

DIRECTOR'S REPORT AND RECOMMENDATION

Living Building Pilot Program and Green Building Amendments

Introduction

From August, 2013, through January, 2015, the Department of Planning and Development (DPD) led a process to evaluate and propose revisions to the Living Building Pilot Program ("the Program"). This work responds to the City Council Resolution 31400, adopted on June 6, 2013, directing DPD to:

- 1) Establish a technical advisory group (TAG) to advise the City on sustainable building practices by August 30, 2013 (convened, with work concluding in 2015);
- 2) Develop recommendations to revise the Living Building Program by December 31, 2013 (amendments were adopted in July 2014, ORD 124535); and
- 3) Develop recommendations to revise the Seattle Deep Green Program by December 31, 2014 (addressed in this report and accompanying legislation).

Resolution 31400 was adopted due to concerns about allowable departures, including those concerning floor area ratios and structure height, and the level of staff and consultant review and consultation for permitting these buildings. DPD (predecessor to the Seattle Department of Construction and Inspections – SDCI) convened a Living Building and Deep Green TAG to advise the City on an improved or replacement pilot program. This report and legislation provides a summary of the work completed with the TAG, the proposed amendments to the Living Building Pilot Program, and proposed consolidation of existing green building standards into a single chapter of the Land Use Code.

Proposal Summary

Informed by the work with the TAG, SDCI recommends the following changes to the Land Use Code:

Living Building Pilot

- *Project eligibility:* Link the Program directly to the International Living Future Institute's (ILFI) Living Building Challenge (LBC), including LBC Petal Recognition. The program would be available for new buildings as well as existing buildings undergoing substantial alteration.
- *Relationship to other programs for gaining additional height or floor area.* Clarify that floor area and/or height gained by participation in the Program is not subject to the affordable housing and other provisions of Chapter 23.49 (incentive zoning) or Chapters 23.58A, 23.58B and 23.58C (Mandatory Housing Affordability (MHA)) above the maximum height allowed. However, the underlying floor area will be subject to MHA, and incentive zoning if applicable. In the case of a project not exceeding the maximum height or floor area limits allowed (in an incentive zone), compliance with both MHA and incentive zoning would be required.
- *Land Use Code modifications and departures:* Allow Land Use Code modifications related to height and floor area ratio to be approved as a Director's decision.

- *Application to vested Living Building Pilot projects:* Allow applicants for permit applications that are vested prior to the adoption to elect to perform under the provisions of the proposed Program, subject to the provisions of MHA; requiring MHA payment or performance.
- *Compliance and penalties:* Reduce the maximum penalty to 5 percent of a project's construction value.
- *Program Extension.* Enrollment will be expanded to allow an additional 20 qualifying projects through December 2025.

Other Green Building Standards

- *Reorganize and consolidate green building requirements in a new Land Use Code chapter and update the green building standards required to participate in the Incentive Zoning program to be consistent in all zones (i.e. currently it varies between LEED Silver and LEED Gold depending on the neighborhood; LEED Gold will become the new requirement for all projects participating in the program).*
- *Define a green building standard to accommodate preferences for the different certification options that currently exist for purposes of meeting Incentive Zoning requirements. This definition outlines both performance-based criteria based on post-occupancy operation of the building (LBC), and point-based programs, such as LEED and BuiltGreen, that certify projects prior to issuance of final permit by quantifying the value of sustainability and energy efficiency components (building systems, materials, etc.) by assigning points prior to occupancy.*

In addition, the TAG identified a number of opportunities beyond the Land Use Code for the City to promote the development of more living buildings. Those recommendations are described in more detail in the Additional Recommendations section of this report.

Background

The Program was adopted by the City Council in December 2009, amended in 2012 and again in July 2014, to facilitate the development of buildings that would either meet the LBC or alternative standards (the former Deep Green criteria). The Program was developed to provide flexibility for projects seeking LBC certification to encourage the use of this very high and difficult to achieve standard.

The LBC is a sustainable building certification program that focuses on a performance-based approach to certification with the aim of producing buildings that are less harmful to the environment than conventional buildings and contribute positively to their surroundings. It was created by ILFI as a green building rating system in order to recognize buildings that achieve the highest level of sustainability. Version 3.0 of the LBC requires buildings to meet 20 imperatives (i.e., requirements or prerequisites) within seven performance areas or petals: Place, Water, Energy, Health and Happiness, Materials, Equity and Beauty. In general, the imperatives require buildings to be built on non-environmentally sensitive sites, use recycled materials, generate as much or more electricity as they use through sustainable sources, capture as much rainwater as they use, treat wastewater on site, and meet standards for other elements.

In addition to the certification program, ILFI also offers Petal Recognition. The performance criteria for at least three of the seven areas, or "petals," must be met in order to receive "Petal Recognition." Recognition is further contingent upon the development demonstrating compliance with at least one of the following petal categories: Water, Energy or Materials. Additionally, certification is based on achievement of a number of "imperative" categories to demonstrate that a building can have a positive effect on the non-built environment. Two imperatives; *01: Limits to Growth* and *20: Inspiration and Education*, must also be met.

The Living Building Program facilitates the development of innovative green buildings to:

- Reduce environmental impacts;
- Test new technologies; and
- Serve as a model for development throughout the region and country.

The existing City Program allows departures from the Land Use Code through Design Review in recognition that the LBC requires the highest levels of sustainability. The Program was adopted through ordinances that amended the Code as follows:

2010: The original legislation implementing the Living Building Pilot program (Ordinance 123206).

2012: "Seattle Deep Green" tailored the Living Building Challenge to Seattle by providing developers with the option—or a pathway—to meet 60% of the Living Building Challenge requirements while meeting Seattle's energy use, water use, and storm water management requirements (Ordinance 123942).

2014: The program was amended (Ordinance 124535) to:

- Eliminate the Seattle Deep Green option;
- Revise the minimum energy use requirements to align with the new Seattle Energy Code;
- Clarify that independent third-party report is required to verify compliance with LBC;
- Modify and/or remove available design review departures; and
- Increase the maximum penalty for projects failing to demonstrate full compliance.

2016: City Council extended the program's expiration date to June 30, 2017 (Ordinance 118672) in order to prevent the program from lapsing prior to this update.

Role of the TAG:

The Living Building and Seattle Deep Green TAG was convened in 2013 by DPD to evaluate and propose revisions to the Program. In addition to industry professionals who have technical knowledge, experience, and interest in sustainable development, membership included a community organization representative as well. This expertise and feedback was used to inform DPD's decision-making process and recommendations to the Mayor and City Council for the 2014 amendment.

Their work focused on evaluating and developing recommendations regarding the following:

- *Project eligibility*: What are the minimum requirements that projects must meet to participate in the Program? Should these be based on already established third-party certification standards or should the City develop their own standards (i.e. continue to use the Deep Green approach)?
- *Land Use Code flexibility and incentives*: What flexibility is needed to meet minimum Program requirements and what incentives might attract more participation in the Program?
- *Process and procedures*: What is the appropriate review process for pilot projects and what is the role of the TAG in that process, if any?
- *Compliance and penalties*: How should compliance be evaluated? What is the appropriate approach to enforcement? Specifically, what level of penalty will ensure that applicants will strive to fully comply with program requirements (rather than paying the penalty in lieu of complying) while not setting a penalty so high that it provides a disincentive to participation in the program?

Purpose:

Based on input from the TAG, the main goal of this process was to improve the accessibility and use of the Program in order to continue to encourage development of very high performing green buildings.

The group also helped to identify the following principles, which were used to inform this work program:

- Pilot projects must be innovative – high performing green buildings should perform better over time due to their adaptability to new technologies, as opposed to incremental green improvements.
- Pilot program requirements should eventually become standard, leading to permanent changes to existing policies and code requirements.
- Incentives and flexibility beyond what the Land Use Code currently provides for are needed to increase participation in the pilot program.
- *Creating (or making permanent) a new or Seattle-specific green building standard rating system is not desirable.*

A key question that dominated discussions with the TAG is whether the Program's requirements should be tied directly to a third-party certification program, such as ILFI's LBC, or if Seattle should develop alternative criteria to more fully develop the former "Seattle Deep Green" program. The TAG recommended that existing third-party programs offer appropriate and sufficient criteria to achieve high performing development. Creating standards that are distinct from existing third-party programs would require significant staff and financial resources to implement and support.

The TAG also recommended that City link the Program to the LBC. As described by ILFI, "The Living Building Challenge sets substantially higher performance requirements across a more comprehensive set of criteria than required by regulation, or any rating system currently in use."¹ While the TAG

¹ Cascadia Region Green Building Council, *Code, Regulatory and Systemic Barriers Affecting Living Building Projects*. 2009. <http://living-future.org/ilfi/ideas-action/research/building-codes/code-regulatory-and-systemic-barriers-affecting-living>

acknowledged that the Land Use Code does not present significant barriers to developing Living Buildings it found that development incentives currently embedded within the Code are not strong enough to attract new projects into the Program given the associated financial cost that results from uncertainty and the additional complexity. Their recommendations for further action beyond the changes included in this proposal are listed on pages 10-11.

Living Building Pilot: Proposed Land Use Code Changes

Broad Goals of the Pilot Program

The City of Seattle has a long history of environmental stewardship. Environmental goals are inherent throughout the City's work. One of the primary objectives is to protect, conserve and enhance the region's environmental resources by setting a community standard of sustainable building practices. The Program is one of the tools being employed to further this commitment to environmental, economic and social stewardship.

Building energy use accounts for more than 20 percent of Seattle's greenhouse gas emissions (GHG). Making sure energy comes from clean, low-carbon sources and improving the overall energy efficiency of buildings are essential to reducing our GHG emissions and achieving the goals outlined in the Climate Action Plan (CAP). Reusing rainwater and greywater reduces combined sewer overflows and demand on the City's potable water supplies. The current Living Building Pilot Program requires that 100 percent of both stormwater and used- water discharge must be managed on-site.

Project Eligibility

To date, three projects have or are formally participating in the Program: the Bullitt Center, the Stone34 project, and 901 7th Avenue. The Bullitt Center pursued full LBC (achieved in April 2015), whereas the Stone34 project is pursuing the requirements under the former Seattle Deep Green program, which was subsequently removed from the Land Use Code in the preceding update of the ordinance (#124535). SDCI has reviewed the staff resources required for the Bullitt Center and Stone 34 projects (901 7th Avenue is still in permitting) against comparable projects not enrolled in the Program. Stone34, which used the Deep Green pathway, required significant staff time and resources to determine baselines and measurement procedures. Staff experience with review of these two projects contributed to the recommendation to link the Program to the LBC and simplify the compliance requirements (see below) in order to minimize the impact on staff resources.

The LBC requires that 100 percent of a project's water use must come from captured precipitation, a closed-loop water system that accounts for downstream ecosystem impacts, or by recycling water from on-site use. Purification of water for drinking and sanitation is required to be conducted without the use of chemicals. Setting a requirement that no potable² water may be used for non-potable uses (toilet flushing and irrigation) will require project teams to incorporate strategies to capture stormwater

² Potable water is clean water — satisfactory for drinking, culinary and domestic purposes, and meets the drinking water standards established by the Washington State Department of Health.

through rainwater harvesting³ and reuse water through greywater harvesting⁴ in order to have water available for uses beyond drinking, sanitation, and cooking. This simplified Program requirement will be clearer for applicants and will significantly reduce the staff time needed to review and verify project performance.

Tying the Program's energy requirement to the energy use targets set in the Seattle Energy Code will simplify the process for applicants and staff in determining and measuring project performance. There will also be the option to rely on alternative energy use targets in cases where the unique aspects of the building design or program warrants an approach not contemplated by the Energy Code. This will need to be approved by the Director during the application submittal.

The building must operate within the energy use target and water requirement for a full year after occupancy in order to meet the City's compliance requirements and receive documentation of such.

SDCI 2016 Proposal:

In order to participate in the Pilot Program, a project would be required to:

- Participate in Seattle's Design Review Program and be located outside the shoreline jurisdiction. Owners of existing buildings that would like to participate in the Program will be able to voluntarily go through design review in order to receive the related incentives.
- Meet all of the imperatives in the International Living Future's (ILFI) full Living Building Challenge™ (LBC) certification, version 3.0; or
- Attain at least three of the seven performance areas or "petals" (Place, Water, Energy, Health and Happiness, Materials, Equity and Beauty) of the ILFI's Petal certification program. At a minimum at least one of the following petals must also be met: Energy, Water or Materials; and
 - Ensure that the energy use is 25 percent below the targets set in the Seattle Energy Code's Target Performance Path⁵ or an energy use intensity (EUI)⁶ established by the Director.
 - Ensure that no potable water is used for non-potable purposes.
- Maintain these requirements for the life of the building.

³ Rainwater harvesting is the capture and storage of rainwater and is considered the cleanest form of harvested water.

⁴ Greywater harvesting is the capture and storage of water that has already been used for non-sewage purposes — from baths and showers to washing machines, sinks and vehicle washing run-off. Reuse of greywater triggers more code requirements and design regulations than the use of rainwater. Some applications are restricted by local building codes.

⁵ This optional energy code compliance path allows the design team, contractor, and owner to determine the most effective methods to achieve energy efficiency. Rather than complying with all the details of the Seattle Energy Code, designers of several common building types will be permitted to submit energy models demonstrating that their proposed buildings will meet specific energy use targets.

⁶ EUI is a common measure used to normalize a building's annual energy performance as a function of its size. The EUI is expressed as units of energy, per square foot, per year (kBtu/SF/year). Generally, a low EUI signifies good energy performance. However, it is important to note that some building types and uses are more energy intensive than others and will consistently have higher EUIs.

Land Use Code Incentives and Departures

In addition to the general Design Review departure criteria, departures are available to projects participating in the Program when an applicant demonstrates that approval of a departure would better meet the goals of the LBC or would not conflict with adopted design guidelines. Both the TAG and separate discussions with developers emphasized that economic feasibility and incentives are necessary to stimulate innovation and encourage higher levels of innovation due to the increased financial risk that results from the initial capital investment in equipment and materials. Developers expressed concern about additional costs associated with living buildings and perceive the existing permit approval process to be a barrier to adopting green building techniques due to the lack of certainty regarding the ability to secure the departures for additional development capacity. This proposal recommends modifying the Program to allow some of the existing departures, such as additional height and floor area, to be approved by the Director as a Type I decision (no appeal), as opposed to discretionary Type II decision (appealable to the City's Hearing Examiner), in order to provide certainty in the approval process. The change is also intended to offset the increased cost associated with living building systems as the additional floor area and/or height should increase a development's leasable area.

The following Design Review departures unrelated to height or floor area could continue to be pursued through the existing Design Review process for any project enrolled in the Program if the applicant demonstrates that the project would result in a development that better meets the intent of adopted design guidelines, or that better meets the goals of the Program and would not conflict with adopted design guidelines:

- Residential density limits;
- Reduction in quantity of parking;
- Permitted, prohibited or conditional use provisions for accessory uses that would directly address an imperative of the LBC;
- Maximum size of use;
- Standards for storage of solid-waste containers;
- Quantity of open space required for major office projects in Downtown zones;
- Standards for the location of access to parking in Downtown zones; and
- Structural building overhangs and minor architectural encroachments.

SDCI 2016 proposal:

Land Use Code modifications

The following incentives will be available to any project enrolled in the Program:

- Increased height (up to 10 feet in zones with height limits up to 85 feet and 20 feet in zones with height limits 85 feet and above); and
- Up to an additional 15 percent of floor area.

These increases would be additive to any additional floor area or height gained by other programs such as incentive zoning or MHA. If additional height and/or floor area is gained through the Program, that additional height and/or floor area would not be subject to incentive zoning or MHA requirements.

Compliance and Penalties

While the goal of the Program has always been to encourage buildings to meet the LBC, SDCI recognizes that the LBC is an innovative and very ambitious program. Penalizing a project that strives to meet these goals but falls slightly short may deter future interest and participation in the Program.

The amendments to the Program, adopted in July 2014, increased the maximum penalty for noncompliance from 5 percent of a project's construction value to 10 percent. Noted at the public hearing, and reiterated in discussions with both the TAG and developers, the penalty may act as a disincentive to participation in the program. In recent discussions with project teams considering participating, the 10 percent penalty has been the main concern raised and in some cases may be the deciding factor.

SDCI 2016 proposal:

- Compliance: Applicants must submit a third-party report demonstrating compliance within two years after issuance of a final Certificate of Occupancy. This allows one year of post-occupancy operations to ensure proper performance and may include retro-commissioning to resolve any problems that may have been encountered during design and construction. The applicant may request an extension if they demonstrate additional time is warranted and likely to result in the intended outcome.
- Maximum Penalty for Non-compliance: SDCI proposes reducing the maximum penalty from 10 percent to 5 percent of a project's construction value, but will continue to evaluate whether the penalty is sufficient as more projects enroll and achieve compliance. If it is demonstrated that the penalty is not high enough to ensure that projects fully comply with the requirements, SDCI will evaluate an increase to the maximum penalty.

Other Green Building Certifications

Separate from the Living Building Pilot Program, the Builtgreen, LEED, Passive House and Evergreen programs are point-based systems that provide certifications prior to occupancy and operation, whereas LBC is based on actual operations one year from occupancy. Currently, to qualify for the higher floor area ratio (FAR) limit in multifamily zones, projects must meet green building performance standards by earning a LEED Silver, a Built Green 4-star rating, or other similar standard. Council recently added Passive House as an option in Lowrise multifamily zones.

SDCI 2016 proposal:

SDCI proposes a new Land Use Code Chapter to consolidate requirements related to green building standards as a condition of a permit. The intent of this consolidation is to provide consistency and make it easier to understand the standards and the process for demonstrating that a project meets those requirements. A new Green Building Requirements chapter will be created to affect this change.

Additionally, the proposal defines the Green Building Standard for Incentive Zoning purposes and allows the Director to establish by rule, procedures for determining whether a proposed or final project meets those standards. For instance, the rule may outline the requirements for enrolling in the Program, identify the type of or format for data required to verify a project's ability to meet the Program's

requirements, and outline the process by which the Director establishes an EUI alternative to the Target Performance Path. Inclusion of this type of information in a rule (as opposed to the Land Use Code) will allow changes to requirements to be made in step with technological advancements, alleviating the need to make legislative changes to address minor modifications to criteria and metrics.

The Green Building Standard applies to a development that meets the standards for one of the following:

- A Net Zero Energy certification according to the criteria in the ILFI's LBC, version 3.0;
- A Gold certificate (changed from currently required Silver) for either LEED for New Construction v4 or for LEED for Homes v4, according to the criteria in the U.S. Green Building Council's LEED Green Building Rating System;
- A 4-Star rating either for BuiltGreen Multi-Family New Construction Version 2009 or BuiltGreen Single-Family/Townhome New Construction Version 2014, at the election of the applicant, according to the criteria in the Master Builders Association of King and Snohomish Counties Rating System;
- A Passive House certificate, according to the criteria in the Passive House Institute US's (PHIUS) 2014 rater checklist;
- Compliance with the standards for the Evergreen Sustainable Development Standard (ESDS) version 2.2 according to the State of Washington Department of Commerce Rating System; or
- A substantially equivalent standard, as approved by the Director, for any of the above. The owner must submit a written request and documentation demonstrating to the Director how the proposed standard is equivalent to the standards for one or more of the certification programs listed above.

2030 District

Proponents of the Seattle 2030 District, a high-performance building district in downtown Seattle that aims to reduce environmental impacts of building construction and operations, have been interested in identifying incentives for existing buildings to achieve high levels of sustainability. A number of existing buildings that were constructed between the 1950s and 1970s will require recladding and other major overhauls over the course of this decade, which may be economically infeasible leading to demolition rather than rehabilitation.

The 2030 District has suggested that given the proper incentive, this may be an opportunity to dramatically improve the environmental performance and energy efficiency of existing buildings. They have been in conversations with ILFI regarding how LBC certification might facilitate such rehabilitations being eligible for the Program. In order to further this concept, the proposal provides existing buildings the ability to voluntarily participate in design review, which would allow participation in the LBC.

Recommendations for Further Consideration

The TAG identified a number of opportunities beyond the Land Use Code that the city may explore to promote the development of more living buildings. Those recommendations are outlined below.

Throughout DPD's work with the TAG, a number of barriers and opportunities were identified that are not linked to the Land Use Code but are areas where the City, or the City in partnership with other agencies, could take steps to promote the development of more living buildings. The recommendations

outlined below highlight areas identified by the TAG that would require additional work and leadership from other City departments or other jurisdictions:

RECOMMENDATION	DESCRIPTION	TIMEFRAME
<p>City pursues Living Building Challenge Certification for a city building.</p>	<p>Both the Seattle Climate Action Plan and the City's Sustainable Buildings and Sites Policy recommends the City take a leadership role in promoting high performance buildings. The Sustainable Buildings and Sites Policy calls for one City of Seattle project to be Living Building Challenge certified project by 2015.</p> <p>The TAG emphasized that the City should fulfill this goal and continue to be a leader for green building and demonstrate higher levels of environmental performance while also evaluating the effectiveness of alternative rating systems.</p> <p>The TAG noted that the City has been a leader in developing LEED certified buildings that helped to establish a market for the increase in LEED certified projects in the private sector, and this is an opportunity to lead the market for living buildings.</p>	<p>Short-term goal</p>
<p>Work with local, state and federal policy makers to allow more flexibility and innovation in water reuse and stormwater management.</p>	<p>In February 2011 the Cascadia Green Building Council (CGBC) and the City of Seattle released a report (prepared by Cascadia GBC) titled "Regulatory Pathways to Net Zero Water: Guidance for Innovative Water Projects in Seattle" (see attachment 2). The report summarizes regulatory challenges in current codes that a net zero water project may encounter, identifies alternative pathways and recommendations on possible changes to consider and provides guidance for future net zero water projects. Many of the issues identified in the report are still a challenge for Living Building projects and more work to change existing local, county, state and federal codes need to be considered.</p> <p>In addition to the challenges outlined in that report, the following issues and opportunities emerged from discussions with the TAG:</p> <ul style="list-style-type: none"> • Allow hybrid vault/cisterns with a seasonal valve – with clear approval process. • Consider options to license smaller operations & maintenance providers or have the City operate a smaller distributed system and establish a framework for city management of 'private' 	<p>Medium-term goal</p>

RECOMMENDATION	DESCRIPTION	TIMEFRAME
	<p>systems. Allowing decentralized site- or district-level solutions is one approach to achieve net positive water systems. A cost/benefit analysis of the current water delivery and treatment system and associated infrastructure maintenance costs compared to smaller scale systems (at the building or district level) would be an important step to inform the discussion.</p>	
<p>Provide Financial incentives to offset the increased upfront costs associated with deep green development.</p> <p>Often described as an ~10-20% premium that is not typically covered by lending institutions, increasing the equity investment needed from the developer to promote living buildings</p>	<p>Financial incentives that offset some of the higher upfront costs (additional design, modeling and systems and materials costs) for projects seeking LBC certification may be the most effective strategy to increase participation in the Program. We have heard from the TAG and developers that there is a financial cost associated with use of new technologies as conventional lenders will not provide financing (requiring a larger equity investment), in addition to the risk associated with the penalties for noncompliance.</p> <p>SDCI is currently in discussions with Seattle City Light to develop an energy performance financial incentive. Other areas to consider are a Seattle Public Utilities (SPU) conservation incentive program, tax incentives (would likely require changes to state law), reduced permit fees (similarly may require changes to state law) or seek grant funds.</p>	<p>Long-term goal</p>

Attachments:

Att 1: Draft Director’s Rule

Att 2: Regulatory Pathways to Net Zero Water: Guidance for Innovative Water Projects in Seattle