

2030

SUSTAINABILITY
ACTION PLAN
2024-2027

CambridgeSeven



Roux Center for the Environment, Bowdoin College, LEED Platinum

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Architecture
Urban Design
Master Planning
Programming
Interior Design
Graphic Design
Exhibit Design

Stefanie Greenfield
Steven Imrich
Patricia E. Intrieri
Gary C. Johnson
Yongjoo Kim
Peter Kuttner
Timothy D. Mansfield
Adam P. Mitchell
Marc Rogers
Jose Silveira

Stefan Bold
Jan L. Brenner
Chris Muskopf
James C. Puopolo
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Douglas Simpson
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Pamela N. Sullivan
David E. Wiborg

Robert Ivy, FAIA
EVP/Chief Executive Officer
The American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006-5292

April 2, 2018

Re: AIA 2030 Commitment Program

Dear Robert,

CambridgeSeven, a 62-person firm located in Cambridge, MA, is hereby signing on to the AIA 2030 Commitment program and its goal of carbon-neutral buildings by the year 2030.

The places where we live, work and play represent the largest sources of greenhouse gas emissions in America, as well as around the world. The design and construction industry has made significant strides toward creating high performance buildings of all types and uses. As a result, the industry is positioned to have a profound impact by continuing to foster high building performance and reducing building-related greenhouse gas emissions.

As architects, we understand the need to exercise leadership in creating the built environment. We believe we must alter our profession's practices and encourage our clients and the entire design and construction industry to join with us to change the course of the planet's future. A multi-year effort will be required to alter current design and construction practices and realize significant reductions in the use of natural resources, non-renewable energy sources and waste production and promote regeneration of natural resources.

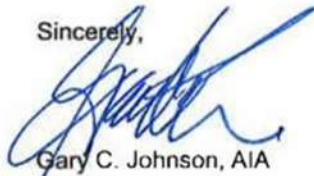
We therefore commit CambridgeSeven to take the following steps that are part of the AIA 2030 Commitment program:

- Create an account in the Design Data Exchange (DDx).
- Within six months of the commitment date, conduct firm engagement related to the 2030 Commitment and create a Sustainability Action Plan.
- We endeavor to meet 2030 energy reduction targets across every project as a deliberate part of design.
- Within the first year and each year thereafter, report the progress of our firm's entire design portfolio toward meeting the 2030 goals by using the AIA 2030 DDx.
- Review how progress and practices are tracking with our firm's Sustainability Action Plan. Update our Sustainability Action Plan once every three years, reflecting on the progress shown our reporting.

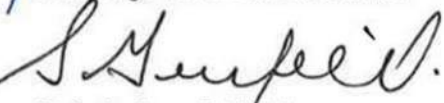
We also support the critical need for more consistent and more rigorous metrics related to actual building performance. We further commit our firm's assistance to the AIA and others in the ongoing development of effective metrics and standards for reporting purposes. It is understood that reporting through the AIA 2030 Commitment program must respect the confidentiality of information about specific clients, projects and proprietary tools.

We look forward to working with you and our professional colleagues to achieve the goals of the 2030 Commitment.

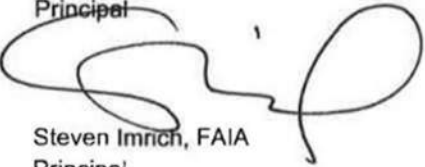
Sincerely,



Gary C. Johnson, AIA
President
Cambridge Seven Associates, Inc.



Stefanie Greenfield, AIA
Principal



Steven Imrich, FAIA
Principal



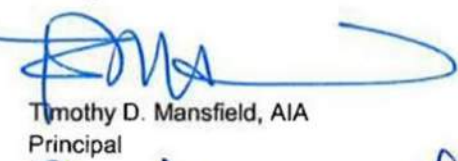
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Principal



Yongjoo Kim, AIA
Principal



Peter Kuttner, FAIA
Principal



Timothy D. Mansfield, AIA
Principal



Adam P. Mitchell, AIA
Principal



Marc Rogers
Principal



Jose Silveira
Principal



**Our
Goal**

**100%
Net Zero Energy
Buildings by 2030**



New England Aquarium Renovation, Boston, MA

Sustainable History

CambridgeSeven was founded in 1962 by a group of seven designers with varied interests and backgrounds who believed their collaborative efforts would be far more effective than those of any individual. Since the very first project for the New England Aquarium, and in numerous projects in architecture and exhibit design today, CambridgeSeven designs buildings that teach a respect for our environment. We strive to educate the public about conservation through both example and content.

Our in-house LEED (Leadership in Energy and Design), ILFI (International Living Future Institute), and PHIUS (Passive House Institute, U.S.) accredited professionals collaborate with green design leaders and engineers to create total building system integration for our clients at municipalities, universities, not-for-profits, and businesses that operate both nationally and internationally.

“From the start, the Seven set out to combine architecture with the other design arts - with exhibits, with graphics, and signage, with public art, with product design, with film, even with city planning. Most of their work is a collaboration among many disciplines.”

Robert Campbell
Architecture Critic



1000 Massachusetts Ave. Studio



Solar Energy Exhibit, National Mall, 1975



Founding Partners

Sustainability Work

2018-2023



The Williams Inn, Williamstown, MA, LEED Gold



CambridgeSeven

These hydraulic elevators are a major energy consumer within our building using 40 horsepower electric motors to lift the cabs hundreds of times per day. In contrast, walking up a flight of stairs will burn at least 5 calories per flight. A climb from the lobby to the fifth floor can therefore burn at least 40 calories. If you add in some speedier stepping, you could double your calories burned.



CambridgeSeven

Poland Spring water is ordinary groundwater that has been trucked from Maine. Questions have been raised about the cleanliness of the water which is pumped from low-lying, populated areas near potential sources of contamination. Toxins from long-term storage in plastic bottles have been shown to leach into the water. Cambridge tap water is some of the cleanest and best tasting water around. Water from the kitchen sink and the refrigerator are filtered, and you are reducing carbon emissions by cutting out the truck.



CambridgeSeven

Reduce your paper use by using Bluebeam Revu for mark-ups, and large monitors for pin-ups. When feasible, print double-sided. Use single-side printed scrap paper from the recycling bin for notes and sketches. Saving 1 ton of paper saves 17 trees, 6953 gallons of water, 463 gallons of oil, 587 pounds of air pollution, 3.06 cubic yards of landfill space and 4077 kilowatt hours of electricity.



CambridgeSeven

- Personal Work Station**
- Task Light
 - Monitors
 - Computer (if possible)
- Last one on Mezzanine**
- Shoo Fan & Lights
 - Overhead Fans (next to plotter)
 - Wall Wash Spots (top of stairs)
- Last one on Main Floor**
- East Big Fan (under stairs)
 - West Big Fan (outside War Rm)
 - Unplug Kitchen Appliances
 - Set Alarm



CambridgeSeven

Using ceramic mugs or dishes instead of paper reduces material consumption, air and water pollution and solid waste after just 60 uses. There are energy savings after 118 uses. Typically ceramic dishes are used over 2,500 times. Some plasticware has been shown to leach hormone changing chemicals into your food. Using durable dishware is more environmentally friendly, less expensive & healthier.



CambridgeSeven

- What Can I Compost?**
- Anything Organic
 - Any Food Waste
 - Dairy Products, Egg & Eggshells
 - Meat and Bones
 - Coffee Grounds & Tea Bags
 - Wood Chopsticks & Toothpicks
 - Non-Plastic Wine Corks
 - Sawdust & Nutshells
 - Houseplants & Flowers
 - Paper Napkins & Towels
 - Real Paper Plates
 - Food Soiled Paper
 - Waxed Paper & Cardboard
 - Newspaper & Shredded Paper
- Do Not Compost**
- PLASTIC of Any Kind
 - Plastic Lined Cartons or Cups
 - Takeout Food Containers
 - Chemically Soiled Paper



CambridgeSeven

Commuting by car costs \$9,000/year on average. Commuting by bike, about \$300/year. Plus you can earn an extra \$20/month towards your bicycle expenses if you ride 10+ times a month (up to \$240/year). Bicycling can build muscle and bone density, improve cardiovascular health, help you lose weight and make you statistically less likely to call in sick. Daily exercise can reduce stress, improve sleep patterns, reduce anxiety and make you happier.

CambridgeSeven NAG TAGS

Sustainable Progress

When CambridgeSeven signed the 2030 challenge in 2018, we created a plan to achieve 100% Net Zero Energy by 2030, increasing our sustainable practice through our design and in our internal operations. So far, we:

- Advocated Massachusetts officials for a forward-thinking energy code and stretch code
- Incorporated sustainable design requirements in standard specifications
- Researched, with Design for Freedom working group, provenance of building materials to eliminate slave and child labor in in complicated supply chain
- Revised materials library to eliminate those with chemicals of concern; added sustainable features labels, including equitable supply chain, show below

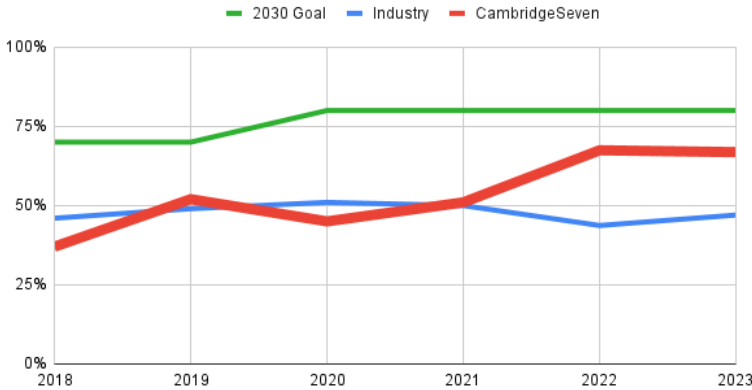


- Share high-performance project case studies internally and with colleagues and clients
- Conduct regular sustainable design training for staff
- Encourage elimination of single-use plastic in office
- Establish energy-saving protocol for office shutdown
- Offer sustainable investment options for 401K plans
- Certify building projects with USGBC's LEED; 1,151,600 sf since 2018w

“Transformation is not accomplished by tentative wading at the edge.”

Robin Wall Kimmerer
Potawatami Botanist, Author, and Professor

2030 Challenge % EUI Reduction from Baseline



CambridgeSeven's progress (red line) reducing energy use of all buildings across our portfolio since 2018.



Foundry 101 Historic Renovation, Cambridge, MA, LEED Gold

Museum Exhibition Materials Pledge



To interior finish and graphic substrate manufacturers:

As members of the museum exhibition community, and inspired by the AIA (American Institute of Architects) Materials Pledge of 2019 and the Lighting Advocacy Letter of 2021, we unite as museum exhibition designers, fabricators, and installers to ask manufactures to continue to raise their standards of transparency while providing long-lasting, high-quality materials that positively impact all people.

As museum exhibit designers, fabricators, and installers, we join with our colleagues who have signed the 2019 AIA Materials Pledge, and we also pledge to:

- support **human health** by preferring products that support and foster life throughout their life-cycles and seek to eliminate the use of hazardous substances.
- support **social health & equity** by preferring products from manufacturers that secure human rights in their own operations and in their supply chains, positively impacting their workers and the communities where they operate.
- support **ecosystem health** by preferring products that support and regenerate the natural air, water, and biological cycles of life through thoughtful supply chain management and restorative company practices.
- support **climate health** by preferring products that reduce carbon emissions and ultimately sequester more carbon than emitted.
- support a **circular economy** by reusing and improving buildings and by designing for resiliency, adaptability, disassembly, and reuse, aspiring to a zero-waste goal for global construction activities.

To address these concerns and to meet our goals of transforming the industry, we commit to continuously updating our design libraries and specifications. We commit to sharing best practices, educational resources, and preferred products with our museum exhibition community. We further commit to giving priority to products and manufacturers with a commitment to:

- Provide publicly available material ingredient disclosure information.
- Provide publicly available environmental impact disclosure information.
- Provide publicly available Design for Freedom supplier questionnaires or similar supply chain disclosure information.
- Do not stop at material transparency but strive for optimization.

To achieve this goal, we must work together as museum leadership, museum boards, exhibit directors, curators, exhibit designers, graphic designers, lighting designers, audiovisual designers, audiovisual specifiers and installers, building product manufacturers, graphic print houses, exhibit fabricators and exhibit installers to build awareness, share knowledge, drive demand, and deliver solutions. We ask you, as responsible product manufacturers, for your commitment to work towards market transformation in the museum exhibition world. To accelerate this mission and to leverage cross-industry insight and expertise, we seek your partnership in advancing this conversation at upcoming industry annual meetings, conferences and trade shows.

We value our relationship with each of you and we understand that the change we seek will not be accomplished overnight. Please join us in continued dialogue and collaboration as we learn from each other and improve the best practices of museum exhibitions.

Sincerely,

MUSEUM EXHIBITION MATERIALS PLEDGE SIGNATORIES
(see [museumMATERIALS website](#) for up-to-date signatories)



Mental Health Exhibit at the OH WOW! Science Center, Youngstown, OH



Heifer Village Exhibits, Heifer International, Little Rock, AK



Initial signatories to the *Museum Exhibit Materials Pledge*

Sustainable Exhibits

- Lead industry in designing more responsible, equitable, and sustainable exhibits through advocacy for better materials from product suppliers
- Promote committment to *Museum Exhibition Materials Pledge* for museums and designers to seek sustainable products and encourage greater transparency from manufacturers
- Distribute office-developed *Sustainable Exhibition Design & Construction Toolkit* to guide sustainable materials choices for museums

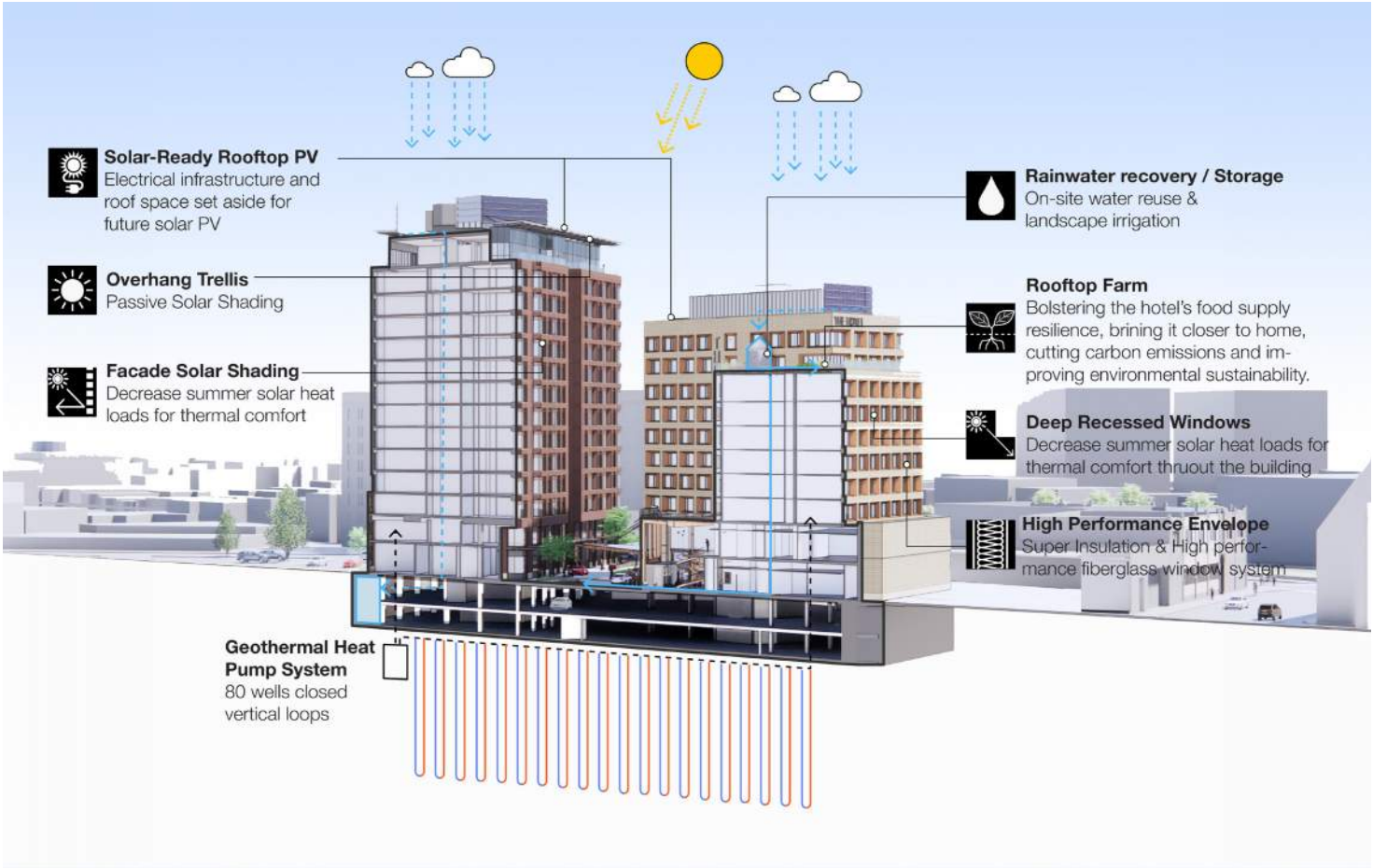
“ **In the end we will conserve only what we love; we will love only what we understand and we will understand only what we are taught.** ”

Baba Dioum
Senegalese Engineer and Forest Scientist



World Alive Exhibit, Discovery Place, Charlotte, NC

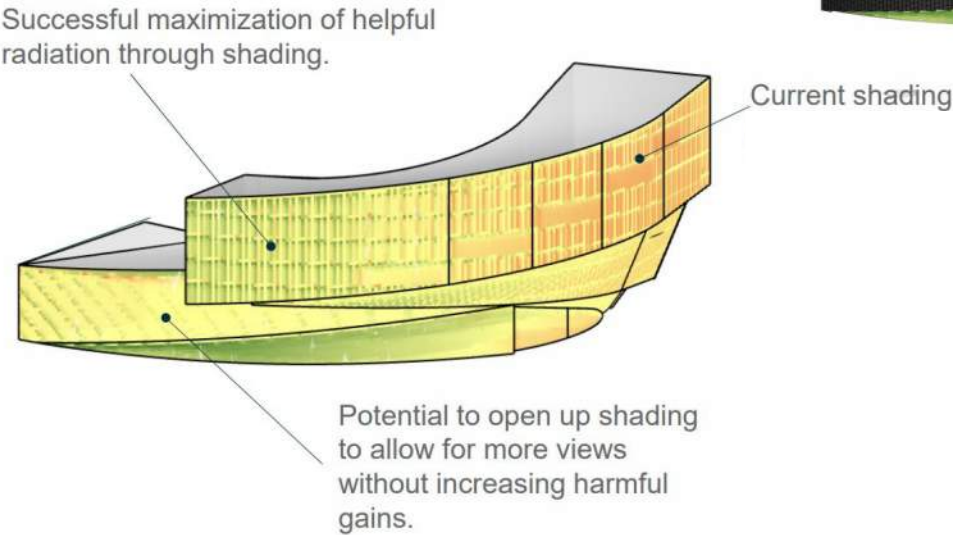
Sustainable Exhibition Design & Construction
Toolkit v6 Sep 2024



Sustainable Features Diagram, Residences and Hotel at Coolidge Corner, LEED Platinum Target, Passive House Certified Target, ILFI Zero Carbon Target

VIEW FROM SE

With Exterior Shading



Solar Shading Study, Roux Institute at Northeastern University; image courtesy of Thornton Tomasetti, project structural engineer

Energy & Water Reduction

- Continue energy modeling as a standard service:
- Achieve 80% energy use reduction from 2006 baselines through 2025
 - Achieve 90% reduction from 2025 to 2030
 - Apply Passive House design principles and onsite energy resources such as solar, wind, and geothermal heat pumps

“We do not inherit the Earth from our ancestors; we borrow it from our children.”

Native American Proverb



The Williams Bookstore, Williamstown, MA, LEED Platinum

Use simple box model and in-house software to evaluate optimal energy usage with the following variables:

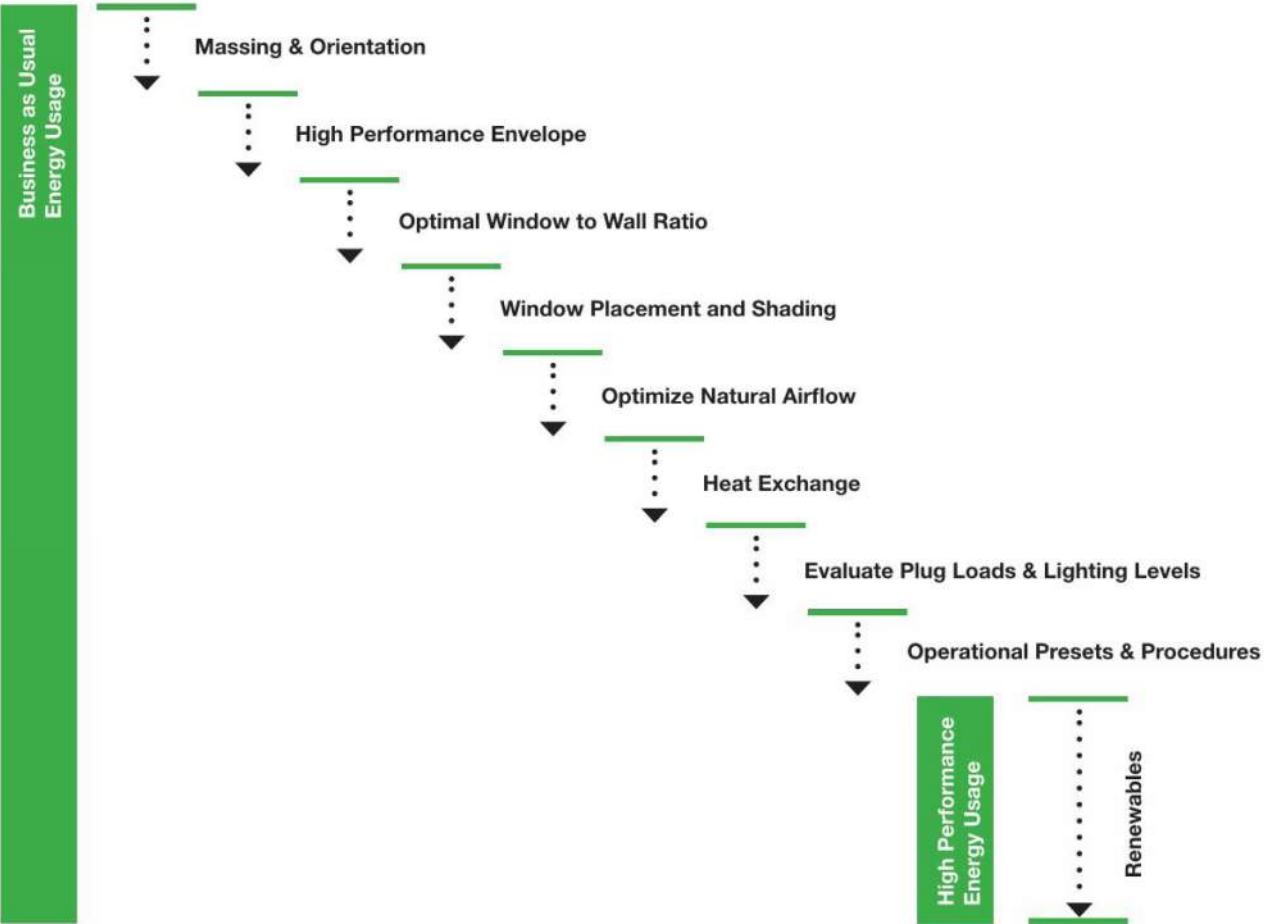
- Massing & Orientation
- Basic Envelope Attributes
- Lighting Levels
- Thermal Comfort Ranges
- Plug & Process Load Needs
- Programmatic & Operational Procedures

Other measures:

- Compare modeled pEUI (projected Energy Use Intensity) to site EUI from the U.S. national median reference values to match or exceed 2030 Challenge energy goals
- Determine feasibility of on-site water harvesting for indoor, outdoor and process water demand
- Continue developing in-house library of typical sustainable building details
- Vet all consultants for commitment to, and understanding of, sustainable design principles
- Collect, evaluate and share post-occupancy energy usage data for 50% of projects one year after occupancy to compare performance to pEUI



The Williams Inn, Williamstown, MA, LEED Gold



Foundry 101 Historic Renovation, Cambridge, MA, LEED Gold

Energy Efficiency: 3 Steps

- **Harvest Site Energy:** Orient building to maximize passive solar and daylighting opportunities
- **Reduce Demand:** Efficient exterior envelope design.
- **Maximize Efficiency:** Minimize loads, size equipment appropriately and specify highly efficient systems.

“Nature provides a free lunch, but only if we control our appetites.”

William Ruckelshaus
1st Head of the Environmental Protection Agency



The Williams Bookstore, Williamstown, MA, LEED Platinum



Roux Center for the Environment, Bowdoin College, LEED Platinum



Heifer Village Exhibits, Heifer International, Little Rock, AK

Sustainability Goals

2024-2027



Danehy Park Gateway Pavilion, Cambridge, MA, Passive House Certified Target



Foundry 101, Cambridge, MA, LEED Gold

Sustainable Design Practice Goals

- Design for local ecologies and natural systems restoration
- Emphasize social justice through community process and material selection
- Emphasize design for deconstruction and disassembly, and salvaged material reuse
- Develop Sustainable Aquarium LSS and MEP standards
- Design:
 - Certified Passive House project
 - Living Building Challenge Core Green Building or Petal Certified project
 - Design for Freedom pilot project

“ Do you remember the first time you stepped into a building that transformed you? ”

Lindsay Baker
CEO, International
Living Future Institute

Sustainable Material Goals

- Educate clients about and specify non-toxic interior building materials
- Educate clients about ethically-sourced materials that are free from child labor and forced labor
- Select local materials
- Select bio-based and other low embodied carbon materials



Expedition Blue Pavilion, Hyannis, MA, LBC Core Certification Target



WBUR CitySpace, Boston, MA, LEED Gold



Roux Center for the Environment, Bowdoin College, LEED Platinum

Sustainability Goals for Each Project

“Framework for Design Excellence” meetings near project kick-off help inform clients of sustainability and energy reduction goals:

- **Information Sharing:** Provide clients information and ROI data on various rating systems
- **Goal Setting Workshop:** Incorporate specific energy reduction and sustainability goals into the project’s Basis of Design (BOD) document
- **Integrated Design Charrette:** Brainstorm cross-discipline ideas to optimize building performance to meet client goals
- **Sustainability Checklist:** Record and monitor Sustainability Checklist for meeting client’s goals



“ **Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.** ”

Chief Seattle
Suquamish Tribe and
Dkhw'Duw'Absh Chief



SevenMinute Talk on setting sustainability goals



Foundry 101, Cambridge, MA, LEED Gold

Operational Actions in Office

- Energy saving lighting and plumbing; reduced paper use
- Rooftop vegetable garden for employees
- Bicycle commuting reimbursement
- Covered bicycle parking; on-site fitness facility with lockers and showers
- Paper, plastic, metal, architectural sample and office equipment recycling through donation, return to vendors and Re-Stream

“ There is no such thing as ‘away.’ When we throw anything away it must go somewhere. ”

Annie Leonard
Director of Greenpeace, USA

2024 Operational Goals

- Provide composting for office employees
- Encourage the elimination of single-use plastic from catering vendors



South Carolina SciQuarium, Greensboro Science Center, LEED Certified



Foundry 101 Historic Renovation, Cambridge, MA, LEED Gold



CambridgeSeven Rooftop Garden



Jellies: Simple Survivors, Virginia Aquarium, Virginia Beach, VA

Advocacy and Education

- Internal LEED exam study groups
- Professional development education funds for sustainability training and accreditation exams
- Share high-performing building case studies internally
- Post LEED projects on the USGBC database
- Create educational graphic panels or sustainability tour brochures for projects

Evaluation and Reporting

- Report via 2030 Design Data Exchange
- Develop in-house Sustainability Report to chart progress toward net zero energy buildings

“The greatest threat to our planet is the belief that someone else will save it.”

Robert Swan
Author & Explorer



26 Court Street Historic Renovation, Boston, MA, LEED Platinum Target



Roux Institute at Northeastern University, Portland, ME



Ocean Pavilion, COP29, Baku, Azerbaijan



Residences and Hotel at Coolidge Corner, LEED Platinum Target, Passive House Certified Target, ILFI Zero Carbon Target