



AFFORDABLE HOUSING CASE STUDY

Block Home 009 Financial Case Study

Since 2017, Facing Homelessness has been building **Block Homes** (tiny homes) in backyards of single family homes across Seattle with the goal of bringing the community together to end homelessness. Facing Homelessness plans to build at least 20 Block Homes that will achieve the Living Building Challenge (LBC). Block Home 009 is the first of these to submit for certification under the Living Building Challenge. Thus far, it has achieved Petal Certification by achieving 19 of the 20 Imperatives. The team is working on the final document for this last Imperative with hopes of receiving full LBC certification soon. The ultimate goal is that this home and all subsequent ones will be Living Buildings.

OVERALL COSTS

The first eight Block Homes cost, on average, about \$120,000 to build (paid for in part through in-kind donations of labor and materials). Block Home 009 was the pioneer project for the Living Building Challenge and bore additional costs, primarily soft costs, associated with the additional research and high-performance design to achieve the LBC. From the start, Facing Homelessness anticipated that this project would cost more because it was the prototype for LBC. The goal was to spend more on this first design with

LOCATION

Seattle, WA

TYPE

Single-family accessory dwelling unit

SIZE

222 square feet

OCCUPANTS

1 full-time

FEATURES

105% Energy Produced On Site

All potable water uses provided by rainwater harvesting

540 SF urban agriculture

74% reduction in embodied carbon

VOLUME APPROACH

The Block Project is using a Volume Approach for their projects; Block Home 009 is the first of 20 homes that are pursuing Living Building Challenge Certification.

When we take a look at the intersections of homelessness and climate change, it's clear that the impacts of pollution impact Black, indigenous and other communities of color as well as our unhoused communities most. It's unfortunate that our current systems tend to force construction projects to build with cheaper, more environmentally harmful products that not only create less healthy buildings for those who occupy them, but additionally create harm where the products are being manufactured in polluting air, land, and water. For low income housing projects aimed at housing as many folks as possible, this often comes at the cost of health for the occupants, in quality of construction, and in distant locations where there's limited visibility for harmful environmental manufacturing practices.

— Facing Homelessness

the notion that each project thereafter would cost less. The cost of Block Home 009 was about \$200,000, most of which came in the form of in-kind donations from their mission-driven industry partners. Subsequent projects have largely maintained the same LBC-compliant designs (including Red List Free materials, urban agriculture, net-positive energy, and more) and cost only \$75,000. Facing Homelessness was able to reduce costs from the original design by innovating the construction process; they created a workshop where they can utilize a modular, prefabricated design to save on both materials costs and labor time needed on site. Their engagement with the community also allows them to utilize volunteer labor in the workshop.

FUTURE PROJECTS

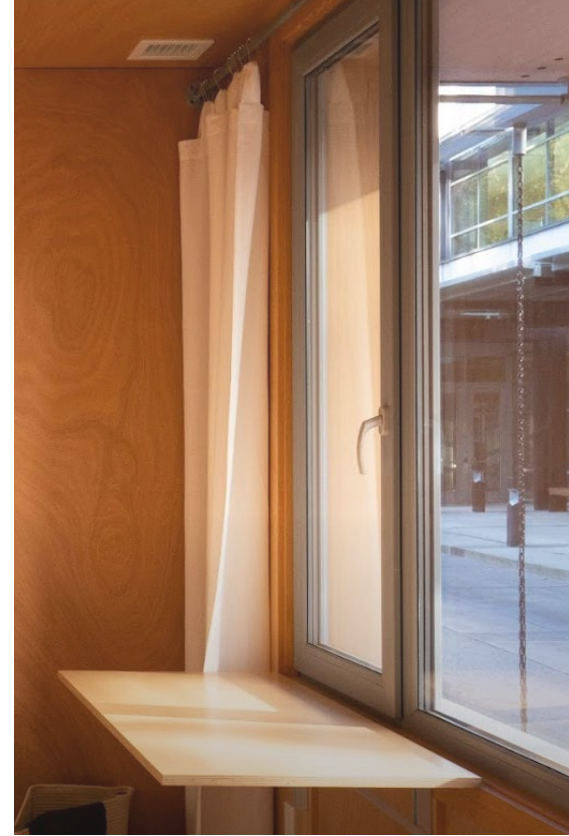
Facing Homelessness plans to integrate all of the elements incorporated into Block Home 009 to comply with the Living Building Challenge into future projects, with the exception of the rainwater harvesting system and composting toilet. The potable rainwater harvesting system was successful on many levels; the resident loved how clean the water tasted and it was able to provide all water consumed in the performance period and beyond. However, the cost of the system was \$10,000, which was challenging to build into a project at this scale (233 square feet) both in terms of budget and space, even when factoring in the water savings (\$350 annually from the rainwater harvesting system and another \$350 from using efficient fixtures). The project team plans to

investigate other means of meeting the Water Petal by continuing to install efficient fixtures and finding ways to handprint (offset) the water use of the resident.

The project team found that the other additional hard costs associated with the Living Building Challenge were minor and worth it for the benefits and impact they provided. For example, the cost of switching to a Red List Free wool insulation product (Havelock) from an XPS board insulation product was about 15% more; however, this change (along with switching from sheet metal siding to restored Juniper rainscreens) was a primary driver in reducing the global warming potential of the project by 74%. This switch also helped them to achieve Net Positive Energy, which saves about \$400 per year in energy bills (typically covered by the owner of the property site, but covered by Facing Homelessness if needed). This was a primary goal for Facing Homelessness because they did not want to burden the homeowner who had offered their backyard as the project site with additional bills. Facing Homelessness also wanted the freedom of having a home that is energy-independent so that it can be moved easily to another location in the event that the property it is located on is sold. The project team also asked for and received a discount on some materials (always recommended for affordable housing teams!). For example, they were able to use a triple paned Red List Free fiberglass window for the same cost as the vinyl window they had used on the early Block homes.



THE BLOCK PROJECT
PHOTOS COURTESY OF FACING
HOMELESSNESS.



LESSONS LEARNED

This project team created Block Home 009 as a prototype for understanding how to design a Living Building. This worked for the team: this initial project had increased soft costs, as anticipated, but subsequent projects did not and actually cost less due to their innovations in the construction process. Assigning one project as the prototype to be replicated can be a very effective and useful strategy towards achieving the LBC on a number of projects. Project teams can also look to the lessons learned and materials used by the Block Project team and other affordable housing pilot projects (collected in resources such as the Affordable Housing Materials List) to reduce the research time needed for their own projects. Ultimately, the Block project team felt that the benefits of pursuing the Living Building Challenge were well worth it and plans to continue to pursue LBC in at least the next 19 projects.