



LIVING FUTURE®



3 YEAR POST-OCCUPANCY UPDATE

Coliseum Place

Located between the Coliseum BART station and a single-family residential neighborhood, Coliseum Place provides affordable homes in a historically underserved community in Oakland, California. The six-story building houses 59 units—over half of which are supported through Section 8 rental assistance—and offers on-site social services for low-income¹ and formerly unhoused families. It also contains a community room, common laundry facilities, a fitness center, and property management offices, all connected by a green “core”—a bright central spine linking amenities, views, and outdoor space.

As one of the pilot projects featured in the [Living Building Challenge Framework for Affordable Housing](#), Coliseum Place demonstrates how engaging with the Living Building Challenge can shape project goals and generate positive outcomes for residents. The project achieved nearly Zero

LOCATION

Oakland, CA

DEVELOPER

Resources for Community Development

PROJECT SIZE

80,000 SF

TOTAL UNITS

59

COST/SF

\$450

COMPLETED

December 2021

FULLY OCCUPIED

July 2022

CERTIFICATION PATH

LBC Energy Petal

PHOTO CREDITS: BRUCE DAMONTE, COURTESY OF DAVID BAKER ARCHITECTS

1. Earning 30% of the area median income (AMI)



Energy-ready performance, and successfully integrated biophilic design while meaningfully engaging with Red List Free materials—driving continued efforts to prioritize healthy building products in future projects. Now three years into occupancy, this case study revisits the strategies implemented and highlights valuable lessons about creating regenerative affordable housing.

ENERGY PERFORMANCE

When David Baker Architects (DBA) joined the International Living Future Institute (Living Future)’s Affordable Housing Program, they set out to develop a [feasibility study](#) exploring opportunities to implement the Living Building Challenge 3.0 in Coliseum Place. Through their pursuit of the Energy Petal, the team investigated different strategies for achieving net zero energy performance in the context of a mid-rise, multifamily housing project built on an urban infill site.

Given that cost is a key consideration for affordable housing projects, the team prioritized the most impactful energy reduction strategies, starting with a simple and efficient building form that minimizes square footage,

reduces exterior surface area, and allows for simple detailing of the thermal envelope. Next, three high-impact design decisions were identified to drastically reduce the project’s energy use:

1. An all electric building;
2. A decentralized heat pump water heating system with no recirculation; and
3. Creating an airtight building envelope with efficient balanced ventilation.

Energy modeling during design development determined that replacing a hot water recirculation loop with a decentralized system had the highest energy reduction potential. To maximize energy savings, an on-demand, shared hot water system was installed in the project, with roughly two units sharing each water heater.

Tracking the project’s energy use post-occupancy provided the team with valuable insights. According to DBA, the choice between a unitary and centralized hot water system for the building remains an interesting debate for a number of reasons. While the system installed in Coliseum Place was designed to eliminate energy



wasted from recirculation loop losses, it may have led to higher water use due to the relatively longer wait times for hot water with the shared on-demand system. The decentralized approach also introduced other tradeoffs for the design team, including challenges around space allocation, acoustic concerns, and ventilation requirements for the heat pump water heater units—an issue that carried energy implications and may have offset some of the anticipated energy savings. It is also noted that the ability to monitor, control, and manage the hot water system centrally can be valuable, especially in terms of detecting issues and ensuring that the system is performing optimally.

Despite these challenges, it is important to note that the current system has worked well, with no major maintenance issues, and remains the most affordable option in terms of upfront cost. The team is also in the process of improving the heat pump water heater venting strategy to further optimize the system's performance.

Finally, the architect emphasizes that achieving the project's energy goals required more than just good

design—it also demanded a strong focus on construction quality. Investing in workforce training and conducting rigorous quality inspections to ensure a properly-installed air barrier and insulation were critical to the building's overall performance.

In addition to the energy efficiency strategies implemented, Coliseum Place features a 98 kW rooftop photovoltaic array that supplies 30% of the building's total annual energy—offsetting most common area loads. As a result, the building has achieved an actual energy use intensity (EUI) of 23, representing a 51% reduction compared to an equivalent baseline building. Although the project did not ultimately achieve the Energy Petal, its exceptional performance highlights a well-balanced approach to sustainability and cost efficiency, providing meaningful takeaways for future affordable housing projects.

ENHANCING PROJECT GOALS THROUGH BIOPHILIC DESIGN

Beyond its successes in energy performance, Coliseum Place deeply embodies the impact biophilic design can have on shaping project outcomes. By embracing a biophilic design framework, the project team was able to push the boundaries of existing design goals while defining their overarching design intention for the project:

*"I think what we learned was how impactful it is to set a strong design intention... **Our design intention was to reconnect residents to each other and to nature**, and this became our motto for the project. If that's the thing you keep telling people, [that] this is what this project's about... something like that will extend that intention into every detail in a way that's really meaningful at the end of the day. That's what hit home for me on this project. Those are some of the things that survived—our core ideas really carried."*

KATIE ACKERLY, AIA, CPHC, PRINCIPAL,
DAVID BAKER ARCHITECTS

This intention is thoughtfully realized throughout the project—from its highly visible green "core" and open-air stairway to its color and materials palette. The building's lobby, featuring custom seating and a kinetic sculptural

ceiling designed to evoke a tree canopy, has delighted both guests and residents.

"A colleague commented, 'This is one of the nicest affordable housing buildings I've been in.' What I read from that was, he stepped into the lobby and thought, 'This is different. This is a level of intention that's unusual.'"

KATIE ACKERLY, AIA, CPHC, PRINCIPAL,
DAVID BAKER ARCHITECTS

The project's biophilic design goals are also reflected in its space configuration, with a pass-through view corridor integrated into the building's common areas. Prioritizing multi-directional views early in the design process underscored the importance of a clearly-defined design intent. With the view corridor embedded in the design from the first plan diagram, Coliseum Place now offers access to views of downtown Oakland, the East Bay Hills, and San Francisco Bay.

Although a full post-occupancy evaluation is still forthcoming, early feedback on the project's biophilic design approach has been positive. Perhaps most telling is a remark from a construction team member who, without knowing the design intent, commented that the dappled light filtering through the facade's perforated metal shade screen reminded them of standing beneath an oak canopy—illustrating an intuitive connection between the design and nature.

PRIORITIZING RESIDENT HEALTH AND WELL-BEING

From the outset, the project's proximity to the BART station and Oakland Coliseum presented a unique opportunity to activate the public realm and strengthen connectivity with the surrounding residential neighborhood. The site previously lacked essential pedestrian infrastructure such as sidewalks and street trees, prompting the team to prioritize these needed improvements, while also enhancing the sense of safety in the area. As part of these efforts, the developer also secured funding to introduce a new bus rapid transit stop nearby. Within the building, residents benefit from protected bicycle storage and an on-site maintenance



ABOVE: COLISEUM PLACE'S GREEN "CORE", AS SEEN FROM THE LOBBY.



station, along with training classes on human-powered transport.

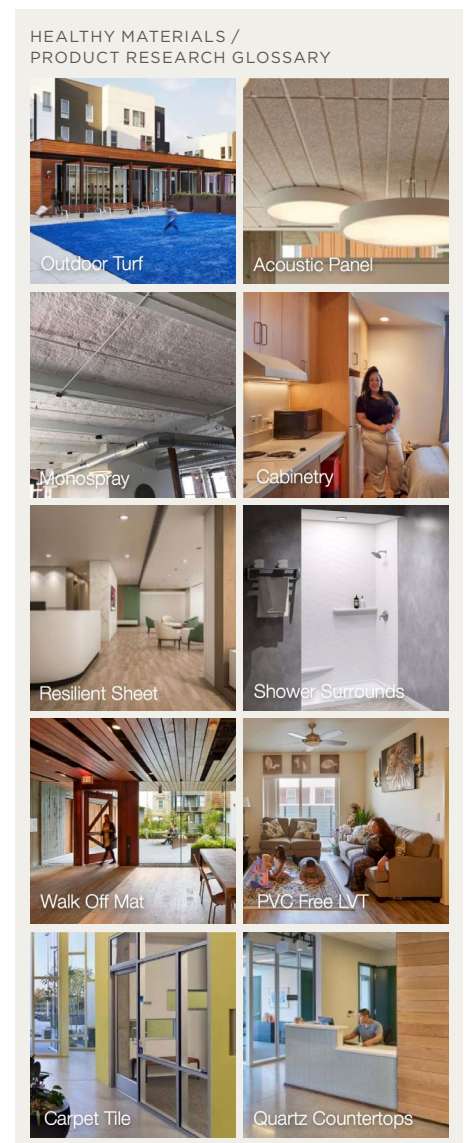
The project's commitment to resident well-being also extended to its selection of interior building materials. Seizing the opportunity to engage more deeply with material health considerations, the design team researched and specified a number of safer building products in the project. In addition to phthalate-free flooring in each unit, all common and utility areas feature Red List Free bio-based resilient flooring, as well as stainless steel corner guards, wainscoting, and work surfaces.

"We really used this project to get our feet wet in the Red List and had set a goal for Red List Free interior finishes. As a result of this project, we've really developed a standard and a process for making these meaningful improvements...We have a much more robust materials specification that we've succeeded in pushing across all of our projects."

KATIE ACKERLY, AIA, CPHC, PRINCIPAL, DAVID BAKER ARCHITECTS

Building on their experience with Coliseum Place, David Baker Architects has developed a list of priority product categories that guides ongoing research and allows them to identify healthier alternatives. This process informs the continuous evolution of their outline specifications documents, and has also fueled further efforts to expand their healthy materials work through participation in the [Shift to Safer Materials](#)—an 18-month Living Future project that aims to accelerate the use of Red List Free building products in the affordable housing sector.

BELOW: AN EXCERPT OF PRIORITY PRODUCT CATEGORIES INCLUDED IN DAVID BAKER ARCHITECTS' MATERIALS RESEARCH PROCESS.

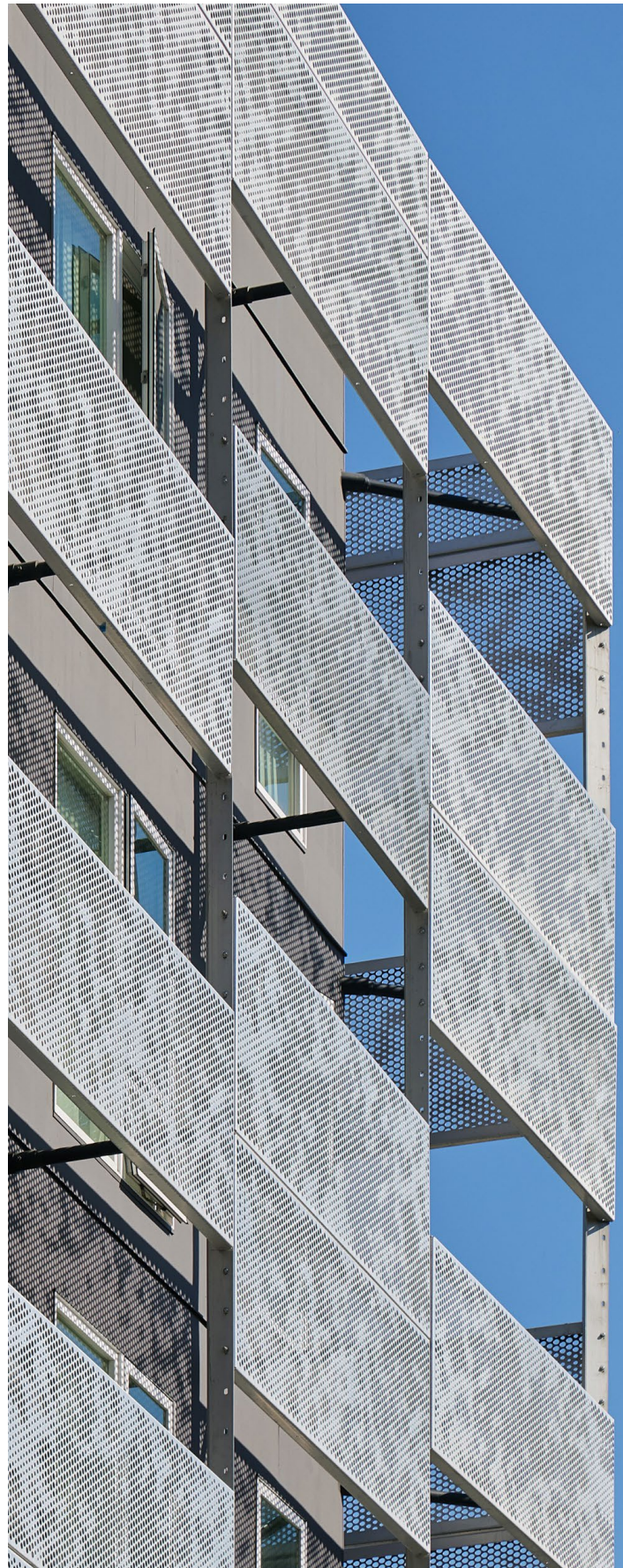


LESSONS LEARNED

Although the project did not achieve Petal Certification due in part to restrictions and timelines related to the structure of affordable housing financing in their state, its engagement with the Living Building Challenge and Living Future's Affordable Housing Program empowered the team to deliver meaningful benefits that directly enhance residents' quality of life. According to DBA, these successes are a result of dedicating the earliest design stages to identifying which certification requirements aligned with the development's overarching priorities. When the team conducted their Living Building Challenge [feasibility study](#), they classified each Imperative according to the following categories:

1. The project already complies (5 IMPERATIVES)
2. The project expects to comply within its existing basic scope (6 IMPERATIVES)
3. Compliance is possible with additional funding or scope (7 IMPERATIVES)
4. Compliance is very difficult or uncertain (2 IMPERATIVES)

This allowed the team to leverage synergies and proactively focus their efforts towards the most impactful—and most achievable—Imperatives. Notably, the collaborative act of developing a Biophilic Design Framework reinforced the project's central vision, safeguarding several design elements that might have otherwise been compromised by cost-saving measures. Another valuable outcome emerged: although the Red List Imperative was initially classified as one of the most difficult and considered beyond the project's reach, the intentionality embedded in the team's approach ultimately transformed their materials vetting process, laying the foundation for their continued engagement through the [Shift to Safer Materials](#) project.



ABOVE: THE PERFORATED METAL SHADE SCREEN MIMICS THE DAPPLIED LIGHT FILTERING THROUGH AN OAK TREE CANOPY.



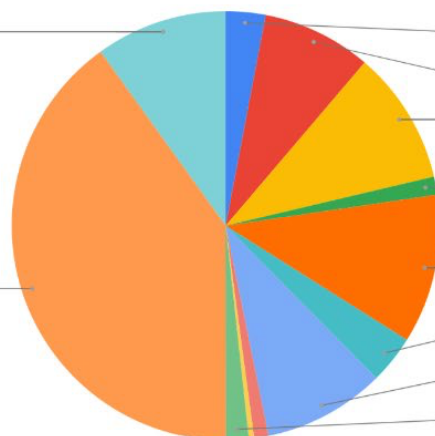
ABOVE, LEFT: THE COMMUNITY ROOM OPENS ONTO A STREETSIDE COURTYARD.

The experience at Coliseum Place illustrates that there are several different entry points and opportunities to create benefits for resource-constrained projects by integrating elements of the Living Building Challenge. Applying this framework introduced a layer of intentionality that unlocked transformative outcomes around energy performance, biophilic design, and the team’s overall approach to healthy materials. In line with the broader mission of Living Future’s Affordable Housing Program, the lessons learned from this project can help move the needle forward, offering valuable insights that can benefit the entire affordable housing sector.

PROJECT FINANCING

private loan (Bank of America)
10.0%

4% tax credit equity (Bank of America)
40.1%



THE PROJECT RELIED ON A NUMBER OF DIFFERENT FUNDING STREAMS, INCLUDING THE 4% LOW INCOME HOUSING TAX CREDIT, PRIVATE LOANS, AND LOCAL FUNDING OPPORTUNITIES.