SUMMARY & CONCLUSIONS

The main area that was investigated on the Wisconsin Place project in Chevy Chase, Maryland was the building façade. Prefabrication played a major part in alleviating site congestion problems and reducing overall schedule time.

The depth study identified the advantages and disadvantages to prefabrication and the reasons owners shy away from the topic in design meetings. The main deterrents for prefabrication are owner commitment in the beginning stages of design and the increased coordination and cost associated with prefab. CII provided easy-to-follow guidelines for owners to help them decide if prefabrication is right for a particular project. My precast panel research ultimately led me to the Slenderwall® panel system, which was a real winner in Analysis 1. I think it is important to keep the industry on their toes when it comes to construction innovations like the brick robot. This is a potential technology that could have a large impact on the way they do business, no matter how 'outside the box' it seems.

Analysis 1 turned out to be a feasible alternative in every sense of the word. Not only does the precast Slenderwall® brick system reduce the schedule time by 22 weeks, it also costs less when all ancillary tasks like hoist and scaffolding removal are considered. This alternate cladding system also satisfied my goal of simplifying the façade construction by combining the exterior stud erection with the masonry. Finally, these panels proved to be more thermally resistive than the existing hand-laid brick system. Slenderwall® is a very unique system, and it was rewarding to investigate a product that I knew nothing about and determine it to be an extremely effective substitution.

Analysis 2 focused more on energy savings through façade adjustments. Photovoltaic panels replaced the foot level panels of the façade as a way to convert solar energy to electrical power for Wisconsin Place. In theory, this seemed like a brilliant idea that would reduce utility costs in the long run. After using Energy10 to simulate the PV panel replacement, I concluded that the 50 Watt panels were not powerful enough to produce the amount of energy the building requires. In addition to this, the payback on investment was a staggering 108 years, so this option was unfortunately disregarded. As a suggestion, the owner could introduce more solar panels to the building in the form of skylights or solar shades.