Executive Summary

This report focuses on methods and technologies that would allow the Moore Building Addition to be constructed at a faster pace, which would allow the occupants, including those displaced, to have a more permanent location to conduct their business. The research provided is impartial to the greatest humanly possible degree and does not favor any outcomes over any others.

Analysis I had a research goal of determining the possibility for demolishing the entire North Wing section of the existing Moore Building as opposed to selective demolition for reasons of reducing total project schedule time and determining a possible difference in cost. As a result of the research performed, demolition or deconstruction would cost roughly $425K versus the original $237K for selective demolition. This assumes no asbestos abatement, which would not affect the cost as it is constant for both approaches, as outlined in the research. However, the demolition/deconstruction would reduce the schedule time by at least 10 work-days.

In the **analysis II**, the benefits and implications of replacing the current stick-built façade with a near identical (if possible) pre-cast façade were explored. The research suggested that, based on the system provided by Oldcastle Precast Systems, the precast system would not be exactly identical nor would it be cheaper ($304K-363K precast vs. $300K stick-built), but, it would weigh slightly less and perform better mechanically, requiring no structural redesign and saving $2,300 per year. Most importantly, the reduction in schedule time is 67 days. This includes time for mobilization, lead times, and waiting for the steel structure to be completed.

For **analysis III** there was an initial desire to consider a contract type with the steel prime contractor in order to streamline the process of delivering and erecting steel that would involve OPP holding the contract with steel prime contractor. This was already the case and a shift to study the effect of a design-assist contract on the process in order to develop the case, as OPP does not have the manpower for such a move. Based on research and analysis, the design-assist contract method would be beneficial to the project assuming allocation of funds was not an obstacle. Quantitatively, the benefits would be seen in the form of a schedule reduction of 12 work days and just over $100K in savings. This would also come at a risk of about 14$ percent of the project total, which would be a risk of $3.6M.

Finally, the last analysis **(analysis IV)**, which looks at the viability of integrating an AE program with OPP in order to have a dual-benefit approach of allowing the students in the program produce B.I.M. models for OPP in order to be used for, but not limited to, preventative maintenance, asset management and geographical representations of on-campus buildings. This idea is based on the notion that students in the AE program would be modeling buildings either way, and OPP could benefit from this and pay a lower premium which would, in turn, benefit the AE department. Based on past trials and controversial aspects of the entire project, as well as intensive research on the project, the most appropriate and effective approach would be to hire students to perform the modeling in an internship setting. This solution, although extremely simple, entitles OPP to all their desires for a model and prevents long lead times as well as provides resume-friendly experience.