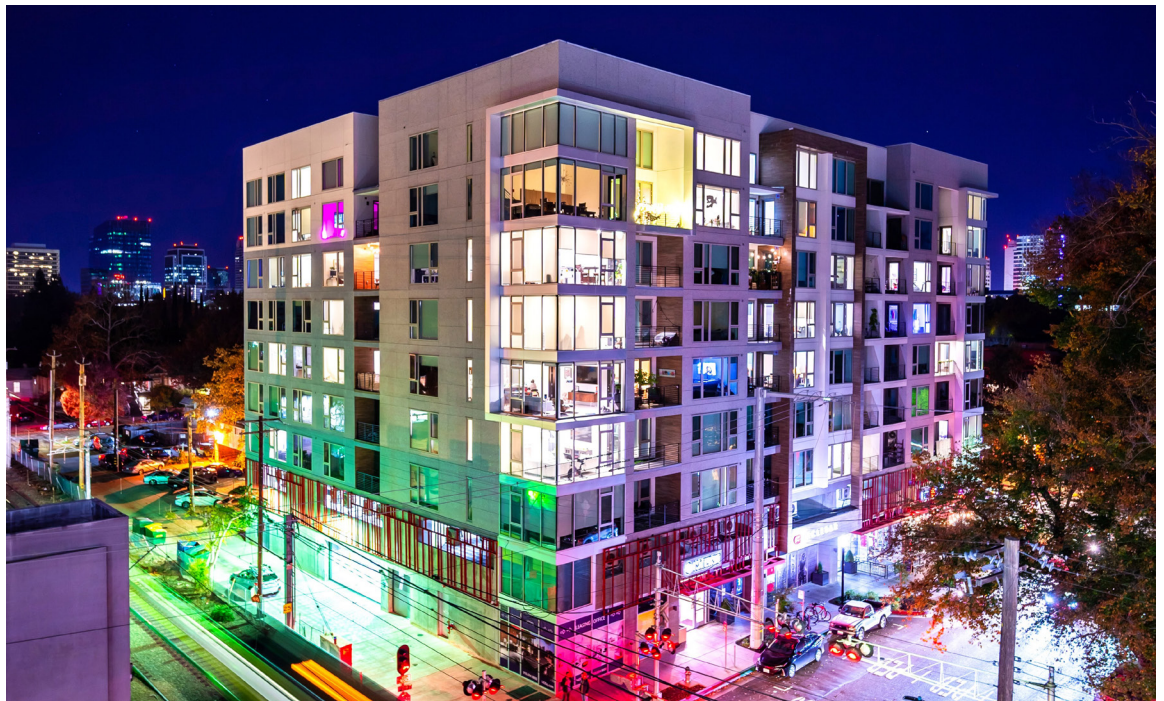


Meeting the Innovation Challenges at 1430 Q Street

Breaking the limits of height with 6 stories of wood-framed Type IIIA over 2 stories of concrete for the first time in the United States using the AMMR (Alternate Means and Methods Request) process.

Owner: D & S Development, Inc.

Architect: HRGA Architects



Project Description

1430 Q has an appealing location in Mid-Town Sacramento, with direct freeway access and proximity to a light rail station and a popular city park. The six wood-frame levels include one and two-bedroom rental units, ranging between 580 to 2200 square feet surrounding a courtyard. Units on the sixth-floor benefit from the mezzanine with floor to ceiling windows. High-grade interior finishes and amenities including a fitness room, bike station, pet washing room and outdoor lounge make it a desirable place to live. The two-story podium has 9000 square feet of leasable space. Parking is below grade and at levels one and two. Construction costs were approximately \$15 million over traditional 5 over 2 buildings, however the additional story with the mezzanine space made the project an instant financial success.

Customer's Challenge

D & S Development -a prolific developer in the Sacramento CA, market was facing challenges making numbers work in a mixed-use urban infill project using the traditional 5 over 2 configuration which has been permitted in the Seattle Building Code for some time. The small urban infill site required more residential units to make it profitable within Sacramento's competitive building market. The International Building Code (IBC) traditionally permits light wood-frame buildings up to five stories over a single-level podium. The project team had to provide a solution that would generate more units while eliminating the need for more expensive steel and concrete.

Tricorp Group Joins the Team

Tricorp Group was hired during design/preconstruction to collaborate with the design and development team to evaluate cost, constructability, and scheduling challenges. The initial design for 1430 Q complied with 2013 California Building Code which limits Type III-A buildings to a maximum of eighty-five feet above grade, five stories of wood-frame over a single-story podium. Working with Churchill Engineering, Buehler and HRGA architects to circumvent these limitations the team looked at options to enhance the buildings constructability, and design features while increasing the height to ninety-four feet.

The Solution

The AMMR process allows a building official to consider the intent of prescriptive code provisions when deliberating on new or existing technologies in materials, design, and methods that are not explicitly addressed in the code. The team studied Sacramento's building code and proposed a mitigation that included 2-hour ratings for all corridor walls, unit separation walls and bearing walls.

Wood was the obvious choice for efficient and cost-effective design and construction. Tricorp Group used prefabricated wood walls to speed construction. The entire system was 2-hour rated.

Additional access to the roof was provided through 2 stairways. The code has had limitations on the floor area, so Churchill Engineering additionally proposed a 3-hour fire wall assembly.

Fire safety being the primary concern the team designed 1430 Q to have the same fire safety as a Type I-B building. In addition to the 2-hour corridor, unit separation, and bearing walls, the building included 2-hour floor assemblies with three layers of 5/8 gypsum for the ceiling and 1-1/4 inches of concrete toppings on the floors, common to residential projects. Acoustic and fire design solutions overlapped as the extra layers of gypsum board meant to meet acoustic standards increased and the fire ratings to 2-hour. The same fire safety as a Type I-B. building.

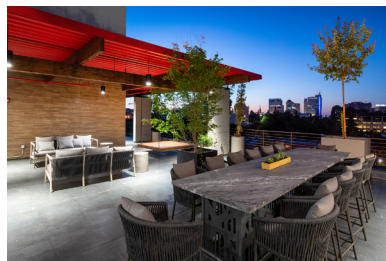
The entire team, after working for weeks on the design and construction solutions, submitted the AMMR report and received approval within three days.

Tricorp Group provided an end product that exceeded the clients' expectations.



Successful Measures Taken:

- * Worked successfully through the AMMR (Alternate Means and Methods Request) process.
- * Devised getting construction sequence in place as there was no footprint to follow.
- * Built mock-ups of the concrete wall, shear walls, exterior finishes, window assemblies, framing assemblies on the third floor for owner approval and tradespeople collaboration.
- * Added concrete shear walls on the first floor of the wood-framed structure.
- * Prefabricated wood wall panels and placed them directly into place from delivery trucks.



“ Tricorp partnered with our team during preconstruction and construction on our 1430 Q Project, which concluded with successful delivery of our beautiful and unique building during the Global Pandemic.

- Steve Lebastchi
Principal
D & S Development

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