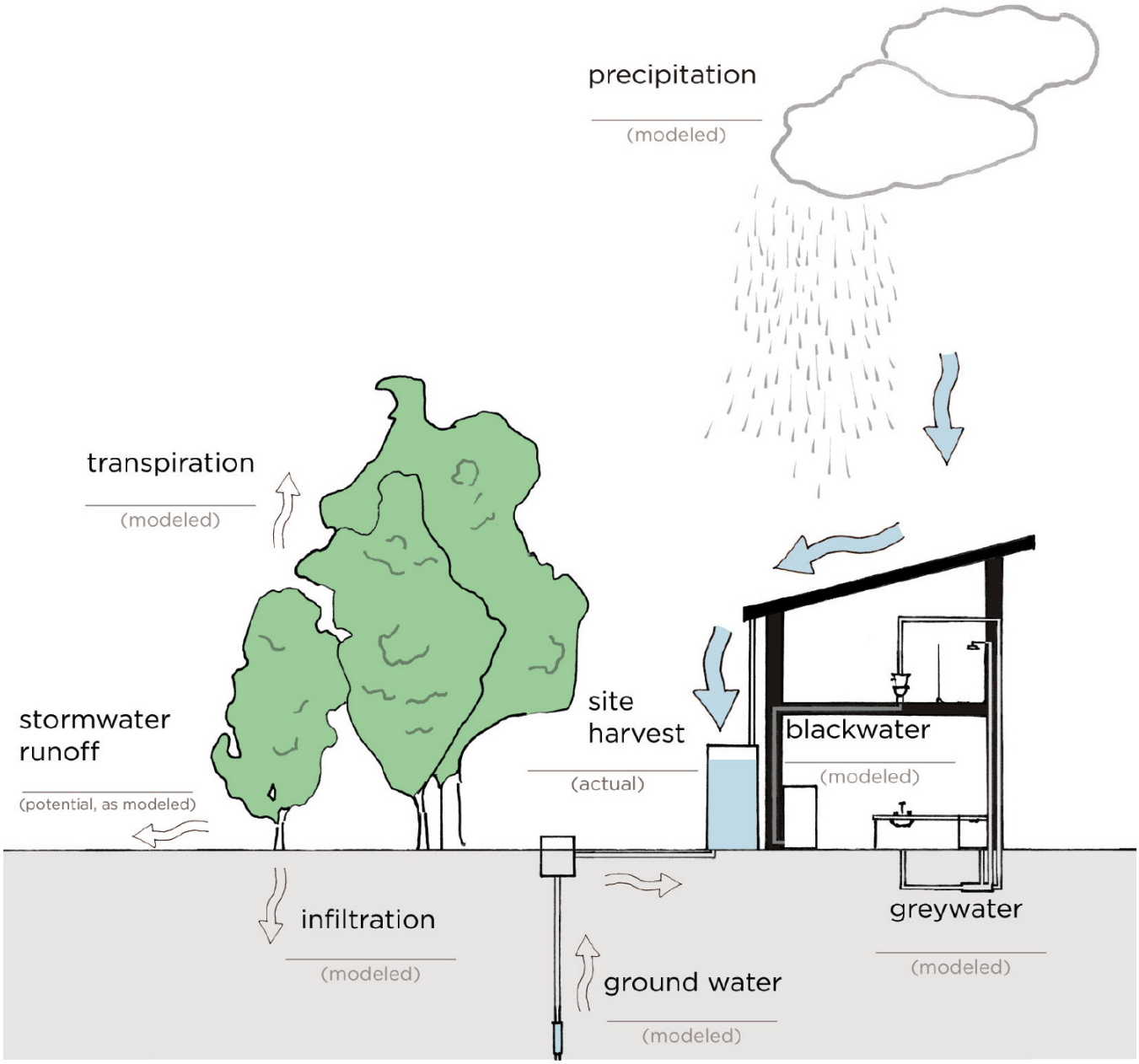
A narrative shall be provided, fully describing water system design and compliance with the Imperative. The narrative, written by the water engineer or designer, shall include the following:

- A summary of the site hydrology and project systems.
- A description of the pre and post development hydrology of the site, and how the project works in harmony with natural water flows.
- A detailed description of how 100% of project water needs are being met from on-site sources, including contributing system(s) and major components, their function and location, and the water treatment method(s).
- A detailed description of the stormwater, grey water and black water treatment and management system(s), their major components, and their function and location.

3.0 Documentation Requirements

I05-2 Annual Water Balance Diagram

An annual water balance diagram showing general water flow and balance of project and site.



3.0 Documentation Requirements

I05-3 Water Supply and Use Table

Total actual water use from monthly readings throughout the 12-month occupancy period from meter(s) or other on-site tracking systems that clearly record the amount of water used from each applicable supply source.

Water Supply and Use Table

Living Building Challenge 3.0
Water Supply and Use Table

Project Name:

	Performance Month	1	2	3	4	5	6	7	8	9	10	11	12	
Performance Period	Actual Month & Year (fill in name/year)	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	Annual Total
	Water units (fill in)													
Water Supply	Harvested Rainwater													0
	Ground/Surfact Water													0
	Reclaimed Greywater													0
	Municipal Potable Water (if allowed by exception)													0
	Other (describe)													0
														0
	Total Actual Water Supply	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Use	Domestic water*													0
	Process water*													0
	Irrigation**													0
	Other (describe)													0
														0
	Total Actual Water Use	0	0	0	0	0	0	0	0	0	0	0	0	0
Modelled	Modelled water supply													0
	Modelled water use													0
	Predicted delta	0	0	0	0	0	0	0	0	0	0	0	0	0

* Break out & list by uses if known. If not, fill in total as "other (total)".

** For urban agriculture areas

I05-4 Stormwater Calculations

Stormwater calculations by the project engineer demonstrating Imperative requirements for working in harmony with natural water flows, based on a minimum of a 10-year storm event.

I05-5 Statement of Non-Connection to Utility (or I05-E1 Documentation)

A signed statement, written by the owner, stating that the project is not connected to a municipal potable water supply or sanitary sewer.

I05-6 Biosolids Disposal Documentation

Evidence of appropriate use of bio-solids and liquids within 100-mile radius of project.

I05-7 Photographs

Photographs of the systems, particularly portions that will be hidden from view at time of audit due to completion of construction.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-05 Exception Documentation Summary Table

EXCEPTION		I05-a Narrative Statement	I05-b Meter Data & Calculations	I05-c Design Docs	I05-d Appeal Docs
I05-E1	Municipal Potable Water Supply		x	x	x
I05-E2	Municipal Water for Fire Protection			x	
I05-E3	Chlorine Disinfection			x	x
I05-E4	L5 & L6 - Municipal Stormwater Connection	x	x		
I05-E5	Municipal Sewer Overflow Connection	x		x	x

I05-a Narrative Statement

Signed narrative statement making a clear case that the project is eligible for the Exception and how it has met requirements.

I05-b Meter Data & Calculations

Meter data and /or calculations as needed to show compliance with Exception requirements.

I05-c Design Documentation

Design documents, such as project manual excerpts, drawings or cutsheets, showing how the project meets Exception requirements.

I05-d Appeals Documentation

Documentation of the team's effort to comply with requirements despite regulatory barriers, including:

- The regulatory statute or code that hinders project compliance
- Summary of all potential appeals and outcomes
- Written appeal documents and response showing the decision(s) from regulatory authority.

3.0 Documentation Requirements

ENERGY PETAL

I06 NET POSITIVE ENERGY

BASIC DOCUMENTATION

I06-1 Energy Narrative

A two to three page narrative that is written by the energy designers or engineers, that describes the energy system, including:

- Anticipated building's needs and operational issues
- Design strategy
- All subsystems of the energy-using and energy-producing systems, including all areas listed in the I06-4 Energy Table
- The energy storage system

I06-2 Energy System Schematic

A schematic drawing of the energy system that correlates to the information in the I06-1 Energy Narrative.

I06-3 Photographs

Photographs of the systems, particularly portions that will be hidden from view at time of audit due to completion of construction.

I06-4 Energy Bills

Utility bills for a continuous 12-month period, beginning with the designated start date of the performance period.

If the project is not connected to a utility, or is sub-metered from a utility meter serving a larger area, and therefore has no energy bills, the energy or mechanical engineer must provide a letter, stamped with her or his professional seal and signed by both the engineer and the owner, substantiating that this is the case.

3.0 Documentation Requirements

I06-5 Energy Production and Demand Table

Completed Energy Usage Table with monthly data from the 12-month performance period, from meter(s), other on-site tracking systems or web-link to an online mechanism that clearly records energy produced and consumed (e.g., total energy generated; total energy use by subsystem including simulated/designed demand if available).

Energy Production and Demand Table (kBTU/ft^2/yr kJ/m^2/yr)

Living Building Challenge 3.0 Energy Production and Demand Table														Project Name:
Performance Period	Performance Month	1	2	3	4	5	6	7	8	9	10	11	12	
	Actual Month & Year (fill in name/year)	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	*Month Year*	Annual Total
	Energy units (fill in)													
Energy Production	Photovoltaics (location 1)													0
	Photovoltaics (location 2)													0
	Micro-hydro-turbines													0
	Wind power													0
	Municipal Power (if grid tied)													0
	Other (describe)													0
	Total Energy Production	0	0	0	0	0	0	0	0	0	0	0	0	0
Energy Demand	Heating													0
	Cooling													0
	Hot Water													0
	Lighting													0
	Ventilation													0
	Computer Services													0
	Pumps													0
	Vertical Transportation													0
	Plug Loads/ Equipment													0
	Other (list)													0
	Total Energy Demand	0	0	0	0	0	0	0	0	0	0	0	0	0
	Project Energy Use Intensity (EUI)													
Modelled (optional)	Modelled energy production													0
	Modelled energy demand													0
	Predicted delta	0	0	0	0	0	0	0	0	0	0	0	0	0

I06-6 Resilient Energy Storage Documentation

Calculations showing the required amount of storage, supported by:

- A brief summary of the predicted lighting demand methodology
- Refrigeration manufacturer's energy use information.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-06 Exception Documentation Summary Table

EXCEPTION		I06-a Narratives	I06-b Metering Data	I06-c Technical Docs	I06-d Photographs
I06-E1	Pre-existing Infrastructure	x	x		x
I06-E2	Photovoltaic Array Ownership			x	
I06-E3	Tenant Improvements in Existing High Rises	x	x	x	x
I06-E4	Specialty Combustion	x			
I06-E5	Ornamental Fireplace in Transects L1 and L2	x			
I06-E6	Emergency Power Systems	x			
I06-E7	Periodic Cultural Festivals	x	x		
I06-E8	Existing Buildings Sub-metering	x			
I06-SJ1	Shared/3rd Party Arrangements		x	x	
I06-SJ2	Campus Setting		x		
I06-SJ3	District Energy System		x		
I06-SJ4	Rural Projects			x	

I06-a **Additional Narrative**
A narrative describing the project's need for the exception, the approach to and implementation of the alternative solution, and compliance with Exception requirements.

I06-b **Metering Documentation**
Metering documentation or data showing compliance with exception requirements.

I06-c **Technical Documents**
Legal, financial or contract documents showing compliance with exception requirements.

I06-d **Photographs**
Photographs showing compliance with exception requirements, including images of all components that will be changed from an existing state, or hidden by the completion of the performance period.

3.0 Documentation Requirements

HEALTH & HAPPINESS PETAL

I07 CIVILIZED ENVIRONMENT

BASIC DOCUMENTATION

I07-1 Dimensioned Drawings

Dimensioned drawings, including plans, diagrams, window schedules and/or exterior elevations, documenting compliance. If using construction drawings to satisfy this requirement, include only relevant pages.

EXCEPTION DOCUMENTATION

None at time of issue.

I08 HEALTHY INTERIOR ENVIRONMENT

BASIC DOCUMENTATION

I08-1 Healthy Indoor Environment Plan

A document that outlines and demonstrates how all Imperative requirements have been met, including:

- Cleaning Product List: A list of the project's cleaning products that comply with the EPA Design for the Environment standard or international equivalent.
- HVAC Documentation: A statement confirming compliance with ASHRAE 62 or international equivalent and the dedicated exhaust systems requirement, as well as any copies of relevant HVAC Drawings.
- I08-3 CDPH v1.1-2010 Documents: A list of all interior building products that have the potential to emit Volatile Organic Compounds (VOCs) and supporting documentation demonstrating each product's compliance with CDPH v1.1-2010 or equivalent standard.
- IAQ Testing Results: Results and any steps taken to remedy deficiencies identified by the testing authority.
- Systems Report: Verification of performance for permanently installed equipment used to monitor levels of carbon dioxide (CO^2), temperature and humidity, including photographs of any hidden systems.

EXCEPTION DOCUMENTATION

None at time of issue.

3.0 Documentation Requirements

I09 BIOPHILIC ENVIRONMENT

BASIC DOCUMENTATION

I09-1 Biophilic Charter and Plan

A substantial illustrated plan that describes how all of the requirements have been met including:

- Any relevant ecological studies
- The agenda, attendee list, meeting minutes, action items and resulting framework from the Biophilic exploration day
- Demonstration of the implementation of the Biophilic framework in the built project.

EXCEPTION DOCUMENTATION

None at time of issue.

MATERIALS PETAL

I10 RED LIST

BASIC DOCUMENTATION

I10-1 Materials Tracking Table

The Materials Tracking Table must be completed and provided in sortable Excel format. A template is available to registered projects on the project team resources page. *See Resources.*

I10-2 Supporting Data

Supporting data is required for each product. Acceptable documentation must include one of the following, confirming no Red List chemicals are present (see Acceptable Documentation under Clarifications):

- Living Building Challenge Compliant or Red List Free Declare ID number
- Health Product Declarations with Full Disclosure of all Intentional Added Ingredients
- Complete Material Safety Data Sheet (MSDS)
- Complete Globally Harmonized System Safety Data Sheet (GHS SDS),
- Complete manufacturer-supplied ingredient list

3.0 Documentation Requirements

I10-3 Wet-Applied Product VOC data

Manufacturer-supplied VOC content data:

- Declare Label with VOC disclosure
- Health Product Declaration (HPD) with VOC disclosure
- MSDS or GHS SDS with VOC data
- Image of VOC content on product label
- Signed statement of compliance and VOC content disclosure from manufacturer

EXCEPTION DOCUMENTATION

I-10 Exception Documentation Summary Table

EXCEPTION		I10-a Due Diligence Documentation	I10-b Technical Docs	I10-c Advocacy Letter	I10-d Manufacturer Letter
I10-E1	General Red List	x		x	
I10-E2-E3	Various Small Components			x	
I10-E4	Proprietary Ingredients			x	x
I10-E5	Red List and Code	x	x	x	
I10-E6-E13	Various			x	
I10-E14	HCFCs in TIs		x	x	
I10-E15	PVC Wire in Residential			x	x
I10-E16	HFRs in Non-PVC Wiring		x	x	
I10-E17-E18	Various			x	

I10-a Due Diligence Documentation

Documents demonstrating genuine effort to exclude Red List products.

Communications must include requests to the parties supplying, and/or requiring the non-compliant material, as well as the response from those parties.

I10-b Technical Documentation

Legal, economic or contract documents that verify Exception requirements have been met, including:

- Official documents such as current business licenses, registrations, or permit documents
- Contracts or receipts showing transactions related to Exception requirements

3.0 Documentation Requirements

I10-c Advocacy Letter

A letter to the entity that provides or requires Red List products advocating for the elimination of Red List materials.

Advocacy is required for all non-compliant products that are part of a Living Building Challenge project, including those addressed in Specific Exceptions. There are two types of advocacy letters:

- Letters to the AHJ that requires Red List products be used, requesting the policy be changed
- Letters to the manufacturer providing the code-required but non-compliant material, requesting a Red List-compliant alternative

Only one type of letter is required for any given Exception, unless noted otherwise. Sample letter templates are posted on the project team resource page. See *Resources, Materials Petal Handbook*.

I10-c Manufacturer Letter

A letter from a manufacturer confirming information that is not otherwise available, such as a letter confirming there are no Red List materials in proprietary ingredients.

I11 EMBODIED CARBON FOOTPRINT

BASIC DOCUMENTATION

I11-1 Carbon Calculations

The input to and results from the selected carbon calculator showing TCO^2e for the project or an in-depth report outlining the methodologies, scope and findings of the professional analysis of embodied carbon life cycle.

I11-2 Carbon Offset Receipts

Receipt from the Living Future Carbon Exchange or other carbon offset program as proof of purchase.

I11-3 Optional Carbon Reduction Narrative

A one- to two-page narrative addressing:

- The process and findings from the initial carbon analysis
- The specific strategies employed by the project team to reduce embodied carbon.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-11 Exception Documentation Summary Table

EXCEPTION		I11-a Exception Narrative
I11-E1	Renovation Offset Reduction	x

I11-a **Exception Narrative**
Description of the calculation methodology and carbon reduction percentage based upon calculator used and extent of work for the project.

I12 RESPONSIBLE INDUSTRY

BASIC DOCUMENTATION

I12-1 **Wood Documentation**
Documents correlating wood in the project with FSC, salvaged or intentionally harvested sources, including:

- Receipts referencing FSC-certified wood acquisition and final chain of custody numbers
- Receipts from the seller/broker of all salvaged wood procurements
- An illustrated narrative documenting both why tree removal was required for construction or as part of a reforestation/restoration program, and the milling process to create finished goods.

I12-2 **Advocacy Letters**
Copies of letters written to the National Trade Associations and/or ASTM International requesting third-party standards for the metal, stone and rock industries.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-12 Exception Documentation Summary Table

EXCEPTION		I12-a Explanatory Narrative	I12-b Technical Documentation	I12-c Advocacy Letter	112-d Photographs
I12-E1	Intentional Harvest	x			x
I12-E2	Pending FSC Certification		x		
I12-E3	Invasive Species	x	x		x
I12-E4	Underwater Salvaged Wood	x	x	x	

I12-a **Additional Narrative**
Narrative with photos as necessary to show compliance with Exception requirements.

I12-b **Technical Documentation**
Legal, economic or contract documents that verify Exception requirements have been met, such as:

- Official documents such as current business licenses or registrations
- Contracts or receipts showing transactions related to Exception requirements

I12-c **Advocacy Letter**
Letter written to non-certified party advocating certification by the organization listed in Exception requirements.

I12-d **Photographs**
Photographs or other graphic documentation verifying that Exception requirements were met.

I13 LIVING ECONOMY SOURCING

BASIC DOCUMENTATION

Materials Tracking Table
A Materials Tracking Table* that includes cost information must be completed and provided in sortable Excel format. *See I10-1 Materials Tracking Table.*

*Cost information will be added to the Materials Tracking Table format in 2014. Project teams may be required to provide backup documentation of listed costs.

3.0 Documentation Requirements

I13-1 Distance Map
A map showing 500 km, 1000 km, 2,500 km and 5000 km radii from the site.

I13-2 Project Team Roster
Roster of each organization or individual participant on the Team, including name, role, office location, and proximity to the project site (in kilometers).

I13-3 Supporting Documentation
Documents stating manufacturer location information for each tracked product. Acceptable options include:

- Declare ID
- Manufacturer documentation (cutsheet, letter or other document that states the manufacturer location information).

EXCEPTION DOCUMENTATION

None at time of issue.

I14 NET POSITIVE WASTE

BASIC DOCUMENTATION

I14-1 Materials Conservation Management Plan
Completed Conservation Management Plan explaining how the project team optimized materials in design, construction, and operations phases, and how they planned for reduced waste at the project's end of life. Projects on sites with existing infrastructure also need to include the required Pre-building Audit Report.

I14-2 Diversion Table
Completed construction waste diversion table, in Excel format, showing percentages of waste diverted (by weight) in each category (metals; paper + cardboard; soil + biomass; rigid foam, carpet + insulation; and all others). The calculations must be based on tangible data that correlates to receipts provided.

I14-3 Diversion Documentation
Copies of receipts, recycling percentage reports and provider names for all tipping fees, recyclers, and building materials salvage services.

I14-4 Salvaged Materials Documentation
Noted architectural drawings showing location of salvaged items.

I14-5 Photographs
Photographs of specific designated on-site areas for separated or commingled construction waste.

3.0 Documentation Requirements

EXCEPTION DOCUMENTATION

I-14 Exception Documentation Summary Table

EXCEPTION		I14-a Exception Narrative	I14-b Technical Documentation	I14-c Advocacy Letters	114-d Photographs
I14-E1	Hazardous Materials		x		
I14-E2	Municipal Limitations			x	
I14-E3	Surplus to Project Team	x			x

I14-a **Exception Narrative**
Narrative explaining the relevant information for the Exception in question.

I14-b **Technical Documentation**
Legal, economic or contract documents that verify Exception requirements have been met, such as:

- Official documents such as current business licenses or registrations
- Contracts or receipts showing transactions related to Exception requirements.

I14-c **Advocacy Letters**
Letters to advocate for better waste reduction options.

I14-d **Photographs**
Photographs

3.0 Documentation Requirements

EQUITY PETAL

I15 HUMAN SCALE + HUMANE PLACES

BASIC DOCUMENTATION

I16-1 Human Scale Narrative
One-page illustrative narrative describing how the project has addressed the human scale and promotes culture and interaction among people and the community.

I16-2 Drawings and photos
Drawings or photos showing location and dimensions (when applicable) of required Human Scale elements.

I16-3 Calculations
Calculations showing total surface parking does not exceed maximum allowed percentages of project area.

EXCEPTION DOCUMENTATION

None at time of issue.

I16 UNIVERSAL ACCESS TO NATURE & PLACE

BASIC DOCUMENTATION

I16-2 ADA, Emissions and Waterway Access Statement
Signed statement affirming compliance of the project with ADA or ABA requirements by the Architect, that noxious emissions are not present and that all waterways have public access.

I16-3 Sun Shading Calculations
Diagrams demonstrating compliance with maximum shading allowances of adjacent properties, measured on the Winter Solstice at the solar noon.

I16-5 Waterway Access
Site plan showing access to and compliance with the requirements for all waterways.

EXCEPTION DOCUMENTATION

None at time of issue.

3.0 Documentation Requirements

I17 EQUITABLE INVESTMENT

BASIC DOCUMENTATION

I17-1 Project Costs
A summary of project costs, including soft costs, hard costs and land costs. Hard costs should include a line item for materials (should be consistent with total material costs in I-13 Living Economy Sourcing) as well as furnishings, fixtures, and equipment.

I17-2 Nonprofit Information
If not utilizing the Equity Living Future Exchange: Location of non-profit(s) and evidence of legal or registered status as a charity.

I17-3 Offset Receipt
If not utilizing the Equity Living Future Exchange: Evidence of payment for donation or offset (receipt, letter, etc.) of .5% of project cost.

EXCEPTION DOCUMENTATION

None at time of issue.

I18: JUST ORGANIZATIONS

BASIC DOCUMENTATION

I18-1 JUST Label
JUST label for project owner/developer, architect, MEP engineer, structural engineer, or landscape architect.

I18-1 Letters to Project Team
Copies of at least ten letters to additional project team members advocating for their participation in JUST.

EXCEPTION DOCUMENTATION

None at time of issue.

3.0 Documentation Requirements

BEAUTY & INSPIRATION PETAL

I19 BEAUTY + SPIRIT

BASIC DOCUMENTATION

I19-1 Beauty Narrative

A two- to four-page narrative written by the project designer or owner that describes how the project meets the intent of the Imperative. The narrative must be accompanied by photographs, diagrams and drawings that illustrate major ideas.

I19-2 Survey + Results

Survey and results from project occupants/users. Survey must state the Imperative, and inquire of respondents whether they think the project has succeeded, and include additional questions related to the beauty of the project based on the designer's narrative. Survey respondents must represent a randomized sampling of 10% of project occupants. Surveys may be administered online or in person. For single-family residences, testimonies from the home's occupants, visitors or family members may be used.

I20 INSPIRATION + EDUCATION

BASIC DOCUMENTATION

I20-1 Case Study Questionnaire

All projects: A complete ILFI Case Study Questionnaire, to be used as content for the public case study of the project on the Institute website.

I20-2 Open House

Non-residential and multifamily residential projects: At least one annual "open day" to educate the public about the project and its achievements. This "open day" shall be publicized to the community at large.

Single Family Residential Projects

At least one "open house" to educate the public about the project and its achievements. This "open house" shall be publicized to the community at large. Subsequent events are encouraged, but not required.

I20-3 Website

All projects: Educational web site (URL to be provided at submission) that shares information about the design, construction, and operation of the house. Performance metrics are encouraged to be included.

3.0 Documentation Requirements

I20-4 Owner's Manual

Non-residential and multifamily residential projects: A copy of the Operations and Maintenance Manual.

Single Family Residential Projects

A simplified Owner's Manual (2-3 pages) that explains any non-typical systems associated with achieving ILFI certification and other unique features of the home, to assist future owners/occupants. No interpretive signage or detailed O&M manual is necessary.

I20-5 Brochure

Non-residential and multifamily residential projects only: A simple brochure describing the design, environmental features, and how occupants can help maintain and operate the project.

I20-6 Signage

Non-residential and multifamily residential projects only: Interpretive signage that teaches visitors and occupants about the project. Signage shall describe the performance goals of the building and major systems and concepts used to achieve ILFI certification.

I20-7 Optional Video

An educational video describing the project's environmental features.

EXCEPTION DOCUMENTATION

None at time of issue.

WHITE PAPER

LOCAL ORDINANCES RELATED TO THE LIVING BUILDING CHALLENGE

SEPTEMBER 2012

CONTENTS

King County GreenTools
Powered by the Solid Waste Division

1. INTRODUCTION

Over the last 3 years, a handful of cities and counties in Washington state have adopted ordinances in support of the Living Building Challenge. While each of these ordinances vary in their scope and implementation, all are intended to stimulate advanced green building practices within their jurisdiction and/or to define a pathway for Living Building Challenge projects to be shepherded through the regulatory process.

Currently, King County and the cities of Redmond, Mount Lake Terrace, Snoqualmie and Kirkland are considering the adoption of an ordinance promoting Living Buildings. This white paper provides an analysis of the existing legislation and offers recommendations for the adoption and implementation of an ordinance encouraging Living Buildings through city and county land use and building codes. It is intended to serve as a resource to King County GreenTools program staff in the evaluation and the development of their own Living Building Challenge demonstration ordinance in collaboration with other local municipalities.

Intended audiences include:

- County and City building and planning department staff charge with developing, adopting and implementing local ordinances
- Seattle/King County Department of Public Health
- City and County Councils and local planning commissions

LIVING BUILDING CHALLENGE

Cascadia Green Building Council launched the Living Building Challenge℠ in 2006 in response to the need for a higher bar to be set in defining green building standards. During this time, the U.S. Green Building Council's LEED rating system was gaining tremendous market penetration. State and local governments were adopting LEED standards for publically funded buildings and encouraging the use of LEED in private sector development through policies and incentives. While the uptake of LEED (and many other green building standards such as Built Green, Energy Star, etc.) has been and continues to be an important step towards reducing the negative impact related to buildings and development patterns, the Living Building Challenge was launched to establish a clearly articulated end goal for sustainability in the built environment.

LIVING BUILDING CHALLENGE IMPERATIVES

SITE
Limits to Growth
Urban Agriculture
Habitat Exchange
Car Free Living

WATER
Net Zero Water
Ecological Water Flow

ENERGY
Net Zero Energy

HEALTH
Civilized Environment
Healthy Air
Biophilia

MATERIALS
Red List
Embodied Carbon Footprint
Responsible Industry
Appropriate Sourcing
Conservation + Reuse

EQUITY
Human Scale + Humane Places
Democracy + Social Justice
Rights to Nature

BEAUTY
Beauty + Spirit
Inspiration + Education

The Living Building Challenge applies to development at all scales, from new construction and renovations to entire communities and even infrastructure projects such as bridges, roads, and parks. The Challenge is comprised of 20 imperatives, or requirements, within seven performance areas: Site, Water, Energy, Health, Materials, Equity and Beauty which define the most advanced measures of sustainability possible in the built environment today. Living Buildings are ultra-efficient and generate all of their own energy onsite using renewable sources; capture and treat all of their own water; are constructed of nontoxic, sustainably sourced materials; are only built on previously developed sites; and are beautiful and inspiring to their inhabitants.

CODE + REGULATORY BARRIERS

In 2009, Cascadia published two reports, funded in part through Washington State and King County, identifying code and regulatory barriers encountered by projects pursuing the Living Building Challenge (see *Resources* section for a link to code research). These studies identified common obstacles within land use and building codes that projects teams were likely to encounter and made recommendations for providing regulatory support for Living Buildings through the approvals process.

Both King County and the state of Washington have shown leadership in promoting the Living Building Challenge and in seeking to identify and remove regulatory hurdles. Washington Department of Ecology's 2009 update to the Beyond Waste Plan states one of their priorities as:

> *Continue to identify and remove regulatory barriers that prohibit and/or contradict green building standards in the State Building Code, local building codes and other applicable state regulations, specifically those related to land use, zoning, stormwater management, water resources, and shoreline protection. (WA Dept. of Ecology, 2009 Beyond Waste Plan, Recommendation GB-3)*

In addition, the Plan outlines recommendation actions and establishes the five year milestone that:

> *"At least five buildings are built to the Living Building standard in Washington." (WA Dept. of Ecology, 2009 Beyond Waste Plan, Milestone GB-G)*

King County is currently in the 2012 update process of its countywide comprehensive plan. A proposed revision to Chapter 2 on Sustainable Development, states:

> *King County should encourage the utilization of Leadership in Energy and Environmental Design (LEED) rating system, Living Building Challenge, Sustainable Sites Initiative, Salmon Safe, Built Green, or other comparable sustainable development rating systems in public and private development.*

LIVING BUILDING LEGISLATION IN WASHINGTON STATE

The following section of this white paper provides an overview of the four municipalities in Washington state that have adopted or are in the process of adopting legislation related to the Living Building Challenge (Seattle, Bainbridge Island, Clark County, Ellensburg). History, scope and lessons learned are discussed for each one in order to analyze how they compare to each other and, more importantly, what can be learned to inform the adoption of future

legislation. Recommendations for future Living Building Challenge ordinances are provided in the final section of this report, followed by a list of resources and links.

2. EXISTING ORDINANCES

SEATTLE LIVING BUILDING PILOT PROGRAM ORDINANCE

History

Seattle City Council adopted Ordinance 123206 in December 2009 establishing the Living Building Pilot Program. The program is intended to promote the goals of the Living Building Challenge by providing flexibility in the application of development standards in Seattle's Land Use Code. The program sunsets on January 20, 2013 and is limited to development of up to 12 projects. According to program staff, the Living Building Pilot Program is expected to be extended another 2 years after its sunset date.

Scope

Eligible projects in the Living Building Pilot Program must be outside the city's shoreline jurisdiction and *must* go through the City's design review process. Design review is a component of Seattle's Master Use Permit (MUP) application that is required for most new commercial, mixed-use and multifamily developments. As such, single-family residential buildings are not eligible under the pilot program.

Interested applicants submit a plan demonstrating how their proposal meets the goals of the Living Building Challenge. Certification under the Challenge is encouraged but not required by the city. The Pilot Program allows projects that are not able to meet all of the Challenge's 20 imperatives to meet a minimum of 60% (12 imperatives), plus:

- 75% reduction in energy use over a comparable building
- 75% reduction in water use over a comparable building
- 50% of stormwater managed on site

A project may request departures from land use standards that propose a conflict in pursing the Living Building Challenge. The design review board is charged with reviewing each departure request and making a recommendation to the Director as to whether or not the departure would result in a development that better meets the goals of the Living Building Challenge**.** Applicants may request departures from the following standards:

- Use provisions (i.e. permitted, prohibited or conditional use), but only for accessory uses that would directly address a requirement of the Living Building Challenge
- Residential density limits
- Downtown view corridor requirements
- Floor area ratios
- Maximum size of use
- Structure height above limit
- Parking requirements
- Solid-waste containers storage
- Downtown open space
- Downtown parking access
- Street, alley and easement requirements

In addition, projects participating in the Pilot Program move to the front of the permit line and receive a coordinated staff review, intended to help identify and resolve issues for complex projects

before they are stalled in the permitting process.

The applicant is required to provide proof that they have met the pilot program requirements at the end of the project. The ordinance includes financial penalties for projects that fail to meet the requirements after construction is completed. If the applicant is not able to bring the project into compliance, the city may apply monetary penalties up to 5% of the project's construction value.

It is important to note that the Living Building Challenge Pilot program provides flexibility under Seattle's Land Use Code only. Code interpretations that may need to be addresses from the building, energy, electrical or mechanical codes are made administratively. The city has established an Innovation Advisory Committee (IAC) to make recommendations on administrative appeals under these codes.

Staffing Resources

Seattle has a primary point of contact responsible for their pilot program. Staffing commitment has thus far equaled approximately 0.1 FTE per project entering into the program.

Projects

One project has been permitted under the Living Building Challenge Pilot program and 2 others are in the process of review:

- The Bullitt Center, currently under construction, a 6-story, 50,000-sf office building in the Capitol Hill neighborhood.
- Stone34, a proposed five story, 120,000-sf office building in the Freemont neighborhood.
- A planned 12-unit multifamily co-housing community in Capitol Hill.

Lessons Learned

As the first and only legislation related to the Living Building Challenge currently in use, there are significant lessons learned and recommendations for amendments to Seattle's Living Building Pilot Program. The International Living Future Institute (ILFI, administrators of the Living Building Challenge) and Cascadia Green Building Council are currently in dialogue with the city regarding proposed changes.

The city is considering an amendment to the current legislation to allow additional building height 20 feet above zoned height limits in certain land use zones. The amendments would also exempt ground floor retail space from being counted against density limits. These two amendments arose from the proposed Stone34 project and have sparked considerable community resistance particularly related to the height allowance.

Because Seattle's current legislation does not require projects to actually certify under the Living Building Challenge, a major loophole exists in Seattle's program potentially allowing a developer to receive code departures without having to comply with the Challenge's rigorous standards. ILFI has testified to Seattle city council on July 9, 2012 with the recommendation to either require project teams to certify or remove the name "Living Building" from Seattle's pilot program.

Another important lesson learned from Seattle's program is the oversight related to the permitting around onsite water systems. The potential code departures identified by Seattle's Department of Planning and Development did not include those related to water supply, reuse or onsite treatment, specifically because these are typically permitted through other regulatory bodies (Seattle Public Utilities, Seattle/King County Public Health, King County Wastewater Treatment Division, Washington State Department of Health). As a result, pilot program participants have encountered difficultly seeking approvals from other agencies, sometimes within the same department, who have not adopted incentives for Living Building projects.

CLARK COUNTY SUSTAINBLE COMMUNITIES ORDINANCE

History

Clark County Board of County Commissioners approved the Sustainable Communities Ordinance in July 2010 establishing a pilot program for residential, commercial and mixed-use projects pursuing the Living Building Challenge. Enrollment in the pilot program is limited to a total of six projects and the program will sunset in 2015. The ordinance was an outcome of an 18-month research analysis by Clark County and City of Vancouver to identify code and regulatory barriers for sustainable, affordable residential development (see Resources section for a link to the research).

Scope

Similar to Seattle's Living Building Pilot Program, the Sustainable Communities program was established to allow code flexibility for projects pursuing advanced green-building strategies. Eligible projects within the county's urban areas include residential, commercial and mixed-use developments with a legal lot of record. Within rural areas, only residential projects with a legal lot of record are eligible to apply.

Participating projects must meet a minimum of 12 of the 20 imperatives outlined in the Living Building Challenge, including:

- 75% reduction in energy use over a comparable building (not including energy produced onsite)
- 75% reduction in water use over a comparable building (not including harvested rainwater)
- 100% of stormwater managed on site
- Inspiration and education (LBC imperative 20)

Eligible projects may request departures from the county's land use standards that propose a conflict in pursing the Living Building Challenge. The responsible official is required to consider the extent to which the anticipated environmental performance of the building would be substantially compromised without the departures.

Specifically, departures from the following codes may be requested:

- Onsite Septic Systems
- Rural Cluster Development
- Minimum Setbacks
- Minimum Required Parking
- Location of Parking Facilities
- Driveways

- Turnaround Design
- Connection to Public Sewer
- Sewer Waiver Requirements
- Connection to Public Water
- Conditions Required for Not Connecting to Water
- Standards – Stormwater Control

Unlike Seattle's program, the Sustainable Communities pilot program does not outline penalty language for applicants who fail to meet the requirements of the program.

Staffing Resources

Clark County has a primary point of contact responsible for their pilot program. Staffing commitment is approximately 0.1 FTE for overseeing the program.

Projects

According to county staff, two potential projects have been in conversations with the county about using the pilot program. Both are private, single family residences located in the rural area.

Lessons Learned

While no projects have actually gone through permit review under Clark County's Sustainable Communities pilot program, lessons learned are likely to be similar to those encountered by Seattle's program due to their similarities. The program's lack of certification requirements and penalty language may pose challenges to the county when attempting to verify that a project has met the program requirements or in holding a developer accountable at the end of the project.

Because Clark County's pilot program applies largely to rural areas, the requirements for net zero water and ecological water flow (Imperatives 5 and 6 of the Living Building Challenge) are easy to meet with conventional strategies within these areas (i.e. wells and septic systems). The 75% reduction in water use requirement should be re-evaluated based on rural versus urban projects and modified to meet the intent of the Living Building Challenge water petal. In addition, future updates to the program should include requiring Limits to Growth (Imperative 1) such that the program also requires that pilot projects be built on previously developed land.

Input from county staff pointed towards the need for greater financial incentives built into the pilot program. Allowing accessory dwelling units (ADUs) and tying the pilot program to similar density bonuses allowed under their cottage housing code were two ideas that surfaced, as well as potentially waiving building permit fees for single family projects.

BAINBRIDGE ISLAND HOUSING DESIGN DEMONSTRATION ORDINANCE

History

Bainbridge Island adopted the Housing Design Demonstration Ordinance in August 2009, allowing the development of a limited number of demonstration projects that increase the variety of housing choices available and encourage sustainable development through the use of development standard incentives. The ordinance expires August 2012, however, according to city staff it is expected to be

extended through end of 2013 and may be adopted in the future as a permanent program. A maximum of 3 projects may be accepted through the Living Building Challenge compliance pathway.

Scope

The Housing Design Demonstration Ordinance applies to single-family residential subdivisions, mixed-use/multifamily and multifamily developments. Only projects located within the Winslow study area of the Winslow Master Plan and the Winslow sanitary sewer system service area are eligible.

The ordinance provides three tiers of incentives for projects pursing affordable housing and green building strategies. Projects certifying under the Living Building Challenge receive the greatest incentives (tier 3), which include flexibility in applying the city's development standards and a density bonus. Tier 3 projects are eligible for density bonuses up to 2.5 times the base density limit or a maximum bonus mixed-use FAR. The ordinance also calls out flexibility when applying the following development standards without a variance:

- setback and buffer area reductions
- flexible lot coverage and size
- reduced parking requirements

Applicants in the program are required to participate in one or more community meetings during the permit stage. After construction and prior to issuance of the certificate of occupancy, the applicant must show proof of initial project compliance as to the Site, Materials, Indoor Quality and Beauty/Inspiration components of the Living Building Challenge (those that do not require an occupancy period) and that the project is likely to achieve the elements of Energy and Water following 12 months of occupancy as required under Living Building Challenge certification. The applicant must then submit a report to the city following 12 months of occupancy, demonstrating that full certification has been met.

Projects

While the city has accepted several projects under the program, none have pursued the Tier 3 compliance path using the Living Building Challenge.

Lessons Learned

According to city staff, projects have used the affordable housing compliance pathway to achieve the Tier 3 incentives rather than the Living Building Challenge route. To date, there has been some push back from the community regarding the incentives provided under the program, arguing that developers are reaping a greater reward than then the public is benefiting. Opportunities exist to increase outreach around the Living Building Challenge compliance pathway and to provide education regarding the public benefits related to these types of projects.

ELLENSBURG DRAFT DENSITY BONUS FOR LIVING BUILDING CHALLENGE PROJECTS

History

In 2010, Ellensburg hired a consultant team to develop a citywide Energy Efficiency and Conservation Strategy in collaboration with an update to the City's land development code. The intent of this joint effort was to update and align the land use code to support future development that was more energy efficient and that improved walkability in the community. Included in the update is a new section (Article 3, Section 15.33) providing density bonuses for projects achieving the Living Building Challenge. The code update is currently in the public review and comment period, and is expected to be adopted in summer 2012.

Scope

The proposed update to the land development code includes 4 tiers of density incentives that promote increasing levels of green building performance and higher energy efficiencies. Projects achieving the Living Building Challenge receive the highest incentive level, up to 150% density bonus for single family, duplex and townhomes developments within the city's residential suburban and low-density zones. Projects in higher density areas are eligible for FAR increases between 0.25- 0.5 depending on the existing zoning.

Similar to Bainbridge Island's Housing Design program, Ellensburg's draft code language requires certification and states:

> "For projects pursuing the Living Building Challenge for the purpose of a density bonus, the applicant must show proof of pursuing ongoing certification during construction for all required elements. After construction and prior to issuance of the certificate of occupancy, the applicant must show proof of initial project compliance as to the site, materials, indoor quality and beauty/inspiration components of the Living Building Challenge and that the project is likely to achieve the elements of energy and water following 12 months of occupancy as required under Living Building Challenge certification. For those elements of energy and water that require occupancy of the building for 12 months for Living Building Challenge certification, the applicant must submit a report to the city following 12 months of occupancy, demonstrating its progress towards meeting these remaining elements of the Living Building Challenge standard. If certification of those elements has not been achieved, the applicant must provide quarterly reports of progress towards certification of these elements, including additional steps and timeline that will be taken to achieve certification."

Projects

None

Lessons Learned

N/A

3. RECOMMENDATIONS

The lessons learned from previous legislation provide important guidance for King County and other cities. It is highly encouraged that any jurisdictions take the following recommendations into account when looking to develop and adopt legislation related to the Living Building Challenge.

1. **Require project certification or petal recognition at a minimum**

   Any legislation that provides incentives for Living Building Challenge projects must require that projects actually follow through and certify upon completion. Without such language, an ordinance may unknowingly provide a developer with substantial leeway in meeting code requirements but not have the leverage to actually enforce that the intended performance levels are being met. The term "Living Building Challenge" is a protected trademark and project teams may not call themselves a "Living Building" until certification through ILFI is achieved. Legal issues have arisen where a municipality advertises its program as a "Living Building Pilot Program" but does not actually require certification, which has undermined both the credibility of the brand and has created community concern.

   At a minimum, it is required that any municipality adopting legislation related to Living Buildings require "Petal Recognition". This is a partial certification compliance path that requires at least three petals to be achieved, one of which must be Water, Energy or Materials. Petal recognition projects must also comply with Limits to Growth imperative[1] (requiring development on previously disturbed properties only) and the Inspiration and Education imperative. Certification under the Institute's Net Zero Energy Building (NZEB) certification can offer a third option for compliance. Incentives should be tiered such that fully certified Living Buildings receive a higher level of incentive/code flexibility and Petal Recognition projects receive a lower level of incentive/code flexibility.

   In addition to certification, financial penalties such as those referenced in Seattle's ordinance, are critical to ensure compliance. A municipality should evaluate the appropriate level of financial penalties for noncompliance, high enough that a developer cannot choose to "buy out", yet at the same time not deterring participation with overly burdensome penalties. Penalties must be tied to certification, requiring project teams to follow through with certification after the one-year occupancy period.

2. **Clarify criteria and process for allowing code departures**

   Several of the existing ordinances include provisions for flexibility in applying development standards and include substantial height and density bonuses. While these offer valuable

[1] The Limits to Growth Imperative requires that Living Building projects are only built on previously developed land. No greenfield development is allowed under the program. Any jurisdiction adopting legislation that provides incentives for Living Building Challenge projects should be aware that it would only apply to previously developed sites.

incentives and encourage the development of Living Building Challenge projects, municipalities need to be cautious that the criteria and process for allowing code departures relates directly to a project's ability to meet the requirements of the Challenge. Clark County's ordinance specifically calls out that "the responsible official is required to consider the extent to which the anticipated environmental performance of the building would be substantially compromised without the departures". Seattle has similar language and has established an independent, third party advisory group tasked with providing recommendations to the responsible official on potential code departures. This is highly recommended, particularly in cases where the departure may conflict with the intent of the development standards. Identifying a clear process that includes public participation and support is critical.

Height increases and density bonuses provide meaningful financial incentives to support a Living Building Challenge project, but may not be directly related to a project's technical ability to achieve certification. In these instances, municipalities should clearly define acceptable height and density allowances within the current limitations of existing zoning and adhere to best practices around design review and community input to guide decision-making. In many cases, the rigorous requirements of the Living Building Challenge such as net zero energy will drive design decisions regarding building heights. Cities should be cautious in defining parameters for acceptable height departures that are not related specifically to meeting the Living Building Challenge, and strictly require certification as a way to address potential loopholes in the ordinance.

3. Require project team consultation and staff training

The Living Building Challenge establishes a set of rigorous sustainability performance metrics that all projects must meet (i.e. net zero energy, net zero water). Certification is based on actual, not modeled or projected, performance after a minimum of 12-months of occupancy. Because it is quite different from other types of green building rating systems, such as LEED or Built Green, there is a need for a clear understanding behind the intent of the Challenge and how it is achieved, both in terms of potential permit applicants as well as staff charged with review, approval and inspection of demonstration projects.

Like all green building rating systems, the Living Building Challenge standard has expanded in breadth and scope over time and continues to evolve. It is therefore recommended that any ordinance related to the Challenge specifically require that project teams certify under the most current version of the standard. Permitting incentives offered to projects pursuing the Challenge should be required to show proof of registration of their project through the International Living Building Institute and encouraged to participate in early design stage consultation with the municipality and/or with the Institute to make sure the project is on track.

City and county staff charged with review, approval and inspection of pilot projects should be required to attend an in depth workshop on Understanding the Living Building Challenge or equivalent training. Public workshops and customized trainings should be tailored to the needs to the staff. In some cases, these staff can then charge for their time during project review and

consultations. Consider co-hosting staff training with other local governments to share in the training costs and build regional support for the pilot program.

4. **Encourage participation with public health department and other regulatory agencies**
It is highly encouraged that any municipality looking to adopt legislation related to the Living Building Challenge collaborate with other regulatory agencies responsible for the review and approval of a participating project. For instance, in King County the local Public Health agency will likely be a critical partner in approving Living Building Challenge compliant water systems. Coordinating directly with state-level agencies that may also be involved in the permitting process is critical, including the Washington Department of Health and Department of Ecology.

   Coordination between land use review and building review and inspection may require that staff work more closely together than is typical. In one instance, a non-Red List material was approved by a plans reviewer but the approved alternative had not been communicated to the building inspector, causing a construction delay. A single point-of-contact responsible for championing the project through both the permitting and inspection phases is recommended to address any conflicts that may arise from various department or agency reviews. Memorandums of Understanding may be needed to formalize the role of each department, agency or utility during the permitting process, including those involved with the review and approval of onsite water and energy systems, stormwater management, urban agriculture and alternative building materials.

5. **Implementation recommendations**
It is essential to align code incentives for Living Building Challenge projects with city and county policies related to environmental protection, climate change, waste prevention, public health, economic development and other related priorities in city and county comprehensive plans. Tapping into the existing code update process may help streamline the process for adopting new legislation related to Living Buildings and allow incentives to be more fully integrated into the code.

   Require all new programs to be evaluated and updated over time. All of the pilot program ordinances described earlier in this report have a sunset date and define a limited number of projects that are eligible to apply. This is a recommended step as it allows staff to evaluate the program's ongoing effectiveness and update the program based on lessons learned.

4. SAMPLE DRAFT MOTION

The following sample motion language is intended solely to provide guidance to municipalities in drafting their own legislation related to Living Buildings. It is expected that each locale will customize the language based on their specific goals.

WHEREAS, buildings are responsible for a large portion of negative environmental impacts, accounting for approximately 50% of U.S. carbon emissions and contributing to climate change, persistent toxins in the environment, raw resource consumption, impacts to water supply, flooding, habitat loss and other related concerns;

WHEREAS, the Living Building Challenge defines the most advanced measures of sustainability in the built environment available today; with projects that meet the Challenge generating all of their own energy from renewable sources, capturing and treating all of its water onsite, eliminating toxic materials and chemicals, and providing an educational model for other projects to follow;

WHEREAS, Living Buildings require a fundamentally different approach to building design, permitting, construction, and operations that may necessitate flexibility in current codes and regulatory processes in order to support their development;

THEREFORE, this ordinance establishes a Pilot Program supporting the development of new buildings and the retrofitting of existing buildings that meet the standards defined in the Living Building Challenge.

GOAL
The goal of the Pilot Program is to support the development of buildings that meet the rigorous standards defined by the Living Building Challenge by creating a coordinated process of regulatory review and allowing flexibility in code requirements that might otherwise discourage or prevent a project from meeting this standard. The Pilot Program is also intended to help identify potential code conflicts for future updates and provide a model of innovative projects that demonstrate advanced levels of sustainability.

MINIMUM REQUIREMENTS
[*Full certification path*] Eligible applicants are required to certify projects through the Living Building Challenge under the current version at the time of project registration. Participating projects must meet all Imperatives required by the Challenge for a particular building typology.

[*Partial certification path*] Eligible applicants are required to certify as "Petal Recognition" projects through the Living Building Challenge under the current version at the time of project registration. Participating projects must meet all Imperatives required for Petal Recognition for a particular building typology. This compliance path requires achievement in at least 3 petals, one of which must be Water, Energy or Materials and includes Limits to Growth and Inspiration + Education imperatives.

CODE DEPARTURES

Departures from code requirements may be allowed only if an applicant demonstrates that the departure is necessary to meet the requirements of the Living Building Challenge *and* that it does not conflict with the intent of existing design standards. In the event that a potential departure is called into question, the International Living Future Institute will be tasked with reviewing and providing a recommendation to the responsible official regarding the applicability of the departure in meeting the requirements of the Living Building Challenge.

Participating projects may be granted departures in the following code sections [to be modified for each jurisdiction as applicable]:

- Use provisions (i.e. permitted, prohibited or conditional use), but only for accessory uses that would directly address a requirement of the Living Building Challenge
- Residential density limits
- Floor area ratios
- Maximum size of use
- Structure height above limit
- View corridors
- Parking requirements and access
- Open space
- Street, alley and easement requirements
- Onsite water systems
- Connection to public sewer and water
- Stormwater management
- Cluster developments
- Minimum setbacks

PROCESS FOR CERTIFICATION

Applicants must show proof of Living Building Challenge project registration through the International Living Future Institute, and must demonstrate how each Imperative will be met through the permitting process. After construction and prior to issuance of the certificate of occupancy, the applicant must show proof of initial project compliance (a preliminary audit by ILFI is recommended) for all Site, Health, Materials, Equity and Beauty imperatives. After 12 months of continuous occupancy, the applicant must submit a report to the responsible official demonstrating compliance with the Energy and Water imperatives and proof of certification. If certification is not achieved, the applicant must provide quarterly reports of progress towards full (or partial) certification, including additional steps and timeline that will be taken to achieve compliance.

PENALTIES

Failure to demonstrate compliance of the above minimum requirements is subject to penalties as defined here [to be modified for each jurisdiction as applicable].

PROGRAM EVALUTION

The program will be evaluated on an annual basis in order to assess the effectiveness of the Pilot Program in meeting its desired goals. The program will be open to a total of [X] number of projects or a total of [X] number of years, whichever come first.

5. FURTHER RESOURCES

Living Building Challenge
www.livingbuildingchallenge.org

Research
Code and Regulatory Barriers to the Living Building Challenge for Sustainable, Affordable, Residential Development (SARD), June 2008
https://ilbi.org/education/reports/SARD

Code, Regulatory and Systemic Barriers Affecting Living Building Projects, July 2009
https://ilbi.org/education/reports/codestudy3

Existing Policies and Ordinances
Department of Ecology Beyond Waste Plan, 2009 update:
https://fortress.wa.gov/ecy/publications/publications/0907026.pdf

Seattle Living Building Pilot Program
www.seattle.gov/dpd/Permits/GreenPermitting/LivingBuildingPilot/default.asp

Clark County Sustainable Communities Pilot Program
http://www.co.clark.wa.us/environment/sustainability/communities.html

Bainbridge Island Housing Design Demonstration Program(Chapter 2.16.020 Q)
http://www.codepublishing.com/wa/bainbridgeisland/

Ellensburg density bonuses for Living Building Challenge projects (Article 3, section 15.33)
http://www.ci.ellensburg.wa.us/DocumentCenter/Home/View/736

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DRAFT Components of City of Shoreline
Living Building Challenge Ordinance

WHEREAS, buildings are responsible for a large portion of negative environmental impacts, accounting for approximately 50% of U.S. carbon emissions and contributing to climate change, persistent toxins in the environment, raw resource consumption, impacts to water supply, habitat loss, and other related concerns; and

WHEREAS, the Living Building Challenge establishes goals for building owners, architects, design professionals, engineers, and contractors to build in a way that provides for a sustainable future through buildings informed by their region's natural characteristics, which generate all of their own energy from renewable resources, capture and treat all of their water, operate efficiently, and are aesthetically pleasing; and

WHEREAS, Living Buildings require a fundamentally different approach to building design, permitting, construction, and operations that may necessitate flexibility in current codes and regulatory processes in order to support their development; and

WHEREAS, The City of Shoreline (City) has been a leader in encouraging sustainable building through construction of a LEED Gold City Hall, adoption of regulations through the 185th Street Station Subarea Plan that require green building in areas near future light rail stations, and identifying energy and water efficient buildings as a primary strategy to meet its greenhouse gas reduction targets adopted through the Climate Action Plan, and initiated other processes, regulations, and incentives to encourage the private market to follow the City's lead; and

WHEREAS, the goal of this ordinance and implementing regulations is to encourage the development of buildings that meet the Living Building Challenge (full Living Building Certification or Petal Recognition), according to the criteria in the International Living Future Institute's certification programs, through a variety of incentives; and

WHEREAS, the City Council designated adoption of a Living Building Challenge Ordinance and consideration of a Petal Recognition Program as priority strategies for 2016-2019 on September 14, 2015, thereby requesting the Department of Planning and Community Development and the Planning Commission to develop recommendations for implementing the Living Building Challenge Program within the City of Shoreline;

NOW, THEREFORE, this ordinance establishes Living Building Challenge and Petal Recognition Programs supporting the development of new buildings and the retrofitting of existing buildings that meet the standards defined by the International Living Futures Institute (ILFI).

BE IT ORDAINED BY THE CITY OF SHORELINE AS FOLLOWS:
(placeholder for specific amendment language)

Application requirements. In order to qualify for the Living Building Challenge Program, an applicant shall submit a complete application pursuant to Section 20.30.297, and a plan demonstrating how their project will meet each of the imperatives of the Living Building Challenge, including an overall design concept, proposed energy balance, proposed water balance, and descriptions of innovative systems. In addition, an applicant shall include a description of how the project serves as a model for testing code improvements to stimulate and encourage Living Buildings in the city.

Qualification process. An eligible project shall qualify for the Living Building Challenge Program upon determination by the Planning & Community Development Director (Director) that the applicant has complied with the application requirements of subsection 20.30.297.

Minimum standards. A qualifying project under the Living Building Challenge Program shall meet full Living Building Certification by achieving all of the imperatives of the International Living Future Institute's (ILFI) Living Building Challenge 3.0 certification. If unable to attain full certification, certain incentives will still be available for projects that meet ILFI Living Building Challenge 3.0 Petal Recognition Program by attaining:

1. At least three of the seven performance areas, or "Petals," of the ILFI Living Building Challenge 3.0 program (Place, Water, Energy, Health and Happiness, Materials, Equity, and Beauty), among which are at least one of the following three petals: Water, Energy, or Materials; and
2. Meeting 12 (60%) of the imperatives of the Living Building Challenge; and
3. 75% reduction in energy use over a comparable building; and
4. 75% reduction in water use over a comparable building; and
5. 75% of stormwater managed on site; and
6. If approved by King County Public Health, no potable water is used for non-potable uses.

Incentives for projects qualifying for Living Building Challenge Program or Petal Recognition.

1. A project qualifying for the Living Building Challenge Program may employ a structure height bonus up to 10 feet for a development in a zone with a height limit of 45 feet or less.
2. A project qualifying for the Living Building Challenge Program may employ a structure height bonus up to 20 feet for development in a zone with a height limit greater than 45 feet.
3. A rooftop feature of a project qualifying for the Living Building Challenge Program may extend above the structure height bonus provided in subsections 20.50.020 or 20.50.050. if the extension is consistent with the applicable standards established for that rooftop feature within the zone.
4. A project qualifying for the Living Building Challenge or Petal Recognition Program may be granted a waiver of stormwater fees.
5. A project qualifying for the Living Building Challenge or Petal Recognition Program may be granted departures from Development Code requirements:

Criteria for departures. Departures from Development Code requirements for projects qualifying for the Living Building Challenge or Petal Recognition Program pursuant to Section xx.xx.xxx may be allowed if an applicant demonstrates that the departure would result in a development that better meets the intent of adopted design guidelines, or that the departure would result in a development that better meets the goals of the Living Building Challenge Program and would not conflict with adopted design guidelines. In making this recommendation, the Director shall consider the extent to which the anticipated environmental performance of the building would be substantially compromised without the departures.

Scope of departures. In addition to the departures allowed under subsection 20.30.297, departures for projects qualifying for the Living Building Challenge or Petal Recognition Program may also be granted for the following:

1. Permitted, prohibited, or conditional use provisions, but only for accessory uses that would directly address an imperative of the Living Building Challenge 3.0, including but not limited to uses that could re-use existing waste streams or reduce the transportation impacts of people or goods;
2. Residential density limits;
3. Maximum size of use;
4. Parking requirements;
5. Setback and lot coverage standards;
6. Standards for storage of solid-waste containers;
7. Open Space requirements;
8. Standards for structural building overhangs and minor architectural encroachments into the right-of-way; and
9. Connection to public water and sewer.

Compliance with minimum standards.

1. After construction and prior to issuance of the Certificate of Occupancy, the applicant must show proof of initial project compliance as to the Site, Materials, Indoor Air Quality, and Beauty/Inspiration components of the Living Building Challenge Program (those that do not require an occupancy period), and that the project is likely to achieve the elements of Energy and Water following 12 months of occupancy as required under the Living Building Challenge certification.
2. No later than two years after issuance of a final Certificate of Occupancy for the project, or such later date as may be allowed by the Director for good cause or a phased project, the owner shall submit to the Director a report demonstrating how the project complies with the standards contained in subsection xx.xx.xxx. Compliance must be demonstrated through an independent report from a third party. The report must be produced by ILFI or another independent entity approved by the Director.
3. If the Director determines that the report submitted provides satisfactory evidence that the project has complied with the standards contained in subsection xx.xx.xxx, the Director shall send the owner a written statement that the project has complied with the standards of the Living Building Challenge Program. If the Director determines that the project does not comply with the standards in subsection xx.xx.xxx the Director shall notify the owner of the aspects in which the project does not comply. Nothing in the written statement or participation in the Living Building Challenge Program shall constitute or imply certification of the project by ILFI as a Living Building under the Living Building Challenge^{SM}. Components of the project that are included in order to comply with the minimum standards of the Living Building Challenge Program shall remain for the life of the project.
4. Within 90 days after the Director notifies the owner of the aspects in which the project does not comply, or such longer period as the Director may allow for good cause, the owner may submit a supplemental report demonstrating that it has made alternations or improvements such that the project complies with the standards in subsection xx.xx.xxx.
5. If the owner fails to timely submit the report required by subsection xx.xx.xxx or to

demonstrate compliance with the standards contained in subsection xx.xx.xxx, or if the owner fails to submit a supplemental report within the time allowed pursuant to subsection xx.xx.xxx, the Director shall determine that the project has failed to demonstrate compliance with the standards contained in subsection xx.xx.xxx, and the owner shall be subject to the penalty in subsection xx.xx.xxx.

Penalties for Non-compliance with the Living Building Challenge Program.

1. Failure to submit the report required by subsection xx.xx.xxx by the date required is subject to a penalty of $500 per day from the date the report was due to the date it is submitted.
2. Failure to demonstrate compliance with the provisions contained in subsection xx.xx.xxx is subject to a maximum penalty of five percent of the construction value set forth in the building permit for the structure based on the extent of noncompliance with the standards contained in subsection xx.xx.xxx.

Potential Additional Components.

Transportation Management Program. The applicant will provide a Transportation Management Program (TMP), consistent with requirements for TMPs, which demonstrates, to the satisfaction of the Planning & Community Development and Public Works Directors, that no more than 40 percent of trips to and from the development will be made using single-occupant vehicles (SOVs).

1. For purposes of measuring the percent of trips to and from the development made using SOVs in the TMP, the number of SOV trips shall be calculated for the p.m. peak hour in which an applicant expects the largest number of vehicle trips to be made by employees at the site (the p.m. peak hour of the generator).
2. Compliance with this subsection xx.xx.xxx does not affect the responsibility of any employer to comply with Shoreline's Commute Trip Reduction (CTR) Ordinance.

Energy management plan. The applicant will provide an energy management plan, approved by the Superintendent of Seattle City Light, demonstrating specific energy conservation or alternative energy generation methods or on-site electrical systems that together can ensure that the existing electrical system can accommodate the projected loads from the development. The approved energy management plan shall be submitted prior to issuance of a Building Permit. The Director, after consulting with the Superintendent of Seattle City Light, may condition the approval of the Building Permit on the implementation of the energy management plan.