Henry Ford Health System

Detroit, Michigan

Michigan Air Products provides Price Chilled Beams solution to retrofit aging induction units in hospital patient rooms.

In 2012 a partnership between Michigan Air Products (MAP) and Henry Ford Health System (HFHS) began around a conversation to upgrade the buildings aging HVAC system. The hospital was receiving some complaints for noisy patient rooms and the current units were not keeping up in the chilly winters. In addition to these issues the cleaning staff had noticed that accessing the induction units to clean them regularly was difficult. With these issues identified MAP began a conversation with Price Industries to develop a custom solution that met the needs of HFHS: a warm, quiet product that is simple to maintain.

The first hurdle came in the form of a very unpredictable installation schedule. With the hospital currently running 24/7 and near capacity only a few rooms are able to close for installation work at any given time. This made balancing only a few units at a time, with differing requirements from the original equipment, very difficult. In addition to a warm, quiet and serviceable product the new Chilled Beam design also needed to handle a wide range of pressure that would change throughout the building.

The design came in three generations with feedback from the hospital and an eventual site visit by Price greatly influencing each design. The first generation originally worked well as installed. However, when attempting to repeat the same build in a different location in the hospital noise levels were drastically worse and led to a second design including a damper. The second generation tested very well in both noise and thermal comfort in lab conditions. But when implemented on site was just as loud as the original generation. The source of the noise in the new design was eventually determined to come from two places, the external damper and airflow restrictions within the Chilled Beam itself, and was found to be very dependent on duct type (hard duct vs flex). To free up flexibility in installation, the third generation opted to use an internal damper which allows the Chilled Beam to quietly operate at a very large range of entering pressures and has been installed in multiple batches to date.

As of 2020, over 100 patient rooms have been outfitted with upgraded HVAC units to date, with many more still left to come. The current Chilled Beams have been operating well, with increased ease of maintenance, lower noise levels, and fewer heating complaints. This will be an ongoing project for some time, and with help from Conti Mechanical, MAP, HFHS, and Price a plug and play solution will enable HFHS to smoothly upgrade every patient room.

PROJECT SUMMARY

BUILDING TYPE	Hospital
LOCATION	Detroit, Michigan
CUSTOMER	Conti Mechanical
YEAR COMPLETED	Ongoing