Mueller Laboratory Renovation

Executive Summary

Roof deck reinforcement beams to help carry the load of new air handler units can be installed on top of the roof deck instead of underneath. This design choice will provide a better quality product, save money, and decrease allow the air handler units to be installed 20 days earlier than otherwise possible.

Asbestos is present in floor tiles in the renovation. Disturbances to the tile from the renovation could create unsafe working conditions. Pennsylvania law requires the abatement of the asbestos containing material given the quantity found on the project. Increasing the abatement crew size accelerates the schedule without significant changes in cost.

The renovation's current worksite is disorganized. Moving the site to a more open, flatter area to the south has a wealth of benefits. Material can be stored more neatly, deliveries are easier, and contractor parking is expanded.

Recycling opportunities are limited for the project due to the distance needed to travel to recycling centers. A scrapyard is close enough for relatively straightforward recycling of large scrap metal. Selling the large quantities of metal scrap will more than pay for the extra equipment needed to recycle metal on the project.

While LED downlight fixtures are efficient, using Edison-base fixtures and screw-in LED bulbs may make sense. Initial cost is lower and system replacement or upgrade is as easy as changing a light bulb. Screw-in bulbs perform nearly identically to hard-wired fixtures, and sometimes even perform better.

The overall recommendations are as follows:
It is recommended that the roof reinforcement be moved to the top of the roof deck.
The abatement of asbestos should be assigned more crews to decrease the duration.
The project's worksite would benefit greatly from going south, not west.
Effective recycling remains difficult to achieve on a renovation such as this one.
Screw-in LED bulbs should be used instead of hard-wired LED fixtures.