Site Layout Planning

The site layout planning drawings, which can be found through links on "Technical Assignments" page, illustrate the locations of the crane during the erection of the structural steel. The crane was positioned in four places, two for the erection of the majority of steel in the addition, one for the erection of the mechanical room steel and one for the erection of the steel for the trellis area. The decision was made to work from building West to building East due to the fact that this movement would be the easiest path for the crane operator to maneuver and the most connections tying the existing building to the addition were found in location 1. This allowed the steel erector more time making these connections without holding up following work.

Location 1 (SE 1.01) was chosen to allow for the erection of the steel in the tight area between the two existing sections of the building. When deciding on this location the construction managers were forced to take into account the narrow space between the existing buildings, the distance to the furthest pick, the space needed for the appropriate angle to allow the boom to swing above the existing buildings and the ability to reach the delivery trucks to unload and place in the shake out area.

Location 2 (SE 2.01) was chosen to allow for the erection of the remaining steel in the addition area. This location was decided to be at approximately the half way point of the building, which did not block the main entrance to the site but also allowed the crane to reach the remaining areas of the addition. The placement of the crane also allowed the crane to unload steel from the trucks and place in the shake out area.

Location 3 (SE 3.01) was chosen due to the narrow area between the existing Rec Hall building and Noll Lab. This location involved very little steel erection, but involved a long distance and narrow width for maneuvering.

Location 4 (SE 4.01) was chosen to allow the erection of the steel for the trellis area. This area was also a long narrow section. The crane was placed in a location that allowed the crane to reach each area of the trellis to erect steel without having to move the crane.

Deliveries/Shakeout Area

Steel deliveries were made approximately every other day. Only steel that would be erected by the end of the following day would be delivered. This was due to the lack of an appropriate sized area for the shakeout of all steel for the project. The shakeout area that was available was on the slab on grade for crane locations 1 and most of 2. Once the steel had been erected over the slab, the shakeout area was moved to the area between the addition and Noll Lab which allowed for easy access when erecting steel in the remainder of crane location 2 and crane location 3. Shakeout for steel in location 4 was completed in the existing parking lot at the rear of Rec Hall.

Entrance/Exit to the Site

Due to the compactness of the site for this project the four gates were used for both entrances and exits. The construction management team was unable to enforce a one way traffic entrance or exit on the Atherton street side of the building due to the tight turning radiuses that would have been required to maneuver around the building. Only one access gate was permitted onto Atherton Street as it is a high traffic road. This required delivery trucks to be backed onto site to allow the trucks to exit the site the same

way onto Atherton Street. In order to prevent the backing up of traffic on Atherton Street during the many deliveries to site, the township approved the re-striping of the left turning lane for traffic moving South on Atherton Street. This lane was then used for delivery trucks waiting to enter the site. The entrances to the site through the small alley at the rear of Rec Hall were mainly used for concrete trucks. There were a few locations of concrete pours that required the concrete trucks to enter the site through these entrances. The entrance to the site off of Burrowes Street was used for steel deliveries and concrete truck.

Schedule

Renovation Phase

The renovation schedule, which can be found through links on "Technical Assignments" page, depicts the many activities required for the Rec Hall renovation phase. Many of these activities will be done during night shift, to accommodate the owner and users of the building. The renovation phase began on June 16, 2005 and will end on September 7, 2006. The schedule describes three main sections of renovation; the wrestling area, Alt 1 Locker and Alt 1 Training. The wrestling area is on the ground floor at the South of the building. Alt 1 Locker and Training are both of the Alternate 1. The locker room is on the first floor in the central area of the building and will be a locker room for the wrestling team. The training room is adjacent to the wrestling locker room and will be used by all sports teams whom reside in Rec Hall.

Addition Phase

The addition schedule, which can be found through links on "Technical Assignments" page, shows all activities needed for the construction of the addition part of the building. Gilbane mobilized on site on April 1, 2005 and are working towards an early completion date of June 15, 2006. This schedule accounts for all new construction including the small mechanical room, trellis and site work at Celos parking lot.

Assemblies Estimate

The assemblies estimate, which can be found through links on "Technical Assignments" page, is an estimate for the fire suppression system to be installed in the addition part of the Rec Hall building. The estimate takes into account for the sprinkler piping as well as the fire alarm system. The sprinkler system is a wet system with one stand pipe in the stairwell and one Siamese connection at a location away from the building. This estimate was based on the assumption that the fire suppression system for Rec Hall is considered an ordinary hazard system.

General Conditions Estimate

The general conditions estimate, which can be found through links on "Technical Assignments" page, accounts for all expenses encountered by the construction management firm while constructing Rec Hall. The estimate is based on the assumption that the scopes of work define that each subcontractor is required to provide their own dumpster. It is also based on the assumption that temporary heat will not be required as the building will be enclosed and AHU's operational by the winter months. If it is

required the Mechanical scope of work states that this sub is responsible for providing temporary heat to the building.

Detailed Estimate

The summary of the detailed estimate is found on this page. It shows the total cost for each part of the structural system and the total cost for the structural system. The takeoffs for each system can be found on the following pages of this report.

Structural Steel

The structural steel estimate, which can be found through links on "Technical Assignments" page, includes all members for the addition phase of the project. This estimate is based on the assumption that the costs given for certain lengths of steel members can be broken into a cost per linear foot. It is also based on the assumption that the members that are not listed in R.S. Means can be assumed to cost the same as the most similar member.

Concrete

The concrete estimate, which can be found through links on "Technical Assignments" page, takes into affect all concrete foundation members in the addition phase including pile caps, grade beams and retaining walls. It does not take into account the slab on grade or the elevated slab. This estimate was developed by making the assumptions that the R.S. Means costs acquired include formwork, reinforcement, placement and finishing of the concrete members.

Piles

The piles estimate, which can be found through links on "Technical Assignments" page, accounts for all piles driven for the foundation of Rec Hall. This estimate is based on the assumption that the average depth of each pile was 60'.

Detailed Estimate			
	Section	Description	Total Cost
2	02455	Piles	$26,970.00
3	03300	Concrete Foundations	$335,642.00
5	05120	Steel Columns and Beams	$239,126.66
5	05210	Steel Joists	$46,285.00
		TOTAL:	$648,023.66