



EARLY PROJECT GUIDEBOOK

MAY 2017

LIVING BUILDING CHALLENGE 3.1

A Visionary Path to a Regenerative Future



INTERNATIONAL
LIVING FUTURE
INSTITUTE™

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The International Living Future Institute is a non-profit organization offering green building and infrastructure solutions at every scale—from small renovations to neighborhoods or whole cities. The mission of the Institute is to lead and support the transformation toward communities that are socially just, culturally rich and ecologically restorative. The Institute administers the Living Building Challenge, the built environment's most rigorous and ambitious performance standard. Additional initiatives and programs can be found on the Institute website: <https://living-future.org>.

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INTRODUCTION

The Living Building Challenge is a certification program, advocacy tool, and philosophy defining the most advanced measure of sustainability in the built environment today. As a certification program, it addresses all buildings, landscapes, and infrastructure projects, at all scales, and is an inclusive tool for transformative design. Whether the project is a single building, a renovation or a park, the Living Building Challenge (LBC) provides a framework for design, construction and improvement of the symbiotic relationship between people and all aspects of the built and natural environment.

This Early Guidance Handbook is a free addition to the LBC Petal Handbook series, a critical resource for project teams pursuing the Living Building Challenge 3.1. There is one Petal Handbook for each of the seven Petals, and those handbooks define the requirements for each Petal as of their date of issue.

INTENT

This guidebook is a reference for teams considering pursuit of the Living Building Challenge. It addresses critical criteria that determine the basic feasibility of pursuing certification under the Challenge and provides a consistent methodology for project teams to determine their project's Typology, Project Area, and Living Transect designation.

HOW TO USE THIS GUIDEBOOK

These rules apply to projects registered under the Living Building Challenge v3.1. This handbook should be used in conjunction with the LBC 3.1 Standard to establish feasibility and basic project categorization. Project teams must follow all rules in place at the time of their registration. Rules established after a project team's registration date may be followed at their discretion. Rules are established through the Standard and the Dialogue, which is available online to registered project teams. The rules are consolidated in the Petal Handbooks. Project teams are encouraged to routinely check the Dialogue for postings after the issue date of the handbook in order to remain up to date on the program.

“The secret of getting ahead, is getting started.”

Mark Twain

ASSESSING FEASIBILITY

The Living Building Challenge (the Challenge or LBC) is appropriate for buildings, renovations, landscapes, and infrastructure projects at any scale and in any location, with certain important caveats that project teams should know before targeting certification. These caveats are listed and explained in brief below. More information is available in the Petal Handbooks, available for purchase at <https://living-future.org>.

LIMITS TO GROWTH

All Living Certified and Petal Certified Buildings must comply with Imperative 01: Limits to Growth. The intent of this Imperative is to curb sprawl, restore natural ecosystems, and protect productive agricultural lands and ecologically sensitive areas from the negative impacts of development.

All projects may only be built on greyfields or brownfields: previously developed sites that are not on or adjacent to certain sensitive ecological habitats. Sensitive habitats addressed by the Challenge include prime farmland, wetlands, primary dunes, old-growth forest and virgin prairie. New development is also not allowed within the 100-year flood plain.

Project teams should carefully review their site before registering for the Living Building Challenge to ensure that they can comply with this Imperative. If the site does not clearly comply with the requirements as written, that does not necessarily mean it cannot be certified under the Challenge. There are a number of exceptions to these requirements that may apply, depending on the situation, and these exceptions can be found in the Place Petal Handbook. For example, educational facilities that have a mission to interpret a natural area are allowed to build appropriately within sensitive lands that relate to their mission.

COMBUSTION

Project teams pursuing the Energy Petal or Zero Energy (ZE) Building Certification are prohibited from using combustion within their projects. Living Buildings are intended to be examples of the highest level of environmental performance currently possible. Combustion requires fossil fuels or biomass and has negative impacts on both ecological services and air quality.

There are exceptions to the ban on combustion that can be found in the Energy Petal Handbook. Project teams should carefully review their energy strategy before registering for the Living Building Challenge to ensure that they can comply with this Imperative. Some example exceptions include combustion generators for critical facilities and fireplaces in certain situations.

Projects that use combustion without an applicable exception are still eligible for Petal Certification under the Living Building Challenge via Material or Water Petal Certification.

DETERMINE BASIC PROJECT INFORMATION

It is important to determine a project's Typology, Transect, and Project Area to correctly apply the LBC. A project's Typology affects which Imperatives are required, and the project's Living Transect can impact the applicability of certain requirements and exceptions within the required Imperatives. A project's Project Area is used in the calculations for compliance with some Imperatives. Establishing these basic aspects of the project is an important step in evaluating the feasibility of pursuing the Living Building Challenge.

TPOLOGY

Every project is classified as either Building, Renovation, or Landscape + Infrastructure Typology. Project teams must determine the Typology that aligns with their project using the information and infographic in this section. This designation will identify which Imperatives apply to the project; some Typologies require fewer than twenty Imperatives because the conditions are either not applicable or may compromise other critical needs. However, teams are encouraged to integrate the optional Imperatives into their projects wherever possible. Refer to the Summary Matrix in the Living Building Challenge Standard to view the list of Imperatives that are mandatory for each project type.

To determine the Typology of a project, refer to *Figure 1: Typology Decision Matrix*.

BUILDING

The Building Typology is for any project that encompasses the construction or substantial renovation of a roofed and walled structure created for permanent use. It applies to both new construction and major renovation of an existing building. Projects that occupy more than 75% of an existing building and alter either the envelope or major systems are considered Building Typology, not Renovation Typology.

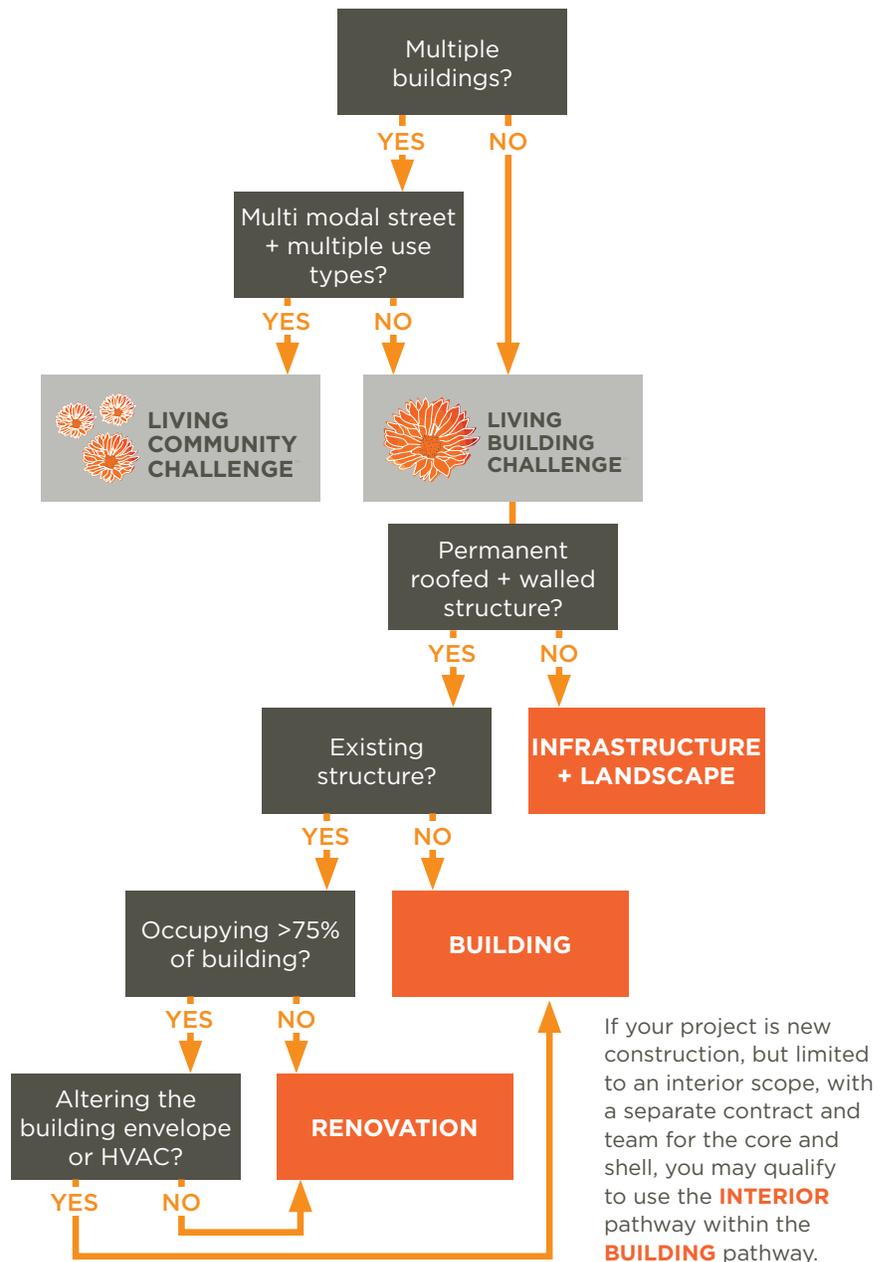
Interior Pathway

The Interior pathway is for new construction projects in the Building Typology that:

- are pursuing Materials Petal Certification;
- have an owner with control over both the site and building area; but
- have separate contracts, schedules, and teams for the exterior shell and the interior fit out.

Projects that have a tenant improvement scope and do not meet the criteria above are likely to be a Renovation Typology (see below).

Figure 1. Typology Decision Matrix



Any plumbing, electrical, and HVAC work that connects to base building systems and serves the Interior project is considered to be part of the Interior project.

Interior projects may only pursue LBC Materials Petal Certification under the Building Typology. Living Certification, Energy Petal Certification or Water Petal Certification are not allowed for Interior projects. Exterior scope or core and shell projects cannot pursue LBC Certification without the interior scope due to the significant impact of the interior on building occupants.

Because the building shell is already determined, Interior projects are exempt from some requirements within the four Imperatives listed in the Interior Requirements Table below:

Interior Requirements Table

| IMPERATIVE | REQUIREMENTS | REQUIRED FOR INTERIOR PROJECTS? | “EXCEPTION LANGUAGE/ COMPLIANCE GUIDANCE” |
|---|--|---|---|
| I02 - Urban Agriculture | Urban agriculture for the project occupants | Yes - may scale jump within property or community. | Project may scale jump (could be within the project area) to comply with I02 Urban Agriculture requirements. |
| I04 - Human Powered Living | Provide protected vehicle storage | Yes - may scale jump within adjacent properties. | “- Projects may scale jump to meet the requirement for providing bicycle storage. |
| | “Promote stairs Advocate for human-powered transportation. Provide a transit subsidy Provide showers and changing facilities “ | Yes - stair promotion can be through signs if stair and/or elevator locations are pre-determined. | - Projects are exempt from altering the stair and/or elevator design if these systems are already in place, though they must include interior signage to promote the use of stairs. |
| | “Enhance pedestrian routes Provide at least one electric vehicle charging station.” | No | - Projects are exempt from providing an EV charging facility and pedestrian route enhancements. “ |
| I15 - Human Scale + Humane Places | “Surface Cover Streets + Intersections Proportion Human Scale - façade opening” | No | The project team must meet all requirements that may be accomplished within the building’s interior, or without substantial impact to the building’s facade. |
| | Signage | Yes - if adding to building’s exterior | |
| | Human Scale - gathering and connection | Yes | |
| I16 - Universal Access to Nature + Place | “Road and infrastructure accessibility Sunlight” | No | Due to the project owners control of the site, projects must still meet basic requirements for the public realm. Projects are exempt from the requirements for externally focused infrastructure, external ADA-compliance (except with regard to project access), and shading restrictions. The project team is still required to protect adjacent property from air or water pollutants. |
| | Meet Americans with Disabilities Act (ADA) and Architectural Barriers Act (ABA) Guidelines. | Yes - for project access and scope | |
| | “Public realm enhancement Fresh Air Natural Waterways” | Yes | |

RENOVATION

The Renovation Typology is for any project that does not form the substantial portion of a complete building reconstruction. Sample projects include single-floor tenant improvements, residential kitchen remodels, or historic rehabilitations of a portion of a building. Projects that occupy more than 75% of an existing building and alter either the envelope or the HVAC systems are classified as Building Typology, not Renovation Typology.

LANDSCAPE + INFRASTRUCTURE

The Landscape and Infrastructure Typology is for a diverse range of landscape and infrastructure projects including but not limited to roads, bridges, plazas, sports facilities, and trails. Typically these projects do not include a physical structure as part of its primary program, although open-air, “park-like” structures, restrooms, and amphitheaters may be part of the overall scope of a Landscape and Infrastructure project.

OTHER PROJECT TYPES

Living Communities

Some projects may be better suited for the Living Community Challenge (LCC). The following criteria are used to establish projects for the LCC:

1. Diversity of Uses: Access to the essential components of livability (places to eat, sleep, work, play, and places where services are provided)
2. Multiple Buildings
3. At Least One Multi-Modal Street
4. Shared Infrastructure (energy, water, streets) is optional, but is an indicator of LCC projects

Sample projects include university, college, or corporate campuses; residential streets; business or industrial districts; and villages and small towns. For more information, please visit <https://living-future.org/lcc> or email lcc.support@living-future.org.

Manufacturing Facilities

Manufacturing facilities are eligible to certify under the Living Building Challenge. Attainment of Living Building Certification contributes toward successful pursuit of the Living Product Challenge for products manufactured within, or made with products from, that facility. For more information, please visit <https://living-future.org/lpc> or email lpc.support@living-future.org.

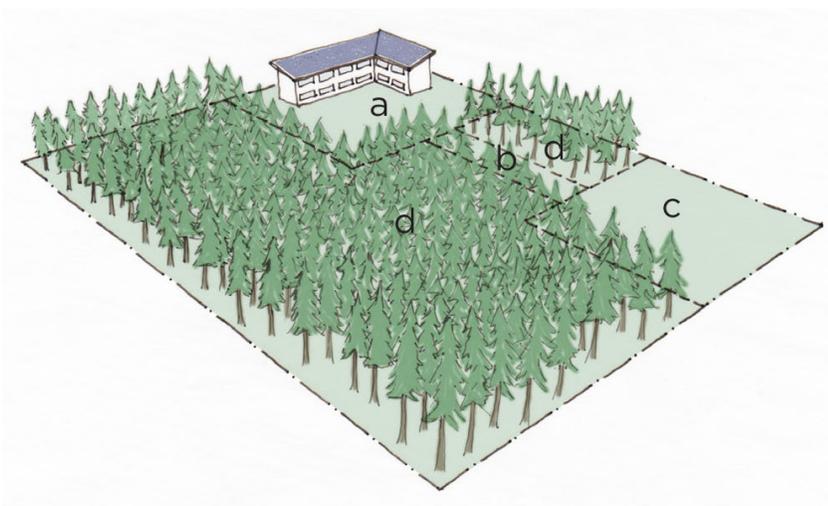
STILL NOT SURE?

If your project doesn't fall under one of the above categories or if the Typology is unclear after following the above guidelines, please reach out to lbc.support@living-future.org.

PROJECT AREA

Every project must have a consistent Project Area across all Imperatives. That area is applied to a number of calculations within the Challenge. Please see *Figure 2*.

Figure 2. Project Area with Ecological Exclusion



- (a) = area of disturbance
- (b) = area of conveyance
- (c) = remote project area (such as geothermal well or greywater infiltration system)
- (d) = excluded from project area for ecological reason
- (a+b+c) = project area

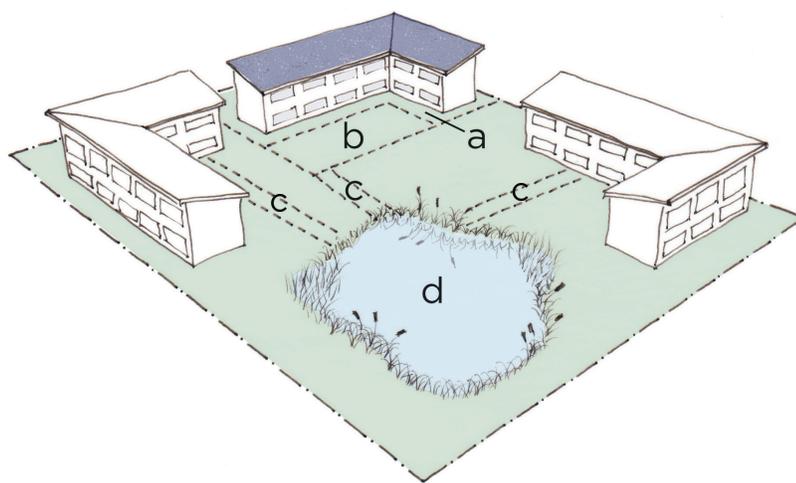
The Project Area must include all areas that are disturbed by the project work, including any areas used during construction for work, utility conveyance, or staging. Any areas that include features used to help meet requirements of any Imperative (I03 and I11 excluded) must be included in the Project Area, unless they are areas accessed through Scale Jumping.

Typically the Project Area will include the entire property. However, projects may exclude areas of their property either for ecological reasons or because the property is many times larger than the project itself, as is often the case in rural areas. Ecologically based reasons to exclude an undisturbed portion of the property from the Project Area may be allowed on a case-by-case basis. In such circumstances, the Project Area may include non-contiguous areas of land.

CAMPUS PROJECTS

Since the property line of a campus, or other similarly large parcel of land owned by a single person or entity, almost always exceeds the boundaries of any given construction scope, LBC projects on campuses must determine a reasonable Project Area. LBC projects on campuses must include all disturbed areas in the Project Area, including all land used for construction work, conveyance, or staging. Undisturbed areas that are clearly linked to the LBC project (e.g., an associated courtyard or parking area) must also be included. Please see Figure 3.

Figure 3. Campus Project Area



- (a) = area of disturbance
- (b) = staging area
- (c) = conveyance area
- (d) = shared constructed wetland (scale-jumped area)
- (a+b+c) = project area

PARTIAL BUILDINGS

As a general rule, partial new buildings are not eligible for certification. For example, project teams may not limit their scope to the residential portion of a mixed-use building.

Exceptions to this rule include Tenant Improvement projects or building additions, which typically fall within the Renovation Typology or the Interior pathway under the Building Typology. See *Interior Pathway*, above.

Core and Shell projects are not eligible for certification.

SCALE JUMPING



Scale Jumping is an alternative compliance strategy that acknowledges that the optimal scale for solutions can vary based on environmental impacts, costs and community needs. It allows for cooperation between projects within a community to meet Imperative requirements for one or more of those projects. Scale-Jumped land must have at least one of the following two attributes:

- It serves multiple buildings or projects, allowing them to operate in a cooperative state.
- It is outside of the project property and therefore requires cooperation with another property owner.

The specifics of scale jumping vary a bit between Imperatives, and are therefore described within each Petal Handbook. Generally, however, projects are encouraged to meet all requirements on their own project site unless there is a constraint that makes on-site compliance particularly difficult, or, there is an opportunity for additional benefits, to the community or ecology, for example, by going off-site and /or coordinating with a broader group of stakeholders. Scale Jumping proposals should be confirmed through the Dialogue to ensure they are compliant.

Land used as part of Scale Jumping does not typically need to be included within the Project Area. However, remote parking (i.e., parking constructed off-site specifically to serve the LBC project) is not considered Scale Jumping, and therefore is included within the Project Area. Parking that is shared with other projects may be included in the Project Area on a pro-rated basis.

Land and system components added for project compliance through Scale Jumping must meet all Imperatives pursued by the project. Land used for I-03 Habitat Exchange and I-11 Embodied Carbon Footprint is not required to comply with other Challenge Imperatives.

Refer to the summary matrix in the Standard to view all Imperatives that may employ the Scale Jumping overlay.

LIVING TRANSECT

The requirements of select Imperatives and some exceptions can differ depending upon a project's Living Transect (Transect). The Transect concept is based on the work of Duany Plater-Zyberk and Company, but has been altered slightly to encourage LBC teams to avoid a suburban model that creates sprawl.

Determination of a project's Transect requires an understanding of the context around the project site. Some project teams will find that a simple review of the Transect descriptions below, as well as consideration of the project area's density and the density and use type of the surrounding neighborhood, is sufficient to determine their project's Transect.

Other teams may find that their project defies easy classification. An inaccurate designation creates a risk that the team may inaccurately apply Transect-based Imperative requirements. Project teams that are uncertain of their Transect are encouraged to reach out to lbc.support@living-future.org for confirmation. Please provide your project's site address, your proposed Transect designation, your rationale for that proposal, and any context documentation that might be helpful (e.g., documents for Imperative 01, Limits to Growth).

The six Living Transects are described below. There are some exceptions to Transect-based prohibitions on development, which can be found in the Place Petal Handbook under Imperative 01, Limits to Growth.

L1 Natural Habitat Preserve is comprised of land that is set aside as a **nature preserve or is defined as sensitive ecological habitat**. Only in limited circumstances related to the preservation or interpretation of the landscape may this land be developed.

L2 Rural Agricultural Zone is comprised of land with a primary function for **agriculture** and development that relates specifically to the cultivation or production of food

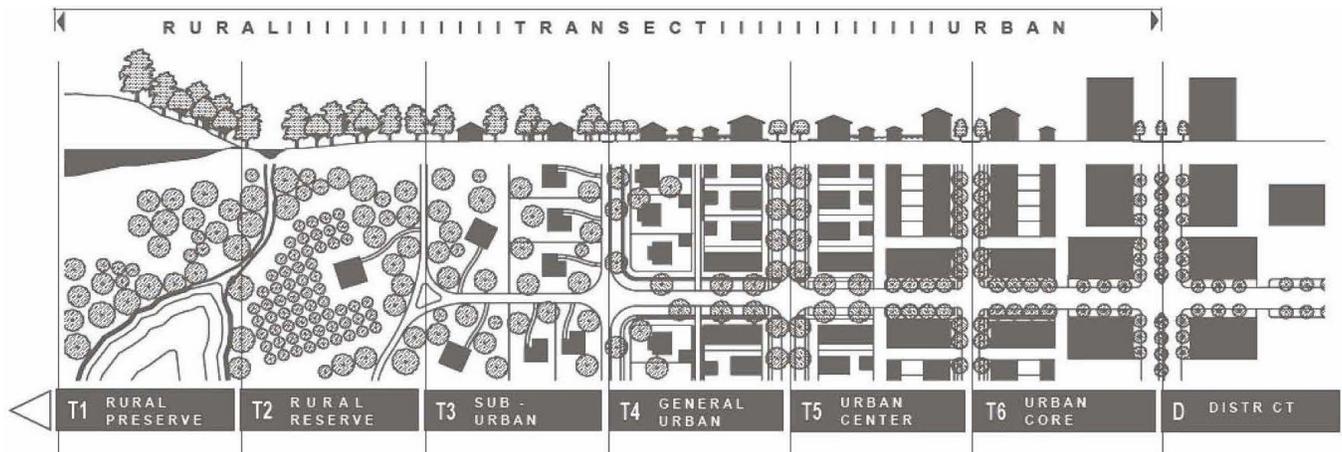
L3 Village or Campus Zone is comprised of relatively **low-density mixed-use development** found in rural villages and towns, and may also include college or university campuses.

L4 General Urban Zone is comprised of **light- to medium-density mixed-use development** found in larger villages, small towns or at the edge of larger cities.

L5 Urban Center Zone is comprised of a **medium- to high-density mixed-use development** found in small to mid-sized cities or in the first "ring" of a larger city.

L6 Urban Core Zone is comprised of **high- to very high-density mixed-use development** found in large cities and metropolises.

Figure 4. Duany Plater-Zyberk + Company Transects



REGISTER A PROJECT

In order for a project to access all available resources and eventually certify under the LBC, it must be registered. There is a one-time registration fee, regardless of the size of project, and projects may remain confidential.

There are many benefits for projects that register early, including access to other project teams and Institute staff through project team calls and summits, both of which are only available for members of registered projects. Registered project team members are also able to review, and post to, the Dialogue, where precedent setting rulings are made (*see Resources below*).

In order to register for any of ILFI's programs, a member of the project team must be a Premium Member of the Living Future Institute. ILFI Membership includes many other benefits, including event and book discounts. To become a member and to learn more, visit <https://living-future.org/membership/>.

Once the person registering the project is a member, they must log in, and scroll down to the "Register a Project" block on their landing page to access the registration form. Once all required fields (marked by an asterisk) are complete, it is possible to save the registration as a draft; however, the project will not be registered until the registration fee has been paid.

"The Living Building Challenge has pushed me and my colleagues to grow in new and unexpected ways, far outside of our comfort zones. It has expanded the boundaries of our knowledge and experience, testifying to the importance of the word "Challenge" in its title. It is also pushing us all into new ways of thinking and doing and is influencing every other project that we touch."

Sandy Wiggins (project team member)

DEFINITIONS

Landscape Area

Planted areas of the site, excluding hardscape and areas used for compliance with Imperative 02, Urban Agriculture.

Project Area

The area of land and buildings within the project boundary. Must include the entire scope of the project and all areas disturbed by the project work including areas of construction, staging and conveyance. The Project Area typically, but not necessarily, encompasses all land within the property line. Must be consistent across all Imperatives.

Property Area

The area of land within the legal property line.

Site Area

The area of land within the project boundary, excluding building area. Must include entire scope of the Project Area but not the entire Property Area. Must be consistent across all Imperatives.

RESOURCES

CUSTOMER SERVICE

General questions regarding the Living Building Challenge or available resources can be directed to customer service: lbc.support@living-future.org. Any project-specific questions that require interpretation of the rules or request an exception should be sent through the Dialogue.

THE DIALOGUE

Registered project teams have access to the Dialogue to read over and request precedent-setting clarifications, exceptions, and definitions related to program requirements. Each registered project is given ten free Dialogue posts. After ten posts, the project may purchase more posts from the Dialogue home page. Posts must focus on one issue and be attributed to a specific Imperative. If the issue is not regarding Imperative compliance, questions may be posted under “General.”

PETAL HANDBOOKS

Reviewing the full suite of Petal Handbooks early in the project is encouraged. The handbooks contain thorough explanations of Imperative requirements, as well as important Clarifications and Exceptions. To purchase digital access to the Petal Handbooks, please visit <https://living-future.org/product/lbc-3-0-petal-handbooks/>.

The Petal Handbooks consolidate Dialogue posts as well as the requirements and footnotes from the Standard into one location to provide a simplified and consistent set of rules for easy reference. The handbooks define the requirements for each Petal as of their date of issue. Dialogue posts incorporated into the handbooks remain searchable online. Project teams are encouraged to routinely check the Dialogue for postings after the issue date of the handbooks in order to remain up to date on the program.

TECHNICAL ASSISTANCE

Technical assistance is offered by the Institute to support a project team’s process of adopting the principles of the Challenge. Optional technical services include but are not limited to charrette facilitation, design development guidance, workshops, and other customized consultations.

<https://living-future.org/lbc/resources/#technical-assistance>

TRANSPARENCY LABELS



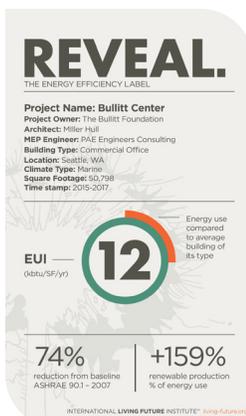
Declare is a “nutrition label” and online database for building materials, providing manufacturers with a clear, elegant, and informative pathway for disclosing the ingredients within their products, and project teams with a database of compliant products. Declare products help teams meet a number of Imperatives under the Materials Petal. Project teams are encouraged to select products through Declare to ensure they meet Living Building Challenge materials requirements. If a suitable product cannot be found in the Declare database, project teams can streamline the process of materials research, selection, and documentation by requesting that manufacturers list their products in Declare.

<https://living-future.org/declare/about/>



Just is an innovative social justice label for all types of organizations. Just is a call to social justice action. The program provides a simple, transparent framework for organizations to reveal much about their operations, including how they treat their employees and where they make financial and community investments. In a similar fashion to the Living Building Challenge’s Declare program, the Just program acts as a “nutrition label” for socially just and equitable organizations, and contributes to successful compliance with the Equity Petal. Just allows all organizations to make progress on improvements in corporate transparency and reap the associated benefits. The Institute invites organizations everywhere to become Just organizations.

<http://justorganizations.com>



Reveal is a simple, easy tool that communicates your building’s energy efficiency profile. Projects do not need to have renewable energy or meet a minimum or maximum threshold for energy efficiency in order to have a Reveal label. Reveal is not currently required for compliance with the Energy Petal, but is a compliance tool for the 2030 Challenge.

<https://living-future.org/reveal>

WEBSITE

The <https://living-future.org> website has many additional resources for teams. It has up-to-date registration and certification fee schedules, case studies of all certified projects, research papers, policy documents, tracking tools, and templates for teams. See links below:

- Policy + Advocacy: <https://living-future.org/policy-advocacy/>
- Research studies: <https://living-future.org/research/>
- Project team resources: <https://living-future.org/lbc/resources/>



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