

EXECUTIVE SUMMARY

The senior thesis final report is to present the findings, conclusions, and recommendations of the four analyses that were executed for the Duval County Unified Courthouse Facility (DCUCF). This project is a new built 798,000 SF building that is dominated with the construction of 51 large scale courtroom rooms and in-house parking. The focal point of each analysis is to promote value engineering both in the office and on the field through means of – prefabrication, schedule efficiency, financial development, and risk allocation.

ANALYSIS NUMBER 1: Critical Industry Issue

Prefabrication is a beneficial tactic already used for the concrete paneling exterior enclosure of the DCUCF. Using this wide spread innovation on the development of a floor system would promote the same benefits. Two systems were observed – Double Tees and Hollow Core Planks using a typical bay method. The double tees didn't prove to fit the project due to size and composition. The hollow core planks, though in a large quantity, took 50 days to implement and ended up saving the project by almost 10 times the original work. It also permitted roughly \$14.5 million savings by using a manufacturing source. Through this introduction of process, the results shared in favor of using an all prefabricated project.

ANALYSIS NUMBER 2: Introduction of a Short Interval Production Schedule (SIPS)

The current project duration is targeted at May 2009 - May 2012. Through multiple debates and research, the project cost and schedule have been issues before the project was initiated on paper. The main concern was that the courtroom construction was taking too long due to constructability detail primarily focusing on the millwork. Using a SIPS schedule to strengthen the interior finishes displayed a minimal but still economic benefit. The schedule to accelerate all of the required trades resulted with a 48 week work period that gave a \$21,250 saving cost to reorganize sequencing issues.

ANALYSIS NUMBER 3: Financial Analysis Awareness

The Duval County Unified Courthouse Facility exhibited financial obstacles prior to May 2009 for construction due to material price inflation for design. The efforts here were to see what strategies could have been used to highlight the original construction time back in 2004. Financial strategies are suggested and should be monitored for a company's success. Once evaluated, the Auchter Company should have used a joint venture to minimize and spread the risk.