

AFFORDABLE HOUSING MATERIALS CASE STUDY OTHELLO SQUARE

SEATTLE, WA • 71,000 SF • 68 UNITS

DESIGN APPROACH TO MATERIALS

Othello Square’s developer, Homesight, and architect, Sundberg Kennedy Ly-Au Young Architects, see the need to integrate healthy materials into this affordable housing project as a social justice issue. Homesight is acutely sensitive to their obligations to the ethnically diverse community of Othello and views tackling Red List Free materials as part of their “unspoken contract” with the neighborhood and future residents. The low-income homeownership model of this project is intended to facilitate “marginalized people controlling their own destiny,” which includes being able to stay in their own community (despite rapidly increasing housing prices), living in housing that is health-promoting, and being energy-independent through renewable energy—and thus able to spend their income on growing the economic health of their own families.

The architectural team approached the Materials Petal by first identifying the low-hanging fruit that could be easily integrated into the project with little or no additional effort or cost. The project team kept the materials palette simple to reduce the number of items to be vetted and to keep costs down. They next identified which materials would be most challenging in terms of either finding appropriate Red List Free or cost-efficient options.

The decreased or discounted cost of some products helped to offset the increased cost of others. In addition, in order to balance out cost premiums, the architectural team strategically reduced scope in other areas of the project. All of these reductions in scope were in areas that have no impact on the quality of life for residents, but resulted in significant cost savings. The first move was to employ advanced framing to reduce the amount of wood needed overall. Because the project is located adjacent to a light rail station with direct access to downtown Seattle, as well as on a bustling commercial street with a plethora of shops, restaurants, and daily services within walking distance, the project team reduced the underground parking scope 20% from what was originally planned. The size of the ground floor storefront windows was also reduced, and the size of the windows in each unit was made slightly smaller.

NOTABLE MATERIALS

LIVING PRODUCT CHALLENGE
MOHAWK PIVOT POINT

DECLARE

METAL SALES METAL SIDING
ALPEN ZENITH WINDOWS
KAWNEER STOREFRONT
MILLIKEN, SHAW CARPET
FORBO MARMOLEUM
GAF TPO ROOFING
KNAUF ECOBATT
VAPROSHIELD WEATHER
BARRIERS
MCKEON ROLLING DOOR
PROSOCO CONSOLIDECK
USG ECOSMART GYPSUM

OTHER RED LIST FREE

VP INDUSTRIES DOORS
F-SORB ACOUSTIC TILES
TNE MEC COATINGS
SHERWIN WILLIAMS
FLUROPON + PRIMER

OTHELLO SQUARE



RENDERING COURTESY SKL ARCHITECTS



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The project team opted for double-pane rather than triple-pane windows, and in order to not impact energy goals, added laminated glass to the bedroom windows, which also achieved a higher sound transmission class (STC) rating in these spaces. The architects predicted that the units located along Martin Luther King Jr Way S, a heavily trafficked street, would be unlikely to utilize balconies due to the noise of traffic, light rail, and commercial activities along this street. They thus eliminated balconies on these units, and instead provided large communal sun decks that overlook the internal gardens and courtyard. The project team also chose to promote energy, health, and cost reduction goals at once by designing an attractive, vegetated stairwell with exterior views of the sundeck and gardens. Because of this stairwell, they chose to eliminate one of the elevators, thus saving cost, promoting active living, and saving energy use.

As this project is one of the first affordable housing projects to seek Materials Petal Certification under the Living Building Challenge, it required the support of many partners. The architects provided pro bono materials research to the developer and were granted free access to the Red2Green Tool by Integrated Eco Strategies. The project team and the International Living Future Institute sought out partners in the manufacturing industry that could help support the healthy materials goals of this project. The manufacturing industry responded with discounted pricing on a number of items.

Most significantly, GAF agreed to donate their TPO roofing to the project. GAF has the first Declare-labelled and LBC-compliant roofing system, and this donation further reinforced the company's goals of promoting both sustainability and equity in the built environment. GAF's Executive Director of Sustainability, Ana Myer, recommends that future affordable housing project teams with similar materials goals reach out to heads of sustainability within sustainability- and equity-minded product manufacturing organizations (such as members of the Institute's Living Product 50) and explain the social and environmental aspirations of the project.

The Othello Square project team worked hard to replace vinyl in the building and received support from several manufacturers in this mission. Replacing vinyl windows with Red List Free windows can sometimes be cost-prohibitive for affordable housing projects. Alpen suggested that they manufacture their Red List Free windows for the Othello Square project during slow production periods, thereby allowing them to match the price of vinyl windows while evening out their production periods. Mohawk agreed to price their Pivot Point Resilient Tile at a discount so that it was the same price as their vinyl tile product. As a Living Product Challenge Certified Product, Mohawk has expressed a willingness to supply this product at price parity for affordable housing projects (see <https://living-future.org/affordable-housing> for a list of all manufacturers of LPC products willing to provide a discount to affordable housing as part of the LPC Equity Petal). Forbo Marmoleum flooring was also specified and priced out as less than the cost of luxury vinyl tile. Sustainable Northwest Wood, Kohler, Milliken, and other manufacturers also offered discounts to the project to make their Red List and FSC goals attainable.

BARRIERS + LESSONS LEARNED

The project team found that while grants and incentives were available for energy efficiency and renewable energy (for example, they received funding from the local utility for installing a heat pump hot water system), there are few such financial incentives or resources available for healthy materials. This indicates that an orchestrated advocacy effort is needed to encourage municipalities and funders to provide additional support and funding in this area.

Although cost has proven to be a barrier for specific items, many others did not actually carry a cost premium, and the project team was able to find cost-effective Red List materials with only a little bit of time invested. However, the project team found that although a Red List Free or FSC product may have specified and priced out on par with the



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target budget, that was not a guarantee that it would be implemented or even submitted for bid. With a very busy and tight construction market, smaller projects like this one struggle to receive competitive bids both from subcontractors and from manufacturers. In an environment where additional jobs are easily found, it was a stretch for subcontractors to deviate from their “business as usual” practices and vendors.

This experience reinforced that when trying to change ingrained processes, it is crucial that every single member of the project team is on board with the goals and understands their role in a successful outcome. Most importantly, the owner must be a leading force in pushing forward Red List Free materials and ensuring that the vision is not lost along the way. Perhaps second only to the owner and architect is the general contractor in ensuring ultimate success with Living Building Challenge Certification. The bidding and value engineering phases of the project are periods when significant substitutions are made that can compromise the certification status and the healthy materials plan overall. The Othello Square project team recommends asking for additional pricing milestones during design so that decisions are made based on accurate cost information, and there is additional time to find products if the initial selections are not bid as expected. The owner included conventional materials as the baseline for bidding purposes, but also included a letter indicating that the owner has the intention to use the LBC-compliant alternates so that all parties receive the signal to ensure a competitive bid for both baseline and alternates. It is also imperative to involve the general contractor in any negotiated pricing or discounts promised by specific manufacturers so that subcontractors understand where to source materials.

Regarding overall vetting, the project team learned that tackling the highest-cost items first was the best strategy to get an idea of budget and how much scope may need to be modified in other areas to compensate, as well as to allow themselves more time to find alternatives or discounts. The project

team found these resources to be most helpful in materials vetting: ILFI’s Declare database, ILFI’s Certified Projects Materials List, LBC Materials Petal Handbook, Red2Green Tool, Bullitt Center As-Built Product List, and Healthy Building Network’s HomeFree resource. team found these resources to be most helpful in materials vetting: Declare database, ILFI’s Certified Projects Materials List, Materials Petal Handbook, Red2Green Tool, Bullitt Center As-Built Product List, and Healthy Building Network’s HomeFree resource.

Othello Square will begin construction in 2020 and may be required to submit for one more round of final pricing. Though not all of the materials are finalized, it appears likely the project team will be very close to the LBC 4.0 requirement of 90% Red List Free materials. Incorporating at least 80% FSC Certified wood remains more elusive, however. Whether or not Othello Square fully achieves Materials Petal, this project has achieved much in pushing the needle forward on healthy materials in affordable housing and created a far healthier living environment for future residents. The project has also provided valuable information on materials that ILFI has used in the Materials List for Affordable Housing, which will then help other projects throughout the affordable housing sector more easily specify Red List Free materials.