



5 Sacramento Street



**BUILDING A  
SUSTAINABLE  
FUTURE**



13 Kirkland Place

## LEARN MORE

Our Harvard University Housing website has more information about 13 Kirkland and 5 Sacramento on our Sustainable Living page.

Scan the QR code to learn more about how these buildings align with ILFI Core and PHIUS through innovative construction & design for a more sustainable future:



[huhousing.harvard.edu](http://huhousing.harvard.edu)

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# Innovating Sustainable Living



**5 SACRAMENTO STREET  
13 KIRKLAND PLACE**

## AMBITIOUS GOALS

Aligned with Harvard's Sustainability Action Plan and the University's Goal Zero for a fossil fuel-free Harvard, 5 Sacramento Street and 13 Kirkland Place are both remodeled to meet two ambitious certifications aimed at achieving all-electric and comprehensively sustainable homes:

### PHIUS+2021 CORE

A performance standard from the Passive House Institute US (PHIUS) focused on achieving superior building performance and quality construction. Certification is guided by a set of design principles that emphasize quality, durability, health, safety, and cost-optimized conservation on the path to net-zero energy:

1. Continuous Insulation
2. Airtight Construction
3. Optimized Windows
4. Balanced Ventilation
5. Minimized Mechanical Systems

### ILFI CORE CERTIFICATION

A holistic performance-based certification system administered by the International Living Future Institute (ILFI), driven by 10 imperatives:

1. Ecology of Place
2. Human-Scaled Living
3. Responsible Water Use
4. Energy + Carbon Reduction
5. Healthy Interior Environment
6. Responsible Materials
7. Universal Access
8. Inclusion
9. Beauty + Biophilia
10. Education + Inspiration

Throughout construction, a Phius Certified Verifier provided 3rd party quality assurance and oversight via on-site inspections and performance testing. After construction, there is a 12-month performance period during which energy and water reduction requirements must be met for the ILFI Core certification to be achieved.

## SUSTAINABLE DESIGN

The project team chose to preserve the original buildings to respect their history and realize significant reductions in embodied carbon through the reuse of existing materials. The buildings utilize modern technology on the inside while maintaining their historic fabrics externally - responding to the challenge of climate change while honoring their unique backgrounds.

### LANDSCAPES

The sites are designed to encourage ecological regeneration and enhance the function of the project sites for the community. Key measures include:

- Soil amendment
- On-site rainwater infiltration and stormwater management
- Tree preservation
- Promotion of biodiversity, native species selection, and drought tolerant plantings
- Incorporation of pollinator gardens
- Community gathering space

The landscaping has been designed to ensure resilience and sustainability in the face of challenging environmental conditions.

### MATERIALS

The projects follow the Harvard Healthier Building Academy (HHBA) product criteria and standards. The HHBA sets material-health specifications aimed at removing chemical classes of concern and identifying healthier products through category-specific requirements - the fundamental requirement being complete product transparency.

Material selection prioritized local sourcing and the project's lumber was either responsibly sourced or salvaged. The project team made strategic use of existing materials in the building, such as siding, sheathing, brick, and concrete floors to reduce embodied carbon.

## WATER

The buildings treat water like a precious resource, minimizing waste and the use of potable water while avoiding downstream impacts and pollution. A 30% reduction target is accomplished by low-flow fixtures, water-saving appliances and equipment, and low-impact landscape design techniques that eliminate the need for irrigation.

## ENERGY

Combined with the PHIUS building measures, a high-performance energy system with heat pump driven technology was selected to meet ambitious Energy Use Intensity (EUI) targets for both buildings.

Far exceeding the ILFI Core requirement of a 50% energy reduction compared to baseline buildings of the same size and function, 13 Kirkland Place and 5 Sacramento Street minimize energy-related carbon emissions that contribute to climate change.

## HUMAN HEALTH

Optimizing occupant health drove the majority of design decisions on the project. Several priorities were adopted into the design of these buildings, including:

- Providing exceptional indoor air quality and a healthy interior environment for residents
- Creating outdoor spaces that promote cycling and walking
- Ensuring design centered around universal access
- Connecting residents to nature, art, and the surrounding community in meaningful ways



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