



CASE STUDY

PAE Living Building

PropertyFit financed energy efficiency and renewable energy measures to support construction

Background

Gerding Edlen used PropertyFit commercial PACE financing to complete the project capital stack for Portland’s first Living Building, one of the most ambitious green building certifications available. The mixed-use building—consisting of class A office and retail space—will generate more energy and water than it consumes and is designed to be the largest commercial Living Building in the world.

Project Overview

PAE Engineers was looking to develop a new building in Portland to serve as its corporate headquarters, as the company had outgrown its existing office space. PAE was interested in the Living Building concept, having designed several others including the Bullitt Center in Seattle, WA, in which PAE is a tenant.

The Living Building Challenge is a rigorous performance standard administered by the International Living Future Institute (ILFI) that requires buildings to achieve net positive energy, water, and waste in addition to meeting other standards for design, health and wellness, materials, and social equity. The current standard requires that buildings have 12 months of continued operations and full occupancy to be eligible for certification.

Part of the inspiration for the design was to demonstrate that Living Buildings are not only technically possible on a dense urban site, but also financially viable using conventional financing mechanisms. The project is being privately developed and funded through a typical commercial real estate development model. The development team opted to finance a portion of the \$25.3 million total construction cost using PropertyFit because it was a cost-effective alternative to additional equity with a longer financing term than other debt products. The \$2.5M commercial property assessed clean energy (PACE) loan provided by PACE Loan Group completed a capital stack consisting of equity, construction loans, mezzanine debt, and small grants.

During the project’s planning phase, PAE leveraged Energy Trust of Oregon’s Path to Net Zero offerings for energy modeling, daylighting

PROJECT AT-A-GLANCE

CPACE FINANCING

\$2.5 million

INSTALLED MEASURES

Energy efficiency and renewable energy

IMPACT

Significantly reduced energy demand

TERM

25 years

PROPERTY TYPE

Commercial office/retail

CAPITAL PROVIDER

PACE Loan Group

DEVELOPMENT TEAM

Gerding Edlen, PAE, Walsh Construction, ZGF Architects



Exterior of PAE Living Building

analysis, commissioning, ILFI Zero Energy Certification, and overall energy use reduction strategies. As part of this collaboration, PAE also worked with Energy Trust to support the integration of an advanced solar system that is paired with energy storage and can provide grid optimization services.

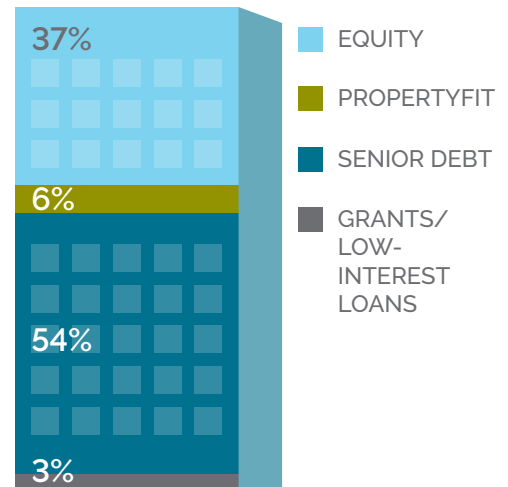
Construction commenced in March 2020 and is expected to be complete by Summer 2021. The development team bid out certain scopes of work in order to meet the technical demands of the design. Of the participating contractors, nearly a third are minority-owned, woman-owned, or emerging small businesses.

The building—located in Portland's Old Town District—will be a 58,000 square foot mixed-use building with class A office and retail space. PAE will occupy floors 3-5, with ground floor retail and second floor office space open to other tenants. The unique concept and design will result in a series of firsts for Living Buildings both locally and across the world (see side-bar for full list).

The sustainability features of the PAE Living Building are extensive, ranging from traditional efficiency components to more innovative technologies and design features. The building is projected to use just 18.6 kBtu/sqft per year, which is 80% lower than a typical office building. A few project highlights include:

- 133 kW on-site rooftop solar array combined with a 195 kW off-site solar array located on a partnering affordable housing unit. The energy generated will supply 105% of the building's demand while providing low-cost power to the residents of the housing unit.
- 71,000-gallon rainwater cistern to meet 100% of water needs through on-site collection and treatment.
- Microgrid with 250 kW battery that allows the building to island itself in the event of power loss.
- Structural design built to Risk Category (RC) IV, enabling a building lifespan of 500+ years. RC IV frames, required for essential functions such as hospitals, are 50% more resistant to seismic forces than RC II frames, the minimum required for office buildings.

In addition to the efficiency and seismic components, the building will be designed to optimize the health and well-being of occupants through ample daylighting and views, natural ventilation, biophilia, and the use of healthy building materials. A full list of sustainability and design features can be found on [PAE's project highlight](#).



PAE Living Building capital stack

A BUILDING OF FIRSTS

- Portland's first, fully certified Living Building
- Oregon's largest Living Building
- Currently, designed to be the largest certified Living Building in the world
- One of the first Living Buildings funded with a developer-driven model
- Five-story vacuum flush, composting waste system
- Urinal-to-fertilizer system that transforms waste to resource
- One of the first buildings in downtown Portland to install a PV-powered battery storage system allowing two-way power connections to the city's utility network and electrical grid in the area where this cannot be normally done

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We are looking forward to completing the PAE Living Building because it will be a way to live our values as a company. We are equally excited that the project is proving that a Living Building is viable in a private investment model. PropertyFit was an important part of that equation and we hope to inspire many other private developers to reach for a Living Building as well. ”

– Marc Brune

PRINCIPAL | PAE ENGINEERS

Why PropertyFit?

PropertyFit provides strategic, long-term financing for energy efficiency, renewable energy, water conservation, and seismic resiliency, enabling owners of commercial, industrial, and multifamily properties to accelerate investments in building performance and unlock value. The benefits of PropertyFit CPACE financing include:

TARGETED: Specifically designed to fund building investments that are often misunderstood by traditional financing and "value-engineered out" through building design and construction.

ACCESSIBLE: Up to 100% financing, with no out-of-pocket costs or personal guarantee, and personalized support to make your project a success.

COMPETITIVE: Long-term financing that is competitively priced, fully amortized, and repaid through assessments that cannot accelerate.

TRANSFERABLE: Secured by a benefit assessment lien which automatically transfers to the new owner upon sale of the property, improving liquidity.

STRATEGIC: Turns an expense into an investment, often generating immediate cashflows, increasing the market appeal of a property, and accelerating progress toward business and environmental goals.

About PropertyFit

PropertyFit is a collaboration between Prosper Portland, Multnomah County, and Energy Trust of Oregon to support a variety of carbon reduction, water conservation, redevelopment, and economic development goals. It was created to help property owners invest in energy efficiency, renewable energy, water conservation, and seismic resiliency projects in Multnomah County.

To learn more about PropertyFit, visit propertyfitoregon.com or email us at support@propertyfitoregon.com.



PROSPER
PORTLAND



Multnomah
County



Interior of PAE Living Building