

# Quick Guide to the Integrated Design Project and Qnect

Downers Grove  
Office Building

*for* Unified Design of Steel  
Structures, *Third Edition*

August 2020

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This guide is a companion to *Unified Design of Steel Structures*, Third Edition, by Louis F. Geschwindner, Judy Liu, and Charles J. Carter. The authors would like to thank Jef Sharp and Henry Lederman of Qnect for introducing their web-based connection tool. Special thanks to Josh Hines (Qnect) for adapting the existing model to work with Tekla and Qnect, and to Allen Adams of Bentley Systems, Inc. for the original model and his technical assistance. We would also like to acknowledge Dr. Rachel Chicchi and Ambar Alvarez-Garcia at the University of Cincinnati for their upcoming video modules for teaching connection design with Qnect. Much appreciation to the American Institute of Steel Construction (AISC) for the AISC Educator Forum as well as their sponsorship of the U. Cincinnati teaching aid.

## Overview

The Integrated Design Project problems can be used selectively or as a full course project to help students learn how to apply the AISC *Specification* to the design of a structural steel building. With the RAM Structural Model and guide (see [www.steelstuff.com](http://www.steelstuff.com)), students can also gain experience with the software-assisted design process. Now, our partnership with Qnect ([www.qnect.com](http://www.qnect.com)) provides the ability to quickly explore connection design alternatives, with 3D models and calculations. Again, instructors can tailor to their course, with options ranging from qualitative comparisons to in-depth investigations into design and detailing.

This document is a quick guide to getting started with Qnect and the Integrated Design Project. Whether you are an instructor developing examples or homework problems, or a student working on an assignment, this guide will show you how to get set up with the software and building model for a basic exploration of a gravity frame connection.

## Connection Teaching Aids

Interested in learning more? AISC plans to release a set of video modules on connection design in January 2021. These modules will also utilize the Integrated Design Project building. Created by Dr. Rachel Chicchi and Ambar Alvarez-Garcia at the University of Cincinnati, the modules will include introductions to different types of connections, explanations of design and detailing decisions, and suggestions for connection studies. Students using these video modules will be able to evaluate the impact of different design decisions on the adequacy of the connection. They will also understand and evaluate different construction/erection decisions that impact connection type choices. Student can also use Qnect connection design reports to compare with their own hand calculations for each limit state.

The planned video modules are:

- How to Set up and Use Qnect
- Introduction to the Integrated Design Project building
- Overview of Connection Design Decisions
- Beam-to-column Flange Shear Connection Types
- Beam-to-column Web Shear Connection Types
- Beam-to-girder Connection Types
- Brace-to-gusset Connection Types
- Moment Connection Types

## Getting Set Up

To get set up with Qnect and the Integrated Design Project building, you will need Tekla Structures, the Tekla model, and Qnect. The instructions provided in this section are for *individual installation* of the software applications and model.

**Students:** please check with your instructor for your options for accessing the software and model. Tekla and Qnect might be available through your university's computing resources. The building model will be provided by your instructor.

## Downloading and Installing Tekla

Tekla Campus provides access to educational software for students and educators. Go to <https://campus.tekla.com/> and follow the instructions to register, activate your free account,

and download Tekla Structures. You will need to log in to download (Figure 1). After installing Tekla Structures, click on “Additional environments” (Figure 1) to access and download the “USA” environment (Figure 2). Start Tekla Structures, select “Use your Tekla online license”, login with your account information (Trimble Identity), select the “USA” environment, and select the “Educational” configuration.

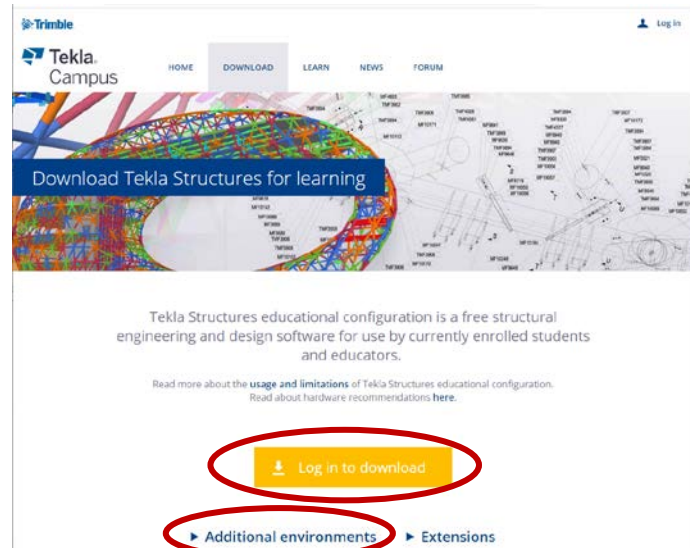


FIGURE 1. SCREENSHOT OF TEKLA STRUCTURES DOWNLOAD PAGE

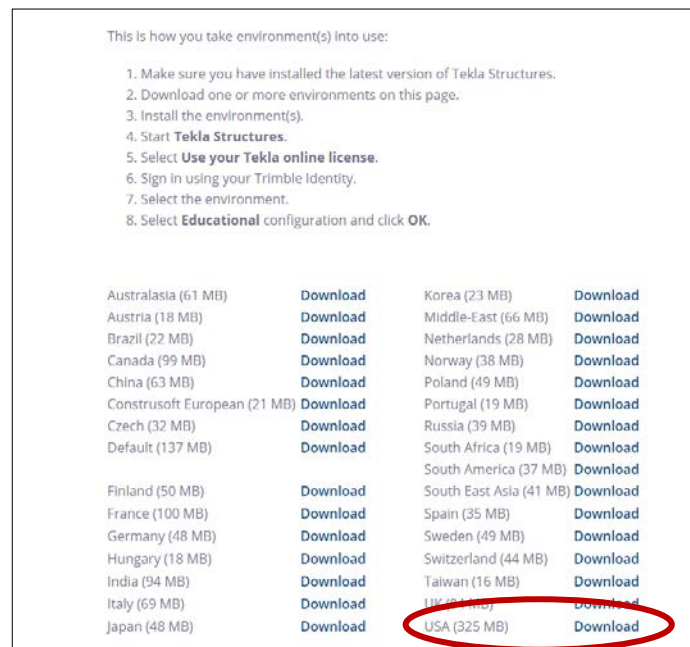


FIGURE 2. INSTRUCTIONS FOR TEKLA ENVIRONMENT AND SET-UP

### Accessing and Installing Qnect

An account is needed to access and download the QuickQnect interface for Tekla. Accounts will be set up by university (see note for instructors). Individuals will be notified by e-mail with a login and temporary password.

**Instructors:** please e-mail [judy.liu@oregonstate.edu](mailto:judy.liu@oregonstate.edu) with the names and e-mail addresses of all individuals requesting a Qnect account. Your university will be set up as a “company” with all individuals as “users”. You will then be able to add and remove users.

Once signed in on the Qnect website ([www.qnect.com](http://www.qnect.com)), find “Tools & Tips” in the left sidebar (Figure 3) and download QuickQnect. Once installed, upon reopening of Tekla Structures, QuickQnect buttons will appear in the Tekla Structures toolbar (Figure 4).

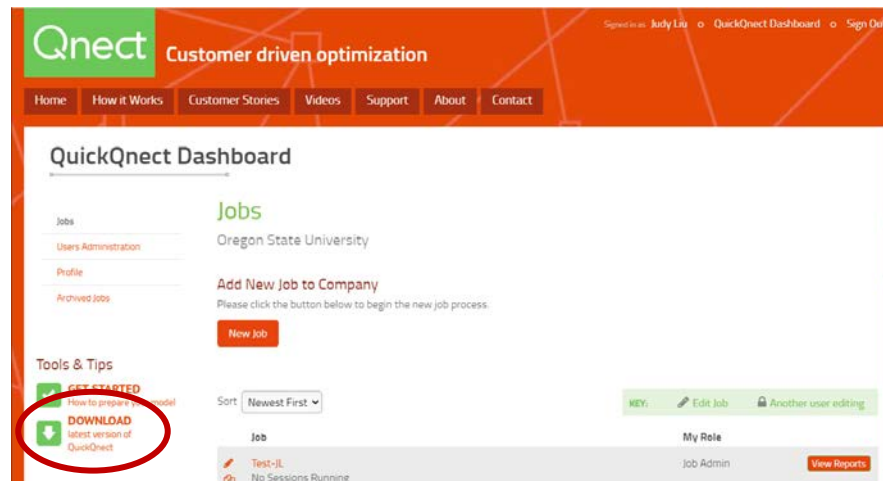


FIGURE 3. QUICKQNECT DASHBOARD WITH DOWNLOAD AT LEFT SIDEBAR

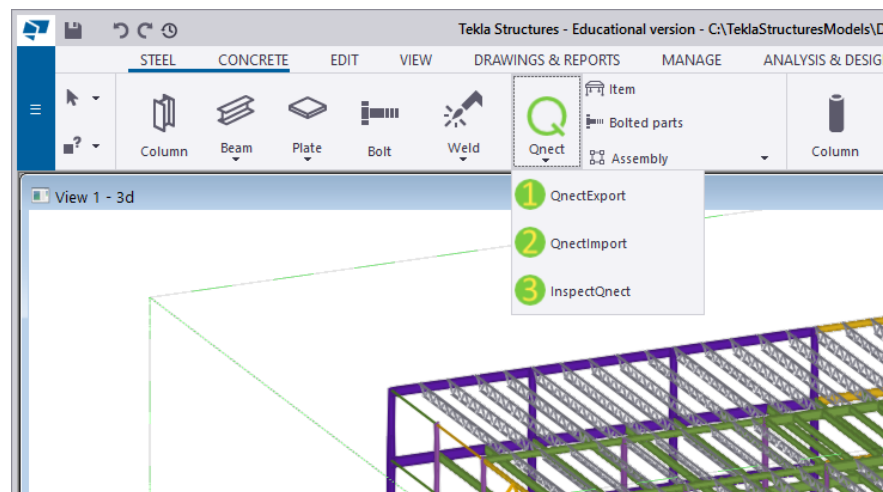


FIGURE 4. QNECT BUTTONS ON TEKLA TOOLBAR

### *Accessing the Downers Grove Model*

The model for the Integrated Design Project, the Downers Grove office building, is available through the AISC Educator Forum. Access to the Educator Forum is limited to full-time university instructors.

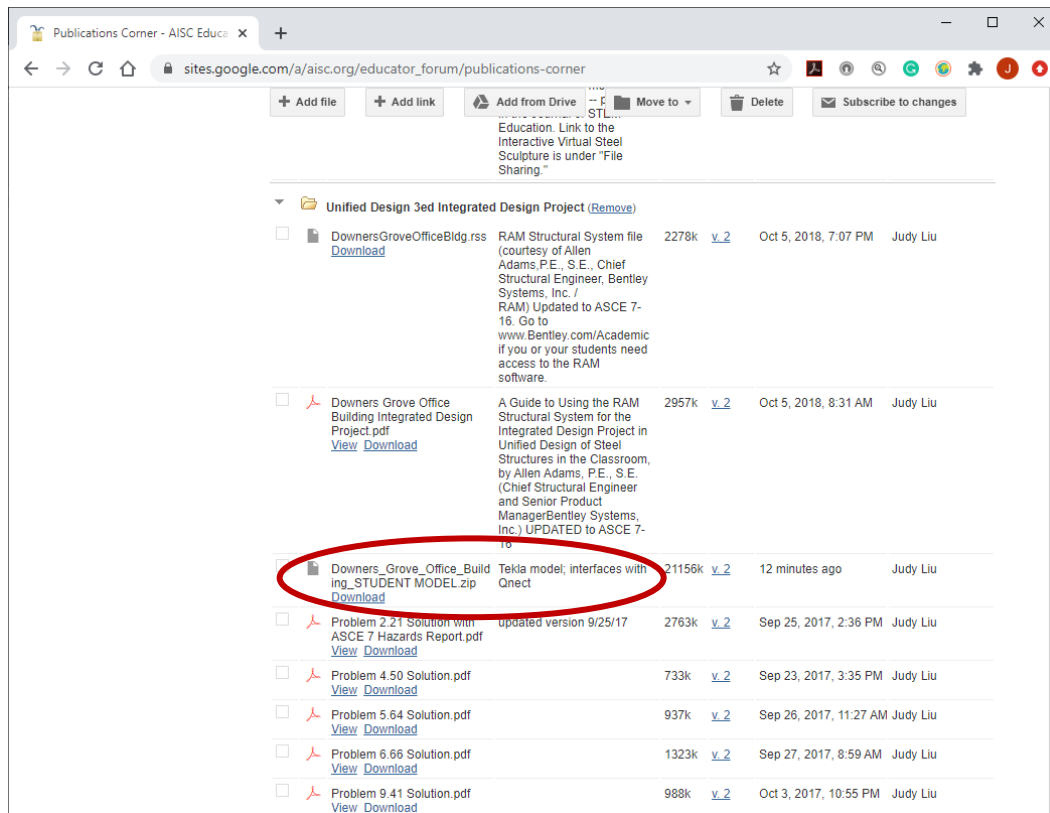


**Instructors:** On the AISC Educator Forum ([www.aisc.org/education/university-programs/educator-forum/](http://www.aisc.org/education/university-programs/educator-forum/)), go to the Publications Corner and the “Unified Design 3ed Integrated Design Project” folder (Figure 5). If needed, a “REQUEST ACCESS” link on the Forum webpage will take you to a form to submit.

Download Downers\_Grove\_Office\_Building\_STUDENT MODEL.zip. This file can then be made available on your learning management system or a shared folder in your university cloud storage.

Extract zipped files to a folder named “Downers\_Grove\_Office\_Building\_STUDENT MODEL”. (The folder name must match the name on the .db1 file to access the model.)

The first time you open the model in Tekla, navigate to the “All models” tab and click “Browse” to find and select the “Downers\_Grove\_Office\_Building\_STUDENT MODEL” folder. Selecting the “3d” view will open a window as shown in Figure 6.



**FIGURE 5. TEKLA MODEL ON AISC EDUCATORS FORUM (PUBLICATIONS CORNER)**

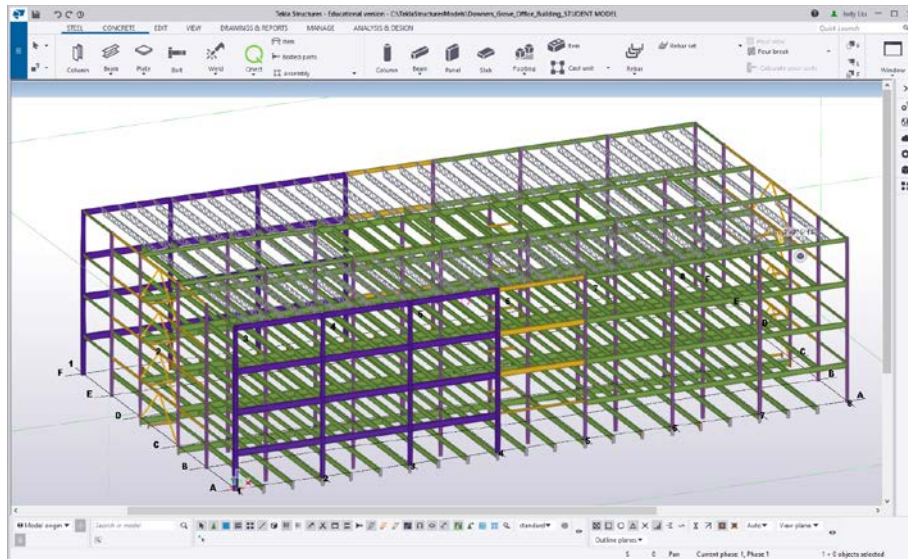



FIGURE 6. 3D VIEW OF DOWNERS GROVE MODEL IN TEKLA

## Try Qnect on a Gravity Frame Connection

In this section, Qnect and Tekla will be used for the design of a beam-to-column flange shear connection. The connection at grid location C-6 has been selected, but this exercise could of course be completed for any shear connection in the building.

Sign in to access the QuickQnect dashboard. Click on “**New Job**”, create and submit a project name. For this example, the project name will be “C-6 Beam-Col”. The project will appear in the list of jobs below. Click on the project name or the pencil icon  to edit the project.

At any point in the process of editing a specific project, clicking on “Job Completion Status” at the upper right-hand side of the Qnect site will show you the information needed before Qnect can design the connections. The required, default categories are: *Basic Information, Minimum Job Requirements, Fabricator's Connection Type Preferences, Fabricator's Detailing Preferences, General Bolt Preferences* and *Job Requirements for Welds* (Figure 7). Click on “Basic Information” in the status list or in the left sidebar to get started; Qnect will step you through the required pages. In many cases, the default settings will suffice. If desired, one may also specify “Optional” requirements such as “Custom Edge Distances”; the pages are populated with default values that can be easily edited.

### *Basic Information*

The *Basic Information* page contains project information, units and specifications, and optimization choices. For the project information, the fabricator, general contractor, and contract number, the defaults are “Sample” names or values. In the Imperial/Metric section, one can select imperial or metric units and choose ASTM or other profile catalogs. Note that the 2010 AISC *Specification for Structural Buildings* (14<sup>th</sup> edition manual) is currently the latest edition that can be selected. There are some updates to the 2016 Specification (15<sup>th</sup> edition), e.g., for some bolt preferences. On this page, one can also select “Preference Optimization” and “Bolt Optimization”. For “Preference Optimization”, Qnect will complete designs for several connection preferences and compare. “Bolt Optimization” utilizes changes in the bolt

spacing. For this example, both optimization options will be set to “No”. Default values are used for the other parameters, as shown in Figure 8. The “Terms and Use” acknowledgement must then be selected before clicking “Submit”.

The screenshot shows the Qnect Customer driven optimization interface. The top navigation bar includes links for Home, How it Works, Customer Stories, Videos, Support, About, and Contact. The main content area is titled "Basic Information" and features a sidebar with links for FAQs, Basic Information, Connection Types, Forces, Advanced, Minimum Job Requirements, Fabricator's Connection Type Preferences, Fabricator's Detailing Preferences, General Bolt Preferences, and Iteration Control. The main form area displays the "C-6 Beam-Col" project information, including the Project Name, General Contractor, Fabricator, and Contract Number. A red circle highlights the "Job Completion Status" checklist, which includes items like Basic Information, Minimum Job Requirements, Fabricator's Connection Type Preferences, Fabricator's Detailing Preferences, General Bolt Preferences, and Job Requirements for Welds.

FIGURE 7. BASIC INFORMATION AND JOB COMPLETION STATUS CHECKLIST IN QNECT

The screenshot shows the Qnect Customer driven optimization interface, focusing on the "Project Information" and "Imperial/Metric" sections. The "Project Information" section includes fields for Project Name, General Contractor, Fabricator, and Contract Number. The "Imperial/Metric" section includes a "PLEASE NOTE" message, a "Building Code" dropdown menu, and "Engineering units" and "What bolt catalog will you be using?" dropdown menus. The "Optional" section includes links for Beam to Beam, Beam to Column Flange, Beam to Column Web, Beam to Embed Plate, Beam to HSS column, Custom Edge Distances, Iteration Control, and Custom Job Costs. The "Optimization" section includes "Preference Optimization - Auto P+Op" and "Bolt Optimization - B+Op" options, each with a "Would you like us to run several preferences and present a report comparing the results?" question and a "Yes/No" radio button selection. At the bottom, there is a checkbox for "I have read the Terms and Use, acknowledge that they are reasonable, and accept them, on behalf of myself and any employer or other entity on whose behalf I am using the Site or downloading the Software."

FIGURE 8. BASIC INFORMATION FOR C-6 BEAM-COL EXAMPLE



## Minimum Job Requirements

The *Minimum Job Requirements* page is used to establish design requirements and preferences. The user specifies LRFD or ASD, design loads, whether or not to design moment or vertical brace connections, material specifications, any integrity checks, and connection preferences such as minimum or maximum plate thickness. If the design forces (e.g., beam end reactions) have not been provided in the model for some connections, the user can instruct Qnect to (1) not design connections at those locations, (2) follow a user-completed table of vertical shear forces for different beam sizes and spans, (3) use a percentage of the uniform design load (UDL), or (4) use 90% of the factored beam shear yield capacity (Figure 9). All connection design forces have been provided in the Downers Grove model, and this example focuses on just one connection, so the “Do Not Connect” option is selected and the “Update” button clicked. [To check the member end reactions in Tekla, click to select the member, right-click and select “User-Defined Attributes”, and then select “End Conditions” in the pop-up window.] There are a number of other minimum job requirements that must be selected. Default values are used for the remaining parameters and questions (see Figure 10 for an example). Users are encouraged to evaluate the influence of these various decisions on the connection design.

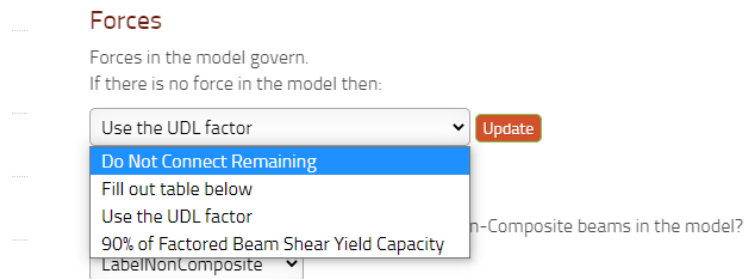


FIGURE 9. OPTIONS FOR CONNECTION FORCES IF NOT PROVIDED IN MODEL

## Fabricator's Connection Type Preferences

On this page, the fabricator's preferences are specified for connection types for different loadings. For this example, “No” had been selected for design of moment and vertical bracing connections, so only connections for shear or shear and axial demands are listed.

Default connections and preference orders are provided; Qnect has pre-populated the lists with common connections. For example, for the beam-to-column flange connection, welded-bolted double angle, all-bolted double angle, and single plate (shear plate) connections are listed in that order. Any of the connections can be deleted or moved in the preference order by clicking to highlight and then using the trash can icon or up and down arrow buttons (Figure 11). For this example, the all-bolted double angles have been selected and moved to “1” in the preference order. One can also use the “[Select One]” drop-down menu to add other connections (Figure 12). “No” was selected for “Preference Optimization”, so only the first connection in the preference order will be designed.

## Minimum Job Requirements

FAQs

Preparing Your Model

Basic Information

Connection Types

Forces

Advanced

Minimum Job Requirements

Fabricator's Connection Type Preferences

Fabricator's Detailing Preferences

General Bolt Preferences

Job Requirements for Welds

**C-6 Beam-Col**  
CONTRACT: Sample-001

Required Page: [Edit to Complete](#)

### Connection Strength Computing Methods

Design Basis  
LRFD

Seismic Requirements  
☒ Seismic Provision R = 3

### Forces

Forces in the model govern.  
If there is no force in the model then:  
Do Not Connect Remaining [Update](#)

If EOR has requested beams be connected for min # of rows, please fill out table below.

Beam Size	Min # of rows
[Select One]	<input type="text"/> <a href="#">Save</a>

[View Reports](#)

Job Completion Status

Advanced

- ☒ Basic Information
- ☐ Minimum Job Requirements
- ☒ Fabricator's Connection Type Preferences
- ☒ Fabricator's Detailing Preferences
- ☒ General Bolt Preferences
- ☒ Job Requirements for Welds

FIGURE 10. MINIMUM JOB REQUIREMENTS - CONNECTION STRENGTH

Beam to Column Flange Connection preference order

[Select One] +

- 1 - Double Angles - Welded at Beam/Bolted at Column Flange
- 2 - Double Angles - Bolted at Beam/Bolted at Column Flange
- 3 - Shear Plate

↑ ↓ 🗑

FIGURE 11. MOVING CONNECTION TYPE UP OR DOWN IN PREFERENCE ORDER

Beam to Column Flange Connection preference order

[Select One] +

- 1 [Select One]
- 2 Double Angles - Knifed - Bolted at Beam/Welded at Column Flange
- 3 Single Angle - Bolted at Beam/Welded at Column Flange
- Single Angle - Bolted at Beam/Bolted at Column Flange
- Single Angle - Welded at Beam/Bolted at Column Flange

↑ ↓ 🗑

FIGURE 12. ADDITIONAL CONNECTION OPTIONS TO ADD TO PREFERENCE ORDER

## Fabricator's Detailing Preferences

On this page, the fabricator's detailing preferences for copes, beam setbacks, gages, and other items are specified. Other items include the fabricator shop's preferred angle sizes at various locations (Figure 13). For this example, all of the default values are used.

Shop's preferred angle size:

Beam to Embed Plate:  
Angles bolted/welded to embed  
L4X4X5/16

Beam to Beam:  
Angles welded/bolted to girder  
L4X4X5/16  
Angles bolted/bolted to girder  
L4X4X5/16

Beam to Column Web:  
Angles welded/bolted to column:

W8 column  
L4X4X5/16

W10 column  
L4X3X5/16

W12 column  
L4X4X5/16

W14 Column  
L4X4X5/16

FIGURE 13. PREFERRED ANGLE SIZES FOR CONNECTIONS

## General Bolt Preferences

On this page, bolt and bolt hole preferences are specified. For example, hex head (HH) or tension control (TC) bolts can be specified for shop and field bolts. For all-bolted angle connections, the user can select no stagger, or choose to stagger on the beam or support side (Figure 14). For this example, the "Stagger Beam Side" is chosen. Otherwise, default values are used for bolt preferences.

General Bolt Preferences

FAQs  
Preparing Your Model

Basic Information  
Connection Types  
Forces

Advanced  
Minimum Job Requirements  
Fabricator's Connection Type Preferences  
Fabricator's Detailing Preferences  
General Bolt Preferences  
Job Requirements for Welds

Optional  
Beam to Beam

C-6 Beam-Col  
contract: Sample-001  
Required Page: Edit to Complete

All Connections  
Are bearing bolts allowed for axially loaded connections with short or long slotted holes where resultant load is less than or equal to 10 deg. from vertical? (see AISI C14th p. 16.2-24)  
☒ Yes ☐ No

At bolted/bolted angle connections, should bolts be staggered?  
No Stagger  
(Select One)  
No Stagger  
Stagger Beam Side  
Stagger Support Side

(Notes:  
- Long slots in angle legs will receive 2x4 washers.  
- All embed plates with shear pin connections must be designed for moment due to eccentric loading of reaction. Please advise EOR.  
- All embed plates with shear pin connections with SC bolts need the following note placed on erection drawings: "SC bolts at connections to embed plates must be pre-tensioned after concrete slab is poured")

What is the maximum column flange material thickness that can be bolted?  
\_\_\_\_\_

View Reports  
Job Completion Status

FIGURE 14. STAGGERED BOLT (BEAM SIDE) PREFERENCE

## Job Requirements for Welds

Job requirements for welds include fillet weld sizes (Figure 15) and preferences for partial-joint penetration (PJP) and complete-joint penetration (CJP) welds if needed. Qnect offers some potential cost-savings methods, such as beveling the plate at a skewed single-plate connection to allow use of fillet welds. For this example, all default values are used for the job requirements for welds. With the final page submitted, the “Job Completion Status” should show with checked boxes that all required information has been provided (Figure 16).

**Job Requirements for Welds**

[View Reports](#)

[Job Completion Status](#)

**FAQs**  
Preparing Your Model

**C-6 Beam-Col**  
contract: Sample-001

Required Page: [Edit to Complete](#)

**Basic Information**

**Connection Types**

**Forces**

**Advanced**

**Minimum Job Requirements**

**Fabricator's Connection Type Preferences**

**Fabricator's Detailing Preferences**

**General Bolt Preferences**

**Job Requirements for Welds**

**Optional**

**Beam to Beam**

**Beam to Column Flange**

**Beam to Column Web**

**For Fillet Type welds, please select minimum and maximum weld sizes.**

Minimum Fillet Weld Size  
3/16"

Maximum Fillet Weld Size  
1"

Qnect increases fillet weld size as required to account for gaps between connecting parts.

At conditions where the gap will allow the use of an increased fillet weld, do you want Qnect to provide effective weld size only instead of weld size equal to effective weld size plus the gap?

☐ Yes ☒ No

Minimum Fillet Weld Size at Shear Plate to Support:  
5/8 tp

Note: Qnect increases fillet weld size as required to account for gaps between connecting parts.

At skewed shear plate to support weld, can Qnect bevel the shear plate at support to avoid gap in order to allow a greater use of fillet welds (up to a 30 degree skew from square) instead of PJP welds?

FIGURE 15. JOB REQUIREMENTS FOR WELDS

**Job Form Submitted**

[View Reports](#)

**C-6 Beam-Col**  
contract: Sample-001

Thanks, the **Job Requirements for Welds** page has been successfully submitted. Choose the next section you would like to add/edit below.

**Job Completion Status**

**Advanced**

☒ Basic Information

☒ Minimum Job Requirements

☒ Fabricator's Connection Type Preferences

☒ Fabricator's Detailing Preferences

☒ General Bolt Preferences

☒ Job Requirements for Welds

**Optional**

**Beam to Beam**

**Beam to Column Flange**

**Beam to Column Web**

FIGURE 16. JOB COMPLETION STATUS WITH ALL REQUIRED PAGES COMPLETED

## Running the Qnect Job

Qnect connection design uses the Tekla model and the Qnect job information. Open the Downers Grove model in Tekla. For this example, locate the first-floor beam-column connection at grid location C-6. Holding the SHIFT key, click to select the column and a beam connecting to the column flange (Figure 17). Click on Qnect in the toolbar and select button ❶ QnectExport. Sign in to Qnect when prompted by the pop-up window. In the next pop-up window, select the job name and enter a session name; there may be multiple sessions for the same job and any unique name can be used for the session (Figure 18). An e-mail notification will prompt you to select ❷ QnectImport; in the pop-up window, select the same job and session. [Note: with only one connection selected, the job is typically completed before the e-mail is received.]

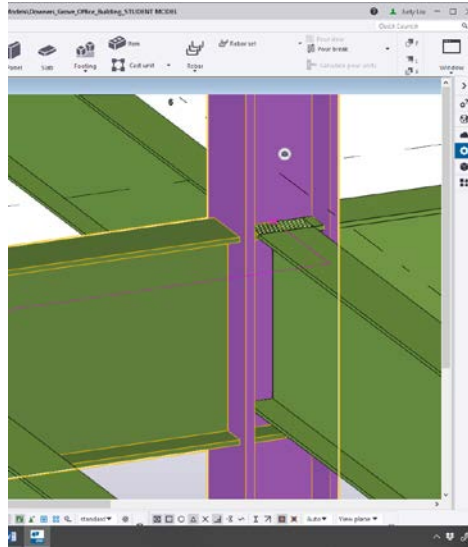


FIGURE 17. SELECTED COLUMN AND BEAM AT GRID LOCATION C-6

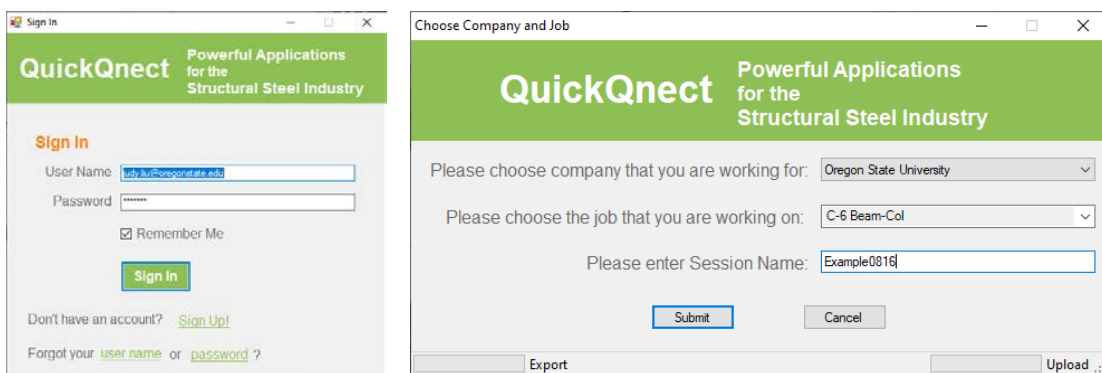



FIGURE 18. (A) QNECT SIGN-IN, (B) CHOOSING COMPANY, JOB, SESSION NAME

At gridline C-6, there is now an all-bolted double-angle connection with the TC bolts staggered on the beam side (Figure 19). Double-clicking on the connection will open a pop-up window with job and connection information (Figure 20). Hyperlinks for the “Double Angle Reports” will



change the information in the summary table at the bottom of the window. Clicking on the hyperlinked connection number in that table will open a summary of the calculations. Note that links for the other types of connections will bring up “No results found” or “Vertical bracing feature is off”; “No” was selected for the preference optimization. For sessions with many connections,  InspectQnect provides a method for navigating through Qnect results, with summaries and alternate views of connections (Figure 21).

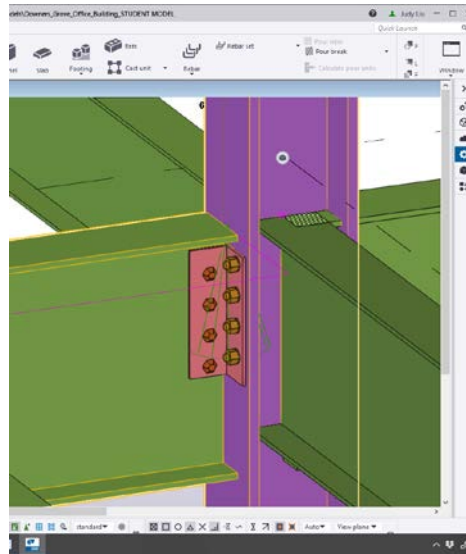


FIGURE 19. QNECT-DESIGNED CONNECTION AT GRID LOCATION C-6

QnectConnection

Connection: 1

Notify help desk.

### Double Angle Specs Report

**Company:** Oregon State University  
**Job Title:** C-6 Beam-Col  
**Session Title:** Example0816  
**Session Date:** 2020-08-16 18:36:44  
**Model Name:** Downers\_Grove\_Office\_Building\_STUDENT\_MODEL.db1

**B+Op Status:** B+Op was disabled  
**Building Code:** AISC-14  
**Design Type:** LRFD  
**Unit System:** Imperial

Weld	Shear Plate	Angle	Bm Web Doubler Plate	Stabilizer Plate	Gusset Plate
E70	A572-GR.50	A572-GR.50	A572-GR.50	A572-GR.50	

**Summary Reports:** [Job Standard Summary](#) | [Job Sample Calcs Report](#) | [B+Op Comparison Report](#)  
[Job Preferences Report](#) | [No Connections Summary](#) | [No Connections Detailed](#)

**Shear Plate Reports:** [Specs](#) | [Strengths \(Shear Only Connections\)](#) | [Strengths \(Shear & Axial Connections\)](#) | [Welds](#) | [Doubblers](#)  
**Single Angle Reports:** [Specs](#) | [Strengths \(Shear & Axial\)](#) | [Welds](#) | [Doubblers](#)  
**Double Angle Reports:** [Support Side Specs](#) | [Beam Side Specs](#) | [Strengths \(Shear & Axial\)](#) | [Welds](#) | [Doubblers](#)  
**Vertical Bracing Reports:** [Specs](#)

[Click here for Double Angle Diagrams](#)

**Bolted Bolted connection(s), showing only beam side specs. [Click here for support side specs](#)**

Connection (click link for full calcs)	Count	Filler Beam	Support Girder/Col	Slope	Skew	Vertical Offset	Span	Reaction	Axial T/C	Integrity Checks		Capacity		Bolts on I			
										NYC	IBC	Vertical Shear	Axial T/C	Columns (Angle1/Angle2)	Rows (Angle1/Angle2)	Total (Beam Diameter)	
<a href="#">bctf.2bb.s.00001.00001</a>	1	W24X62	W10X88	0.00	-90.00	0.00	30.00	75.00	0.00 \ 0.00	No	No	129.10	0.00 \ 0.00	1 \ 1	4 \ 4	4	0.75

FIGURE 20. DOUBLE ANGLE SPECIFICATIONS REPORT

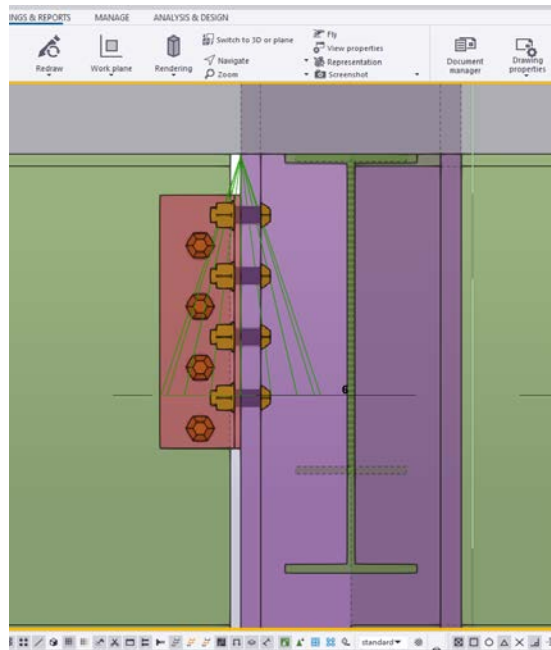



FIGURE 21. ALTERNATE VIEW OF CONNECTION THROUGH INSPECTQNECT


## Use Qnect with the Integrated Design Project Problems

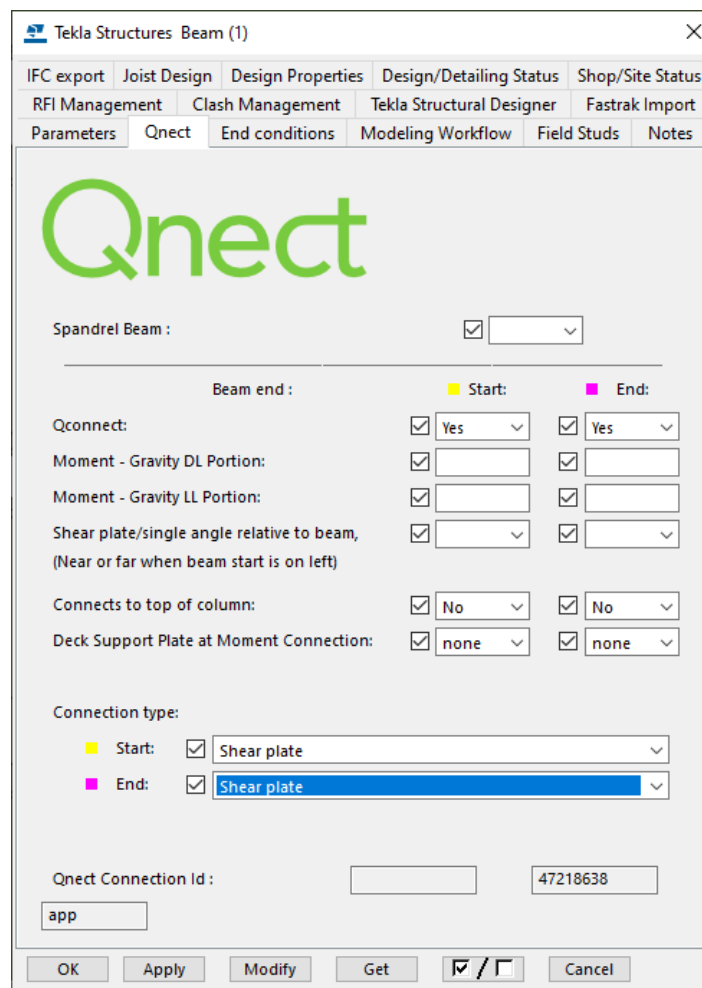
Qnect can be used to supplement Integrated Design Project problems. For example, Chapter 11 - Problem 43 first requires design of double-angle shear connections for the gravity beams and girders designed in Chapter 6. Then, students are instructed to reconsider the types of shear connections and design with single-plate connections. The second task can be accomplished in Qnect by moving the single-plate connections to the top of the preference order and running the job again on the unconnected beams and columns. Or, if only changing connections for one beam, the same task can be accomplished by right-clicking on the beam, selecting “User-Defined Attributes”, clicking on the “Qnect” tab, selecting new connection types for the start and end of the beam, and clicking “Modify” (Figure 22). Figure 23 shows the single-plate at grid location C-6.

Any number of variations with Qnect could be explored. Students could design double-angle and single-plate connections first by hand, and then compare to Qnect results for those connections with different preferences. Students might compare their own double-angle and single-plate designs for a select number of connections and then compare several others using Qnect. Students may choose to design all-bolted double angles and then compare to Qnect designs for welded-bolted and bolted-welded.

Regardless of the Qnect adaptation chosen, consideration of multiple designs can be accomplished by adding all connection types to the preference lists and choosing “Yes” for the Preference Optimization for the same job, “C-6 Beam-Col”. Note that this selection will automatically prompt the Bolt Optimization (variation in bolt spacing), as well. Again select the first-floor beam-column connection at grid location C-6 and select button **QnectExport**. Sign

in, choose the job and create a new session name. An e-mail notification will be sent for each connection design, prompting you to click button QnectImport.

The Tekla model will show just one connection, but details of all connections can be obtained through Qnect. The “Jobs” list will now include single-plate (SP) and double-angle bolted (DABB) versions of the “C-6 Beam-Col” job (Figure 24). Click on “View Reports”, select the session name, and click on the  button to move the session to the “Include List”. A dropdown menu and hyperlinks can be used to view the same types of reports (e.g., full connection calculations) accessed in Tekla. Optimization reports comparing costs for different options are also available.



Tekla Structures Beam (1)

IFC export Joist Design Design Properties Design/Detailing Status Shop/Site Status

RFI Management Clash Management Tekla Structural Designer Fastrak Import

Parameters Qnect End conditions Modeling Workflow Field Studs Notes

**Qnect**

Spandrel Beam : ☒

Beam end :  Start: ☒ End: ☒

Qconnect: ☒ Yes  ☒ Yes

Moment - Gravity DL Portion: ☒  ☒

Moment - Gravity LL Portion: ☒  ☒

Shear plate/single angle relative to beam, (Near or far when beam start is on left) ☒  ☒

Connects to top of column: ☒ No  ☒ No

Deck Support Plate at Moment Connection: ☒ none  ☒ none

Connection type:

Start: ☒ Shear plate

End: ☒ Shear plate

Qnect Connection Id :  47218638

☒ app

OK Apply Modify Get ☒ / ☐ Cancel

FIGURE 22. CHANGING CONNECTION TYPES AT ONE BEAM

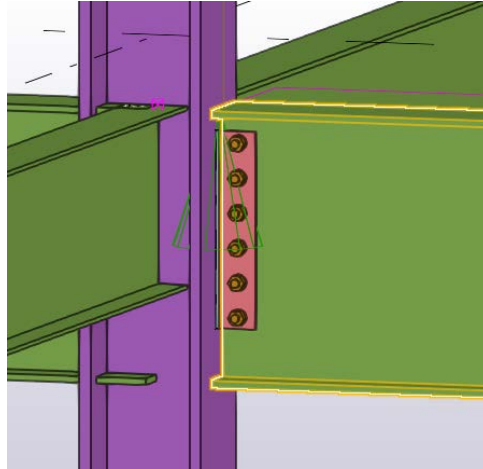


FIGURE 23. SINGLE-PLATE CONNECTION AT GRID LOCATION C-6

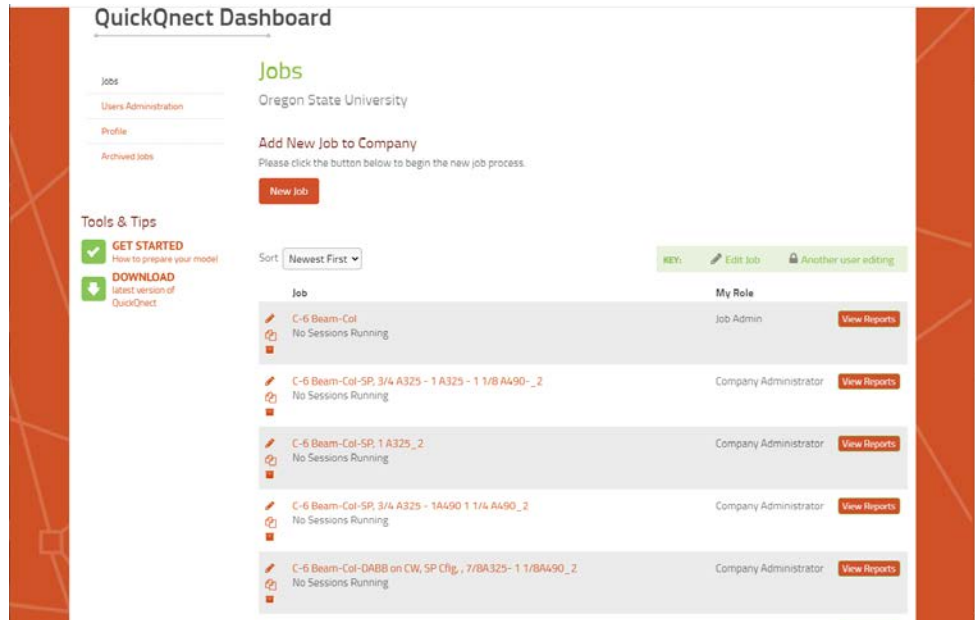


FIGURE 24. JOB LIST WITH MULTIPLE DESIGNS FOR PREFERENCE OPTIMIZATION

## Additional Resources

Frequently-asked questions and help videos are available at [www.qnect.com](http://www.qnect.com). Video topics range from how to get started to utilizing the moment connection capabilities.

The video modules from the University of Cincinnati will reference the Downers Grove building but provide a broader perspective on connection design. This guide will be updated after those modules are released in January 2021.