

## ***SUMMARY AND CONCLUSIONS***

Three analyses were performed on the Ambridge Area High School. The analyses focused on the incorporation of green building techniques and construction schedule reduction.

The first analysis was aimed at determining the barriers public school districts have to building green and achieving LEED certification on construction projects. Research was conducted surveying public school districts, architects, engineers and contractors collecting opinion of why schools choose not to go green. From the results, the primary reason is lack of knowledge and understanding of the LEED rating system and the benefits and advantages of green construction. A tool was developed serving as a lesson to be taught in high school settings to educate future adults of the benefits green construction has to offer to schools and buildings in general.

The second analysis looked to reduce the construction schedule and increase the thermal values of the exterior wall system by replacing the conventional masonry assembly with an architectural precast system from High Concrete. This system does place higher structural loads on the foundations but analysis proved they are sufficiently designed to carry this load. Mechanical impacts of incorporating this system are negligible as the thermal R-value of the two assemblies is close in magnitude.

The final analysis aimed to reduce the overall construction schedule by using an alternative steel and façade erection sequence allowing façade work to begin prior to the completion of steel erection. Using Navisworks 4-dimensional modeling, a sequence that allowed for completion of the exterior façade to occur one month earlier was created. While this change allowed the façade to complete earlier, other activities not covered in this analysis hindered its ability to reduce the overall construction schedule.