

Appendix 1 – Breadth Studies

Analysis 1 – Using Reinforced Concrete in the place of Post Tension Concrete

Structural Breadth

When this project was handed over to the general contractor, there were many systems that were not yet designed and some of these systems needed to be connected to the post tension concrete slabs. During construction many tendons were hit as a result of the lack of design and coordination. I plan to go back to the beginning of the preconstruction process and propose to use reinforced concrete to assure we would not have any tendon busts from the lack of design, especially from the window wall brackets. I will learn how to use the CRSI handbook to approximate the rebar layouts and then use the direct design method along with the ACI handbook to come up with the slab thickness. I have come up with “typical bays” in the building that I can use to complete this research. All of this structural analysis will lead to a conclusion whether reinforced concrete would have been a better idea, with cost and schedule, than using the post tension concrete.

Analysis 2 – Sovent System

Mechanical Breadth & Critical Industry Issue

The use of the Sovent System in this building was a great step in sustainable construction because of the amount of pipe that the system saved compared to using a normal drain, waste, vent system. I plan to get one step further and analyze the supply water system and come up with other sustainable ways of construction including prefabrication and the use of propress fittings. I will attempt to utilize these methods of construction into the design and then see what the impact would be on the cost and schedule compared to the systems that are currently being installed on the project. I will also see if the use of either of these methods would lead to anymore obtainable points on the LEED rating or rebates for the owner.