

BRANDON C. McKEE  
CONSTRUCTION MANAGEMENT  
AMBRIDGE AREA HIGH SCHOOL  
AMBRIDGE, PENNSYLVANIA  
ADVISOR: DR. JOHN MESSNER  
THESIS PROPOSAL



## ***EXECUTIVE SUMMARY***

This proposal includes three analyses conducted on the Ambridge Area High School (AAHS). Included is a detailed description of the problem, the goal of the research, the methods and tools to be used to attain the research goal, and the expected outcome. Since the AAHS did not seek a LEED rating, the overall theme for the analyses is providing a green design to public school projects, to help lower the operation and maintenance costs at minimal or no added first cost. Below is a preview of each analysis.

### ***Analysis 1 – Green Design in Public Schools***

This analysis will attempt to identify the desires of public school districts along green design principles to reduce operation and maintenance costs of school buildings. Design professionals suggestions of green design principles will be compared to the requests of owners to develop a list of techniques to achieve green design at the lowest first cost.

### ***Analysis 2 – Precast Brick Façade***

Will focus on an alternative exterior wall system, replacing unit masonry construction with precast architectural panels to achieve the same aesthetics. Areas of interest are reduction in the construction schedule, reduction in trade coordination, and an increased thermal value of the wall unit.

### ***Analysis 3 – Structural Steel Erection Sequencing***

It will analyze the steel erection sequence used in construction against a proposed sequence to drastically reduce the construction schedule to provide earlier owner occupancy. A proposed reduction in general conditions costs will offset the potential increase in the steel contract.

