Abstract

The project used for this thesis is Widener University's Metropolitan Hall. Construction began on the building in July 2005 and is expected to be completed in time for students to move in for the fall semester of 2006. The project site is at the corner of 17'th and Melrose Ave. in Chester, Pennsylvania, an within the boundaries of Philadelphia.

The first analysis looks at the benefit of constructability reviews. This was an attempt to quantify the benefits obtained by conducting third party reviews of construction drawings. Overall this analysis was successful in that it found that on the typical project of $15 million, it is usually worth the $30, 000 cost and two weeks required for a thorough plan check because it will most likely save about $100,000.

The next section of this thesis is a change to the plumbing system in order to gain LEED™ points for water use reduction. This water use reduction was achieved by changing the water fixtures from the university's standard fixtures to more recently created models which require less water to achieve approximately the same result.

The last analysis, shortening the project schedule, is broken into two parts. The first part compares the options for the structural system, while the second part involves the creation of a SIPS schedule in order to organize the finishing trades into a more efficient work pattern. The structural analysis found that by using 6" tilt-up wall panels, in place of the CMU walls the project could save as much as 194 days, and is less expensive. The SIPS schedule only reduced the total duration by 3 days but it gives the opportunity to increase the rate of work without greatly increasing congestion.