ZERO CARBON

CERTIFICATION 1.1

LIVING FUTURE®

Agenda

- A Little About Living Future
- Living Future's Building Programs
- **Zero Carbon Certification 1.1**
  - Program Requirements
  - Certification Process
  - Program Fees
  - Pilot Program
- Case Studies & Resources
- Q&A

Hello from our **Buildings Support Team!**

You can reach us at
sales@living-future.org

Andrea Cooper
(she/her) Chicago, IL, USA

Vice President, Buildings

Jaime Van Mourik
(she/her) Bethesda, MD, USA

Vice President, Market Transformation

Emma Weiss Burns
(she/her) Minneapolis, MN, USA

Senior Manager, Buildings

Natalie Van Dreal
(she/her) Portland, OR, USA

Manager, Certification

Lea Celestial
(she/her) Eugene, OR, USA

Manager, Affordable Housing + Equity

Ava Calvano 👋
(she/her) Albuquerque, NM, USA

Manager, Buildings

A Little About

LIVING FUTURE®

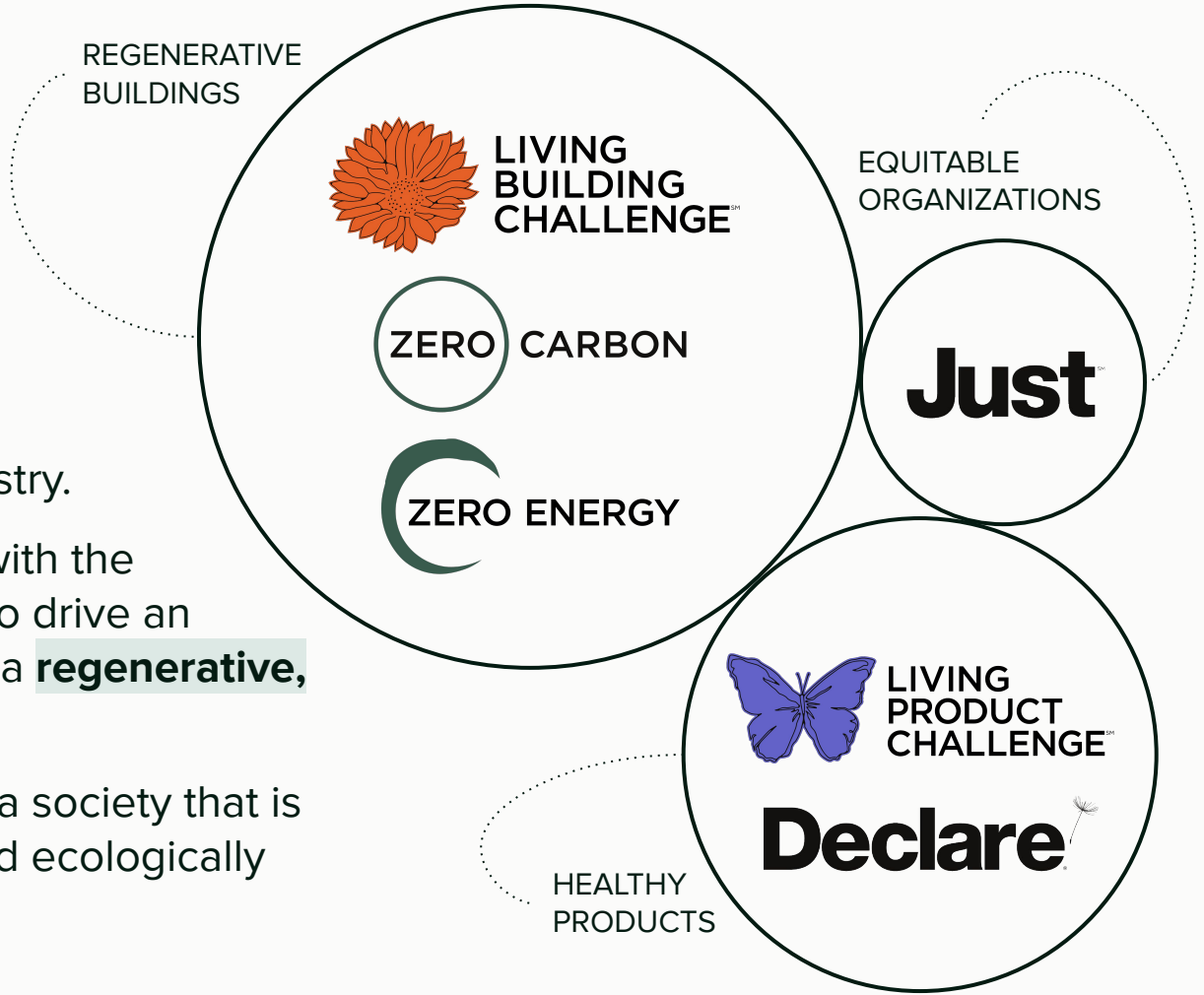
LIVING FUTURE®

Our Mission

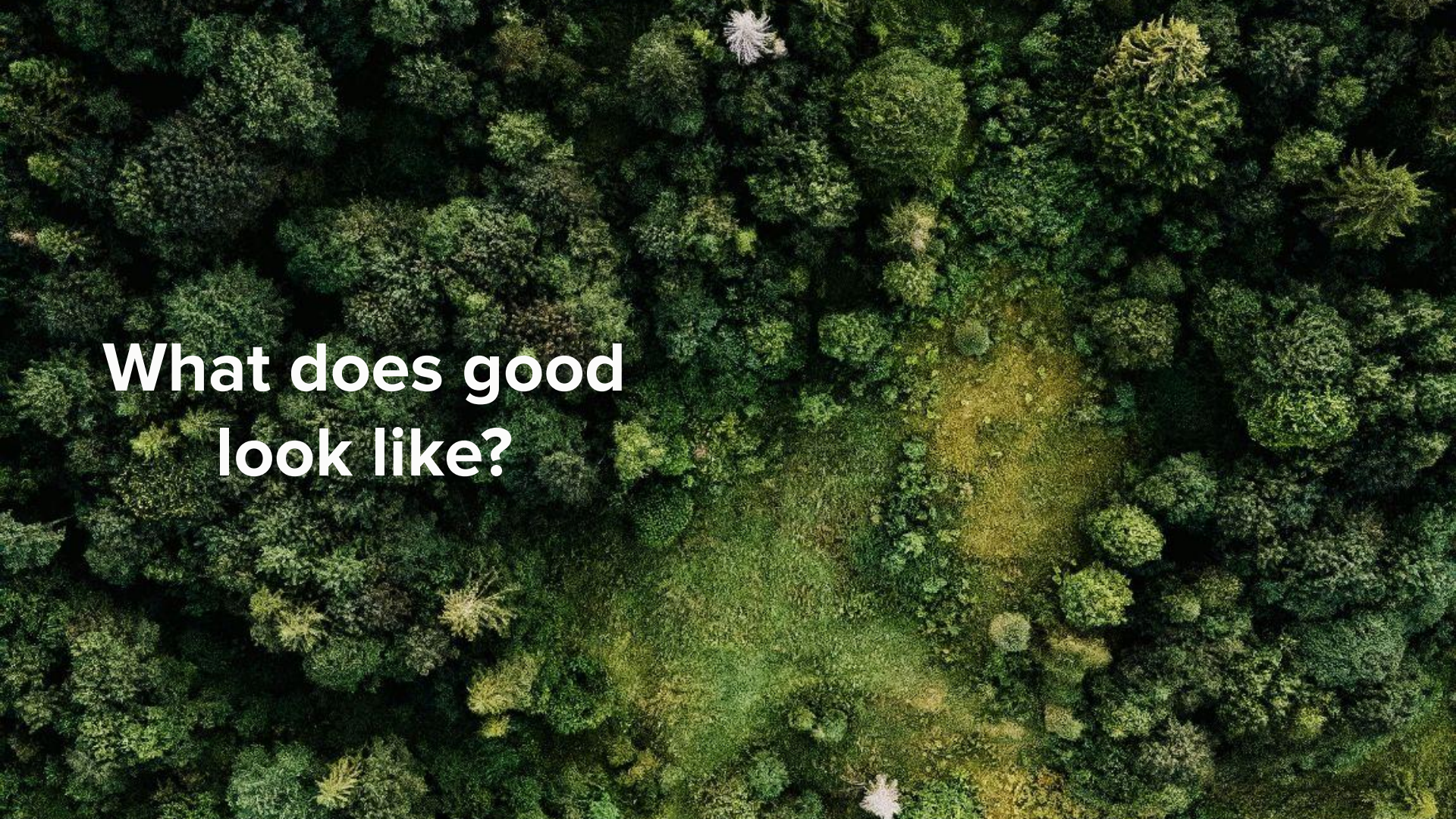
Living Future is a globally recognized nonprofit at the vanguard of the building industry.

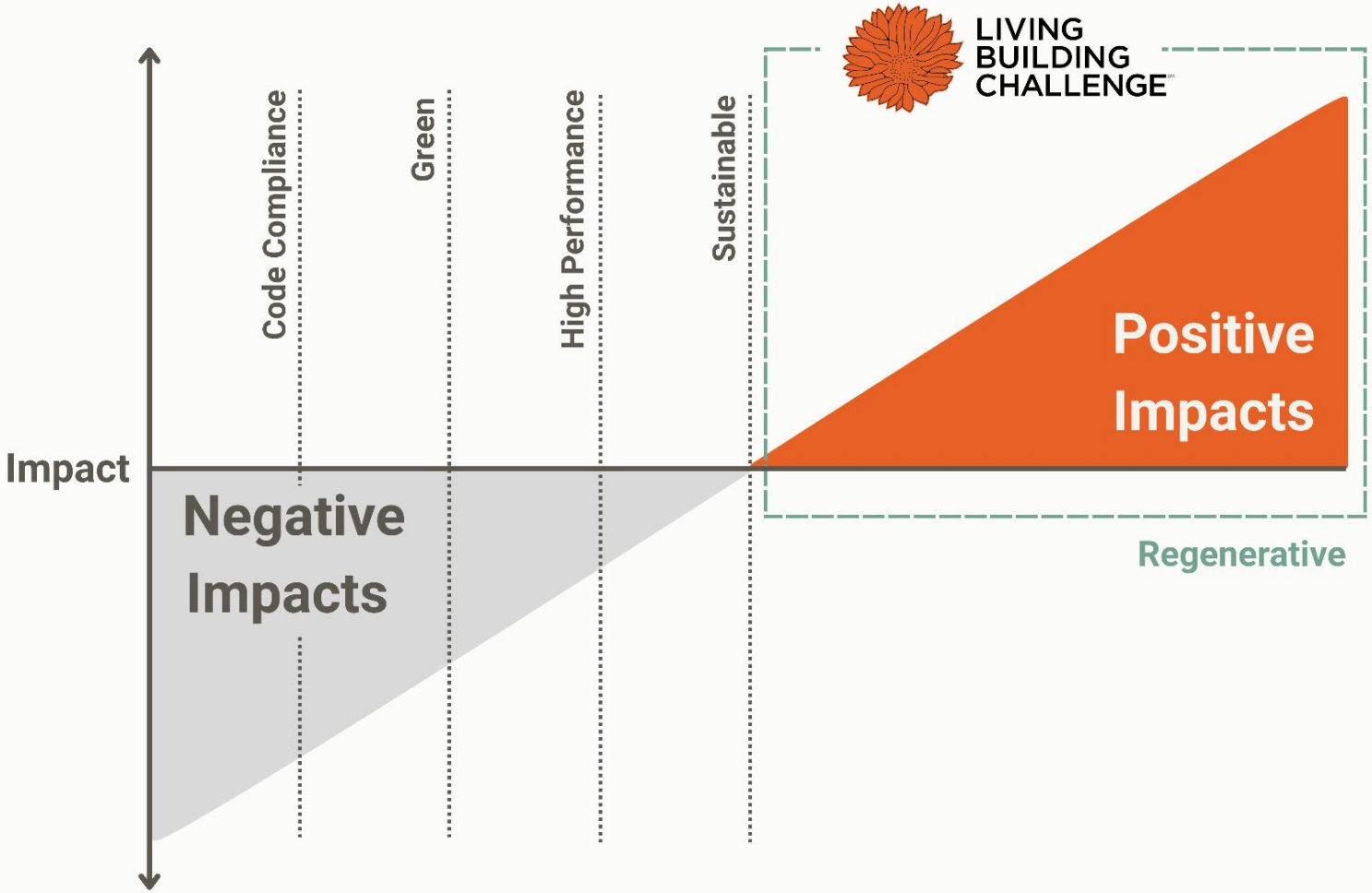
We provide industry leaders with the tools and support they need to drive an urgent transformation toward a **regenerative, resilient, and just future**.

Our vision is simple: cultivate a society that is socially just, culturally rich, and ecologically restorative.



How do we do less bad?


What does good
look like?


LIVING
BUILDING
CHALLENGE
Code Compliance
Green
High Performance
Sustainable
Impact
Positive
Impacts
Negative
Impacts
Regenerative

Living Future's **Building Programs**

Living Future manages three building certification programs:

LATEST VERSION

Living Building Challenge 4.1

LIVING BUILDING CHALLENGE℠

Requires **holistically regenerative performance**. There are seven performance areas, or Petals:

- **Place** Petal
- **Water** Petal
- **Energy** Petal
- **Health + Happiness** Petal
- **Materials** Petal
- **Equity** Petal
- **Beauty** Petal

ZERO CARBON

ZERO ENERGY

LATEST VERSION

Living Building Challenge 4.1

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LATEST VERSION

Zero Carbon Certification 1.1

ZERO CARBON

Focus narrows to **operational energy performance** + **embodied carbon reduction**.

Requirements are identical to those of the LBC Energy Petal, except for a slightly more lenient renewable energy requirement:

LBC Requirement
Supply 105% of the project's energy needs through new on-site renewables.

ZC Requirement
Supply 100% of the project's energy needs through new on- or off-site renewables.

ZERO ENERGY

LATEST VERSION

Living Building Challenge 4.1

LIVING BUILDING CHALLENGE℠

Requires **holistically regenerative performance**. There are seven performance areas, or Petals:

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Zero Carbon Certification 1.1

ZERO CARBON

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Supply 105% of the project's energy needs through new on-site renewables.

ZC Requirement
Supply 100% of the project's energy needs through new on- or off-site renewables.

LATEST VERSION

Zero Energy Certification 1.1

ZERO ENERGY

Focus further narrows to just two **operational energy performance** requirements:

100% of the building's energy needs on a net annual basis must be supplied by on-site renewable energy.

No combustion is allowed.

LATEST VERSION

Living Building Challenge 4.1

LATEST VERSION

Zero Carbon Certification 1.1

LATEST VERSION

Zero Energy Certification 1.1

All three building programs are **performance-based**. Every project must demonstrate performance over a one-year period in order to achieve certification.

The Building Certification Process

Registration

1

Register your project as soon as possible to lock in program requirements and access support from our team.

Project Support

2

Our team is available to discuss unique project circumstances and help clarify requirements through technical support calls and email.

Audit

3

Takes place upon construction completion and, if successful, results in a “Ready” designation.

Occurs after a continuous, 12-month, post-occupancy performance period. If successful, leads to Certification.


ZERO CARBON
CERTIFICATION 1.1

Arlington County's Green Building Incentive Policy

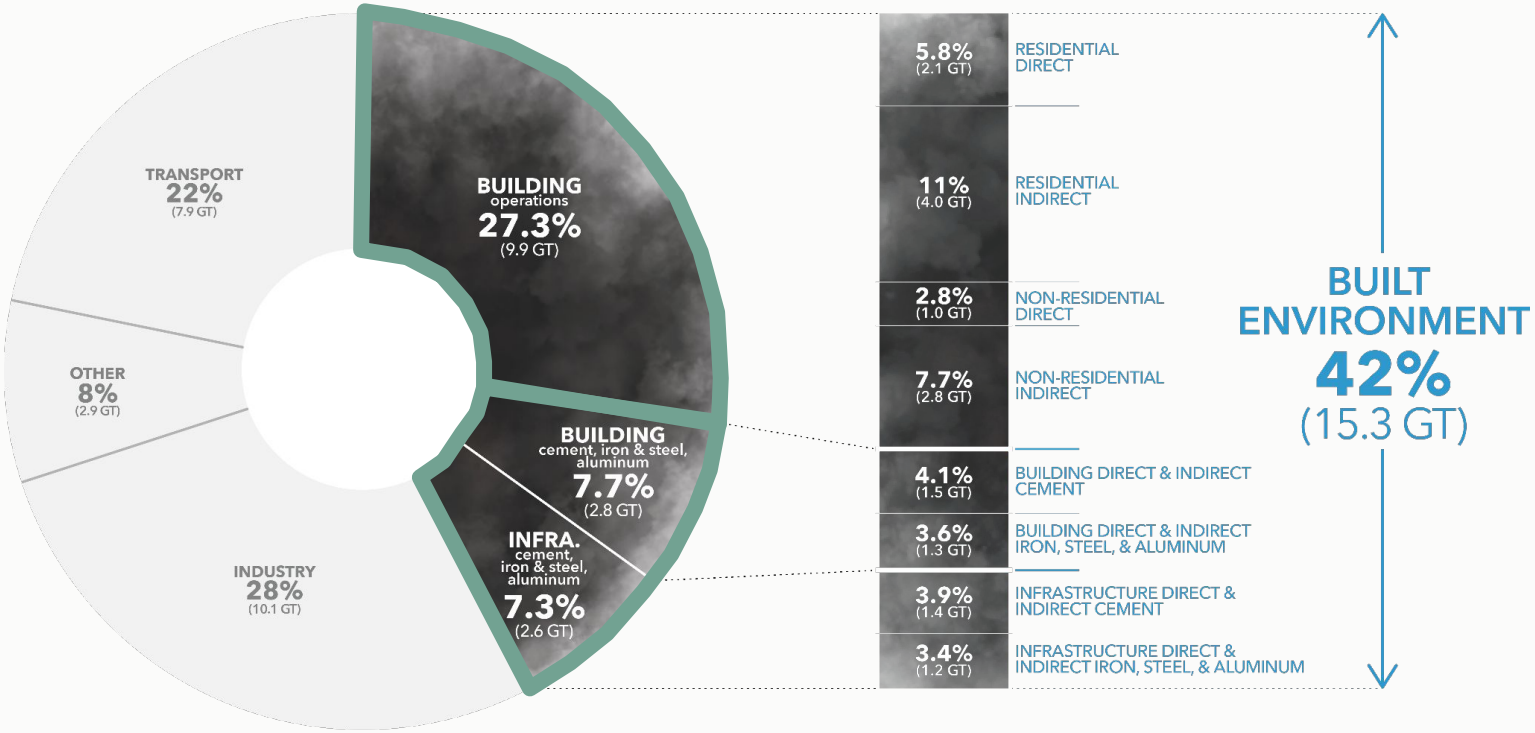
0.25 FAR	0.35 FAR	0.45 FAR
• LEED v5 Gold* • Energy Optimization Performance Improvement • Baseline Prerequisites (Appendix 1) • ENERGY STAR Score 80 or LEED site Energy Use Intensity (EUI) performance verification • 2 Items from *Extra List* (Appendix 2)	**Option 1:** • LEED v5 Gold* • Energy Optimization Performance Improvement • Baseline Prerequisites (Appendix 1) • ENERGY STAR Score 85 or LEED site Energy Use Intensity (EUI) performance verification • 3 Items from *Extra list* (Appendix 2) ***OR (see next two rows in this column below)***	**Option 1:** • LEED v5 Platinum* • Energy Optimization Performance Improvement • Baseline Prerequisites (Appendix 1) • ENERGY STAR Score 90 or LEED site Energy Use Intensity (EUI) performance verification • 4 Items from *Extra List* (Appendix 2) ***OR (see next two rows in this column below)***
	0.35 FAR Incentive Package[1] (Case Study + Benchmarking)	**0.45 FAR Incentive Package[1] (Case Study + Benchmarking + Streamlined GB Permitting)**
	Option 2: • ILFI Zero Carbon • Energy Reporting for a period of 10 years • Electric Vehicle (EV) Charging	**Option 2:** • ILFI Zero Carbon • Energy Reporting for a period of 10 years • Electric Vehicle (EV) Charging • Post-occupancy recommissioning

1 For the FAR Incentive Package for Option 2 under the 0.35 and 0.45 FAR tiers, please reference Appendix 4 for further information.

* Other certifications are authorized as set forth in this GBIP.


The construction and operation of our built environment is responsible for 42% of global CO2 emissions annually.

TOTAL ANNUAL GLOBAL CO_2 EMISSIONS
Direct & Indirect Energy & Process Emissions (36.3 GT)



Analysis & Aggregation by Architecture 2030 using data sources from IEA & Statista.

Operational Carbon

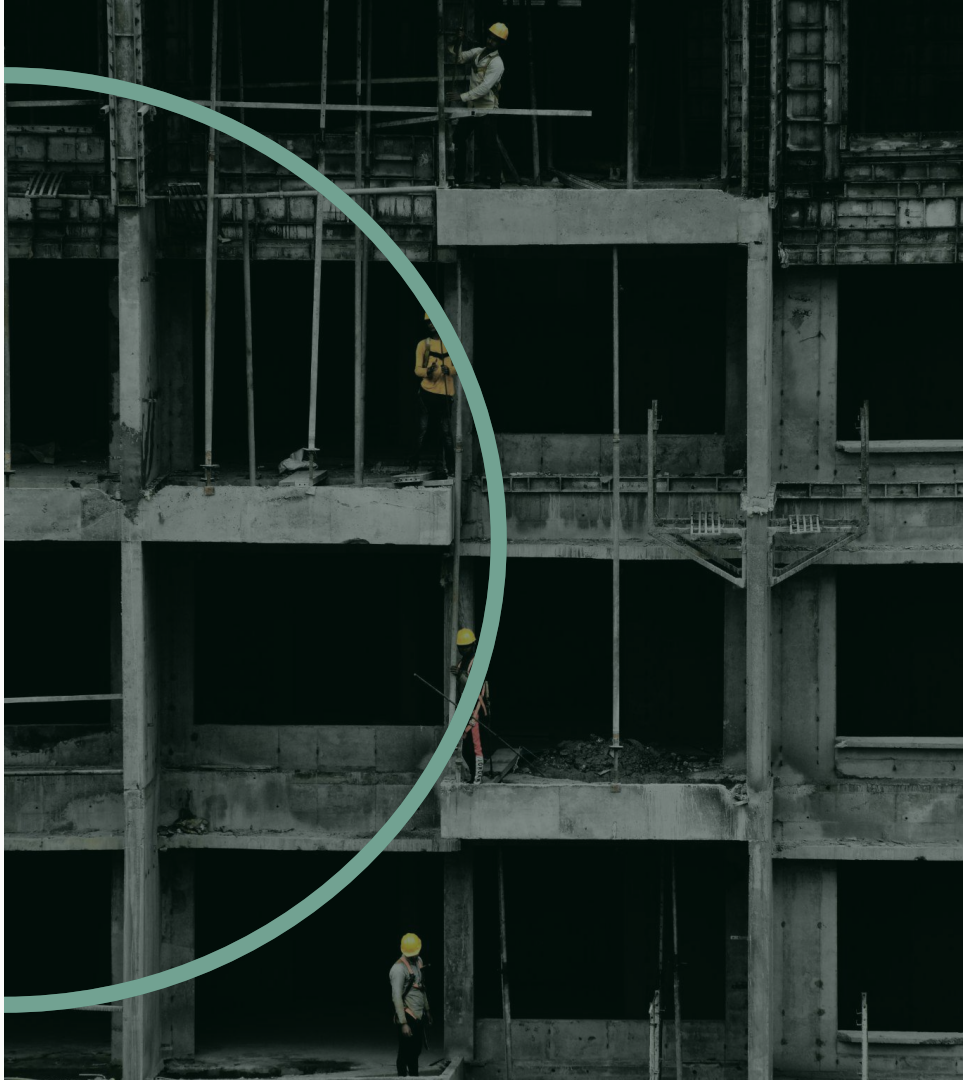
The greenhouse gas emissions associated with the operational energy use of a building.

This includes all carbon from energy required to condition, ventilate, and power the building, including but not limited to lighting, plug loads, heating and cooling, process loads, and cooking.

Embodied Carbon

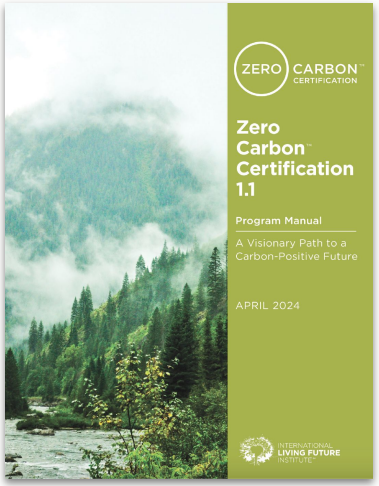
The greenhouse gas emissions associated with the raw material extraction, manufacturing, processing, transportation, installation, maintenance, and disposal of all building materials.

Between now and 2030, it's expected that the majority of the building sector's carbon emissions will be in the form of embodied carbon.



ZERO CARBON
CERTIFICATION 1.1

Requires project teams to demonstrate **measured carbon neutrality** in the project's operational and embodied carbon emissions



Latest iteration (1.1) released in Spring 2024

ZERO CARBON

Building Typology

Every Zero Carbon project is classified by **typology**.

Typology directly impacts program requirements.

You can reach us at
sales@living-future.org

NEW BUILDING

Any project that encompasses the construction of a new building or a new addition.

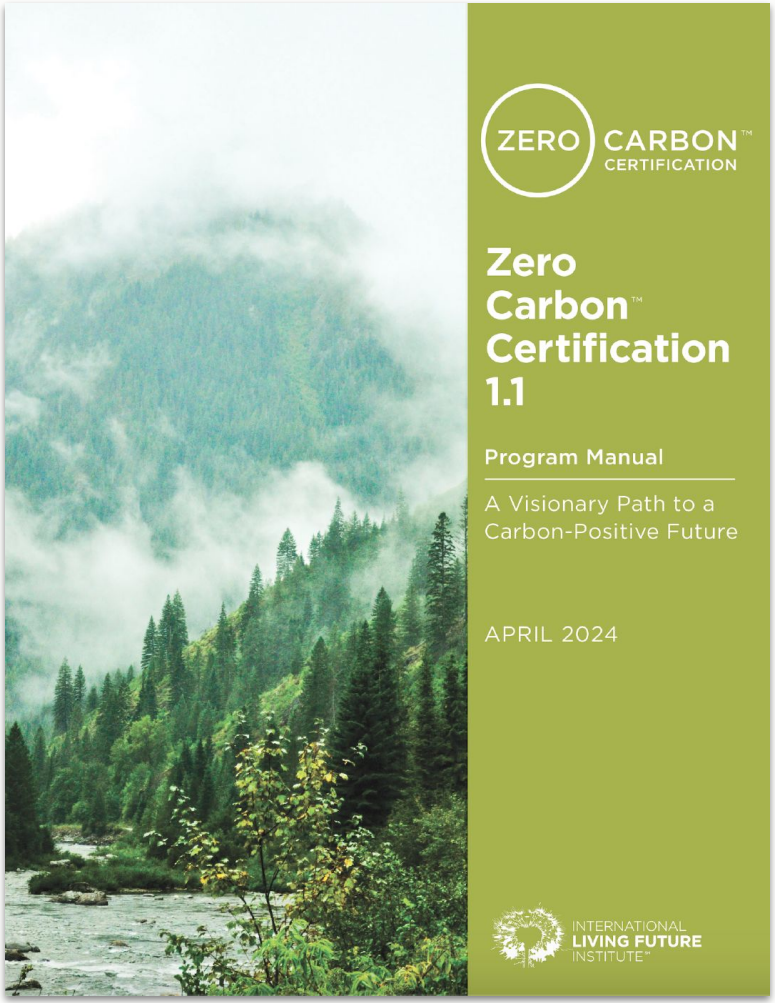
BUILDING RENOVATION

Any project that alters either or both the thermal envelope or the major systems* of an existing building.

INTERIOR

Any project that is a complete interior fit-out and does not alter the site, thermal envelope or the major systems* of a building. The base building may be newly constructed or existing.

* **Major systems** include electrical, conditioning, ventilation, and water systems.



Program details are communicated via a single, consolidated document: **the program manual**.

Program manuals are publicly available and can be viewed and/or downloaded by following the link below:

https://support.living-future.org/article/1548-program-manuals

ZERO CARBON
CERTIFICATION 1.1

Program Requirements

Embodied Carbon

- 1: REDUCE EMBODIED CARBON
- 2: OFFSET EMBODIED CARBON

Operational Carbon

- 3: ACHIEVE EFFICIENCY TARGET
- 4: REMOVE/ RESTRICT COMBUSTION
- 5: USE RENEWABLES
- 6: METER ENERGY USE
- 7: MANAGE FUGITIVE REFRIGERANTS

1: REDUCE EMBODIED CARBON

Requirements

- **New Buildings + Building Renovations** | Demonstrate a **20% reduction** in the embodied carbon emissions of primary materials and exterior materials across life cycle stages A1-A5 as compared to a baseline building of equivalent size, function, and energy performance.

- **All Projects** | Set a goal to achieve below a whole-building, upfront embodied carbon threshold of **350 $kgCO_2e/m^2$** across life cycle stages A1–A5.

- **All Projects** | Select **carpet, ceiling tile, and gypsum wallboard** with a lower than industry average carbon footprint (per EC3 or equivalent).

1: REDUCE EMBODIED CARBON

Additional Guidance

Applicable Typologies	Included Materials	LCA Scope	Target
New Buildings + Building Renovations	Primary + Exterior	A1-A5	Show a 20% reduction compared to baseline equivalent building
All Typologies	Primary + Exterior + Interior (i.e., whole-building)	A1-A5	Show a whole-building upfront embodied carbon footprint of less than 350 $kgCO_2e/m^2$ *
All Typologies with the included materials in scope	Carpet, Ceiling Tile, and/or Gypsum Wallboard	A1-A5	Select products with lower than industry average embodied carbon footprint

* Note this target is a “goal,” not a hard requirement

1: REDUCE EMBODIED CARBON

Additional Guidance

Included materials for **20% reduction target**

Primary Material Assemblies	Substructure	• Foundations • Subgrade Enclosures • Slabs-On-Grade

	Shell	• Superstructure of Floors, Roof, and Stairs
		• Exterior Vertical and Horizontal Enclosures
		  • Cladding
		  • Insulation
		  • Fenestration
		  • Roof Assemblies

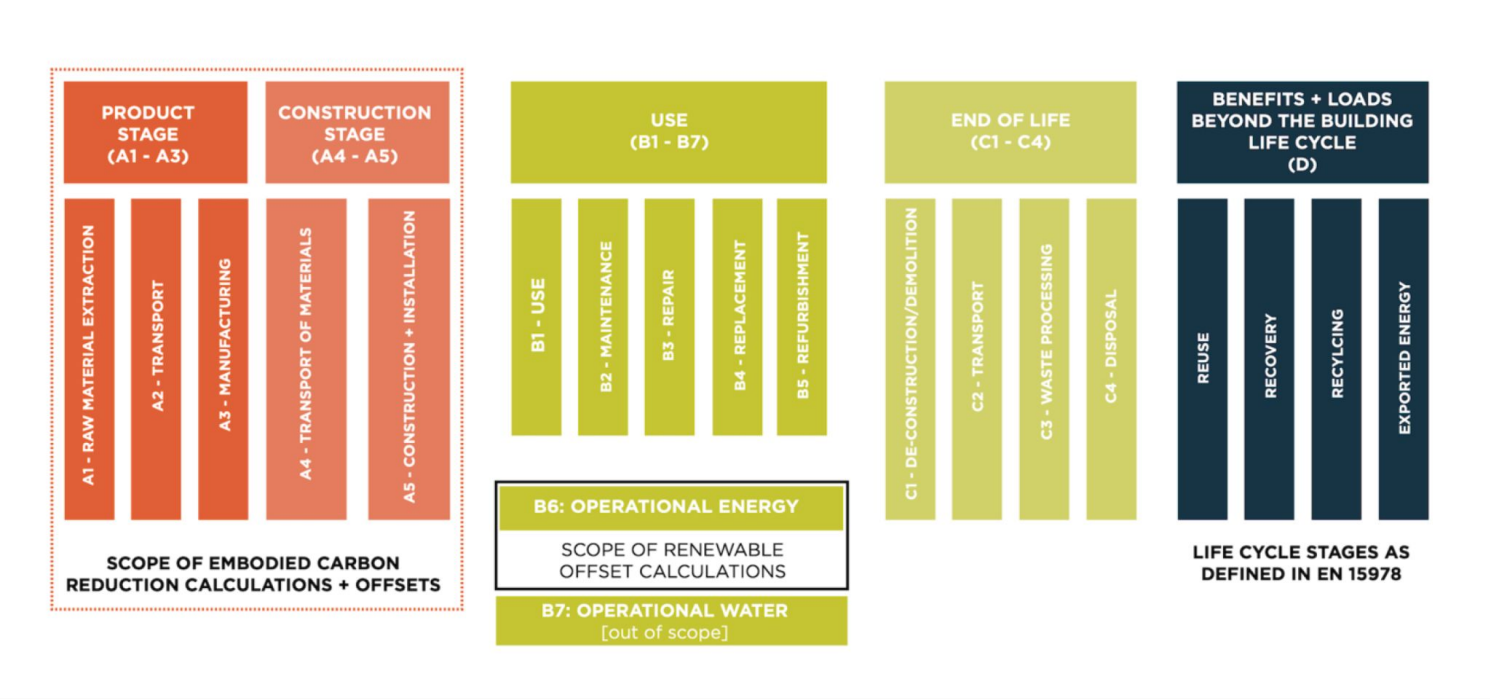
Exterior Material Assemblies	Site Materials	• Roads, Paths and Paving • Special Surfacing and Paving

Interior Material Assemblies	Interior Construction	• Interior Partitions
		  • Framing
		  • Insulation
		  • Fenestration

	Interior Finishes	• Wall • Flooring • Ceiling
Other Material Assemblies	*Interior Equipment and Furnishings*	• *Furniture* • *Fixtures* • *Equipment*
	Services	• *Mechanical* • *Electrical + Fire Detection* • *Plumbing + Fire Suppression*
	Sitework	• *Site Preparation* • *Liquid and Gas Site Utilities* • *Electrical Site Improvements*

Included materials for **whole-building upfront embodied carbon target**

Additional Guidance



1: REDUCE EMBODIED CARBON

Additional Guidance

"How do we hit our embodied carbon targets?"

Reduction Type	Example Strategies
Material Quantity Reduction	• Building or material reuse • Advanced structural design for material efficiency • Prefabricated construction
Material Alternative	• Structural type alternative • Wall assembly alternative • Carbon-sequestering alternative
Product Alternative	• Salvaged product • Locally-sourced product • Product manufactured using renewable energy • Sustainably-harvested product

2: OFFSET EMBODIED CARBON

Requirements

All Projects | Disclose and offset **100% of the embodied carbon emissions (tCO2e) associated with life cycle stages A1-A5 of primary materials, exterior materials, and interior materials*** through on-site carbon-sequestering materials and/or by a one-time carbon offset purchase through an ILFI-approved carbon offset provider.

* This is the whole-building upfront embodied carbon footprint you calculated for the embodied carbon reduction requirements!

2: OFFSET EMBODIED CARBON

Additional Guidance

Approved Carbon Offsets*	Prohibited Carbon Offsets
• Offsets that are **Green-e Climate Certified** • Offsets using methodologies that are Core Carbon Principles approved (a.k.a. **CCP-approved**) by the Integrity Council for the Voluntary Carbon Market	• Renewable Energy Certificates (RECs) • The carbon-reducing function of any on-site elements, such as native landscapes

* Offsets must be attributed to the project and retired on its behalf

3: ACHIEVE EFFICIENCY TARGET

Requirements

Achievement of the project's efficiency target must be demonstrated on a net annual basis over the course of a post-occupancy 12-month performance period:

- **New Buildings** | 20% improvement beyond the energy consumption levels required by ASHRAE Standard 90.1-2019 or later (demonstrating compliance under Appendix G) or IECC 2021 or later.

- **Building Renovations + Interiors** | Meet the energy consumption levels required by ASHRAE Standard 90.1-2019 or later (demonstrating compliance under Appendix G) or IECC 2021 or later, OR achieve a 50% reduction of energy use intensity (EUI) from a typical existing building of an equivalent type, size, and location using ILFI-approved tools.

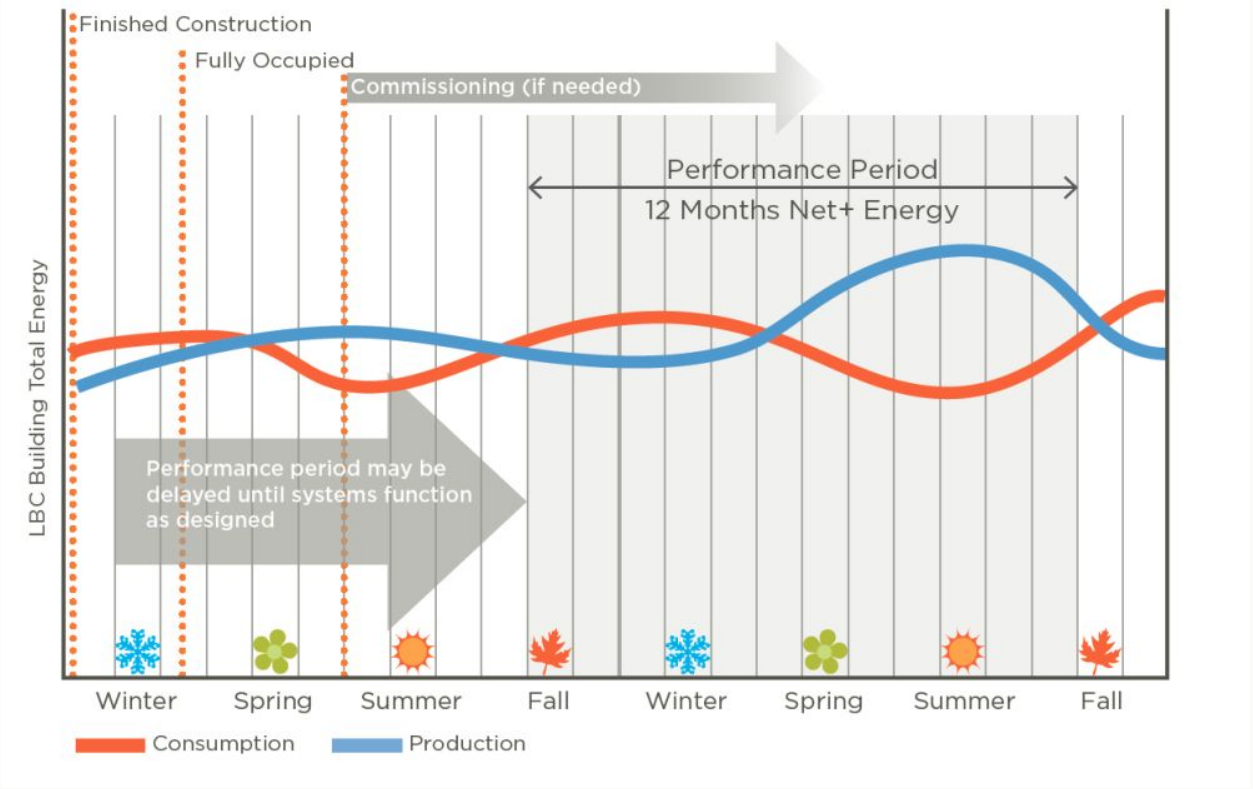
3: ACHIEVE EFFICIENCY TARGET

Additional Guidance

The team chooses the start of the performance period. It can begin:

- Once all systems are fully functional and operating as designed
- Once the building is 85% occupied

Systems may be adjusted throughout the performance period as needed.



Requirements

Projects must remove/restrict combustion in the project as follows:

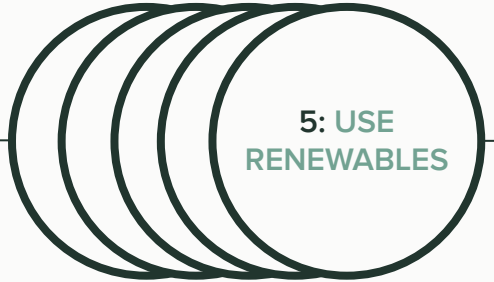
- **New Buildings** | Not allowed.
- **Building Renovations** | Allowed for HVAC systems that are not in project scope. Phase-out plan and renewables offset are required.
- **Interiors** | Allowed for HVAC systems that are not in project scope. Advocacy for a phase-out plan is required.

Additional Guidance

- **EC-002 Specialized Combustion** | Combustion-based equipment used for process-specific applications that require high heat, such as Bunsen burners in a laboratory setting, are allowed.
- **EC-004 Ornamental Fireplace in Transects L1, L2, and L3** | In the limited instances, a single indoor wood-burning stove or fireplace may be allowed.
- **EC-014 Emergency Power Systems** | If programmatic needs, basic project function, or code requirements mandate the inclusion of an emergency power system, and battery backup is not feasible, combustion-based backup is allowed.
- **Combustion-Based District Energy Systems** | Projects may connect to a combustion-based DES for heating/cooling (triggers additional requirement for phase-out plan and renewable offset)

Requirements

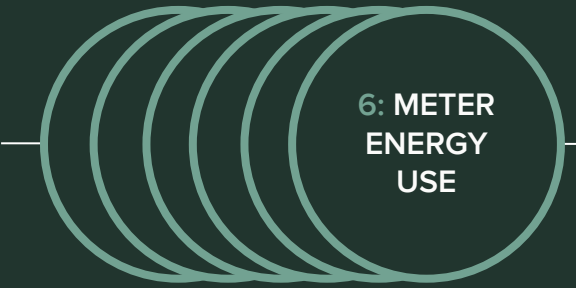
All Projects | Provide **100%** of the operational energy use associated with the project by new **on- or off-site** renewable energy.



Additional Guidance

Renewable energy must be produced **either directly on-site or procured from a dedicated, new off-site installation.**

- **Appropriately owned** - Contributing systems must be either directly owned or leased via a 15-year contract (or equivalent). Direct connection is not required; vPPAs are permitted.
- **Solely attributed** - RECs generated from the claimed systems must be maintained or retired by the project or on its behalf.
- **Additional** - Contributing systems must be either new or pre-constructed for the project.
- **Identifiable** - Contributing systems must be physically identifiable, rather than a generalized power purchase.
- **From allowed sources** - Allowed sources include passive solar, photovoltaics, solar thermal, wind turbines, water-powered microturbines, direct geothermal, or fuel cells powered by hydrogen generated from renewably powered electrolysis.
- **Educational** - The use of renewables must be highlighted at the project site through signage, BAS dashboards, etc.



Requirements

All Projects | Meter* the project's energy use and report it in the Energy Production and Demand Table.

* Although sub-metering is best practice and strongly encouraged in order to better understand and troubleshoot energy end uses, it is not required for certification

Requirements

- **All Projects** | Have a **maintenance plan** in place to monitor and reduce fugitive refrigerant emissions (from sources such as refrigeration, air conditioning, and fire suppression systems).

- **All Projects** | A member of the team must commit to reducing embodied and operational carbon within the mechanical, electrical and plumbing (MEP) industry. The team member must establish and sign a company plan to reduce operational and embodied carbon on MEP systems, request low-GWP refrigerants during projects' design phases, and request Environmental Product Declarations (EPDs) for MEP products. Signatories of the **MEP 2040 Commitment** comply with this requirement.

ZERO CARBON
CERTIFICATION 1.1

Program Requirements

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- 5: USE RENEWABLES
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- 7: MANAGE FUGITIVE REFRIGERANTS

The Certification Process

You can reach us at
sales@living-future.org

- One person from your organization or project team will need an active **Professional Living Future Membership** to register the project via the project **Portal**
- The **Registration fee** is a flat fee and is due upon enrollment:

Living Building Challenge (including Petal and Core)	$5,000 USD
Zero Carbon Certification & Zero Energy Certification	$2,500 USD

The Certification Process

- Upon registering, you team can begin uploading documentation to the project **Portal**
- Your team may schedule up to **three 1-hour calls** with our Buildings Team staff
- As needed, submit **Request for Rulings (RfRs)** to request deviations from the standard program requirements and/or secure permission to use pre-approval pathways

The Certification Process

STEP 1 — **REGISTRATION**

STEP 2 — **PROJECT DEVELOPMENT/ COACHING**

STEP 3 — **READY AUDIT**

STEP 4 — **FINAL AUDIT**

STEP 5 — **CERTIFICATION RULING**

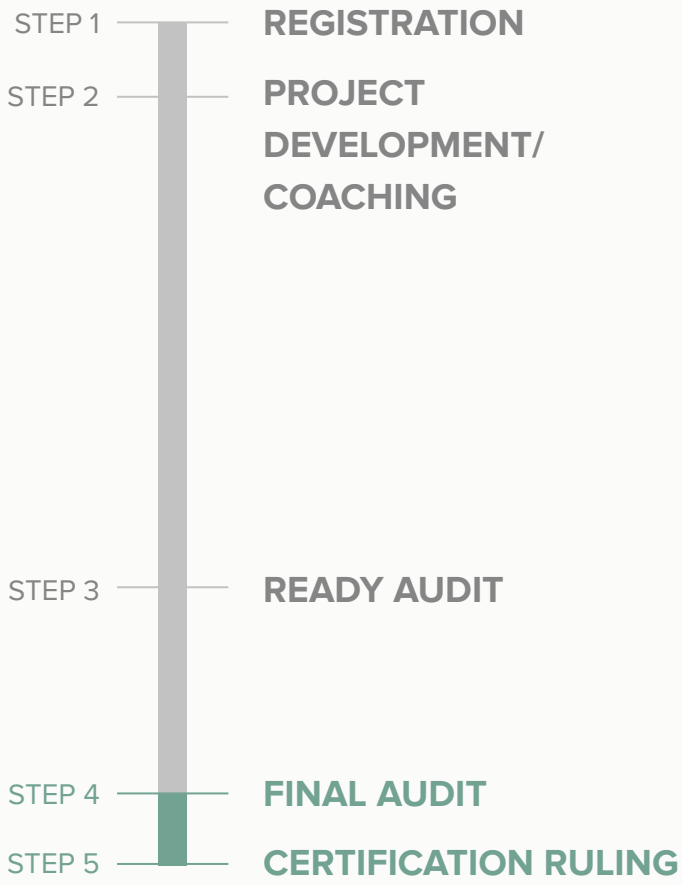
- Teams may submit their documentation for Ready Audit upon **construction completion**
- The **Certification fee** is due when the project submits for Ready Audit and is based on project size:

	USD / Sq. Ft.	USD / Sq. M.	Minimum
Living Building Challenge	$0.13	$1.399	$7,000
Core Green Building Certification	$0.08	$0.861	$3,500
Zero Carbon Certification	$0.06	$0.646	$3,500
Zero Energy Certification	$0.04	$0.431	$2,000

The Certification Process

- Once the Certification fee is paid, Living Future will assign a **third-party auditor** to review the project documentation
- If the Ready Audit is successful, the project will receive a **“Ready” designation** (e.g., LBC Ready)

The Certification Process



- Once a project has achieved Ready status and has completed its **performance period** (12 consecutive months of occupancy) the team may submit for **Final Audit**
- For LBC projects, there will also be a **virtual site tour** before the certification ruling is made
- If the Final Audit is successful, the project will officially receive its **certification ruling** 🎉

ZERO CARBON

PILOT PROGRAM

LIVING FUTURE®

September 2025

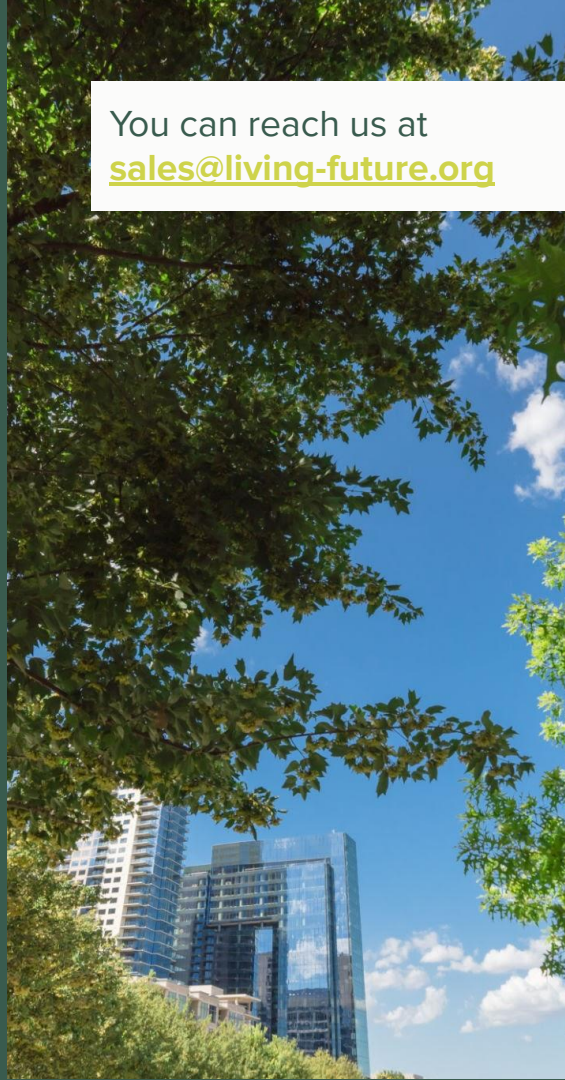
Living Future is seeking Pilot Projects to utilize our new Zero Carbon certification pathways, including **Existing Buildings** with no renovation/construction scope-of-work

ZERO CARBON
PILOT PROGRAM

Help shape the future of carbon standards.

LEARN MORE
https://support.living-future.org/article/1543-zero-carbon-pilot-registration-guide

APPLY
https://portal.living-future.org/prog/zero_carbon_pilot/



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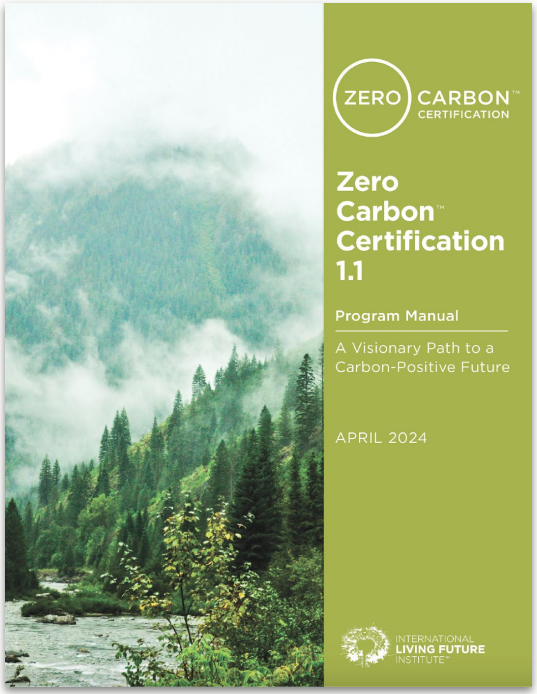
LIVING FUTURE®

Resources

Access the **Program Manual**



Program details are communicated via a single, consolidated document: **the program manual**.

Program manuals are publicly available and can be viewed and/or downloaded by following the link below:

https://support.living-future.org/article/1548-program-manuals

Book a **Program Intro Call** with us

We offer **30-minute calls free of charge** to those interested in the Living Building Challenge, Zero Carbon Certification, and/or Zero Energy Certification to discuss their project, ask questions, and learn more about program requirements, the certification process, and available resources.

Now through June ➜ receive a 10% discount off registration when you book an program intro call!

Schedule a call with our team by following the link below:

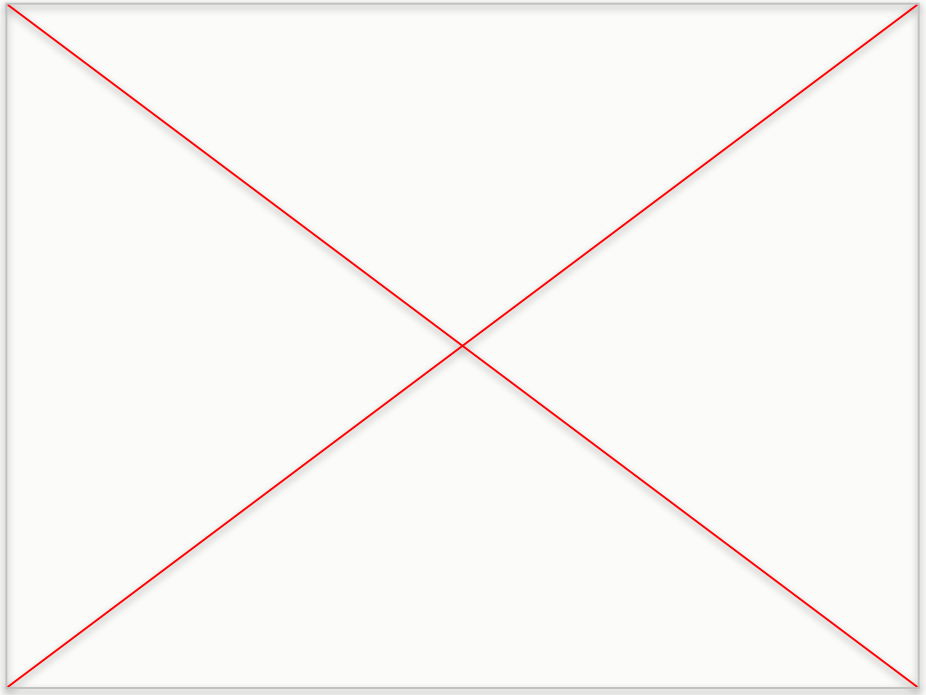
https://store.living-future.org/collections/building-certifications-support

Check out our **support articles**

We have new support articles! Find detailed guidance on registration, fees, project support, RfRs, audit, and more.

Check out the new articles by following the link below:

https://support.living-future.org/collection/1529-buildings



Explore **case studies**

Every certified project is required to publish a case study. You can search the **Living Future webpage** by project name, or navigate to the **Project Map** to search by program and location.

Find the map by following the link below:

https://living-future.org/our-living-future-map/

Explore **case studies**

Climate Pledge Arena
All-electric arena with salvaged iconic roof

Location: Seattle, Washington, U.S.A.
Gross Building Area: 932,000 ft^2

Aurora Amazon Fresh
New grocery store location by Amazon

Location: Seattle, Washington, U.S.A.
Gross Building Area: 37,000 ft^2

Eindhoven DC4
Newly constructed, cutting-edge warehouse

Location: Eindhoven,
Zuid Holland, Netherlands
Gross Building Area: 425,680 ft^2

Lon 6 Pancras Square
Commercial office renovation for Google

Location: London, England, United Kingdom
Gross Building Area: 531,576 ft^2

Explore **case studies**

Aurora Amazon Fresh
New grocery store location by Amazon

Location: Seattle, Washington, U.S.A.
Gross Building Area: 37,000 ft^2

Annual reduction of over 100 tons of CO_2e per year.

Highlighted zero carbon strategies:

- Lower carbon concrete
- Doors on refrigerated cases
- Natural refrigerant system
- All-electric kitchen and hot water heating
- Timber based signage
- Electric vehicle charging stations

“The majority of the cost premiums for the project were due to the speed at which the interventions were implemented, with a 2% cost premium resulting in an estimated 20% lifecycle reduction in emissions.”

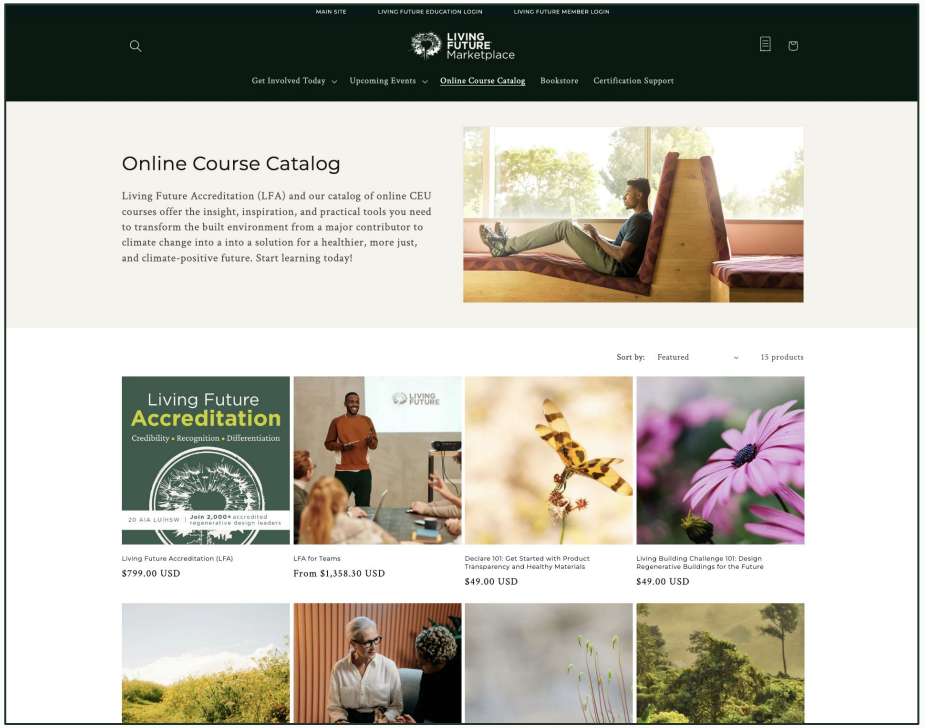
Deepen your knowledge with **online courses**

Grow your understanding of Living Future's programs and philosophy while earning CEUs:

- **Living Future Accreditation** (LFA), our professional credential
- **Zero Carbon Certification 101**
- **Embodied Impact Course Bundle**

Browse the catalog by following the link below:

https://store.living-future.org/collections/living-future-accreditation-online-courses



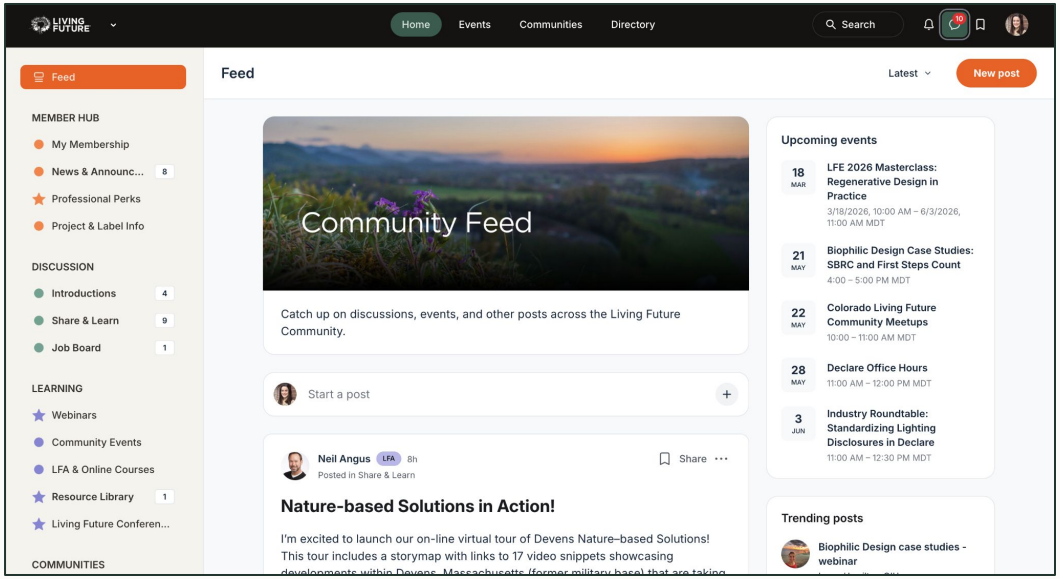
Connect with co-conspirators through **membership**

Our **Community Platform** is a no-cost networking resource, where you can browse our member directory, post to discussion boards, and join regional communities.

Become a **Professional Member** to gain access to course discounts, webinars, the Resource Library, and more.

Join for the Community for free by following the link below:

https://community.living-future.org/feed



Ready to build your team's capacity to lead successful Zero Carbon projects?

Reach out.

sales@living-future.org

We offer customizable packages for consulting services, lunch and learns, webinars, and more.

Q&A

Connect with us at sales@living-future.org