

Executive Summary

Pershing Hill Elementary School Replacement Project is the replacement of the existing school, with a new school of 87,160 square feet and \$13.3 million in construction costs. Pershing Hill Elementary School is being delivered using a traditional design-bid-build approach with a multiple prime contract structure in which Jacobs Facilities, Inc. is acting as the construction manager. Pershing Hill Elementary School is located entirely within an US army base (Fort Meade), and part of the site is within a “Critical Wetlands Area”

Four analysis activities are proposed in this paper; replacing the traditional roof with a green roof, installing a geothermal mechanical system, replacing all or a portion of the masonry façade with a precast system, and pursuing LEED certification. These green roof would address problems associated with storm water management, but would also provide additional load which will likely result in needing to redesign the structural system of a typical bay. A geothermal system would provide alternative energy, but at an additional upfront cost. Lifecycle analysis will be used to weigh the additional upfront costs against the energy savings. A precast system would be less labor intensive than a masonry one, reducing the effects of site access difficulties, but would require analyzing how the site could accommodate the additional requirements associated with precast systems (additional crane use, and need to layout spaces). At the PACE Roundtable conference, it was discussed that many schools are moving towards LEED certification. This analysis will look at the costs associated with pursuing LEED certification.