THESIS CONCLUSIONS AND RECOMMENDATIONS

The main goals of the owner during the construction of Bridgeside II were to get the project completed as quickly as possible and to lease at least 50 percent of the space. Once the building is completed and the tenants can fit-out their space then the Ferchill Group will begin receiving rent income and can start their next project in the Pittsburgh Technology Center. The overall goals of this thesis were to decrease the project duration, make the building more attractive to potential tenants, and to help tenants design their desired space earlier in the project.

The first analysis was in response to the increased costs and schedule delays during the foundation construction. Underground obstructions prevented the steel piles from being driven into the bedrock and as a result each pile had to be pre-drilled. By replacing the steel H-piles with micro piles, I was able to create a schedule reduction of 24 days and a cost savings of $266,565. The second analysis proposed the replacement of non-vision spandrel panels on two of the facades with photovoltaic Light-Thru modules. The goal of this analysis was to utilize solar energy to create a life cycle cost savings. The Light-Thru modules will cost $228,553 and based on the energy production the payback period is 119 years. Based on the average life of the modules, this is not a reliable investment; however, they still provide a guaranteed reduction in utility costs and they provide environmental benefits such as reduced CO_2 emissions. Based on the payback period the owners will probably not choose to install the PV modules. However, if the micro piles are also installed then the owner would still see a total cost savings of $38,012 and a schedule reduction of 24 days. In addition, since the initial costs of the PV modules are offset immediately, the owner and tenants will benefit from a $1917 reduction in utility costs each year. Over the 25 year life span of the modules, they will create an additional cost savings of $48,000, which totals to $86,012.

The final analysis investigated the use of BIM during the interior construction phases. Inexperienced owners are often hesitant to require the use of BIM on their projects because they are unsure how to apply the model and how to assign responsibilities. With the release of the new AIA BIM document and the Model Progression Specification, owners and the rest of the project team are able to plan, during the initial phase, who is responsible for the detail and how the model will be used. By using BIM for core and shell projects, potential tenants will be able to design their future space with ease and may be willing to determine a lease agreement earlier in the project.