CE4002 – BIM Fall 2016

<u>For Groups 1-3</u>

Homework 1 – Topics to be covered in the presentations on <u>November 15th, 2016</u>

Group 1
▪ Briefly overview the process of generating the architectural model.
▪ What were the results of the changes (as described in the assignment) you made to the model? What processes you could use (such as connecting, adding rules, etc.) to make modeling and modifying a model more efficient?
▪ What are the features of the software you see as a benefit?
▪ What are the difficulties you have experienced while modeling in Revit? What might some limitations of the tool?
▪ What should be the level of detail in the building information model for 4D simulation? Does having more detail improve the benefits you will get from a 4D model? Will there be any problems with having more detail?

Group 2
▪ Very brief overview of the 4D features of Navisworks. How to create a 4D (how to link schedule and model).
▪ Describe some interesting sequencing constraints incorporated in the schedule - How did you define the linkage/dependency of the tasks in the schedule?
▪ Any interesting features of the system you realized. Discuss the features that you liked and the things that can be improved in the 4D system that you have used (i.e. Navisworks). So, what aspects of the system need improvement (for easier usage, more benefits in construction planning, etc.)?
▪ What should be the level of details in the schedules?
▪ The schedule that you created (the fast track schedule) should contain more detailed breakdown of the activities than the base schedule initially given to you. You may not need to decompose every activity to its subtasks. However, do you think the more detail that you have (in terms of components, zones, etc.) in the schedule and in the model, the better assessment that you will have about the capabilities of 4D? Why?
▪ What are some characteristics of a project that would benefit the most from a 4D system? Would it be useful for all types of projects or rather for specific project characteristics (such as detailed, complex, industrial, high-rise, etc).

Group 3
▪ Discuss what opportunities for improvement (if any) that you have identified on your schedule after 4D simulation and how you identified them. So, how did the 4D help you improve your schedule?
▪ If 4D didn't help with identifying improvements, what was its limitation?
▪ Discuss in general whether there would be some issues in maintaining a 4D model in the face of changes in the 3D model as well as in the schedule. So, how easy/difficult do you think it would be to modify the 4D simulation during the construction?
▪ (Optional: you can try to modify a task in the schedule and/or a component in the model

to try this process for answering this question)
▪ Discuss whether you think you will gain a value from creating a 4D model during construction. Similarly, discuss the barriers/problems 4D modeling may cause in the planning process (if there are any).
• How can you improve the 4D model for better planning and analysis of the construction process on a real project (for progress monitoring, resource allocation, procurements, resource space conflicts, etc.)?
▪ Create a wishlist containing 5-10 items that you would like to have in an "ideal" 4D system.

Please:

- Keep the presentations within 15-20 minutes.
- Be specific.
- Provide your group's own views on the discussion topics. But be ready to explain and backup your points based on your own understanding.
- Minimize repetition amongst presenting groups by looking at the topics assigned to other groups presenting and not repeating those points in your presentation. (i.e. Do not present other groups' topics.)

Groups 1-3 will perform their presentations on November 15th, during the class hour.