

Chiller Replacement

When we were contacted by the owners of the last high-rise constructed on Lake Shore Drive in Chicago about replacing their old, outdated rooftop HVAC system, we were honored to be presented with the task. The process of replacing this rooftop HVAC system started years ago with a phone call. Our HVAC design staff started working on the project almost immediately, and we were happy to provide budgetary support for this massive and complicated project from its inception to its completion.

Upon assessing the condo's current HVAC needs and anticipating their future HVAC needs, we provided them with several options so that they could discuss the project and choose the best unit for their residents and building. This is because when we do an assessment of an HVAC system for a replacement, we always provide at least three options. The first option is usually low cost with standard energy-efficiency and/or a similar design as the original unit. In this case, it was a unit with a water-cooled chiller. Next, we provide a mid-range unit with moderate energy efficiency. Lastly, we provide an option for a high-energy efficient model, which usually results in the highest purchase price and installation costs. Then, those options can be discussed by the building owner, executive team or HOA in order to determine which model would best suit the building's cooling needs and the overall HVAC replacement budget.

The 27-story luxury condo chose to replace the original HVAC unit, which contained a water-cooled chiller, with a 70-ton air-cooled model. Air-cooled chillers offer a few advantages over water-cooled chillers. The first advantage is that it transfers heat with ambient air circulation, which means there are no water costs associated with the operation of the air-cooling HVAC unit. This dramatically lowers water bills and improves the environmental friendliness of the building. There's also no cooling tower to maintain, which means less maintenance and improved ease of operation. This is primarily due to the fact that chemicals do not need to be added in order to control bacterial and microbial growth, and there's no chance of experiencing a catastrophic water leak.

Of course, the installation was not without its challenges. The luxury condo building has 27 floors. This means that the new unit had to be lifted to the roof. In order to ensure proper protocols were followed and all building codes were maintained, we had to speak with the city and pulling the proper permits in order to remove the original HVAC unit and install the new air-cooled chiller. Once the permits were in place, we ordered the new 70 ton rooftop chiller and scheduled a helicopter lift.

On the day of the delivery, we coordinated with the city to temporarily close Lake Shore Drive for the safety of the vehicles on the road and the nearby residents. We positioned a crew on the roof to help with the placement of the new HVAC system and a crew on the ground to control pedestrian traffic in case we encountered any unforeseen issues with the airlifts.

The old unit was removed via helicopter. Then, the new unit was lifted off the tractor-trailer by the helicopter and carefully raised 27 stories to the roof where our crews worked with the helicopter pilot to properly position the new unit on the HVAC pad.

The entire process took about 30 minutes, and once it was safe, Lake Shore Drive was reopened to vehicle and pedestrian traffic. Our crew immediately started connecting electrical wires and air ducts to the new unit in order to provide cool air to the staff, residents and guests of the luxury condo building.

