Building statistics 2

Construction

A large portion of the project involves selective demolition of existing systems. Care is to be taken to not disrupt HVAC, electrical, or data service to areas of the building that are not being renovated and remain occupied.

Electrical

Power runs into the building from Penn State’s 12.47KV loop through two 1600 Amp switchboards. Individual bus ducts are run to each floor of the building. 208 volt 4-wire 3 phase panel boards feeds power to lighting and outlets. All new lighting in the building is to be LEDs, most with occupancy sensors and dimming functions, wired at 208 volts.

Mechanical

Three air water air handler units, with provision to later add a fourth, are placed on the roof to provide heating and cooling to the building. Propylene glycol is used as the heat transfer fluid, as is required for food-grad spaces, such as the biology labs. Four 25,000CFM exhaust fans reside on the roof to provide exhaust for the lab spaces. Supply and return air ducts run vertically at the corners of the building. Exhaust ducts run vertically on the north face of the building.

Structural

The duct enclosures are framed by hollow structural steel (HSS) ranging from 2x2x1/4 to as large as 8x4x5/16, welded together at the connections. An L3x3x1/4 is used as a brick shelf, set every 12’6 along the structure’s height. The steel structure rests on 8 and 13 inch concrete walls set on 12”x25” 2000psf concrete footings.

Fire Protection

All floors of the building receive new smoke alarms tied into the new initiation circuit. The elevator is also tied into the new fire alarm control panel and programed to react appropriately in emergencies.