BY STEVE SPAULDING

HORIZON DESIGN DELIVERS HIGH-END HIGH-QUALITY RADIANT/SOLAR APPLICATIONS

Radiant heating and solar collectors keep southern California home cozy.

Youssef Zaki left Boston nearly four years ago to come to sunny southern California where he began working for a number of different plumbing and heating companies, eventually falling in with Horizon Design International.

"The owner is Roland Schallibaum, a Swiss architect and real estate investor who created Horizon in Zurich where he focused on building his own standard of luxury," Zaki explains. And both Schallibaum and Zaki found plenty of opportunity doing radiant heating installations in southern California.

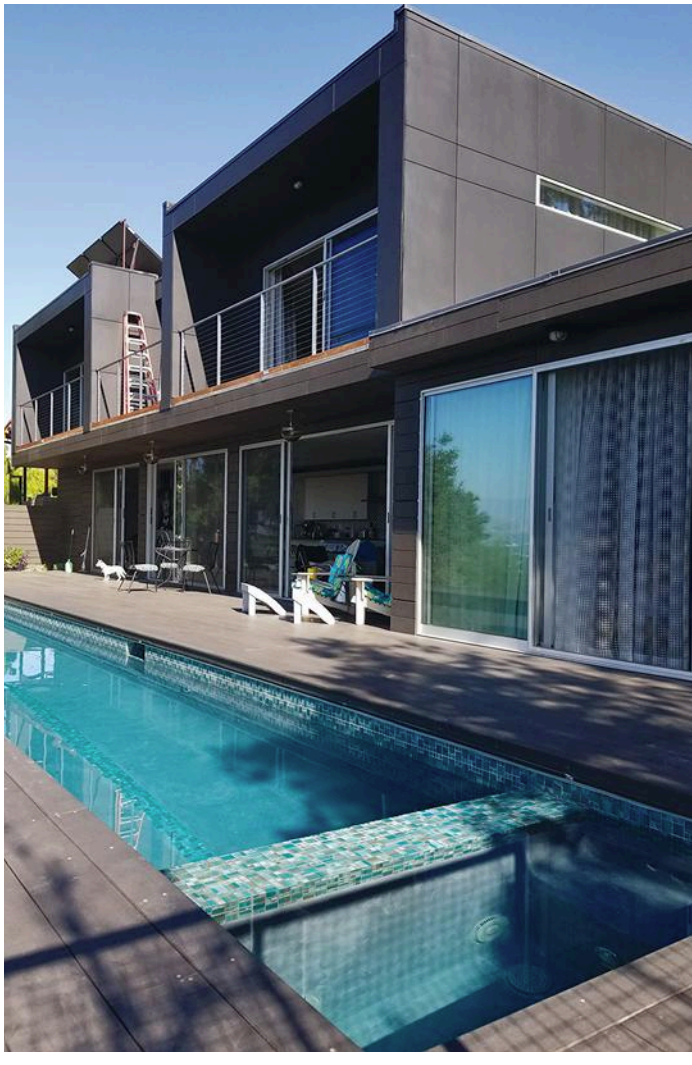
"In southern California and Los Angeles right now, real estate and housing are just out of control," Zaki says. "There're a million contractors, plumbers, and everybody pops up overnight. But there's a lack of quality, of knowledge. People can't explain these systems to customers…they're not trying to take advantage of the different control options that are out there today."

Zaki met Schallibaum during a job out in Beverly Hills. Today, he operates a subsidiary, Horizon Plumbing and Radiant Heating, that offers custom plumbing, radiant heating/cooling and solar thermal system design, installation, maintenance and repair.

"Where I come from, over in Boston, plumbing and heating go hand-in-hand," Zaki says. "Hydronic heating, you know? Out here most plumbers are strictly plumbers, and you don't have too many companies geared towards [hydronic heating]. At least in the residential sector you don't."

Because of his expertise, Zaki has become something of a gun-for-hire for builders with clients who are looking to add radiant systems to either new construction or renovations. Most of his work comes in through word-of-mouth. And word has been spreading rapidly; in fact, it's been keeping Zaki more than busy.

"I'm running around like a madman out here!" Zaki says, half in fun and half in exasperation. "I



Feliks Parnell's dream home in the hills above Studio City, California. The pool is used as a heat-dump for the radiant system.

The guts of the system are a Navian NHB 150 mod/con boiler (white box, center) and a Heat Flo HF 60-D 60 gal. dual-coil storage tank (large gray cylinder at left).

do the designs, I sell the systems, I talk to people…but [lately] I've let go a little. I've got another truck and a couple of guys that work for me. But it's tough; I'm really a hands-on type of dude."

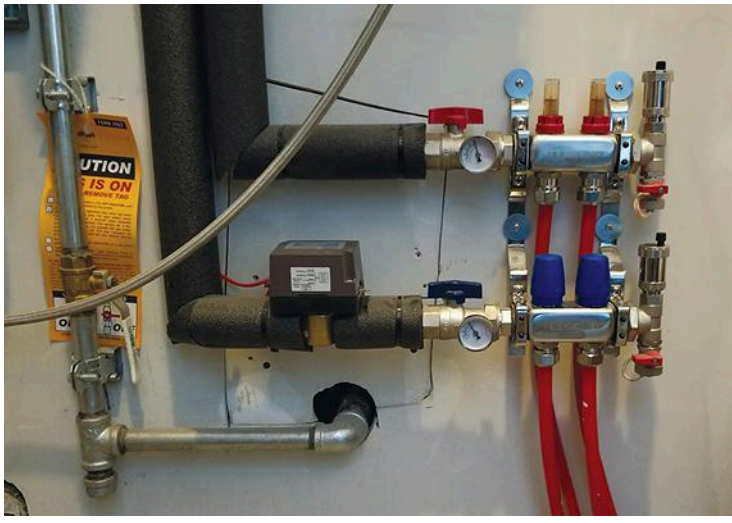
A lot of his projects incorporate solar. "Some of these houses take two to three years to build," Zaki says, "Some are anywhere from 8,000 sq. ft. to 10,000 sq ft., and in these weird, precarious places, places that are hanging off the side of a cliff sometimes. Hard to work in."

It was word-of-mouth that brought him to one of his current projects, a home in Studio City (and if not hanging off a cliff, at least high in the hills) owned by Feliks Parnell, a camera operator who works for various television projects. For Parnell, it's been a long journey to build his dream home.

Living the Dream

"I bought a home in southern California on a hillside back in 1998," Parnell says. "It's a very small house. I was always thinking of remodeling it." Parnell did a great deal of research on mid-century modern buildings and became enamored of radiant heating systems.

"I read some testimonials from those [radiant system] owners, and they were very happy," Parnell says. "So, I elected to go with radiant heating. Since I decided to pour new concrete floors, it was a perfect opportunity to bury [the tubing] in the concrete."



PEX tubing leads to the radiant heating zones.

The home is 1,489 sq. ft. on the first floor, 1,248 sq. ft. on the second floor with a total heating load of approximately 26,000 Btu, and a domestic hot water heating demand of roughly 130,000 Btu.

Horizon Design installed a Navian NHB 150 mod/con boiler along with a Heat Flo HF 60-D 60 gal. dual coil storage tank. On the roof are three 4 ft. X 8 ft. Sun Earth

Empire Series flat plate solar collectors. The solar collectors are being run by a Caleffi iSolar Plus differential temperature controller.

"That particular controller has two relays on it," Zaki explains. "Obviously, whenever it's capable of making hot water, the boiler will always keep that tank at 120°F. That's what we've got it set at. The domestic has a mixing valve on it, so when the solar panels on the roof start cooking above that, it turns it on and lets the panels start heating that water up even more. Once the tank gets up to 135-140°F, I have it switching over to dump the heat into the pool." In this particular system, the solar doesn't help out the radiant floor heating.

Normally the three collectors on the roof satisfy the tank in the morning. Once it has reached temperature, the excess heat is to be dumped in the pool by the Caleffi iSolar Plus controller, which monitors temperature and turns on the relay controlling the stainless steel pump. This pump pulls domestic water from the tank through a Brazteck 155K Btu 316 stainless steel shell-and-tube style heat exchanger.

When the tank temp has been brought down again, the heat exchanger pump is shut down, the tank temp is built back up, and the process repeats.

Grundfos UP series pumps (in red) keep water circulating efficiently.

At right you can see part of the control set-up, which includes a Caleffi iSolar Plus unit.

To distribute the radiant heat, Horizon used 1/2-in. Legend Flex tubing with oxygen barrier in the floor, and 1 in. Legend Flex tubing with oxygen barrier for the supply/return lines. Also used were Legend stainless steel manifolds, Legend zone valves, Grundfos UP series pumps, Webstone isolation flanges, valves, and mixing and air separators. Caleffi auto feed and backflow pumps were also integral parts of the system.

When installing the in-slab tubing, Horizon used Barrier X5 under slab insulation.

Ready to Enjoy

The homeowners moved in the house in January 2018. Feliks Parnell says the system has been performing beautifully.

"Our winters are mild," Parnell says, "but it gets a little chilly at night. So we turn it up to about 72°F – which is great because we have those NEST thermostats. They 'wake up' as you walk by…We love it. You don't feel any hot air blowing anywhere. It's just very soft, very clean."

And he has nothing but good things to say about Youssef Abou-Zaki as a professional radiant heating designer and installer.

"The system he came up with is a masterpiece," Parnell says. "It looks like a spacecraft! It's a very intricate system with a lot of pumps and pipes. He is a true artist; his work is so clean. Every angle is right. He's a perfectionist, basically, so everything is totally perfect and cool. Sometimes, I just go down to look at it. It makes me feel good."

Steve Spaulding is Content Director of Radiant Living *magazine*.