

WVU Medicine AHU-2 and AHU-3 Replacement

DESIGN / CONSTRUCTION TIMELINE:

July 2017 – November 2019

CLIENT:

WVU Medicine

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As a part of an overall renovation to the third floor of the hospital, the existing air handling units 2 and 3 were undersized and well beyond their useful life. These unit could not be taken out of service and there was no additional space available to install new units. LEA recommended installing new roof mounted units that could be installed and tested, then reconnected to the existing main ductwork there by minimizing the shutdown to tie ins only. Ductwork, chilled water, steam, and condensate were run down the exterior of the building where they were connected to the existing supplies on that floor. Electrical power for the units needed to come from the emergency distribution system which required the installation of new feeders from the existing main emergency distribution system. One new 800-amp 480v feeder was run to serve the larger unit and existing emergency power was redistributed from another panel to serve the other unit.

AHU-2 was a 38,000 CFM 100% outside air unit with pre-filters, an energy recovery coil, steam heating coil, chilled water coil, supply fan wall with VFD control, final filters and a steam humidifier. Ahu-3 was a 53,000 CFM unit with an economizer, air blender, pre-filter, steam heating coil, chilled water heating coil, supply fan wall with VFD control, final filters and a steam humidifier.

Phasing was crucial to allow the minimal shutdown of the spaces served by the units during the changeover to the new units presented issues. Careful consideration had to be given as to how the ductwork would fit into the limited space available in the existing mechanical room. It was determined that in order to make the tie ins only one unit could be directly connected to the existing distribution duct system. After that unit was operational, the existing AHU unit could be removed and the ductwork from the second unit could utilize the space where the first unit was removed to install the new ductwork connection.

