Assignment A01: Building Systems Typology

Instructor: Glenn Hill

TASK #1 – REVIT Model of Typical Building Systems.

1. Determine Occupancy Type and Construction Type for the Project.
2. Design a Building Code and ADA compliant Restroom and Stairwell.
3. Conceptually Size all of the Structural Components. (Columns, Girders, Beams, Joists, Decking, etc…)
5. Build a physical model of the Building Systems based on the Revit Drawings.

Typical Building Systems - Structural Steel Frame.

1. 4 Bays Size – 24’ x 36’
   a. 4 Levels – Basement, Ground Level, 2nd Level, 3rd Level (Roof)
2. Primary Structure
   b. Girders – Narrow Flange and/or Truss Girders
   c. Beams - Narrow Flange and/or Truss Beams
3. Secondary Structure
   a. Open Web joists
   b. Beams on top of Girders
   c. Pre-Cast Concrete Floor Panels
   a. Steel Deck & Concrete
   b. Pre-Cast Concrete Floor Panels
5. Foundation
   a. Spread Footing = 36”w x 36”l x 24”d, under each column
   b. Foundation (Grade) Beams = 12”w x 16”d, connecting each column
   c. Slab on Grade = 6” depth
6. Stairwell
   a. Model Stairwell steel frame stair to meet Code & ADA Requirements.

Typical Enclosure Systems.

1. Glass Curtain Wall with spandrel panels
2. Metal Stud Curtain wall, Veneer finish, Aluminum frame window system
3. Metal Stud Curtain wall, Metal Panel finish, Storefront window system
4. Metal Stud Curtain wall with Ceramic Tile, Aluminum frame Window System
Typical Interior Systems.

1. Standard ACT Hung Ceiling
2. Cloud and Canopy Hung Ceilings
3. Interior Partitions
   a. Metal Stud with ½” Gypsum Board.
   b. Glass Wall Partitioning System.

Typical Mechanical Systems.

1. Download Variable Refrigerant Flow (VRF) system assemblies.
2. Download Dedicated Outside Air System (DOAS) assemblies.
3. In the REVIT model place the components in the appropriate locations and connect with appropriate components.

FINAL SUBMITTAL:

1. **Drawing Presentation Requirements.** All of the below drawings should be submitted on a single sheet not to exceed 36” x 60”
   a. Typical Floor Plan. 1/8 scale.
   c. Axonometric Structural Detail – 1/8” = 1’ scale. Shaded or Line Drawing.
   d. Wall Section. ½” = 1’ Scale. Line Drawing.
   e. Wall Section Axonometric. ½” = 1’ Scale. Shaded or Rendered view without Shadows.
   f. Building Section. Room Section showing Enclosure-Shading-Daylighting system and interior systems. 1/8” scale
   g. Exterior Perspective looking at the two sides of your typology model.

2. **Final Revit Model**
   a. Structural, Enclosure, Interior, and Mechanical System Model.
ASSIGNMENT GRADING SHEET:

Assignment A01: Building Systems Typology Study

Your grade will be determined by the four (4) separate categories listed below. You will receive points for each category ranging from 0 - 4. How many points you receive will be based on the grading rubric on the previous page.

NAME:__________________________________________________________________

DATE: ________-________-________

GRADE: _______

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<td>Glass Curtain Wall</td>
<td>Opaque Curtain Walls</td>
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