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Construction Management
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Lehigh Valley Hospital – Cedar Crest Campus
Allentown, PA
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EXECUTIVE SUMMARY

The Lehigh Valley Hospital – Cedar Crest Campus is a very large project with a square foot total of 310,000 and project cost of \$181.5 million. Consisting of three sections, section A and B rise 8 stories with section C rising only 4 stories. Section A will house the lobby on the first floor and mostly patient rooms on floors 2 through 7. Section B is considered the “knuckle” and is the transition from section A to section C which houses a multitude of regular and service elevators. Section C, at this point in the project is planned to be a burn trauma unit, but its use could change by completion. The building is made up of structural steel members along with a pre-cast concrete panel façade. One challenge whenever expanding an existing structure is making the building look like it was originally part of the existing structure.

Another challenge that arises with this project is the fact that the existing building is still occupied which makes noise a factor as well as making sure the sections of the project between the existing structure and the new structure are completely sealed off. This being a hospital, extra care is needed to make sure the existing building stays clean and sanitary. It also creates concern for the safety of hospital employees and patients entering the jobsite as well as making sure construction workers do not enter the hospital.

One reason I chose this project and also makes it unique is that it is going for a silver LEED rating. This, I believe, will be a challenge because a hospital is very strict with its design and quality control. Extra emphasis and planning will be needed in order to stay on track with the requirements necessary to earn the silver LEED rating.

Another challenge is that the second floor needs to be turned over early in the schedule. This is going to create a lot of problems with getting materials from the ground level to floors 3 through 7. It is also going to make maintaining a clean area in the stairwells and other surrounding areas of the second floor for the remainder of the project.

The last challenge that I am concerned with is just the size of the project. When I visited the jobsite they had 8 volumes of drawings broken down into structural, mechanical, lighting, etc. As a project manager, I would be concerned with the planning of how to get all the trades working together and not being in each others way. Some planning of phasing hopefully will solve this problem

PROJECT SCHEDULE SUMMARY

ID	Task Name	Duration	Start	Finish	3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quarter			1st Quarter			3rd Quar	
					May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul
1	Notice to Proceed	1 day	Mon 6/6/05	Mon 6/6/05	◆ Notice to Proceed																			
2	Sitework	126 days	Mon 6/13/05	Mon 12/5/05	▬ Sitework																			
3	Foundations	110 days	Mon 7/18/05	Fri 12/16/05	▬ Foundations																			
4	Superstructure Section A	50 days	Mon 12/19/05	Fri 2/24/06	▬ Superstructure Section A																			
5	Superstructure Section B	50 days	Mon 2/27/06	Fri 5/5/06	▬ Superstructure Section B																			
6	Superstructure Section C	30 days	Mon 3/27/06	Fri 5/5/06	▬ Superstructure Section C																			
7	Enclosure Section A	110 days	Mon 5/8/06	Fri 10/6/06	▬ Enclosure Section A																			
8	Enclosure Section A Infill	40 days	Mon 7/24/06	Fri 9/15/06	▬ Enclosure Section A Infill																			
9	Enclosure Section B	70 days	Mon 7/10/06	Fri 10/13/06	▬ Enclosure Section B																			
10	Enclosure Section C	80 days	Mon 7/31/06	Fri 11/17/06	▬ Enclosure Section C																			
11	Finishes Section A	235 days	Mon 11/20/06	Fri 10/12/07	▬ Finishes Section A																			
12	Finishes Section A Infill	55 days	Mon 11/20/06	Fri 2/2/07	▬ Finishes Section A Infill																			
13	Finishes Section B	185 days	Mon 3/12/07	Fri 11/23/07	▬ Finishes Section B																			
14	Finishes Section C	160 days	Mon 3/19/07	Fri 10/26/07	▬ Finishes Section C																			
15	Occupancy Floors Basement-3	1 day	Fri 12/14/07	Fri 12/14/07	▲ Occupancy Floors Basement-3																			
16	Occupancy floors 4-7	1 day	Fri 2/8/08	Fri 2/8/08	▲ Occupancy floors 4-7																			

BUILDING SYSTEMS SUMMARY

Yes	No	Scope of Work	Yes	No	Scope of Work
	X	Demolition	X		Electrical
X		Structural Steel Frame		X	Masonry
X		Cast-in-Place Concrete	X		Curtain Wall
X		Pre-cast Concrete		X	Excavation Support
X		Mechanical			

Structural Steel Frame:

The structural steel frame consists of joists ranging from W16x26 to W21x57 typical and girders ranging from W24x76 and W24x103 typical.

Cast-in-Place Concrete:

Cast-in-place concrete is used throughout the basement floor to create 4, 5 and 6 inch slab on grade with W1.4XW1.4 WWF over 4 inch crushed stone

Pre-cast Concrete:

Pre-cast concrete panels are used for the curtain wall enclosing the building.

Mechanical System:

The mechanical system is quite elaborate consisting of 14 AHUs and 3 Boilers, along with variable speed fans to heat and cool the building. There are also 6 fan coil units.

Electrical System:

(Waiting for the rest of the drawings to determine.)

Curtain Wall:

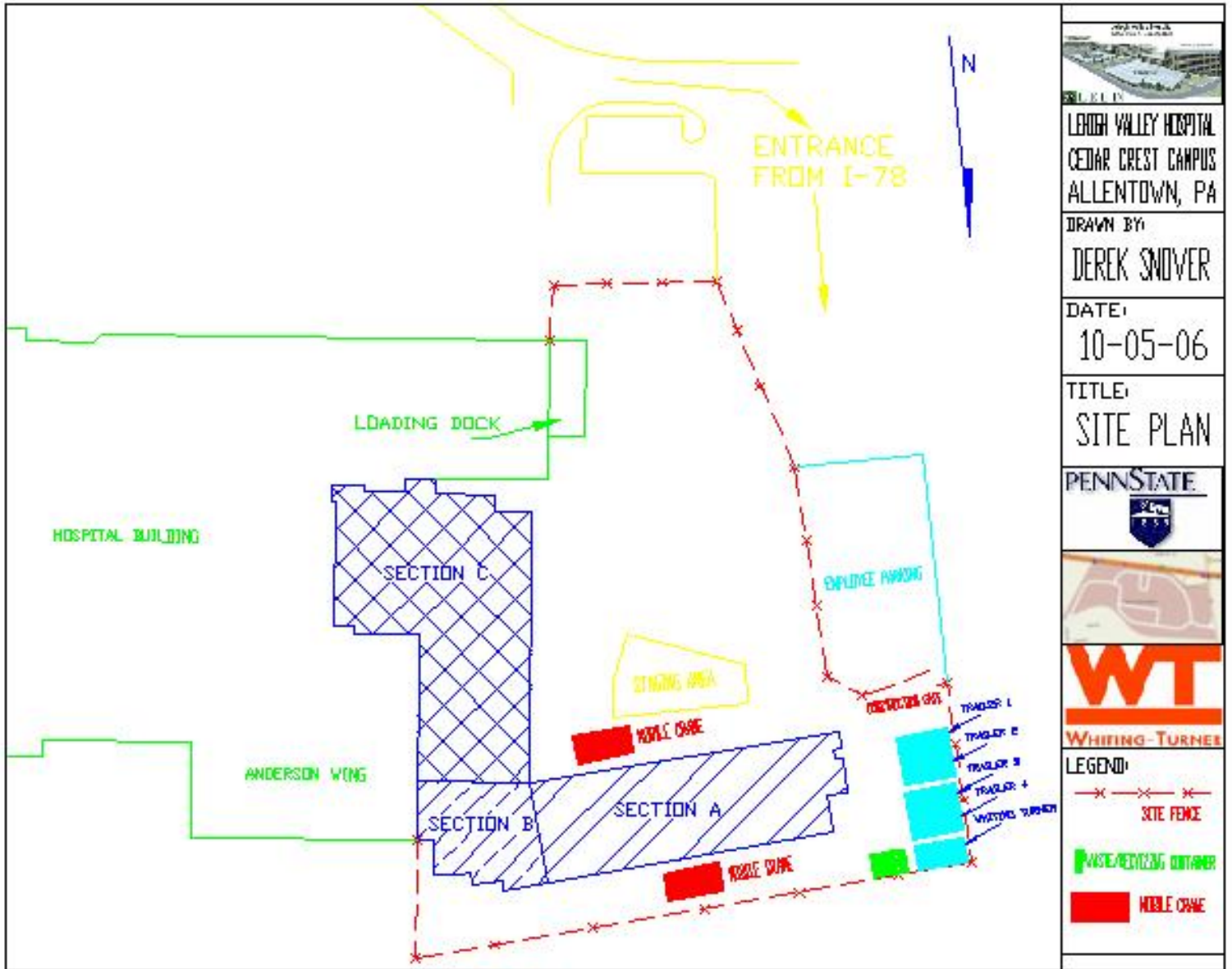
The curtain wall consists of the previously mentioned pre-cast concrete panels along with metal panels to surround the windows.

PROJECT COST EVALUATION

- Actual Building Construction Costs
 - Could not get because of confidentiality
- Total Project Cost
 - \$181,500,000
 - At 310,000 SF - \$585.48/SF
- Major Building Systems Cost
 - Mechanical: Could not get because of confidentiality
 - Electrical: Could not get because of confidentiality
 - Structural: Could not get because of confidentiality
 - Sitework: Could not get because of confidentiality
- Square Foot Estimate using Cost Works 2005
 - Used the parameters of:
 - Institutional
 - Hospital
 - 4-8 Stories
 - Modified Location: Allentown, PA
 - Total Estimate Cost Including
 - Basement
 - General Conditions (25%)
 - Architectural Fees (9%)
 - \$58,749,075, \$189.51/SF
- D4 Cost Parametric Estimate
 - Estimate Cost:

These costs are a lot lower than that of the total project costs because there are multiple parts of the project figured into the total project cost and with Cost Works I only figured in the hospital. Included in the overall project costs are the patient tower, medical office building, 900 space parking deck, 2 – 500 space parking decks & interior renovations.

SITE PLAN OF EXISTING CONDITIONS



LOCAL CONDITIONS

There is no preferred method of construction for the area, but designing the expansion to look like the rest of the hospital is important. There is a small parking lot within the jobsite and then any overflow can be taken care of by the surrounding parking lot of the hospital.

In order to gain points towards the LEED rating, there are dumpsters on site to recycle all the materials that qualify.

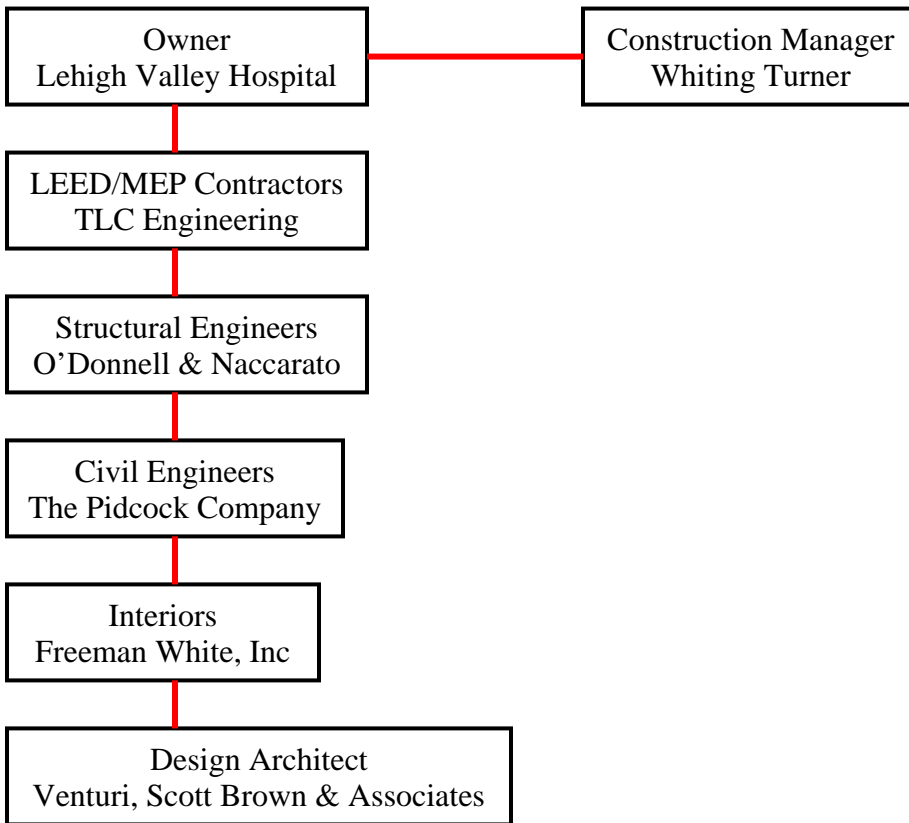
Subsurface conditions encountered on site are generally clay and silt with some coarse to fine sand and traces of medium to fine limestone rock ranging from sand to gravel sizes. In the stratum, N-values ranged from 3 to over 50 blows per foot (bpf). The stratum depths ranged from 2 to more than 82 feet.

CLIENT INFORMATION

The client is Lehigh Valley Hospital – Cedar Crest Campus, located in Allentown, PA. They are a not-for-profit hospital who opened their doors in 1899 as the Allentown Hospital and has grown to three campuses, two in Allentown and one in Bethlehem, PA. They are a major clinical campus for The Pennsylvania State University's College of Medicine at the Milton S. Hershey Medical Center. Home to advanced acute care hospital with more than 800 patient beds in operation on three sites. They also were Pennsylvania's first Level I Trauma Center and remains the only Level I trauma center in the Lehigh Valley region with additional qualifications in pediatric trauma.

The reasons that LVH is expanding its facilities is that the emergency room as well as the patient rooms are insufficient in the current facility and they currently end up waiting at times for patient beds to be available.

PROJECT DELIVERY METHOD



The project delivery method is a CM @ Risk.

STAFFING PLAN

