



**ARCH 2431 BUILDING TECH III**

**SEMESTER LONG CASE STUDY ASSIGNMENT 01**

**Semester long research / case study**

The main focus of the semester work will be a detailed research based case study of an existing steel frame building. The process of case study will involve the drawing of a set of construction document drawings. As you draw look to investigate how the building was constructed. There are many questions to consider. What materials is it made from and how are they assembled? Where is the structure, what are the spans and how far apart are the columns? What is the exterior skin and how is it attached? Where are the mechanical components, the air intake, and the mechanical room and how is fresh air circulated? Where are the main circulation components, the stairs and elevators and how do they facilitate safe egress from the building?

**Selecting a Project**

The case study subject needs to a steel frame building that meets the following criteria:

- Located in NYC (one of the five boroughs) so that you can visit it often
- Has public access (CUNY buildings, Museums, Public Commercial Buildings, etc.)
- Multistory (4 or more floors) so that it has stair and elevator cores.
- Large public lobby/atrium with a double height space preferably with a monumental stair (stair optional).
- Two or more materials on the façade. For example glass curtain wall and metal panel system.

**3D Studies**

- Detail studies will consist of three or more coordinated views as well as an isometric with annotations and dimensions.

**Case studies drawing set:** as a minimum the drawing set should include:

- Cover sheet – with 3D images, drawings list, abbreviations and symbols
- Architectural Floor plans – (entry level) to include walls, doors, door schedules, room and door numbers, structural columns & grid, dimensions, shaft openings, stairs & core. Additional floors are optional.
- Reflected Ceiling Plan – Entry level RCP. Show all visible elements including lights, mechanical supply return, sprinklers, and exit signs. May use this drawing for color coded rated wall study.
- Egress Study Plan – identifies key dimensions for egress including corridor width, size of doors for rooms. Includes calculations and may also include a building section. Rated walls identified by type and color coded on plan. Exit signs. Partitions types to be included.
- Occupancy Plan Study – Areas of rooms, determine the number of occupants. May be combined with Egress.
- Exterior Elevations & Building Sections– includes windows sheet & window schedule
- Wall Sections and Detail Studies – produce case study detail studies of chosen building.

**Research:**

The most critical part of the case study assignment is to conduct thorough research. This may include contacting the architect, looking for publications on the building, contacting the manufacturer, research details on the various building systems, understanding applicable building, fire and safety codes to identify how they affected the construction of the building.

**The Team & the Individual:**

Teams will setup based on project selection. Each team is responsible for developing and adhering to a schedule and must develop their own critical path to complete the work. A critical path identifies all tasks needed to complete the work, estimates the time required for each and puts these in sequential order, addresses issues of team work, the fair division of labor and internal team deadlines. In particular critical path looks to identify tasks that must be completed before others can begin. Students may share research with team members but each student must create their own drawings.

**Reviews:**

There will be a series of graded reviews throughout the semester that will contribute to a cumulative grade.

**Grading:**

The case study project represents 40% of your semester grade.