INTERNATIONAL LIVING FUTURE INSTITUTE℠

IMAGE COURTESY OF HOUSING HOPE

AFFORDABLE HOUSING CASE STUDY

Hopeworks Station Phase II Financial Case Study

Hopeworks Station Phase II is a 67,000 square foot affordable housing building located in Everett, Washington. In addition to residential units, the building includes a cafe with commercial kitchen and culinary training programs for formerly homeless youths and adults. With this project, the Owner, Housing Hope, set out to achieve three ambitious goals to simultaneously: 1) provide affordable housing to previously homeless individuals and families, 2) provide job training in growing fields to residents and others in the community, and 3) to create a building that would be an exemplar of environmentally responsible design for the region. To guide these pursuits, the project team chose to pursue Energy Petal certification under the Living Building Challenge (LBC) 3.1. This meant that the project would need to achieve all of the Imperatives within three of the seven Petals of the LBC. The project team chose to pursue the Energy, Place, and Beauty Petals. Under the Energy Petal, the goal was to achieve Net Positive Energy, by producing more electricity via solar panels than was consumed by the residents. The project was completed in November 2019 and has been occupied for more than three years. While the project team achieved all the Imperatives under the Place and Beauty Petals, the project has not been hitting its Net Positive Energy goals. The building's energy generation

LOCATION
Everett, WA

BUILDING TYPE
Affordable Multi-Family Residential (Owned by Housing Hope)
Ground-Floor Retail/Training (Owned By Hopeworks)

SIZE
67,000 SF residential units

OCCUPANTS
65 Housing units

FEATURES
1,359 SF urban agriculture
89 Bicycle racks
532 Photovoltaic panels generating 199 kWh
2 Electric vehicle charging stations

HUMAN-POWERED LIVING

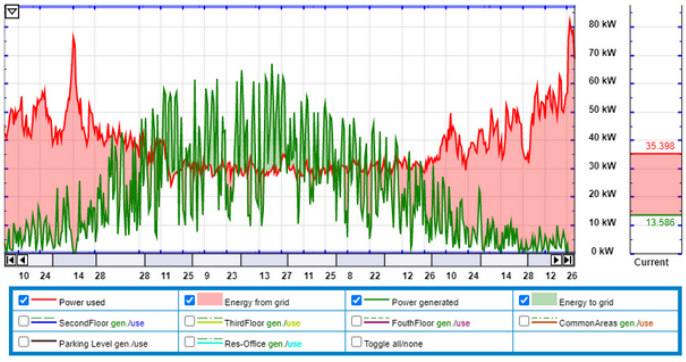
Between 2020 and 2021, Housing Hope saved more than $30,000 on energy bills through the production of the solar panels. Based on the output of these two years, the panels will have a payback period of less than 9 years, saving the Owner hundreds of thousands over the 30–50 years (at least) that the Owner plans to own the building. In addition to their net positive energy goals, this project prioritized alternatives to single-family vehicles and is an excellent case study of LBC Imperative I04 Human-Powered Living.

IMAGE COURTESY OF HOUSING HOPE

is as expected, but the energy consumption has been about 20% higher than modeled largely related to the timing of the project's completion coinciding with the pandemic. The primary drivers of the higher than modeled energy use are a higher number of tenants than anticipated, tenants occupying the building more hours than expected, and the management team needing to deal with pandemic-related issues and services meaning that they could not prioritize tenant education and engagement around energy efficiency.

ENERGY COST SAVINGS

Even though the ultimate goal of Net Positive Energy was not achieved, the inclusion of energy efficiency measures (including a tight building envelope with triple pane windows and additional insulation) and a 200-kw photovoltaic array means that the Owner saves thousands each year in energy bills. In 2020, the total energy consumed by the three residential floors would have cost the Owner $29,907.79 if they had to purchase all of it from the local utility (and note that without the energy efficiency measures in place this would have been even higher). However, due to the significant amount of energy generated by the solar panels the total energy bill for the year was $12,700.14 - a savings of $17,207.65. In 2021, the results were similar. The total energy bill for the year was $13,385.53 compared to the $29,633.49 it would have been without the benefit of the solar panels - a savings of $16,247.96. Based on the energy savings of these two years, the payback for the solar panels is approximately 8.5 years. Like most affordable housing developers, Housing Hope plans to hold and occupy building for at least 30 years, which means that the project will ultimately save hundreds of thousands of dollars in energy bills (and potentially more, if energy costs rise as expected) - money that can be used to bring more services to residents or create more affordable housing. .



GRAPH OF ENERGY CONSUMPTION (RED) AS COMPARED TO ENERGY GENERATION OF PHOTOVOLTAIC ARRAY (GREEN) IN 2021. COURTESY OF HOUSING HOPE.

IMAGE COURTESY OF HOUSING HOPE

FUNDING SOURCES

The project team used the federal government's Renewable Energy Tax Credit (RETC) and an incentive for in-state manufactured panels to offset approximately $100,000 of the costs of the panels, as well as reduce the number of years before the array is paid back. Without this tax credit and incentives, the payback period on the energy efficiency improvements and solar panels would have been closer to 18 years rather than 8.5 years. In the long-term, the Owner would still be saving a considerable amount of money on energy, but it would have been harder to justify the additional upfront costs during construction with a longer payback.

SOURCES	TOTAL	RESIDENTIAL	COMMERCIAL
State Housing Trust Fund	1,000,000	1,000,000	
State Housing Trust Fund - UHEE	750,000	750,000	
Federal Home Loan Bank - AHP	500,000	500,000	
Snohomish County - Home	600,000	600,000	
Deferred Developer Fee	942,341	731,351	210,990
Low Income Housing Tax Credits	12,927,362	12,927,362	
City of Everett - CDBG	358,400		358,400
Snohomish County - CDBG	201,000		201,000
Additional County/City Funds	1,100,000	600,000	500,000
New Market Tax Credits	2,946,015		2,946,015
WA Building Communities Fund	2,750,000		2,750,000
Commercial Loan / Social Investor	2,625,000		2,625,000
Hopeworks Capital Campaign	2,600,557		2,600,557
TOTAL SOURCES	**29,300,675**	**17,108,713**	**12,191,962**

FUNDING SOURCES UTILIZED TO CONSTRUCT HOPEWORKS STATION PHASE II. COURTESY OF HOUSING HOPE.

In addition to the tax credit and incentive mentioned above, the project received funding from 13 other sources. The chart below shows all of the sources of funding and indicates how they were allocated between the residential and commercial components of the project. As with many affordable housing projects in the United States, the project relied upon the Low Income Housing Tax Credits (LIHTC) for a large percentage of funding. The majority of mid-rise multi-family affordable housing projects are built using this funding mechanism; which is competitively awarded by each state based on factors that they choose to prioritize. Projects that are on hold for years are often stalled primarily because they have not received LIHTC funding. This project also received the New Market Tax Credit, which is a federal incentive intended to drive investment in distressed communities. These two tax credits together account for about half of the cost of development for this project.

Another notable source of funding for this project was Washington State's Housing Trust Fund for Ultra-Efficient Affordable Housing (listed as UHEE in the chart). This funding was created by the Washington Department of Commerce to provide incentives for net zero energy affordable housing projects and to help offset the first costs associated with being an "early adopter." As with the International Living Future Institute's Affordable

IMAGE COURTESY OF HOUSING HOPE

Housing Program, the goal of the state program is to encourage 'demonstration projects' that can then be replicated. Building towards net zero energy can include increases in soft costs, particularly for project teams and developers that are new to this method of building. This state funding is intended to help teams learn how to design net-zero energy buildings to ensure that residents of affordable housing are housed in buildings that are resilient. As a requirement of participation, project teams are required to report on energy use for three years post-occupancy and provide presentations and other information to help inform the market and updates to building codes. Additionally, this funding and the other State Housing Trust funds require that the project include covenants to remain affordable for 40 years (10 years longer than required by the Low Income Housing Tax Credit funds).

> *Knowing the impacts of climate change hit underserved populations hardest, and that affordable housing often comes with special challenges and funding limitations, HopeWorks is helping define a sustainability framework for these projects. HopeWorks has a unique mission in that they recognize we need housing first, but we can't have housing only.*

— JON HALL, PRINCIPAL GGLO ARCHITECTS

LESSONS LEARNED

Hopeworks Station Phase II provides an example of how to leverage funding opportunities at the local, state, and federal levels. Although this project has not achieved Net Positive or Zero Energy, the savings on the utility bills from the solar panels and energy efficiency measures will save the project a significant amount of money over time which can be reinvested into programs for the residents or additional affordable housing. The project has also inspired a local housing authority to consider how they can pursue the Living Building Challenge on a large-scale redevelopment plan.The project has also inspired a local housing authority to consider how they can pursue the Living Building Challenge on a large-scale redevelopment plan. The project has also inspired a local housing authority to consider how they can pursue the Living Building Challenge on a large-scale redevelopment plan. Lastly, the Owner and residents of Hopeworks Station will also continue to benefit from the additional elements inspired by the Living Building Challenge such urban agriculture in the courtyard, a motif of education around sustainability, and a focus on public transportation options.