Individual Reflections

Construction Management

Dana Burzo

The BIM/IPD Thesis allowed me to further develop my skills as a Construction Manager in ways that could not be simulated throughout other courses. The experience I have gained through working in a team will help provide a framework for me as I join the industry. I enjoyed working on a team of eight people that all had similar goals and work ethic. In the industry, every project is a team effort and while the team may have ups and downs in the end you need to present the best product possible and this project perfectly simulated that. I believe this course has prepared me for when I graduate and will give me the confidence I need to be successful in the industry.

The project required heavy collaboration between options from the start and complete team communication throughout the process, but using frameworks acquired through my time in internships and class I was able to help manage the process. This Vertical Farm project allowed us to create something that was our own and truly collaborate to form the best design possible for all options as a unit. The BIM thesis structure allowed our team to learn from each other as we went through the design process and gain valuable assets that will be used when we join the industry.

I would like to thank all of the AE faculty and special thanks to my advisor Dr. Craig Dubler who helped our team throughout the entire design process. I would also like to thank Team Synthesis, for creating a collaborative, educational, and ultimately fun team environment that made this experience a positive one.

Mechanical

Michael Hardesty

The BIM/IPD Thesis allowed me to further develop my skills as an engineer in ways I would not have been able to in other courses. The experience I have gained through working in a team is invaluable. I enjoyed working on a team of eight people that all had one mindset and goal of putting forth the best design and best project. I believe this course has prepared me for when I graduate and will give me the confidence I need to be successful in the industry.

The project required heavy research and work upfront due to the type of project, but I was able to apply many of the skills and concepts I have learned through previous courses and summer internships throughout the entire design process. This project allowed us to think outside of the box and develop design ideas that we would not have been able to do for other projects. BIM Thesis created a professional environment between all of the disciplines which allowed us to integrate a design that benefited the team as a whole. I was not only educated in new mechanical design concepts for this project, but was educated in structural and electrical designs and construction concepts.

I would like to thank all of the AE faculty and special thanks to my advisor Prof. Moses Ling who helped our team throughout the entire design process. I would also like to thank my entire team, Team Synthesis, for making this one of the best learning experiences I have had in my five years at Penn State.

Structural

Zach Brown

Participating in the AEI Student Design Competition has given me an interesting insight into the coordination that is required between disciplines in any building design. Up until this year, we have been told that coordination is key in any successful building, but this was my first time actually experiencing it first-hand. Every design decision needed to be discussed between all options to ensure that it would be feasible. I enjoyed the challenge that came with this team competition. We as a team would challenge each other to produce the most effective and efficient design possible, and in the end it made us better engineers.

One of the biggest things I took away from this experience was the importance of an updated building model. When working on an integrated model for a project such as this one, it became critical that each option actively update the model with their systems to avoid clashes. A system may work conceptually on paper, but until you can actually see how it fits into the model with the other systems, it means nothing.

I believe that by participating in group thesis, my overall knowledge and understanding of a building has been expanded. I also believe, it helped me understand a lot more of the technical information that goes into all design disciplines. Group thesis also gave me an idea of how this industry will work in the real world, and how important it is to communicate with all other project members.

I would like to thank all of my team members for their hard work and determination on this project this year. They made it possible to create a holistic building possible of winning an award in every category at the AEI competition. You have all helped make me a well-rounded engineer in all disciplines. I would also like to thank all of Penn State's structural faculty for aiding in the design of the project. A special thank you goes out to my advisors: Professor Kevin Parfitt, Dr. Ryan Solnosky, Robert McNamara, and Bob Holland.

Tyler Poff

Participating with a team to complete thesis has prepared me for any challenges that I may endure during my professional career. This experience has given me a wide base of knowledge of all of the systems that go into a building, as well as make me better-rounded within my own option. By collaboratively working with seven other student it was challenging to decide which designs were best for all members involved. It made me realize that while one design may be best for your own option, it may have adverse side effects on all of the other options. Therefore, the team needed to come together and decide which designs will work the best for the building as a whole. While often times it led to heated arguments, we learned many real life design and construction issues. While working as the structural engineer on the project, I realized that even though we feel our design correct, there are design considerations that can help the other disciplines immensely while have minimal effects on the structural system. Therefore, I now know that to have a good structural system, all disciplines need to be considered.

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