Focus On
THE WEST COAST: PROJECT SPOTLIGHT

Square Peg for a Round Hole

Sacramento’s Capitol collaborates with Schumacher, Columbia and GAL/Hollister-Whitney to deliver unique residential project.

by Mike Moss

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The gearless Hollister-Whitney Elevator Corp. machine, and Elsco model B car and model D counterweight guide shoes allow it to smoothly travel top to bottom in just under 20 s.

The elevator carries passengers between the floors of a Timberpeg home and an underground wine cave/entertainment area.
Sacramento, California, home to approximately 450,000 (more than 2.1 million if one includes the greater metropolitan area), is known as an affordable place to live. It is also full of beauty, with the largest tree canopy in the U.S. and an extensive list of attractions. The city boasts low commute times, clean streets and parks, and a growing economy. For these reasons, many West Coast elites call “Sactown” home. So, it was no surprise when one of the area’s most successful business professionals began drawing up plans for a new residence in 2014.

The homeowners acted as their own general contractor and sought out specialty contractors for several features of the home, including its one-of-a-kind elevator that travels between underground and a second floor. The home’s shell is a post and beam by Timberpeg® sitting atop a wine cave by Condor Earth. For the elevator connecting them, the homeowners looked no further than Capitol Elevator of Sacramento.

Capitol, in turn, looked to several vendors. Capitol has worked on custom elevators, including high-end residential units and complex commercial ones. To Capitol, the residential project was ideal since it reflected the company’s reputation for taking on jobs that aren’t standard. An intermediary general contractor met with Capitol Vice President Tim Conkling at a West Coast winery that had an elevator. The deal was made over wine and looking over that elevator, which was exactly what the client wanted, with a few modifications.

Conkling recalls: “Overall design and safety were important to the owners, as well as having a trusted local company in charge. The owners valued quality over price and wanted the process to be hassle free. To me, that meant we were a great fit, since we thrive in the custom environment and provide a high level of service. Our customers want systems with no or minimal downtime, so we are proactive on preventive-maintenance agreements.”

While the owners wish to remain anonymous, Conkling and a photographer were granted access to the home to highlight its elevator. In this 18,000-sq.-ft. suburban estate, the name “home elevator” is a bit of a misnomer. Most home elevators range from 700-1000-lb. capacity and lack the bells and whistles found on commercial elevators. This elevator is quite the opposite.

The equipment was engineered to order by Schumacher Elevator Co. of Denver, Iowa, which, like Capitol, is a family-owned independent with a focus on custom jobs (ELEVATOR WORLD, October 2013). Schumacher built the 900-series custom glass cab with a 2000-lb capacity. The homeowners wanted a high-capacity elevator. The deal was made over wine and looking over that elevator, which was exactly what the client wanted, with a few modifications.

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unit to ease the flow of guests during large parties and other events held in the wine cave/entertainment area.

Working closely with Conkling, Schumacher’s first engineering and design challenge was to fit a square peg in a round hole: A square glass cab wrapped with stairs was specified for the circular hoistway. The elevator doors open to the basement wine cave and entertainment area, then the unit climbs 53 ft. to a first-floor main living space with a grand balcony. It then climbs nearly 14 additional feet to a second-floor living space.

The solution was to build a tubular steel support structure. Schumacher specified the hoist space and bracketing locations. The general contractor/homeowner participated in this process and was able to create something precise and artistic for structural support. One of Capitol’s mechanics noted how incredibly plumb the fabricated structure is: “Within one-thousandth of an inch, you just don’t see that. It makes our job that much smoother to align rails and brackets.”

The team effort continued on the elevator’s many details. “We took into consideration what the customer did and did not want to see as far as mechanicals in the open hoistway,” a Schumacher designer said. “On a fully glass inlaid cab, aesthetics are key — that, and a bottle of Windex!”

While riding the elevator, passengers enjoy views of the home’s interior, the outdoors and certain mechanical elements and components. The center-parting doors were sourced through Columbia Elevator Products Co., Inc. of New York City, with GAL Manufacturing Corp. VFE 2500 operators set 1 ft. above door height. A custom enclosure was built to hide them, along with other car-top equipment.

Minimizing clutter in the hoistway, keeping it clean visually and getting the elevator operating as quietly as possible were further owner requests. The hall stations utilized a Cat 6 cable for the data serial link on chipped push buttons to minimize wire count. All signal equipment was kept fairly simple, with no video or touchscreen controls.

This simplistic elegance all tied into a GAL Galaxy IV controller powering a basement-mounted gearless traction GAL GL-171-20 machine. This mount design was desirable, as it minimizes noise in the living areas and retains the open feel of the hoistway. Engineers drew up a 1.5-in.-thick steel base plate that was precast into the floor of the 6-ft.-deep pit. The plate was massive for a home elevator and built to withstand the upward pull of the nearly 5,000 lb. of counterweight. The cab assembly features 3/4-in. glass and 1,500 ft. of steel cable slung around five sheaves.

Quiet and Fast

A typical home elevator travels at 45 fpm or less. This commercial-style home elevator, however, runs at 200 fpm. The gearless Hollister-Whitney Elevator Corp. machine, and Elsco model B car and model D counterweight guide shoes allow it to smoothly travel top to bottom in just under 20 s. It runs quietly enough that typical conversation is louder than its operation.

A walk down the staircase surrounding the hoistway passes by a lower-level machine-room door. Placement was determined so machine, electrical disconnects and pit are all easily accessible through the same door. Additionally, since the machine was basement mounted, and there was not access to the overhead, a remote set governor was utilized.

Conkling commented that a three-stop elevator can take an average of six months from bidding and contracting to turnover to the customer. This job, however, commenced in mid 2014 and was completed in May 2017. Because the home was large and built with attention to every detail, delays were inevitable, he said. For example, regular check-ins had to be performed to determine when elevator construction could commence. Digging 50 ft. down to accommodate the wine cave was, itself, a lengthy process.

The end result is something of which all involved can be proud, Conkling says, observing: “This customer wanted luxury materials: lots of glass, great lighting — the best — and that is what they got. It’s the most beautiful home elevator we’ve ever installed. With all the glass, it feels like an open concept with great views. We love this kind of work, which allows more creativity and attention to detail.”

Mike Moss is senior sales associate at Schumacher Elevator.