



Washington-Lee High School

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Executive Summary

This report is the culmination of a semesters worth of research and analysis on Washington-Lee High School. The first part of this report contains information on research on LEED rated schools and why there are not more of them being built. Surveys were sent out to Dallastown area school district school board members and analyzed on why their new intermediate school proposal was not going green. The findings were that they could not justify the extra cost of going for a LEED rating on the new school. The public was already upset about the cost of the new school and adding more cost would not go over well. It was suggested that if the public was educated more on the advantages of having a green school they might be willing to pay the extra tax money. The best way for Dallastown to educate the public would be to put articles and statistics in the pamphlets and community couriers that go out monthly.

The first analysis that was done was to compare the use of architectural precast panels on the façade with the current façade design. Altus Group's Carboncast panels were chosen and were found to be a feasible alternative to the CMU and brick that is currently being used. Using these panels will reduce the schedule by 96 days however will require the use of a crane to erect them. These panels will also provide a reduction in heating and cooling loads. The only downside to using the Carboncast panels is the increase in price compared to the current design. It would cost approximately \$2 million dollars more to use the Carboncast panels, however the quality of these precast panels would be better and waste would be reduced.

The second analysis that was done was to value engineer/redesign the lighting in the gymnasium. The current gymnasium design uses 1000 watt metal halide bulbs which are more inefficient when compared to fluorescent lighting. A 6-bulb, 54 watt T5HO luminaire was chosen to take the place of the current metal halide fixtures. It turned out that these fluorescent luminaires could replace the metal halide fixtures 1 for 1 so no extra fixtures would be added. The new design was kept so that the power density met ASHRAE 90.1 standard of 1.1 W/sf for gymnasiums. After the lighting levels were found and renderings were made the energy savings was calculated. The new design would save more than \$9500 per year in electricity costs. It would also give the owner more control over the lighting levels in the gymnasium.