

Taylor Hall

George Mason University
Fairfax, VA

Technical Assignment 1 Summary Slides

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Technical Assignment 1
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Introduction

Taylor Hall, George Mason University, located in Fairfax, VA

- Freshman dorm to hold 295 students
- LEED Silver
- \$16 Million



Client Information

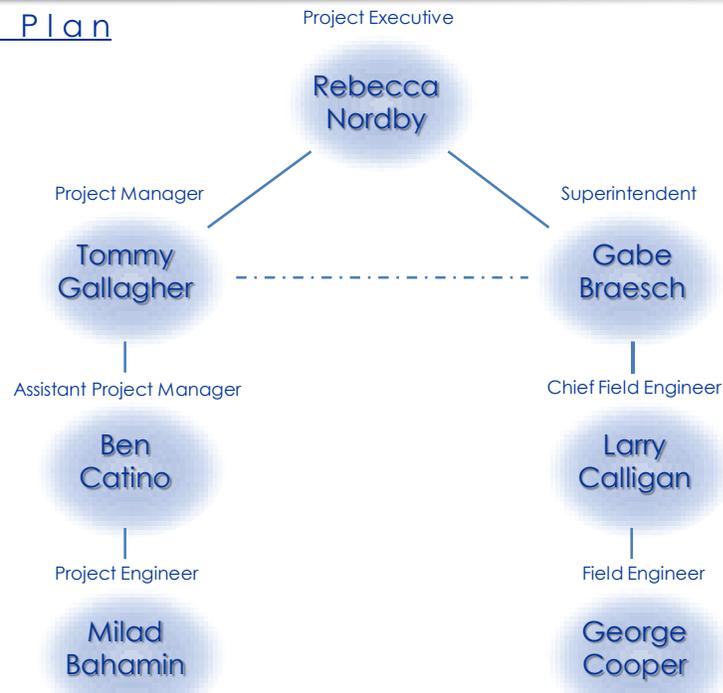


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Client Information

- Expanding campus since 1960
- Values woodland "buffer zones" and open congregational spaces
- Has a very modern architecture and state of the art buildings
- Has roughly 3 construction projects underway on campus at any given time, just like Penn State
- BBC recently finished the \$55 Million Mason Inn Hotel and conference center
- Project team moves down the street to build the new freshman dormitory for the rapidly growing campus.

Staffing Plan

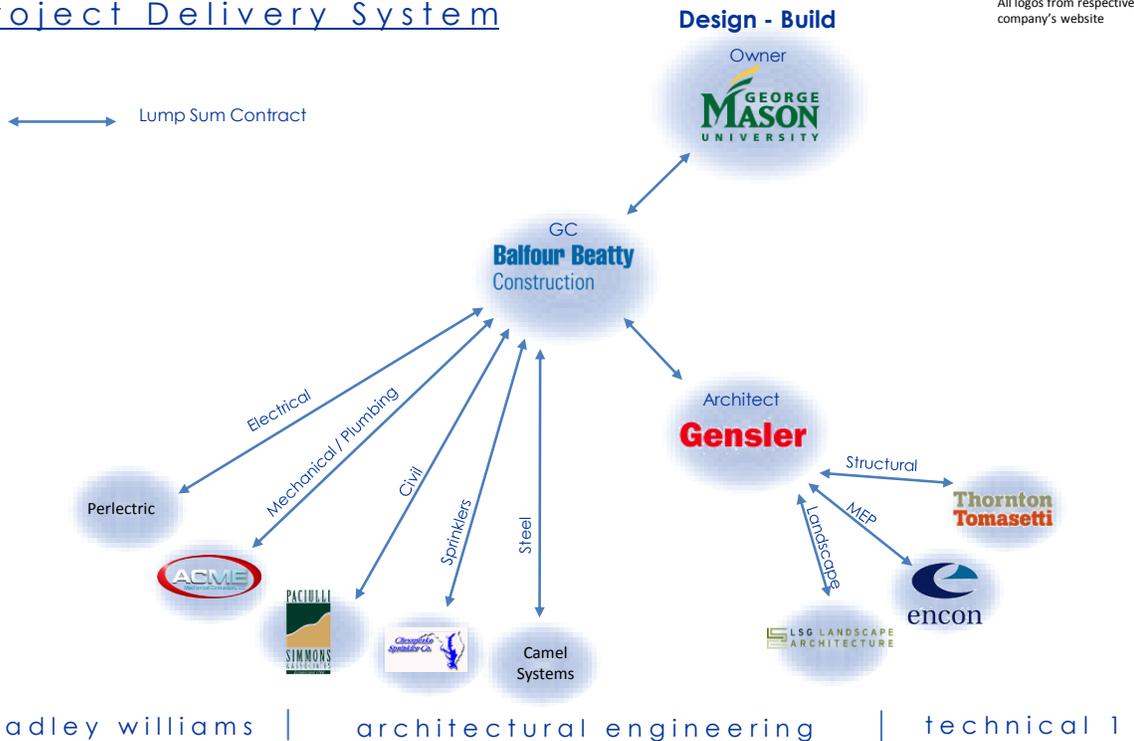


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Staffing Plan

- The same management personnel from the Mason Inn project were kept together because of their knowledge of George Mason's construction standards and orders of operation.
- Knowledge of how to manage campus construction operations, dealing with student-construction interaction, and adherence to a tight construction schedule.

Project Delivery System



Project Delivery System

- Design – Build project hosted by George Mason University and the Commonwealth of Virginia
- GMU put out an RFP and GC's managed design teams to complete a competitive design to meet the request and a proposal to compete with other designs.
- Decision was design and cost based
- GC manages subcontractors and architect

Existing Conditions

- Student/Faculty parking lot
- Geotechnical reports; mostly Silty Clay (ML); no high-plasticity soils or ground water
- No interference with student traffic flow
- Half parking lot still accessible



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Existing Conditions

- Building to be placed in a student/faculty parking lot on the south-east boarder of campus.
- Geotechnical reports showed favorable building conditions, mostly silty-clay. No signs of high-plasticity soils or ground water.
- GMU values the buffer zone and has strict tree protection policies in place
- Current site utilities were designed to accommodate a building in the area, as per the master plan
- Underground electric in red (light poles in parking lot), storm water in aqua, and water main in blue dots.
- Building to be the same height as neighboring Liberty Square
- New utilities include an underground telecom line and ties into nearby water main, HTHW (High Temp. hot water), CWS (Chilled water system) and electricity from nearby transformer
- Site plan will not hinder student flow on campus due to all classes being north of site. Construction delivery easily integrates with existing road loop.

Building Systems Summary

Structural

CIP Concrete

Precast Concrete

Mechanical

Electrical

Masonry

Curtain Wall



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Building Systems Summary

-Structural

Steel frame with HSS columns, designed to maximize space; load bearing cold formed steel walls and precast concrete shear walls

-CIP Concrete

Shallow footings and an elevator pit are the deepest pours on the project. Slab on deck system for floors 2-4.

-Precast Concrete

Precast structural concrete shear walls to maximize space and time. Early coordination needed to form wall penetrations in the right locations.

-Mechanical

Heating system fed from campus high temperature hot water system. Goes through a heat transfer to a building low temperature system to feed unit radiators and terminal units. Cooling from campus chilled water system which works in conjunction with a

rooftop AHU with 100% Outside Air. The AHU has a heat recovery system in place and provides 5 CFM per person for dorm rooms.

-Electrical

Near-by 500kVa transformer provides power to the site and building. Step down transformers located in the building and panels located on each floor. Branch circuits are located in-slab and building load is expected to be 1200A. There is a diesel fuel emergency generator to back up system.

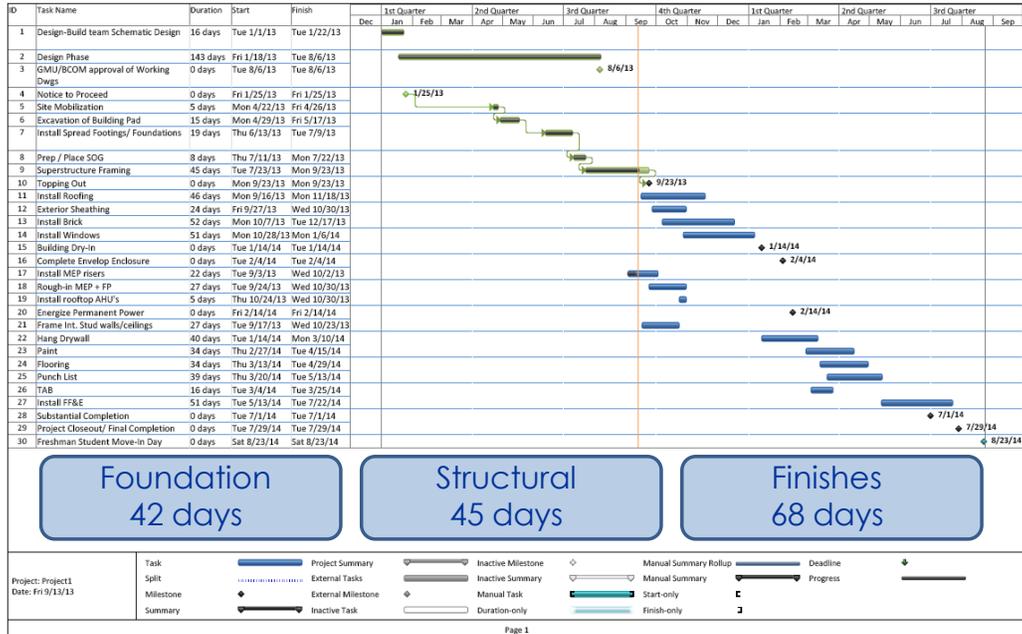
-Masonry walls

Façade is composed of a standard running-bond brick. It makes up roughly 60% of the face of the building.

-Curtain wall

There are aluminum storefronts making up approximately 30% of the façade. These are located in the elevator areas/group living rooms, stairwells, and ground floor common room.

Project Schedule Summary



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Project Schedule Summary

- There's a total of 13 months of construction, driven by student semesters.
- Ground breaking in May '13 and Substantial completion at the end of June '14
- Foundation and excavation will take 42 days
- Superstructure will take 45 days
- Finishes will take 68 days



Project Cost Evaluation



Cost Comparison (\$ / SF)

	RS Means	Actual	% Difference
HVAC	\$ 14.26	\$ 40.00	(3.35%)
Plumbing	\$ 24.40	\$ 40.00	(3.35%)
Fire Protection	\$ 3.58	\$ 2.90	23.5%
Electrical	\$ 17.38	\$ 20.50	(15.2%)
Structural	\$ 19.98	\$ 30.00	(33.4%)
Construction Cost	\$ 157.01	\$ 157.02	0%
TOTAL PROJECT	\$ 199.81	\$ 228.39	(12.5%)

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Project Cost Evaluation

- Compared to RS Means data, the actual costs were relatively high. The cost of fire protection, however, was less than predicted by RS Means.
- The construction costs were nearly identical, possibly because of fees associated with fast tracking the project.
- Overall project cost was 12.5% higher than RS Means prediction.