

A Coming Convergence?

Revit & Advance Steel

Interoperability



About the speakers

Martha Hollowell

Learning Content Developer

ASCENT – Center for Technical Knowledge



About the speakers

Veredith Keller

Senior Solutions Consultant

IMAGINiT Technologies



About you

- ☐ Construction
- ☐ Education
- ☐ Fabrication
- ☐ Structural Design
- ☐ Other



About you

- ☐ BIM/CAD/VDC Manager
- ☐ Drafter/Designer/Technician
- ☐ Educator
- ☐ Structural Engineer
- ☐ Other

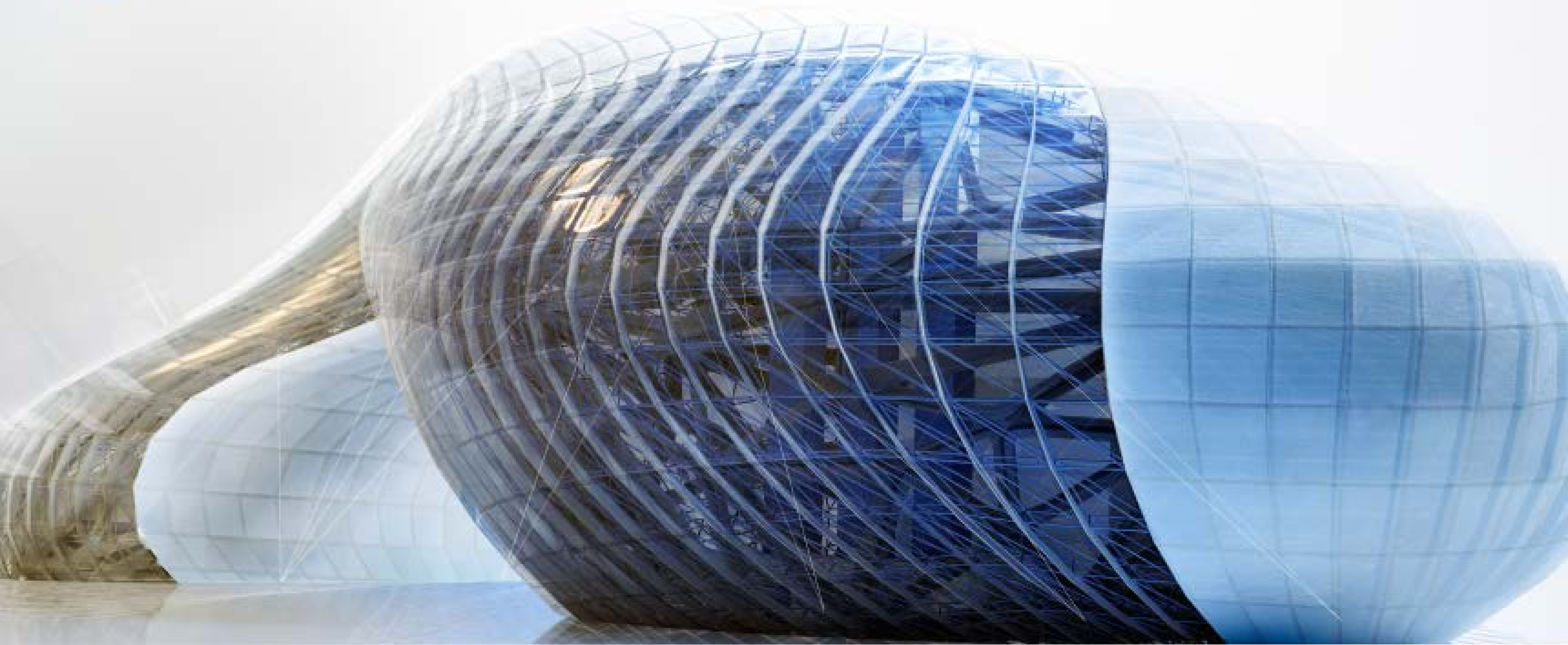


AUTODESK® **ADVANCE STEEL** 2019





AUTODESK® REVIT® 2019





Martha Hollowell, 2018. Moving Right.
[digital photograph] (private collection).

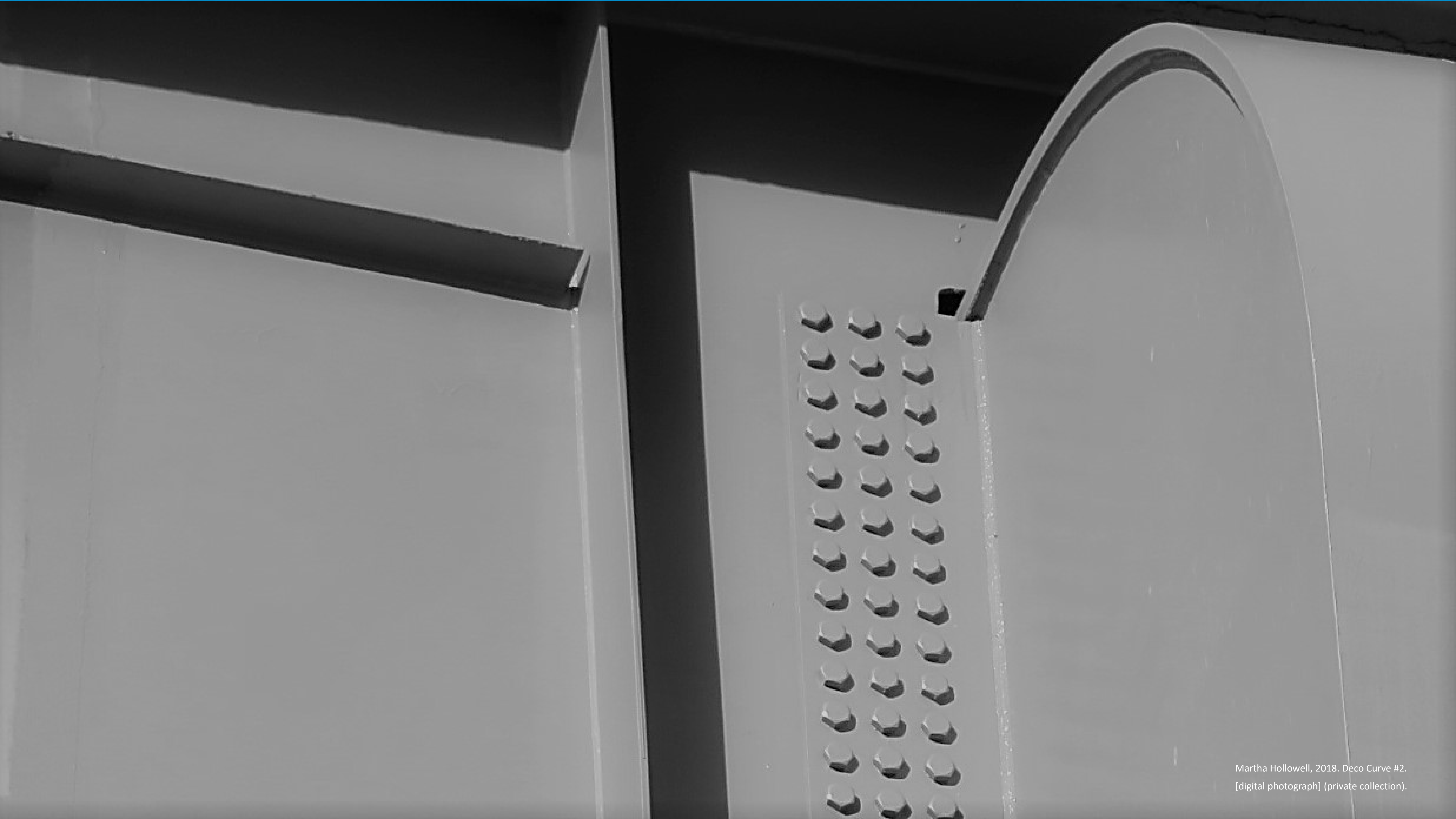
Learning Objectives

- EXPLAIN THE IMPORTANCE OF LEVEL OF DEVELOPMENT (LOD) FOR STRUCTURAL STEEL DESIGN AND FABRICATION.
- COMPARE HOW COMPLEX STEEL CONNECTIONS, CUSTOM PLATES, BOLTS, AND WELDS ARE CREATED IN REVIT AND ADVANCE STEEL.
- UNDERSTAND THE EXTENT TO WHICH CONSTRUCTION AND FABRICATION DOCUMENTS ARE CREATED IN REVIT AND ADVANCE STEEL.
- DEVELOP A COMPLETE DESIGN TO FABRICATION WORKFLOW USING THE INTEROPERABILITY FEATURES OF REVIT AND ADVANCE STEEL.

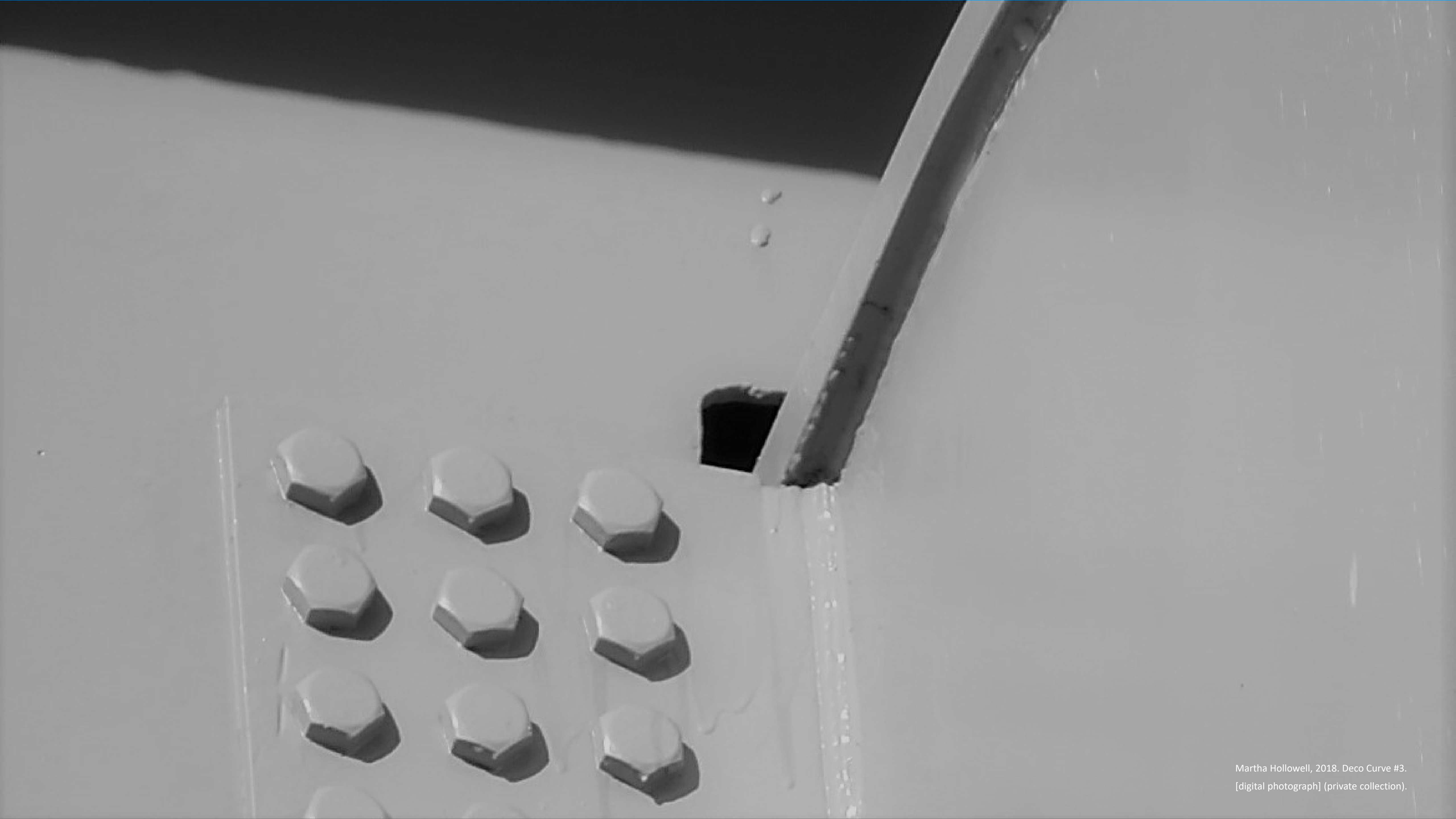


Level of Development (LOD)

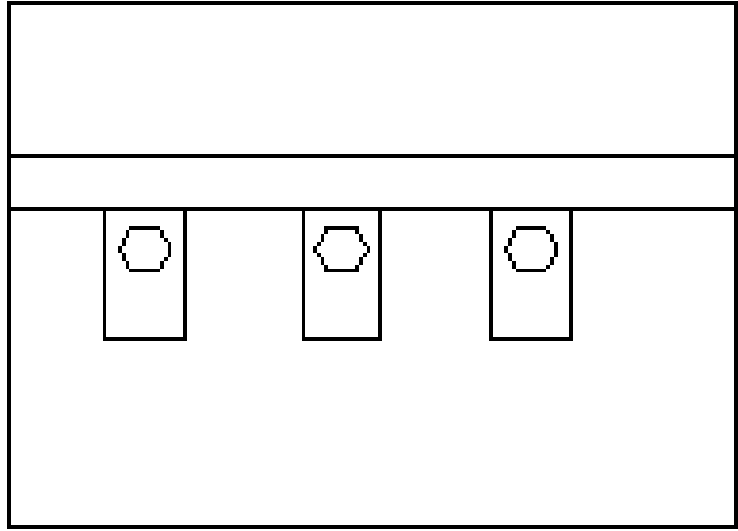
- Explain the importance of level of development (LOD) for structural steel design and fabrication.



Martha Hollowell, 2018. Deco Curve #2.
[digital photograph] (private collection).



Martha Hollowell, 2018. Deco Curve #3.
[digital photograph] (private collection).

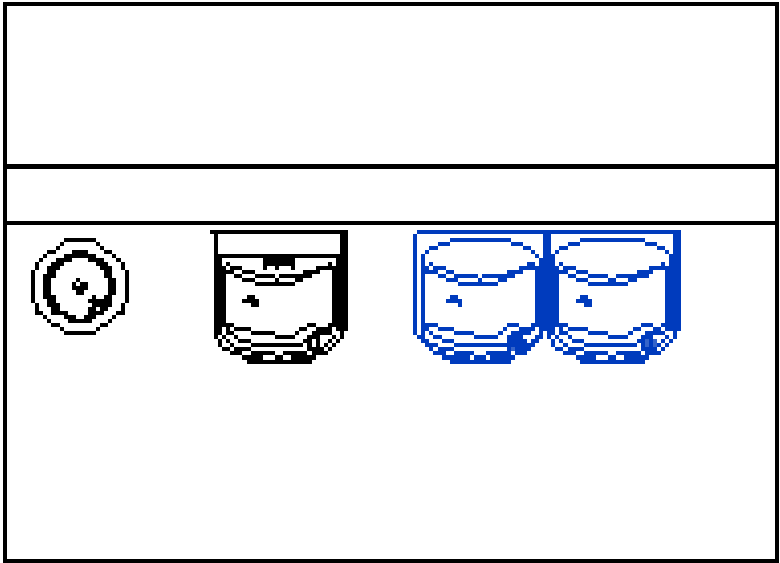


① Water Fountains
1/4" = 1'-0"

Plumbing Fixture Schedule				
Count	Family and Type	Manufacturer	Cost	Comments
3	Drinking Fountain-2D: Drinking Fountain-2D			

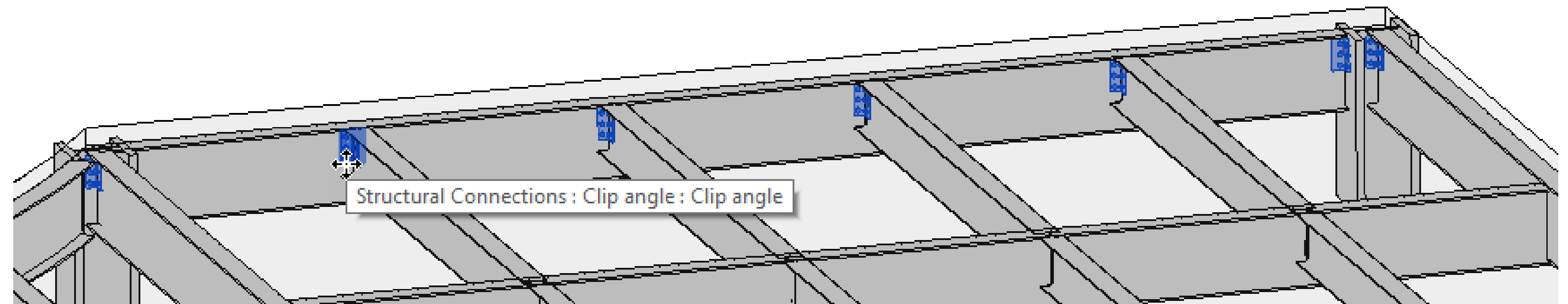
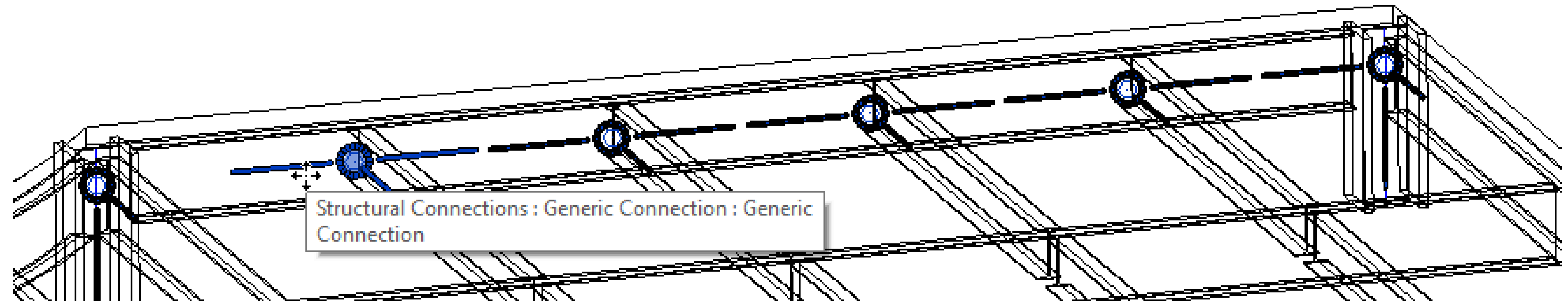


Level of Detail



① Water Fountains
1/4" = 1'-0"

Plumbing Fixture Schedule				
Count	Family and Type	Manufacturer	Cost	Comments
1	4400FRK: LK4400FRK	Elkay	425.00	
1	equip-water-cooler-elkay-enhanced lzs8ws: LZS8WSLP	Elkay	567.00	
1	equip-water-cooler-elkay-ez-ada-bileve l: EZ STL8*C	Elkay	322.00	
3			1314.00	

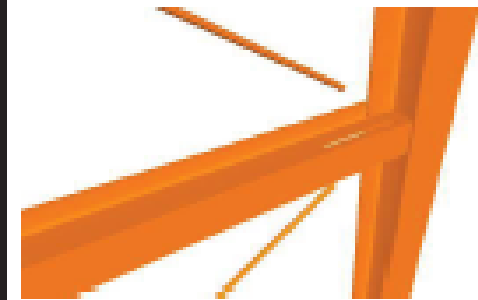
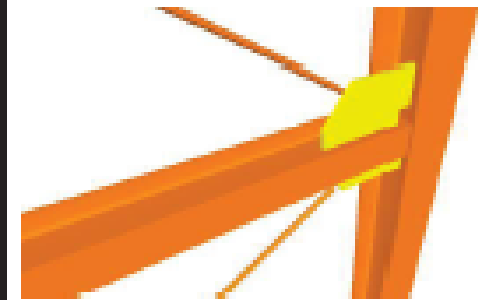
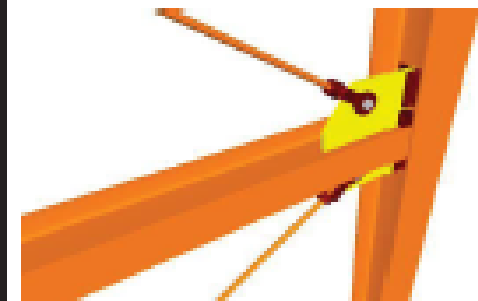


Level of Development

Unifomat Omniclass

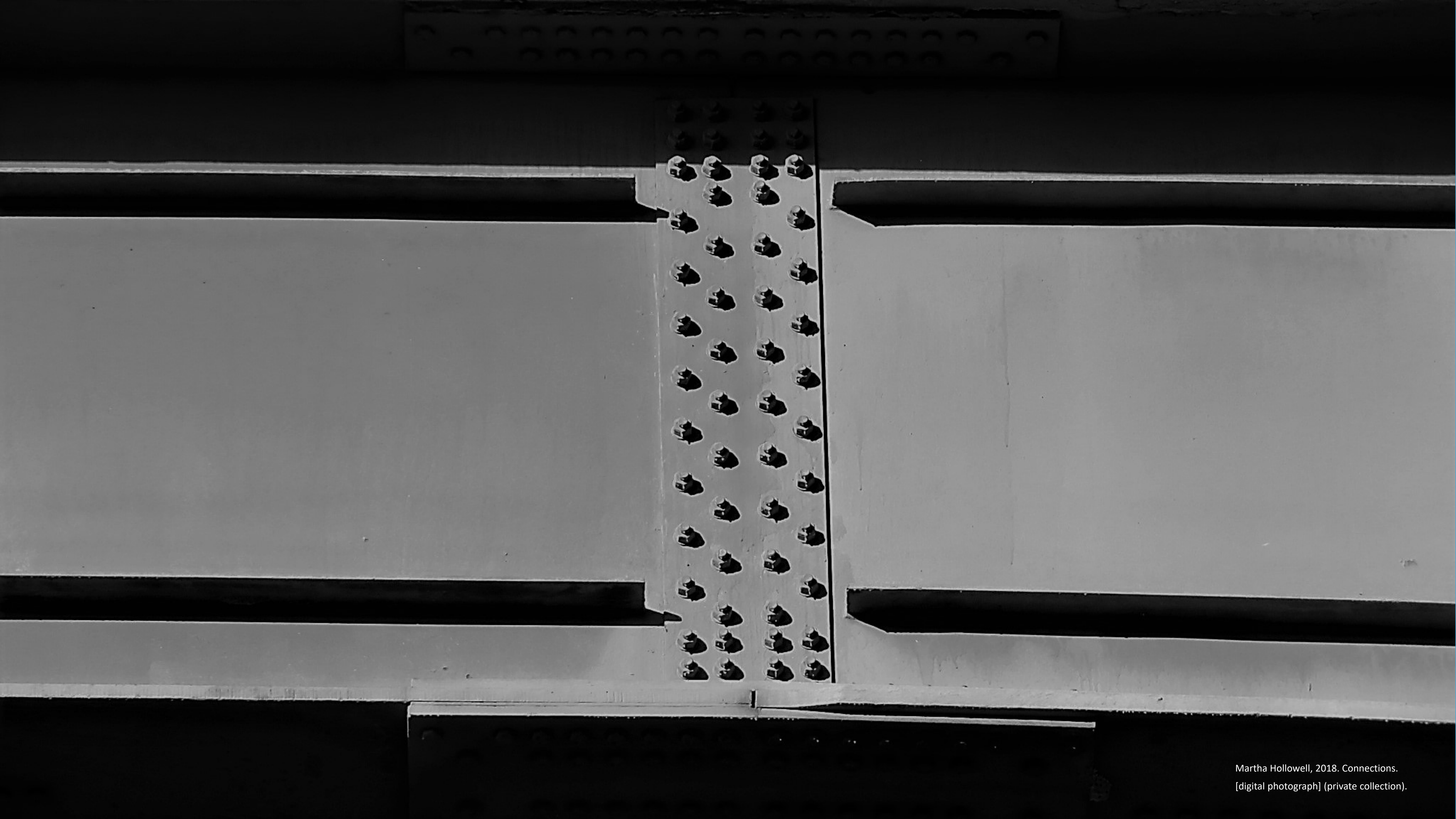
B1010.10.50 21-02 10 10 10 50 Floor Structural Frame (Steel Framing Bracing Rods)

Associated Masterformat Sections: 05 10 00

100	See B10	
200	See B1010	
300	Element modeling to include: <ul style="list-style-type: none">Specific sizes of main structural braces modeled per defined structural grid	 <p>31 B1010.100-LOD-300 Floor Structural Frame (Steel Framing Bracing Rods)</p>
350	Element modeling to include: <ul style="list-style-type: none">Connection detailsActual elevations and location of member connectionsMain elements of typical connections applied to all structural steel connections such as base plates, gusset plates, anchor rods, etc.Any miscellaneous steel members with correct size, shape, orientation and material	 <p>32 B1010.100-LOD-350 Floor Structural Frame (Steel Framing Bracing Rods)</p>
400	Element modeling to include: <ul style="list-style-type: none">WeldsClevisBolts, washers, nuts, etc.All assembly elements	 <p>33 B1010.100-LOD-400 Floor Structural Frame (Steel Framing Bracing Rods)</p>

BIMFORUM

Level of Development Specification

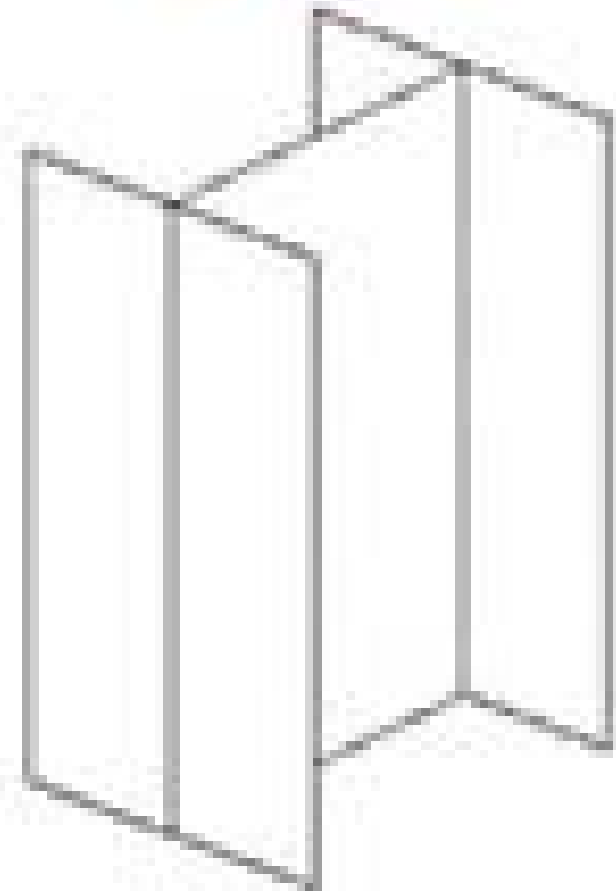


Martha Hollowell, 2018. Connections.
[digital photograph] (private collection).

**LOD
100**



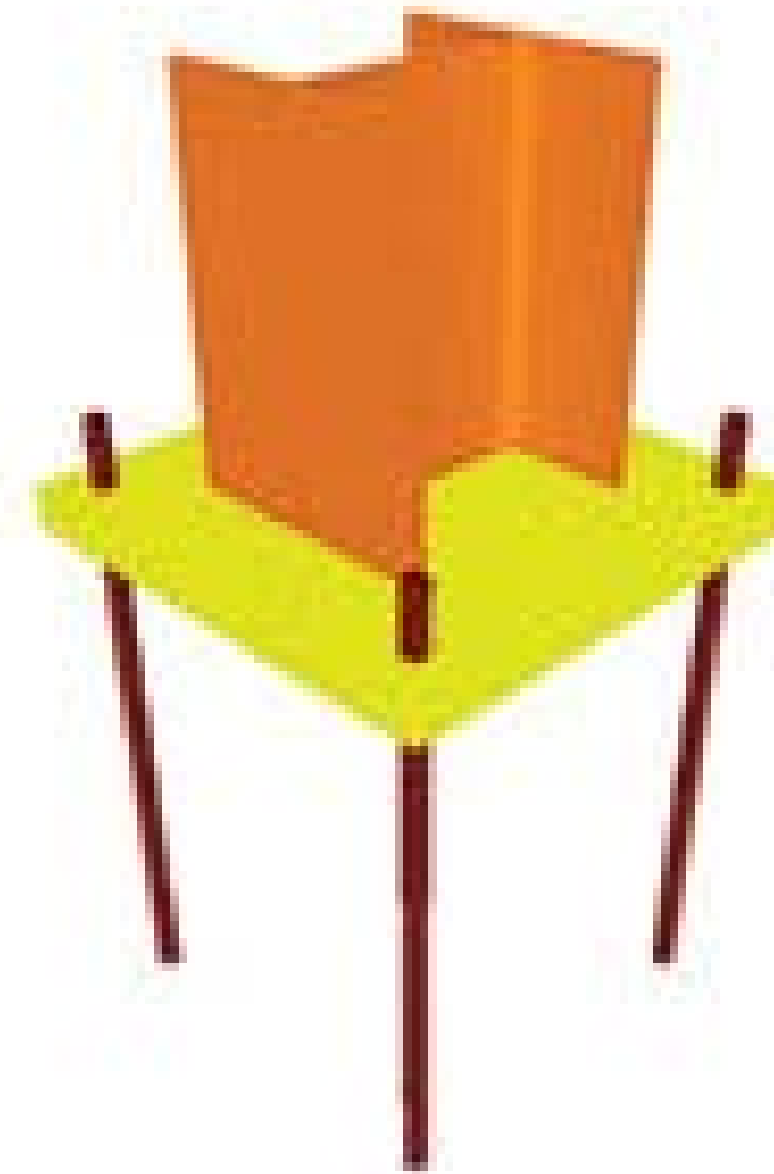
**LOD
200**



**LOD
300**



**LOD
350**



**LOD
400**



Conceptual Design

Design Development

Documentation

Coordination

Construction

Level of Development

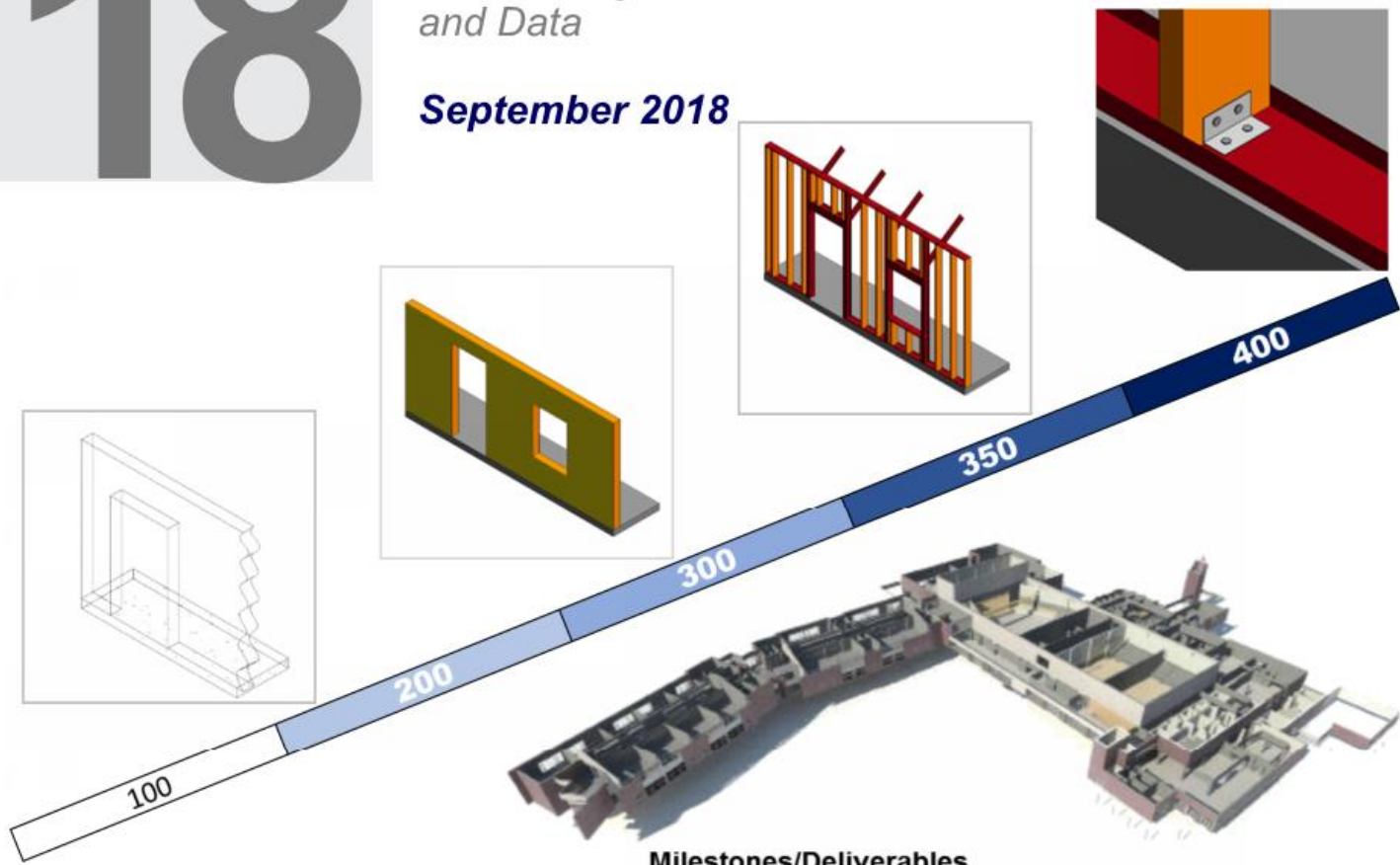
2018

BIMFORUM

LEVEL OF DEVELOPMENT(LOD) SPECIFICATION PART I & COMMENTARY

For Building Information Models and Data

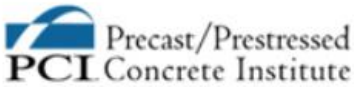
September 2018



Milestones/Deliverables

Building Systems	Model Elements		SD		DD		CD	Constr. Coord.	Fabrication

PARTICIPATING ORGANIZATIONS



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Level of Development Specification
Version: 2018


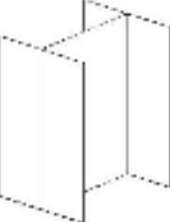

www.bimforum.org/lod

Unifomat Omniclass

400	Element modeling to include: <ul style="list-style-type: none">WaterproofingCoursingReinforcingGrout	
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B1010.10.30 21-02 10 10 10 30 Floor Structural Frame (Steel Framing Columns)

Associated Masterformat Sections: 05 10 00

100	Generic column element. See B10 .	 23 B1010.10-LOD-100 Floor Structural Frame (Steel Framing Columns)
200	See B1010 .	 24 B1010.10-LOD-200 Floor Structural Frame (Steel Framing Columns)
300	Element modeling to include: <ul style="list-style-type: none">Specific sizes of main vertical structural members modeled per defined structural grid with correct location and orientation	 25 B1010.10-LOD-300 Floor Structural Frame (Steel Framing Columns)

[Back to TOC](#)

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Level of Development Specification

Conceptual Design

Design Development

Documentation

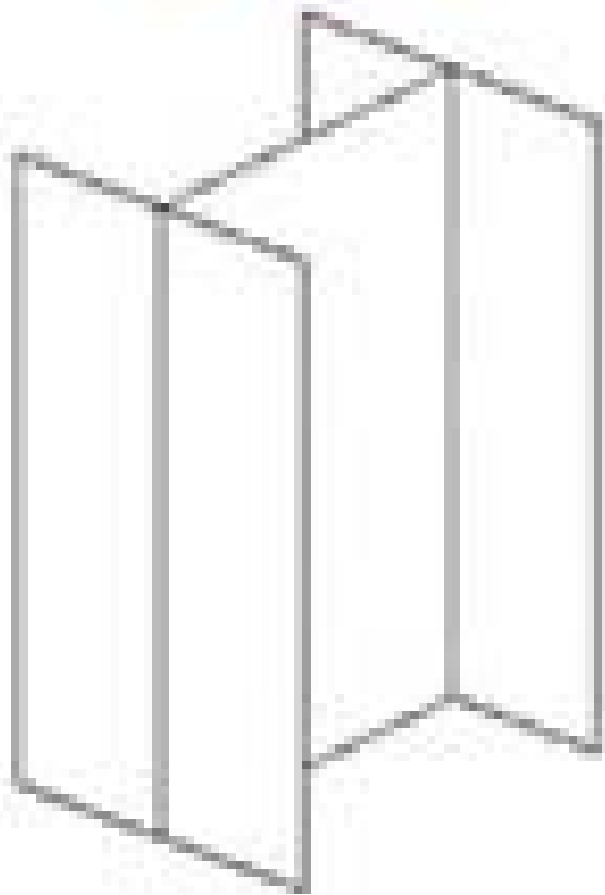
Coordination

Construction

LOD
100



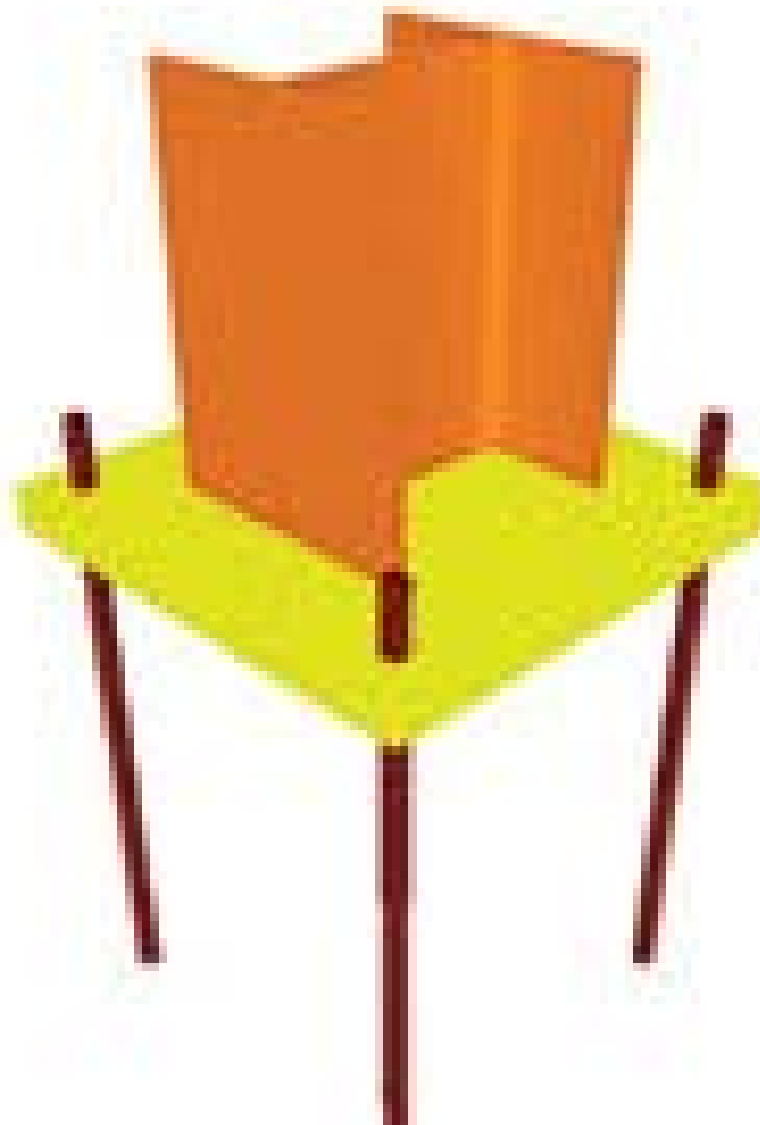
LOD
200



LOD
300



LOD
350



LOD
400



Basic Revit Tools

Revit Steel Connections

Advance Steel

LOD – Revit and Advance Steel

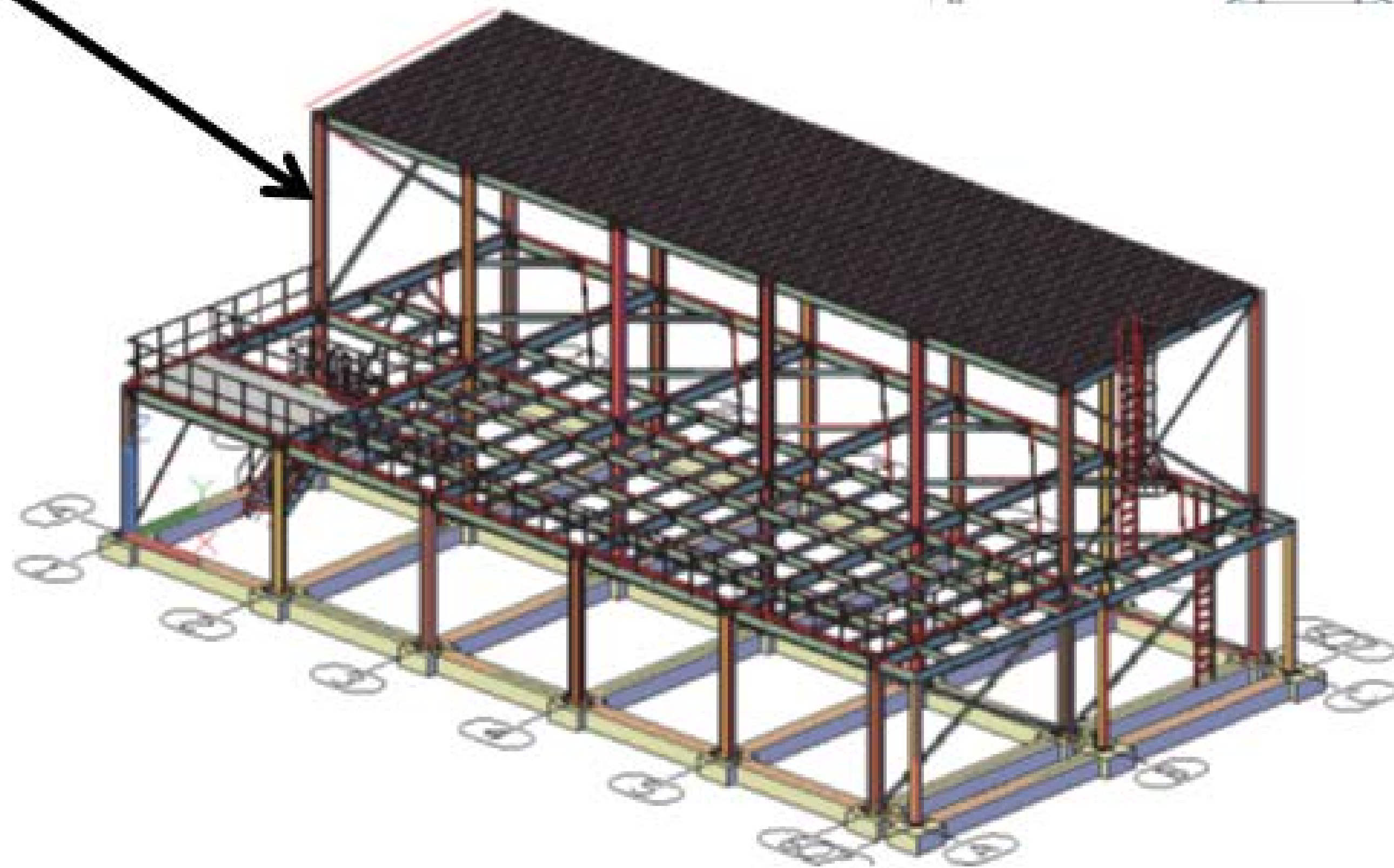


Steel Connections and Documentation

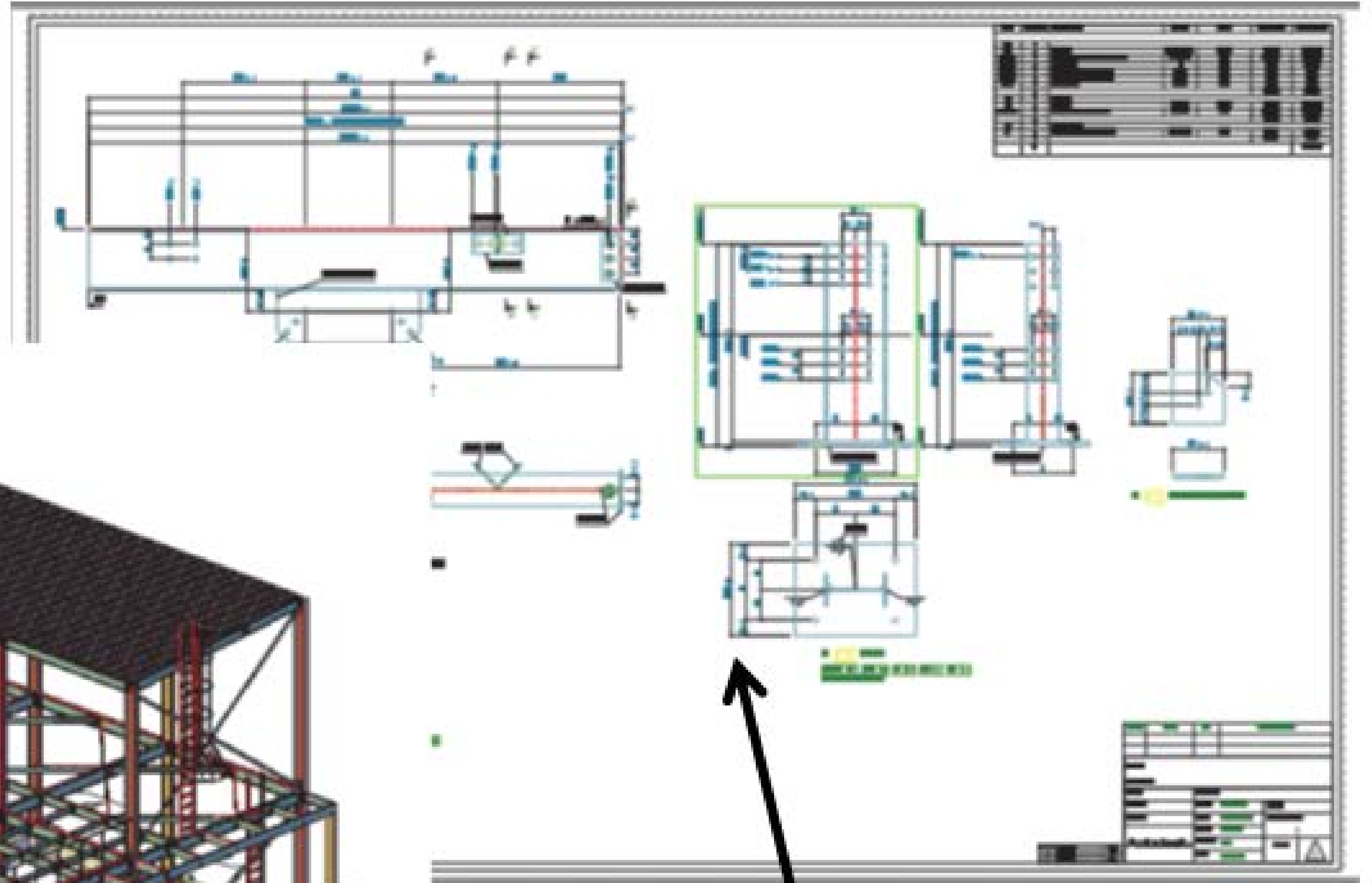
- Compare how complex steel connections, custom plates, bolts, and welds are created in Revit and Advance Steel
- Understand the extent to which construction and fabrication documents are created in Revit and Advance Steel.

Working in a 3D Model

*Make a
change here...*



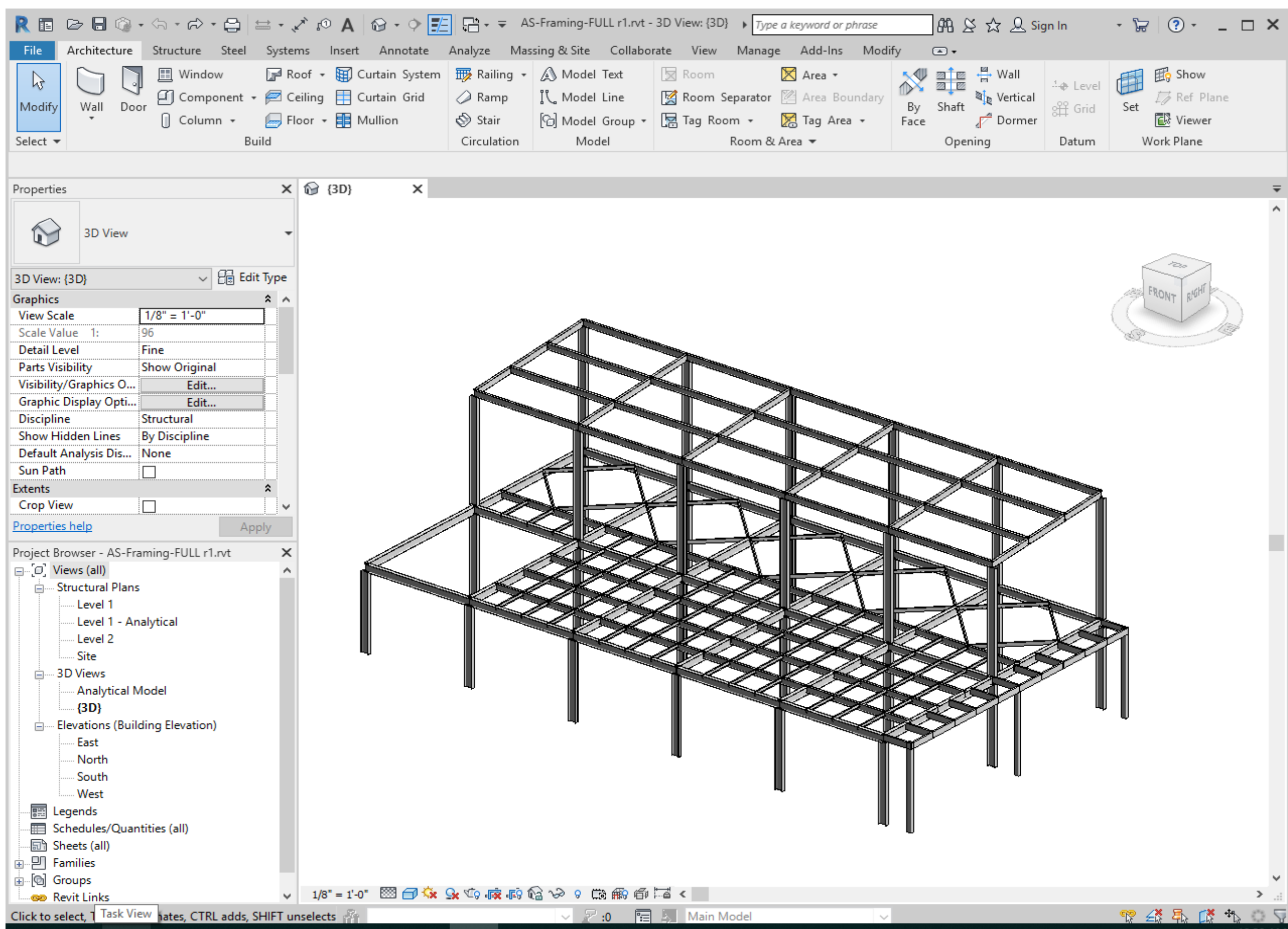
3D Model



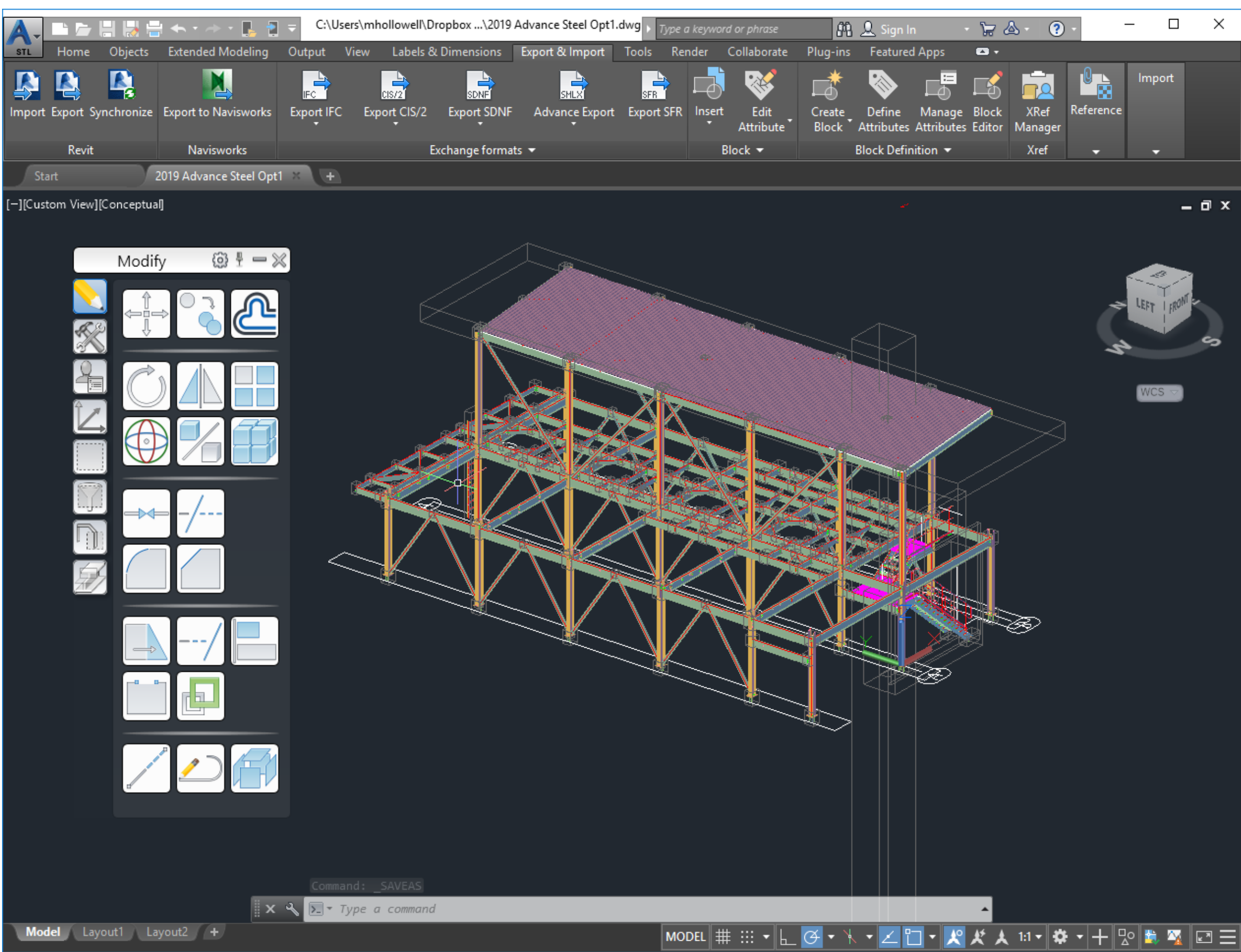
2D Documents

*...and it is
displayed here*

Platform Comparison



Autodesk Revit



Advance Steel

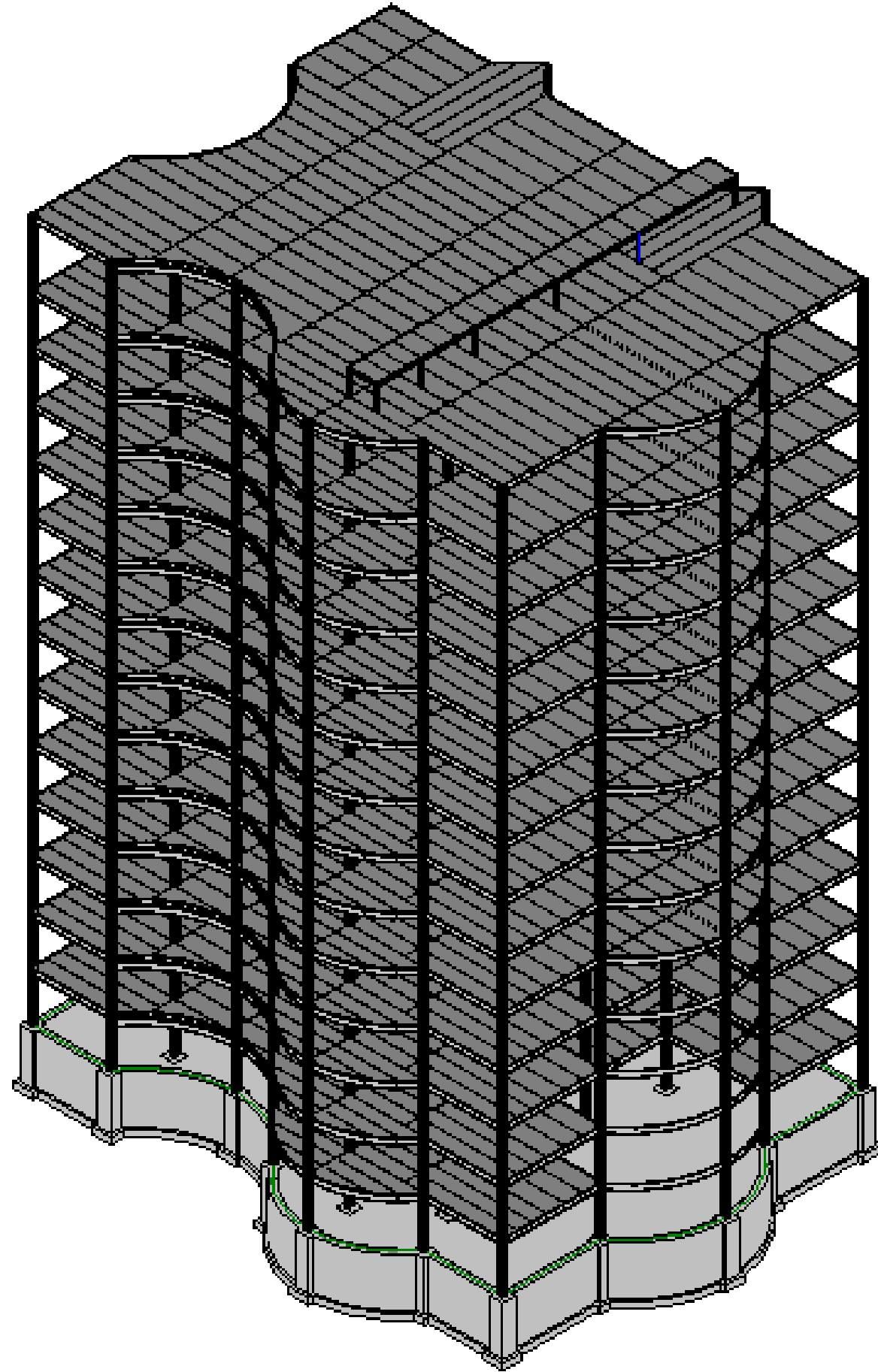
Steel Connections Demo



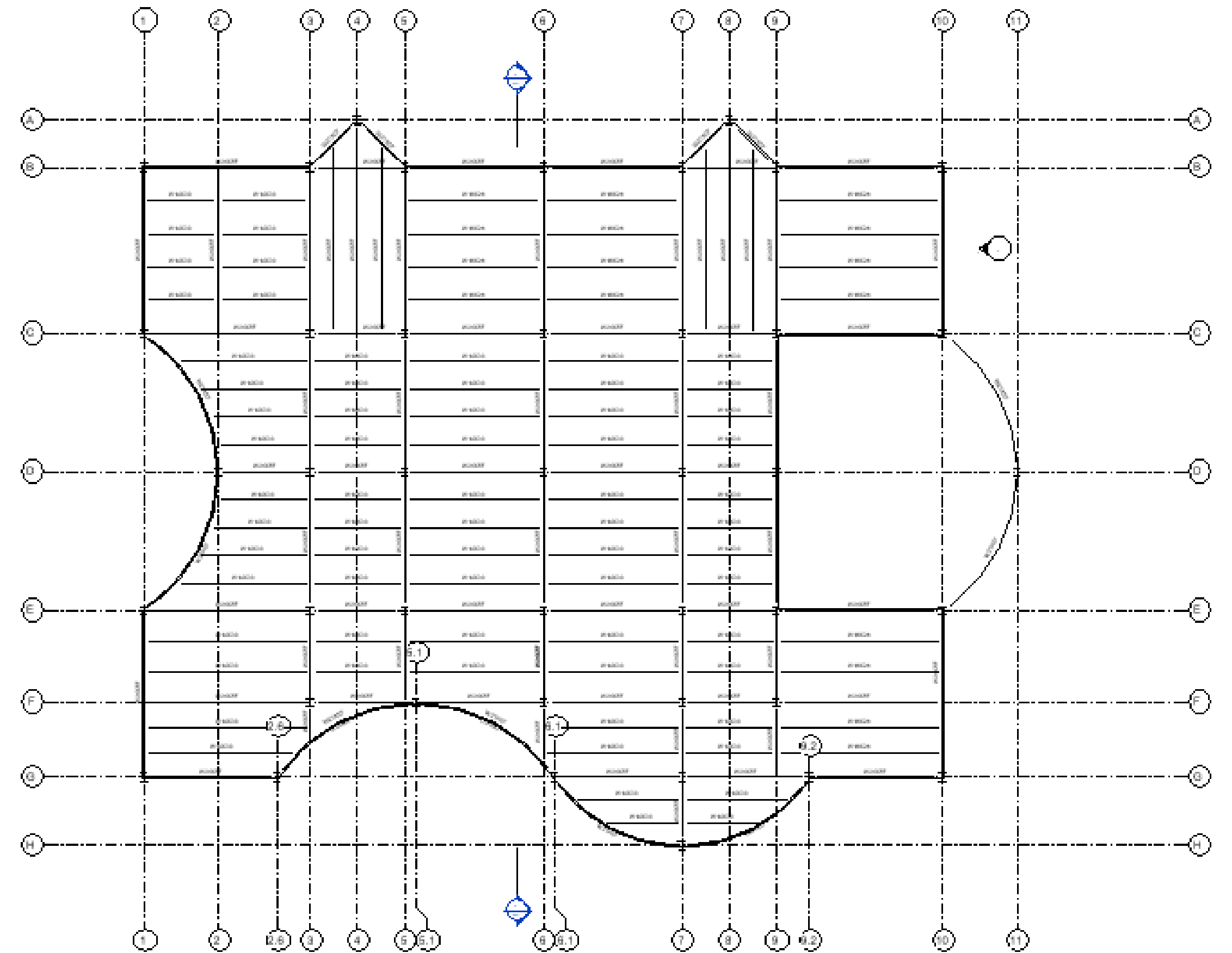
Design to Fabrication Workflow

- Develop a complete design to fabrication workflow using the interoperability features of Revit and Advance Steel.

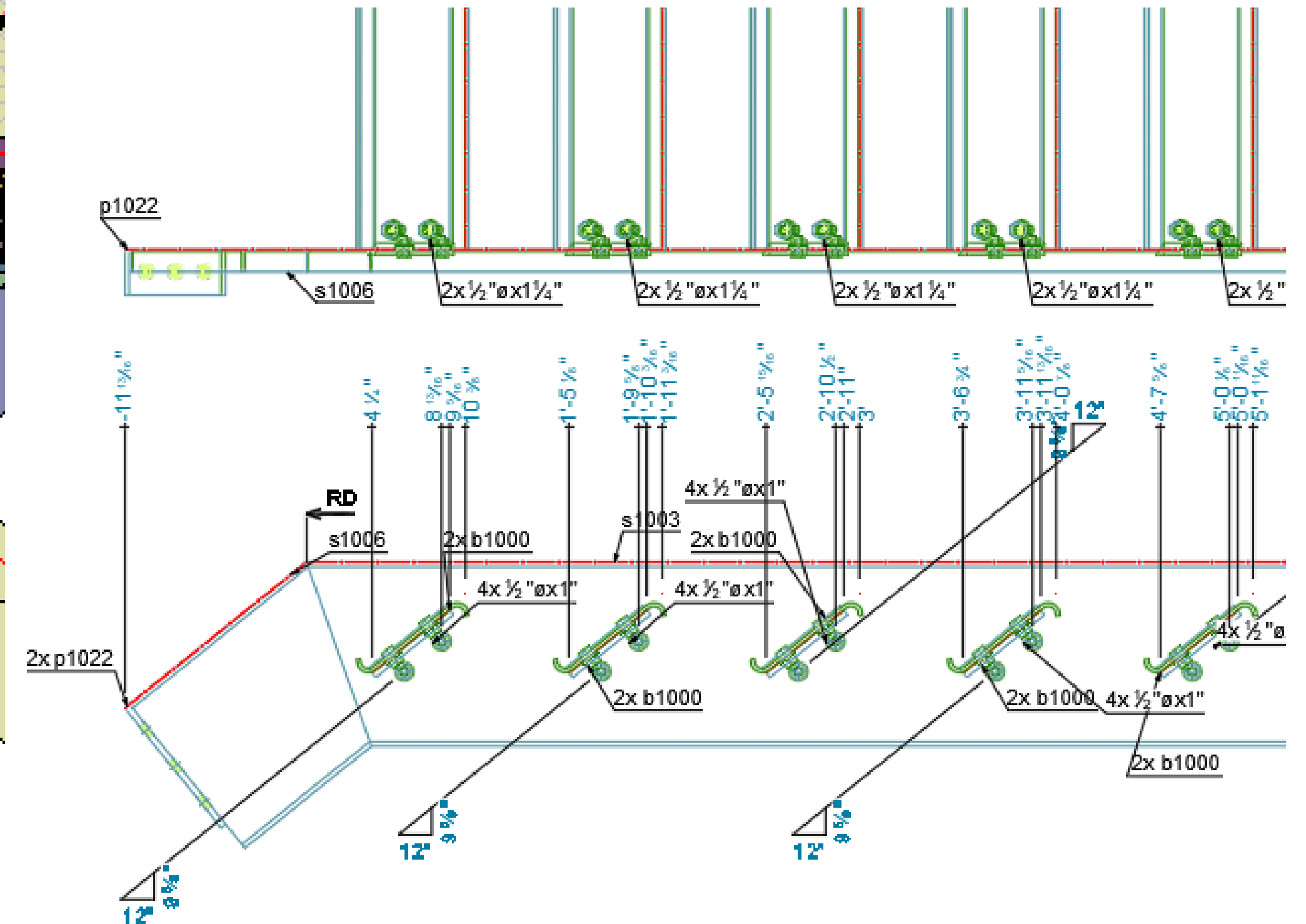
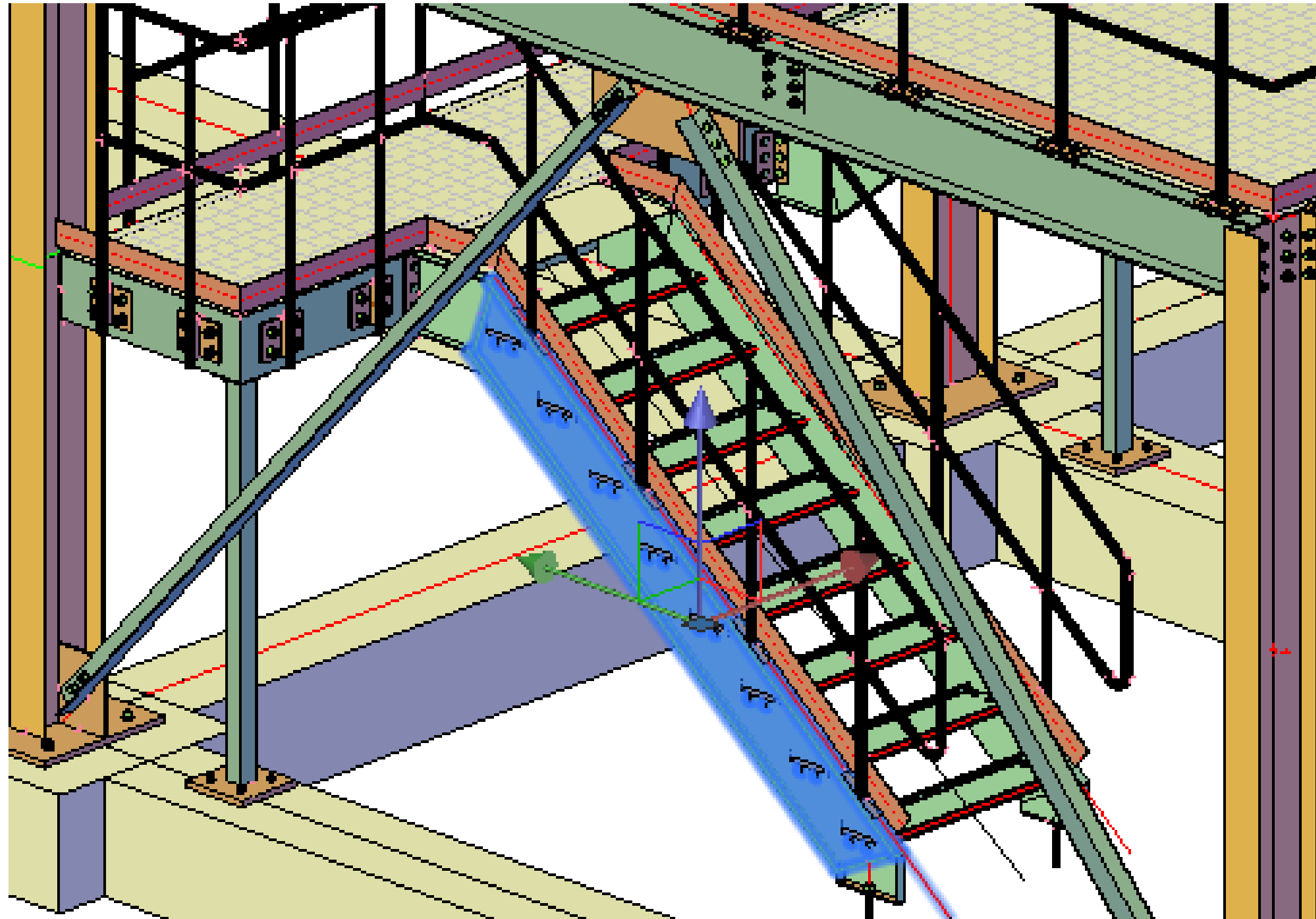
Design...



Autodesk Revit

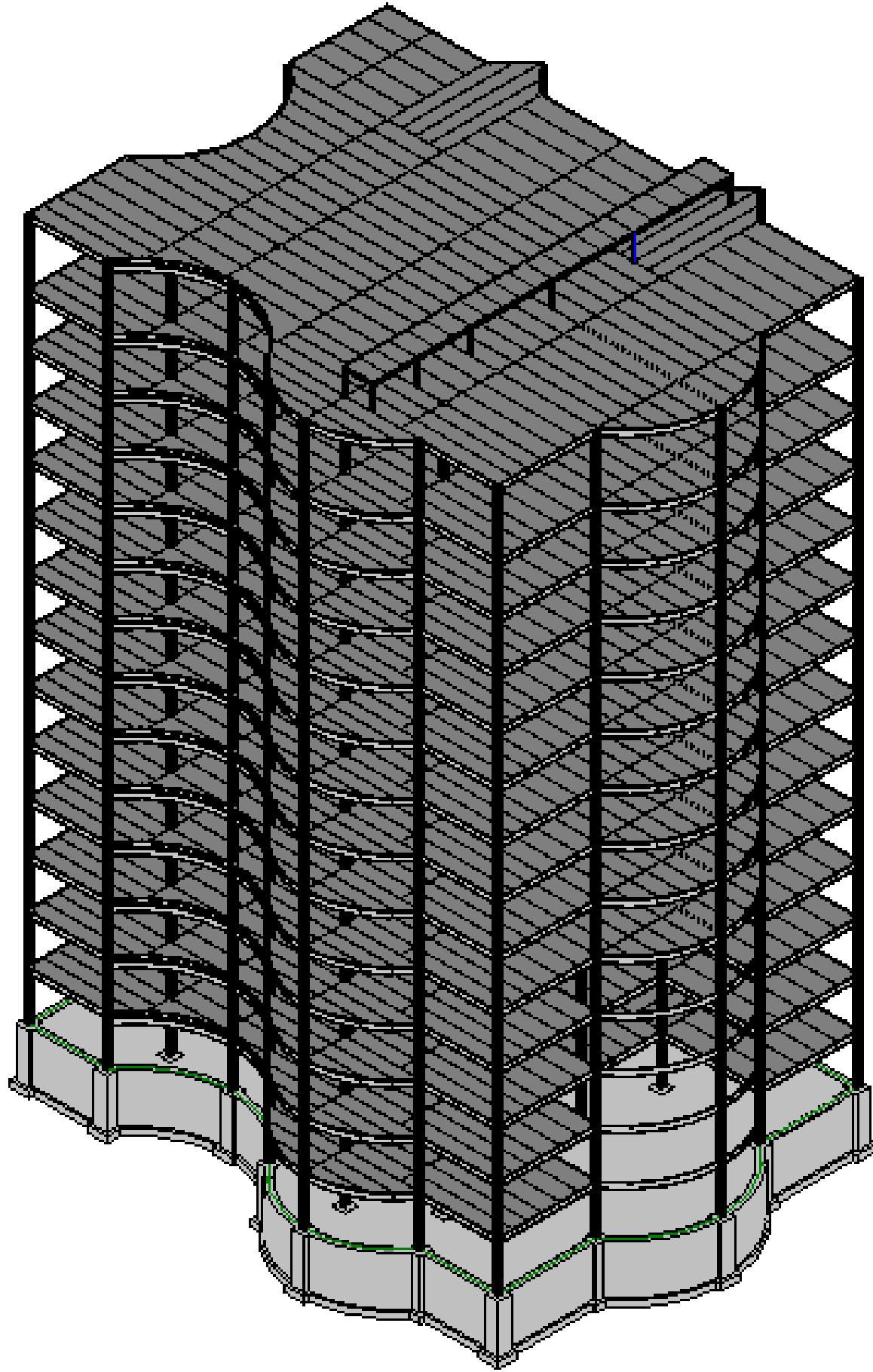


...to Fabrication

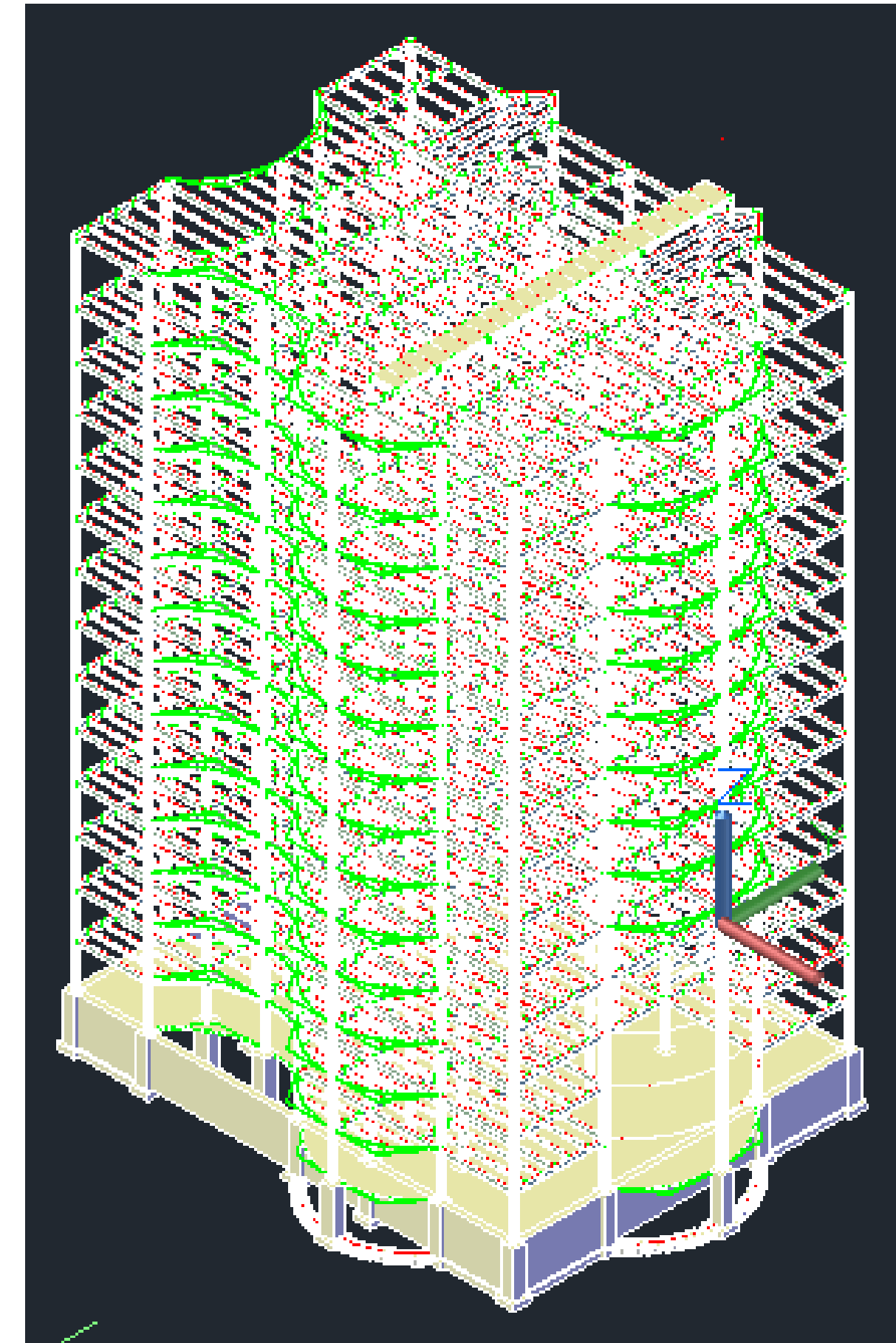
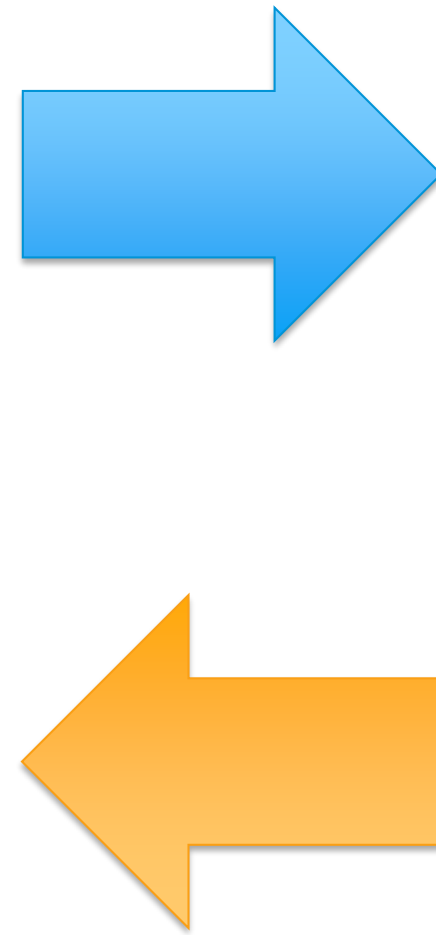


Advance Steel

Design to Fabrication Workflow Demo



Autodesk Revit



Advance Steel



Conclusion

Learning Objectives

- ✓ EXPLAIN THE IMPORTANCE OF LEVEL OF DETAIL/DEVELOPMENT (LOD) FOR STRUCTURAL STEEL DESIGN AND FABRICATION.
- ✓ COMPARE HOW COMPLEX STEEL CONNECTIONS, CUSTOM PLATES, BOLTS, AND WELDS ARE CREATED IN REVIT AND ADVANCE STEEL.
- ✓ UNDERSTAND THE EXTENT TO WHICH CONSTRUCTION AND FABRICATION DOCUMENTS ARE CREATED IN REVIT AND ADVANCE STEEL.
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Questions

Martha Hollowell, 2018. Rivets in a Row.
[digital photograph] (private collection).

Don't forget to fill out the survey:
A Coming Convergence?
Revit & Advance Steel Interoperability
(BLD225500)

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