



ARCH 2431 BUILDING TECH III

(#3A) STEEL CONNECTIONS

Steel Connections Study:

This assignment will introduce you to standard steel components used for beams and columns including Wide Flange Sections, Hollow Circular and Square Columns. Through this assignment we will investigate each of these types and look at how steel connections are made.

Steel Connection Types:

Steel connections are made using Rivets, Bolts or by Welding. The use of Rivets are less common today than they were before the introduction of standard size bolts. For this assignment we will consider connections made with bolts or by welding.

Drawings:

Note: *Multiple coordinated views (plan/front elevation, side elevation or section) are typically the same scale. At times we use a smaller scale for the isometric in order to fit it on the same sheet. Views must be clearly readable.*

The project will be completed in several stages.

Stage 1:

Create 3D families for three types of columns and one type of beam. Assemble these on a column grid 15' x 25'. Layout the entire assembly on a 22 x 34 sheet. Include coordinated views including a plan, 2 elevations and an isometric.

- *W 24 x 162 for columns (depth 25", Width 15", Flange Thickness 1.22", Web Thickness .705")*
- *W 21 x 62 for Beams (depth 21", Width 8.24", Flange Thickness .615", Web Thickness .4")*
- *HSS Hollow Square Column (10" x 10" x ½" Thick)*
- *HSS Hollow Round Column (10" diameter x ½" Thick)*

Stage 2:

Add additional 3D family's element to illustrate the following. Create callouts and add notes, leaders and dimensions. Add detail items as necessary to illustrate the drawings. Complete research as needed.

- *The splice connection of two stacked columns*
- *Diagonal Bracing of the steel frame*
- *Base of Column to Concrete Footing Transition Connection*

**Grading: Criteria for grading will include but not be limited to the following
(Remember quality is more important than quantity)**

- ***A minimum of two sheets are required, one overall composition and one detail composition***
- ***How well are the drawings composed & are the proper drawings included?***
- ***Are appropriate annotation and dimensions included?***
- ***Are the details well researched?***
- ***Does the student demonstrate an understanding of what has been drawn graphically and verbally?***

****This assignment is included in the 30% of grading listed Studio Lab Assignments in the syllabus**