EXECUTIVE SUMMARY

The following document is a proposal of the work that will be completed during the spring 2010 semester by the IPD / BIM thesis team 3, which includes Matthew Hedrick, Kyle Horst, Casey Leman and Andres Perez. The purpose of this proposal is to introduce alternative concepts in the design and construction of the New York Times Building by utilizing both an integrated project delivery method and building information modeling. The alternative concepts will focus on achieving an overall team goal of increasing the profitability and marketability of the building while maintaining its iconic and sustainable image.

In order to achieve this primary goal, the following three strategies have been identified:

1. Decrease the floor to floor height with the intension of adding additional rentable floors.
2. Redesigning the core configuration structurally and architecturally in order to add additional rentable space to each floor while maintaining the efficiency of the lateral system.
3. Improve the sustainability profile of the spaces to add marketability and possibly charge a higher rent.

To achieve a decreased floor to floor height several the team is considering modifying the structural floor configuration to a castellated composite steel beam system. In addition the underfloor air distribution system will be replaced with an active chilled beam system which will be coordinated with the castellated beam system. A feasibility study will be done in order to determine the viability of adding additional rentable floors.

The redesign of the core configuration will involve an investigation of alternative architectural layouts in order to increase rentable floor area. When changing the architectural configuration of the core the layout of the lateral system must be a consideration. Therefore, the opportunity of redesigning the lateral force resisting system with an alternative solution was presented. The alternative solution to be explored is that of a concrete core with outriggers on the mechanical floors. The investigation of the core will also involve an analysis of necessary infrastructure such as elevators and MEP risers.

Improving the sustainability profile will involve two main redesign tasks. The first will involve the façade which currently contributes to a large portion of the overall building cooling and heating loads. The team will work toward developing an alternative design which will optimize energy usage and maintain acceptable daylighting of the space. The second task will involve a redesign of the cogeneration system in order decrease energy costs and associated emissions for the building. The goal for this redesign is to supply The New York Times Company floors with 100% of its power needs, but ultimately cost, energy use and emissions will be the driving factors.

It will be the responsibility of all of the team members to update a central BIM file that the group uses. This model will be used to coordinate the different redesigns and efficiently organize the interior spaces of the New York Times Building. It will be important to analyze what ways BIM helped our project. Integrating the efforts of each of the team members is of high importance of this project. It will be essential to keep open the lines of communication between all of the team members. Utilizing BIM to aid our methods of analysis will help to integrate our ideas together.