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CASE STUDY

Residential High-Rise

Facility at a glance

Name

Icon 1616

Location

Philadelphia, PA, USA

Building size

280,000 sq ft

Issue

Renovating HVAC system while preserving historic building

Solution

280 - Daikin vertical-stack WSHPs

40 - Daikin horiz. SmartSource® WSHPs

16 - Daikin VRV units

Daikin Preserves Historic Building with HVAC Renovation Solutions

Issues

The Icon 1616 luxury apartments in downtown Philadelphia opened in 2014 after a complete renovation of the former office building into a Class-A multifamily community. Built in 1929, the 25-story Art Deco structure is listed on the U.S. National Register of Historic Places and now accommodates 206 apartments ranging in size from one to three bedrooms in addition to penthouses on the top two floors. Among other amenities, the facility features a fitness center, club-room with kitchen, and a sky deck.

"Property owners were seeking economical WSHP solutions for residences that could accommodate tight, compact spaces and had low maintenance and low noise," says Eric Voegele, project manager with A.T. Chadwick Co. mechanical contractors in Bensalem, PA.

Solution

"The vertical stack WSHPs by Daikin Applied are an efficient system and also inexpensive to purchase and install," adds Andrew Doble, engineering sales manager and Daikin Applied representative with Tristate HVAC in West Conshohocken, PA, noting the vintage building presented challenges for the design and installation of the HVAC system. "The project required significant coordination before ordering the equipment to ensure a proper fit."

Before installation, one challenge occurred when it was determined the low-ceiling height in the fourth-floor gym and daycare area couldn't accommodate the vertical stack WSHPs. "As an alternative, we specified 16 Daikin AC ceiling-mounted water-source VRV units with piping to supply hot and cold water without ductwork," Doble says.

Voegele noted that apartment space constraints entailed significant planning to install the 280 vertical stack WSHPs in the apartments (as well as 40 Daikin SmartSource horizontal WSHPs for penthouse

suites) before major finishing occurred. "All of the apartment floors have narrow floor-to-ceiling heights at 10.5', so getting the vertical stack WSHP units into the spaces required careful maneuvering and coordination with various construction crews."

Installations occurred June through September of 2013 and were done in small groups with cabinet/piping installations in one stage, chassis in another, and final finishing in a third stage. An exterior hoist car was used by the mechanical installers to lift the WSHPs into the building.

Outcome

Icon 1616 is a great example of an efficient installation and HVAC solution for property owners and residents alike. "The overall coordination among parties went very well for a fast-tracked job with tight schedules," Voegele says. The building has been occupied for more than one year and A.T. Chadwick has fielded only minor service calls on the WSHPs. "All the units have been heating and cooling properly and we have not heard any complaints about residents being too hot or cold," he concludes.



Height constraints proved challenging for vertical WSHP installation, but chassis design of the Daikin units helped facilitate staged, fast-tracked installation.