



# Formulating Fabrication & Design Craft Building Assembly & Component Fabrication

Ian Atkins

Head of BIM, Heatherwick Studio

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The background of the slide is a complex, abstract wireframe mesh. It consists of a dense network of thin, light gray lines that form a series of interconnected, flowing, and undulating shapes. These shapes resemble organic, cellular structures or perhaps a digital representation of a fluid surface. The mesh is more densely packed in some areas, creating a sense of depth and volume, while other areas are more sparse. The overall effect is one of dynamic, organic complexity. A solid blue horizontal band is positioned across the lower third of the image, providing a contrasting background for the white text.

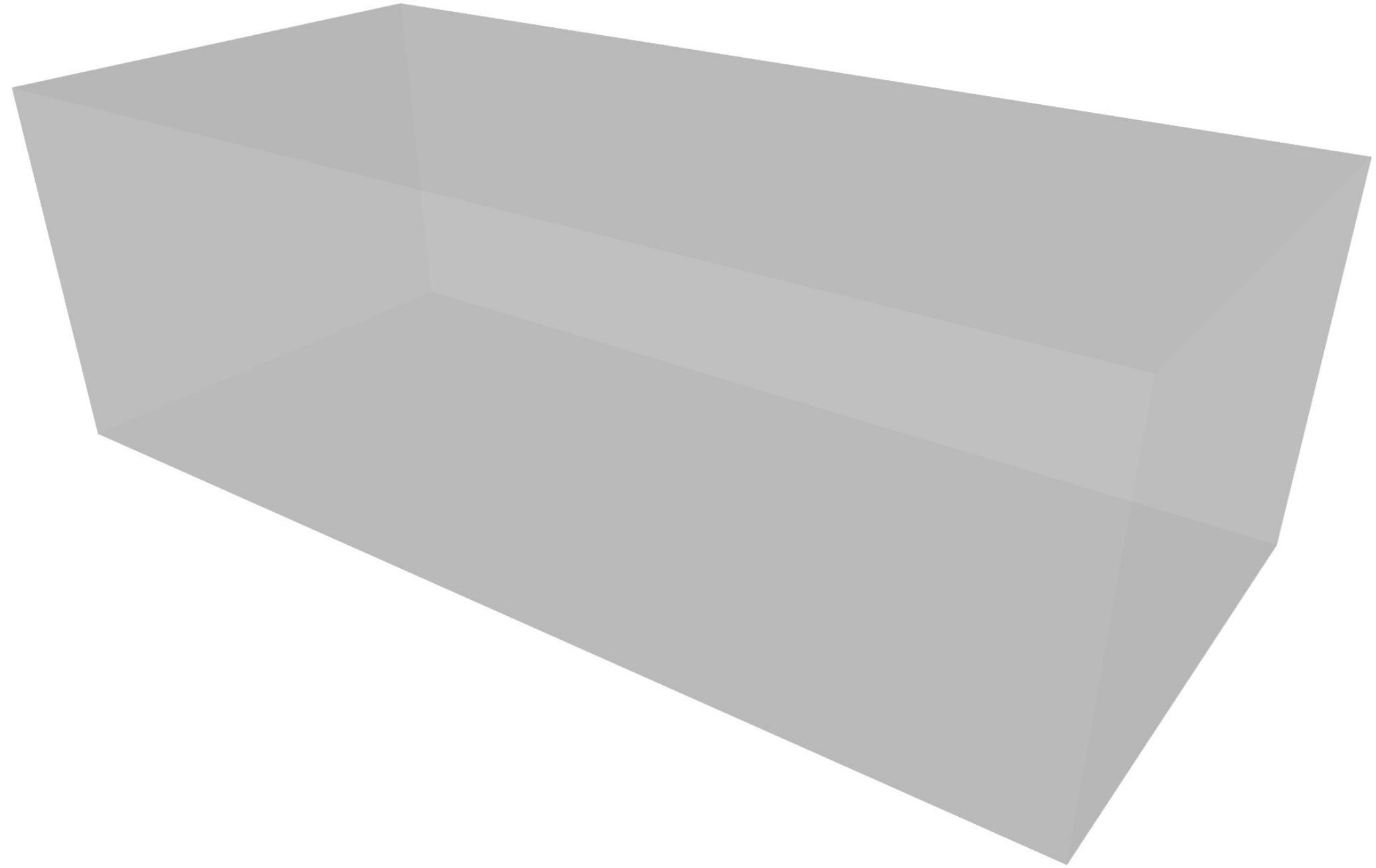
# 01 : Architectural {Pre}Fabrication

# Class Summary

- Dynamic shifts have emerged in the digital realm of building design & the physical methods of offsite fabrication. Buildings are increasingly manufactured/ assembled rather than constructed or crafted. This class will present these digital procedures for designing & modelling buildings in Revit whilst simultaneously assembling & managing your building components through dynamo & into Inventor for fabrication.
- This entails navigating a hierarchy of linked/nested Revit models, Families & formulas; aligning the design BIM with detailed fabrication models in Inventor. Dynamo will be applied as a tool to automate, annotate & design the building layout with the assembled components.
- Orchestrate the Building Model, drawing sets and work instructions in Revit alongside dynamo to layout building components, visualize building data, component relationships and to simultaneously assemble Revit components for building site context, component assembly in factory layout & final modules in transportation.

# Degrees of Fabrication

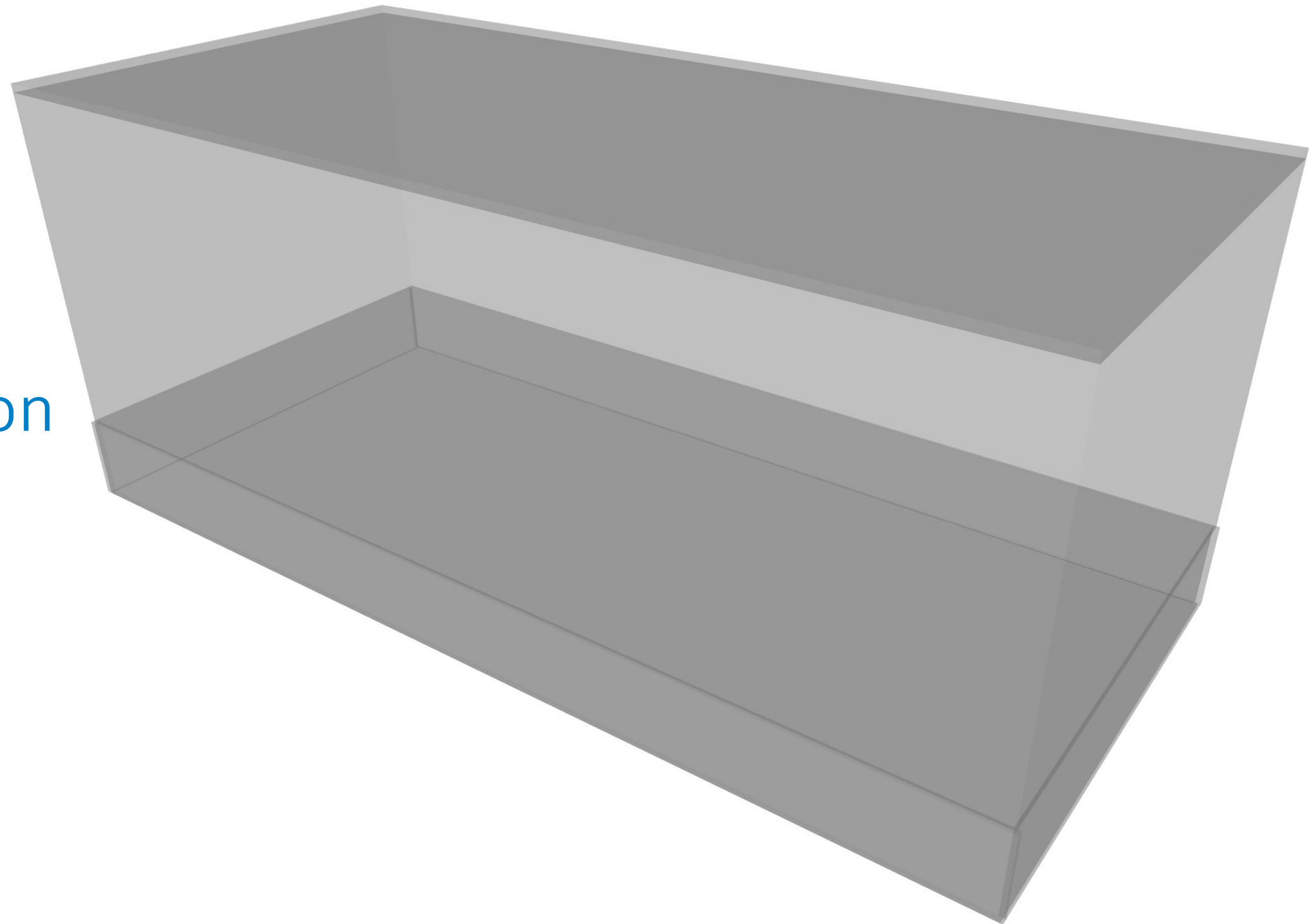
- Building  
(Typical)





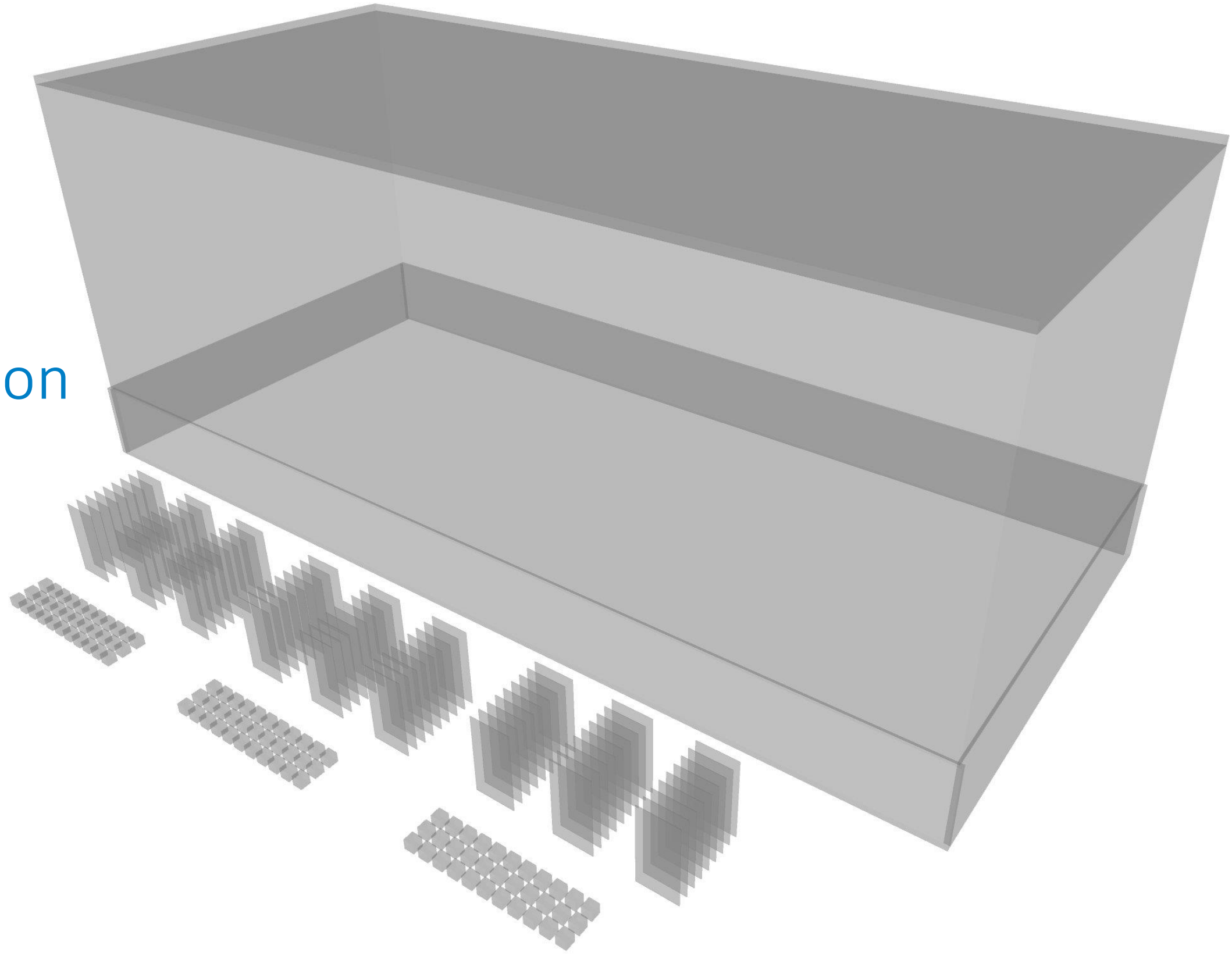
# Degrees of Fabrication

- Building  
(Typical)
- Roof
- Site Foundation



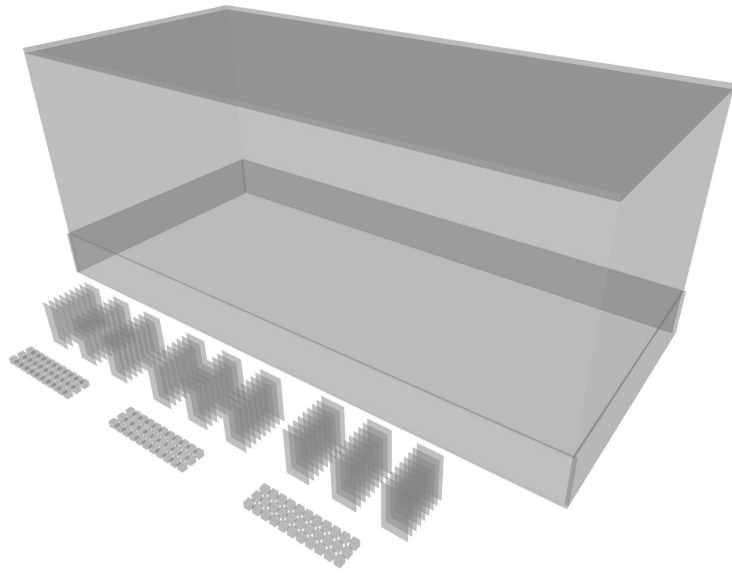
# Degrees of Fabrication

- Building (Typical)
- Roof
- Site Foundation
- + Assemblies

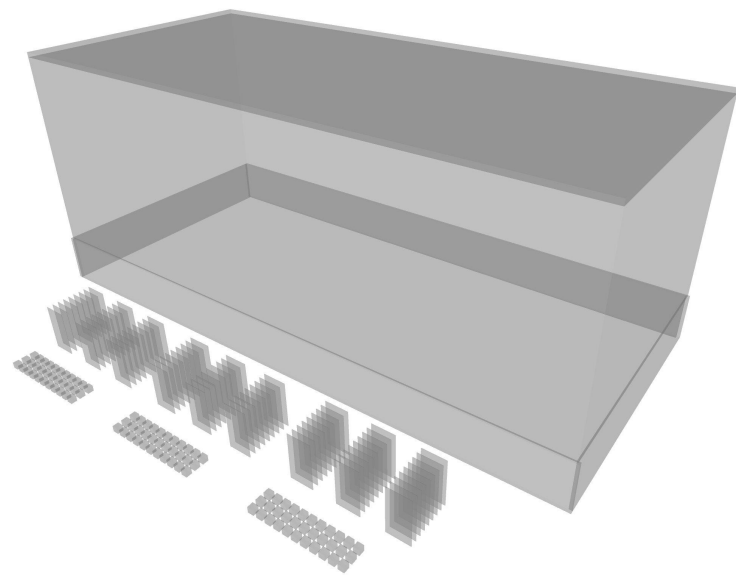




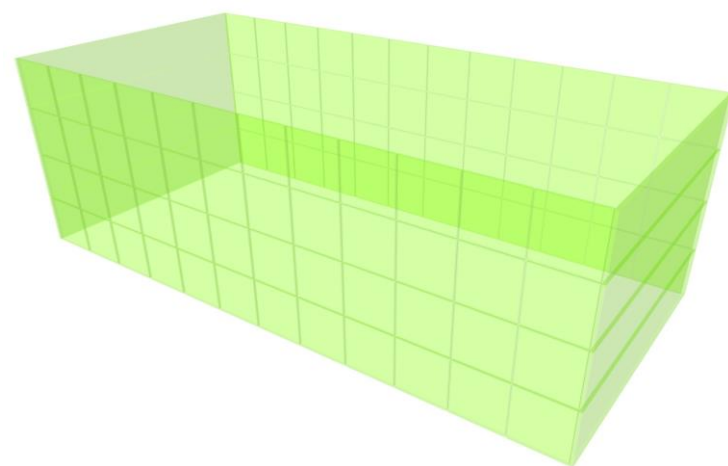
# Degrees of Fabrication



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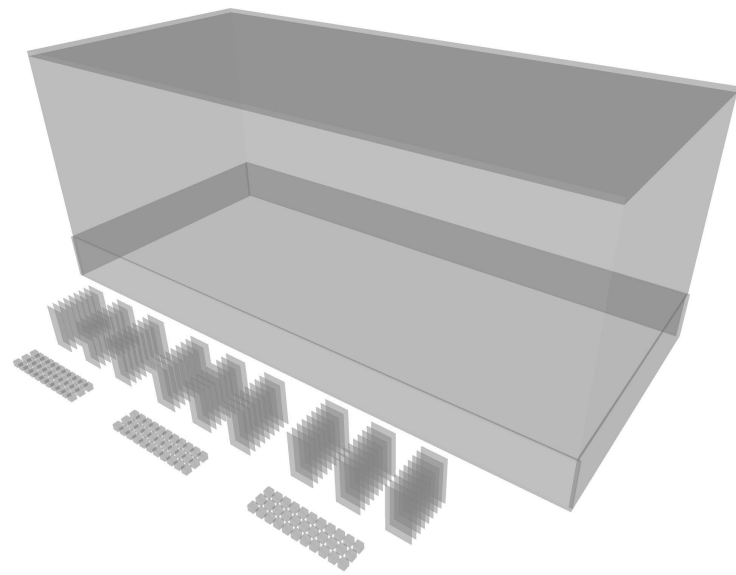


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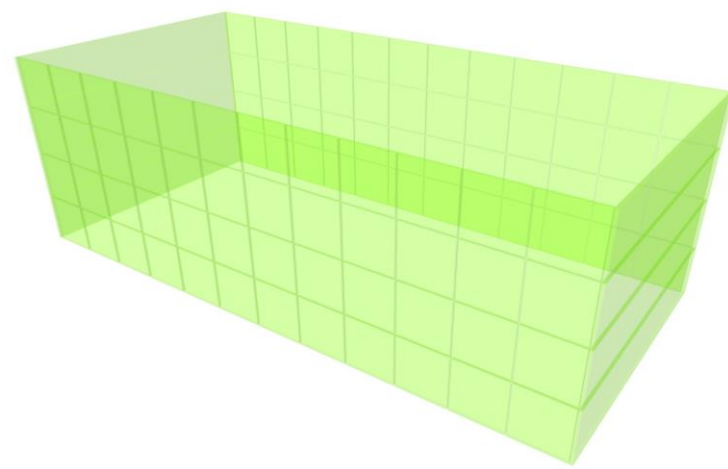


50-Assemblies

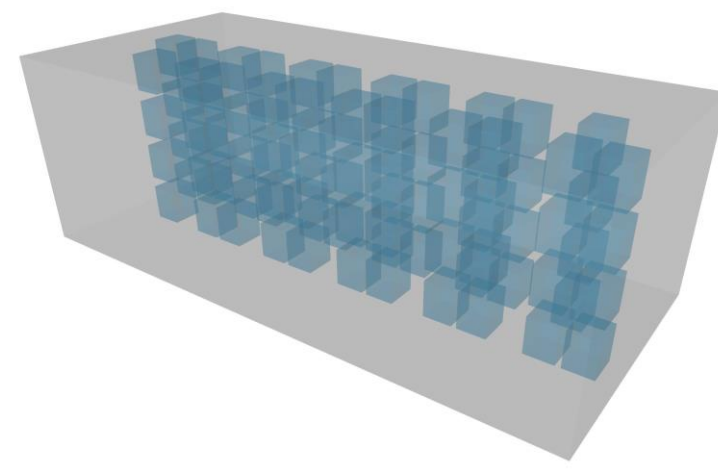




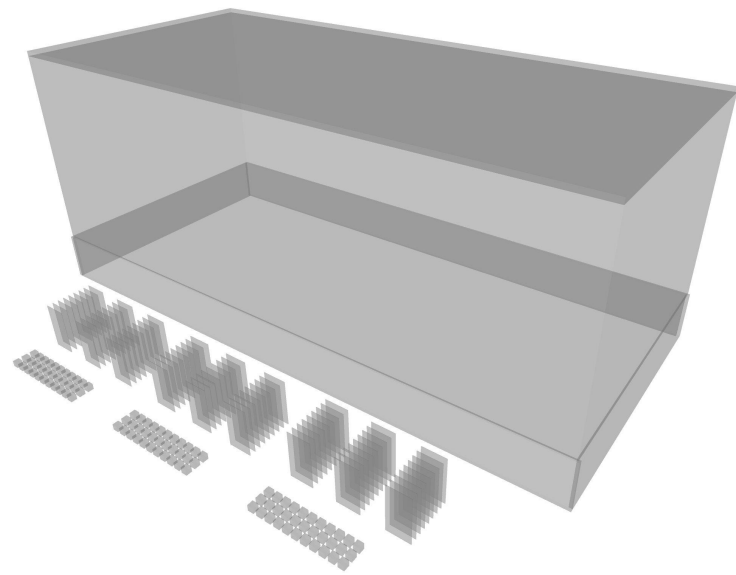
00-General Materials



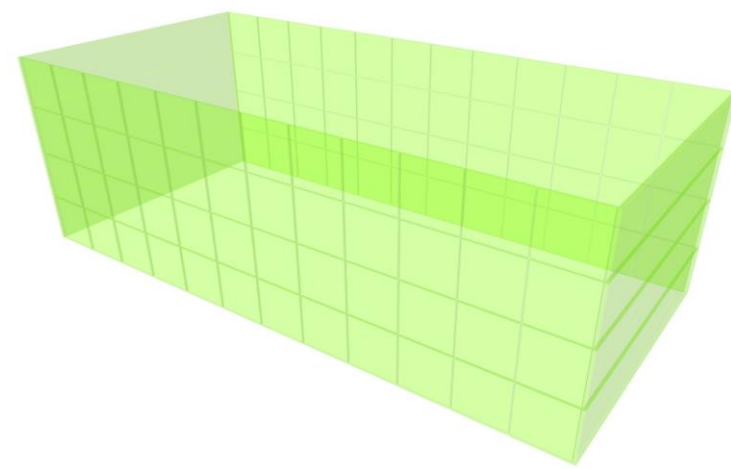
50-Assemblies



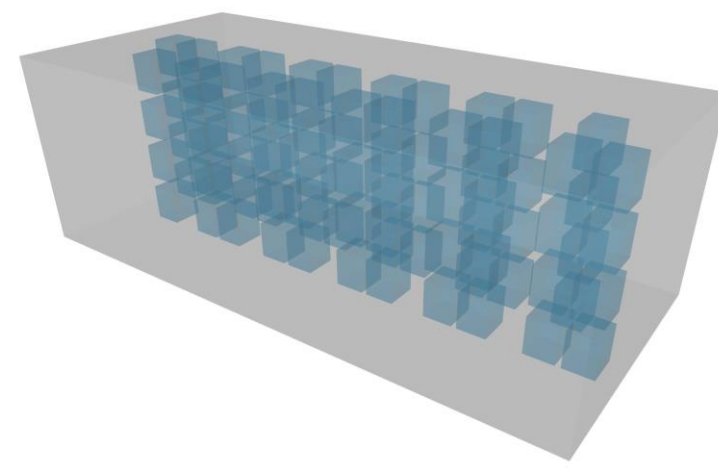
30-Pods



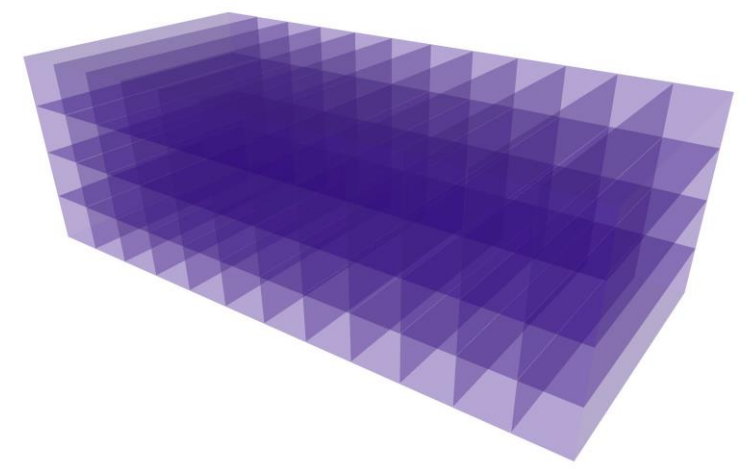
00-General Materials



50-Assemblies

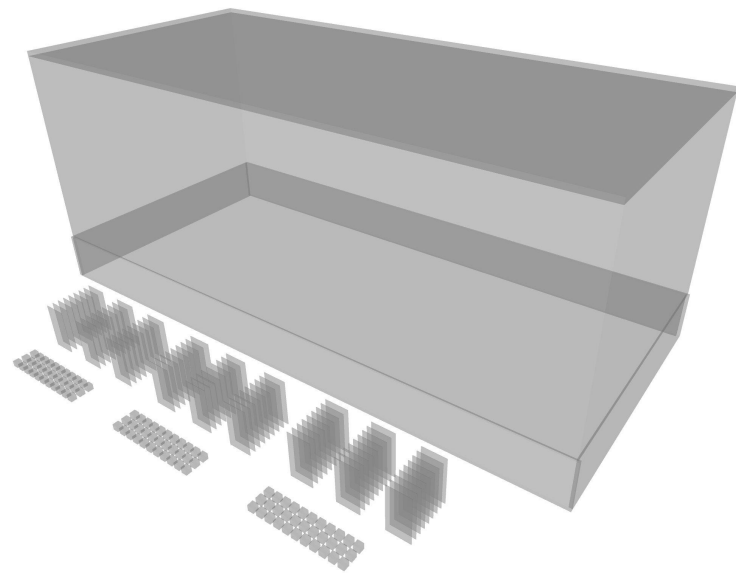


30-Pods

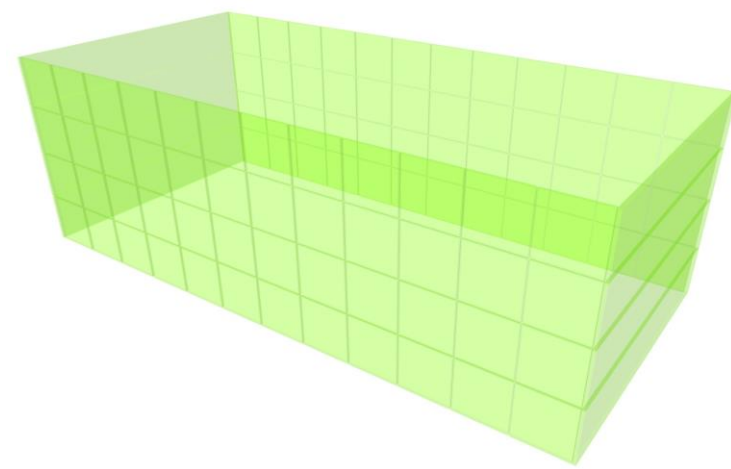


20-Modules

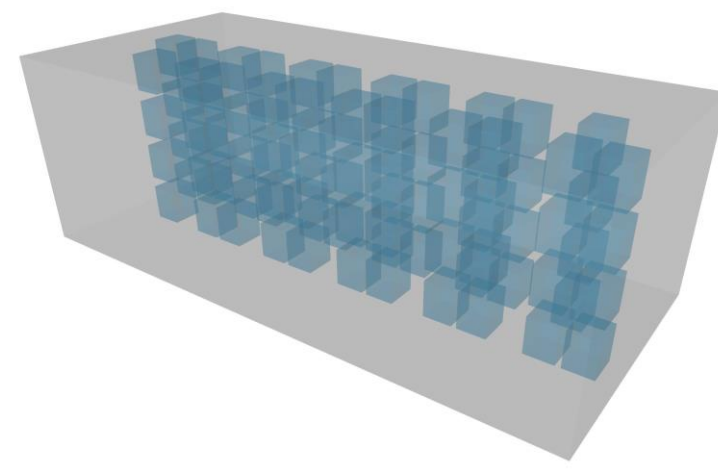




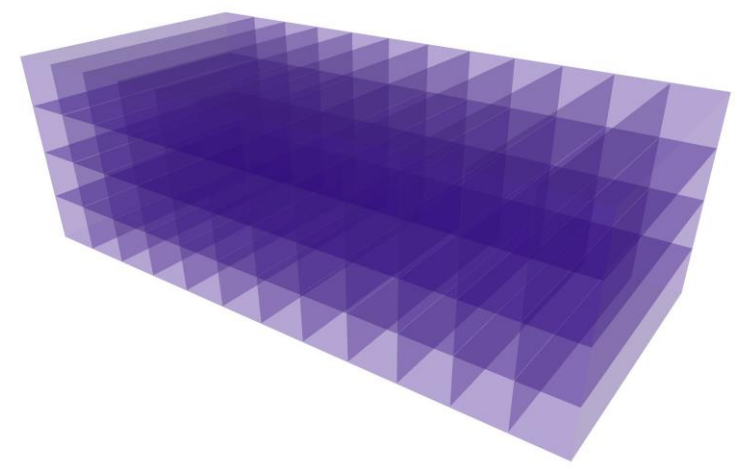
00-General Materials



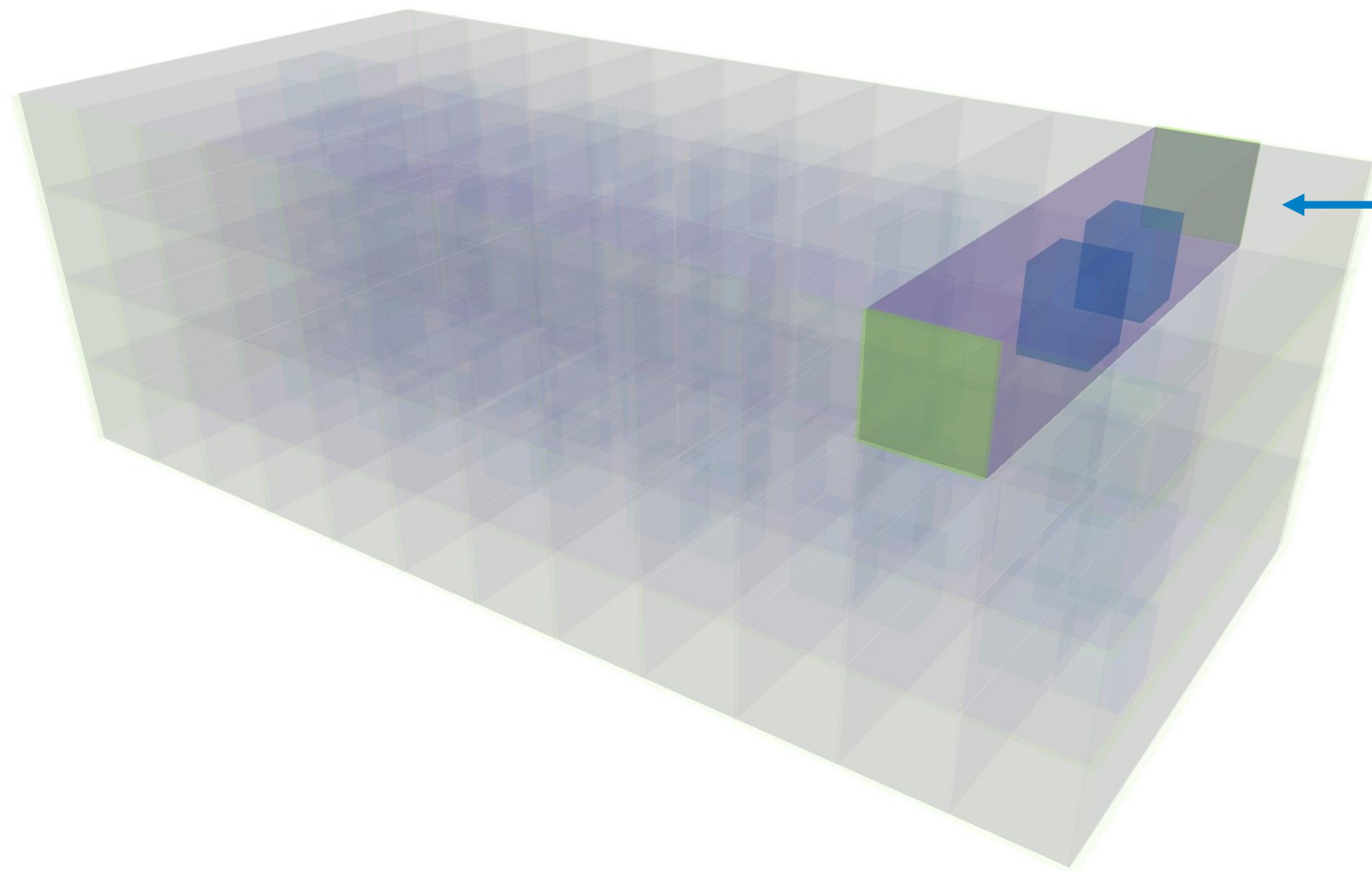
50-Assemblies

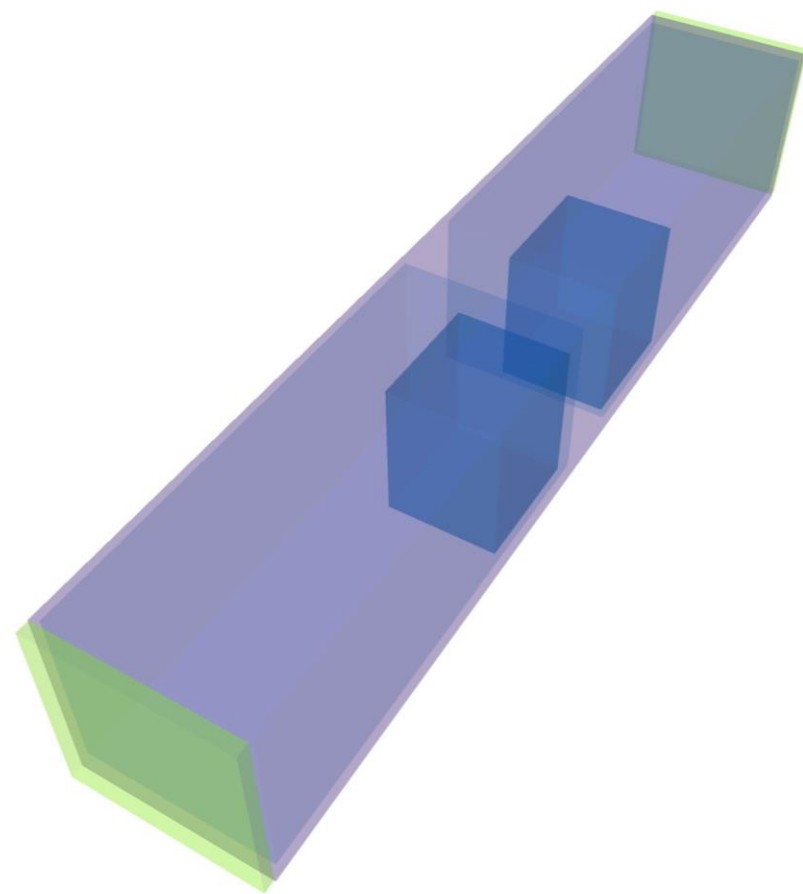
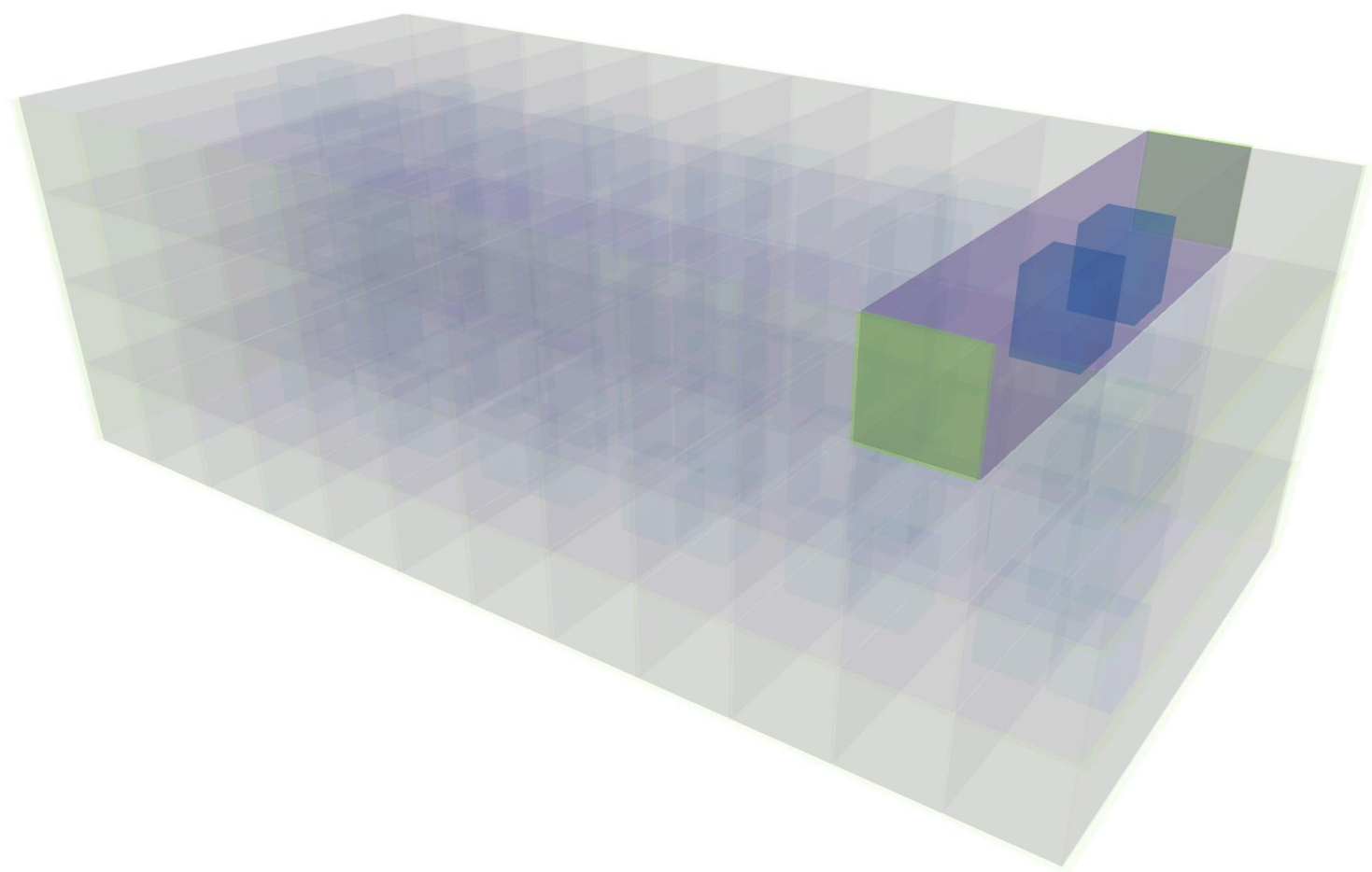


30-Pods

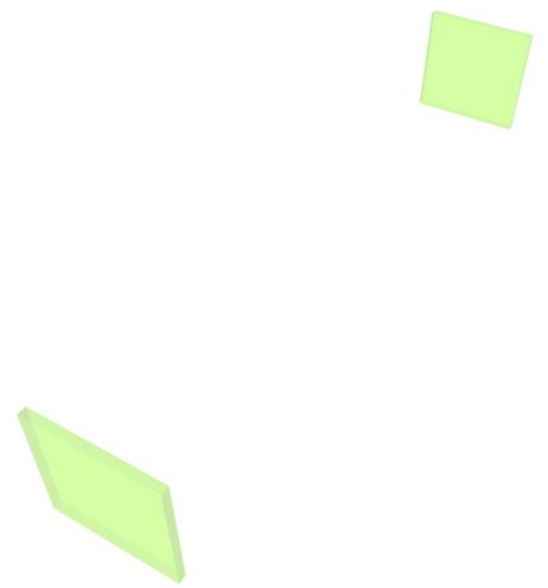


20-Modules

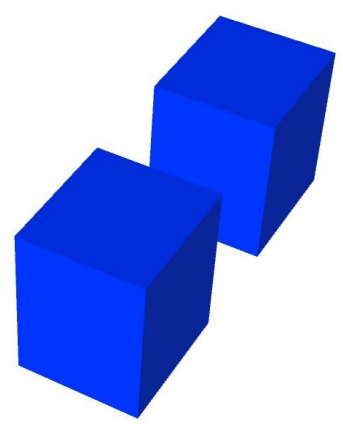




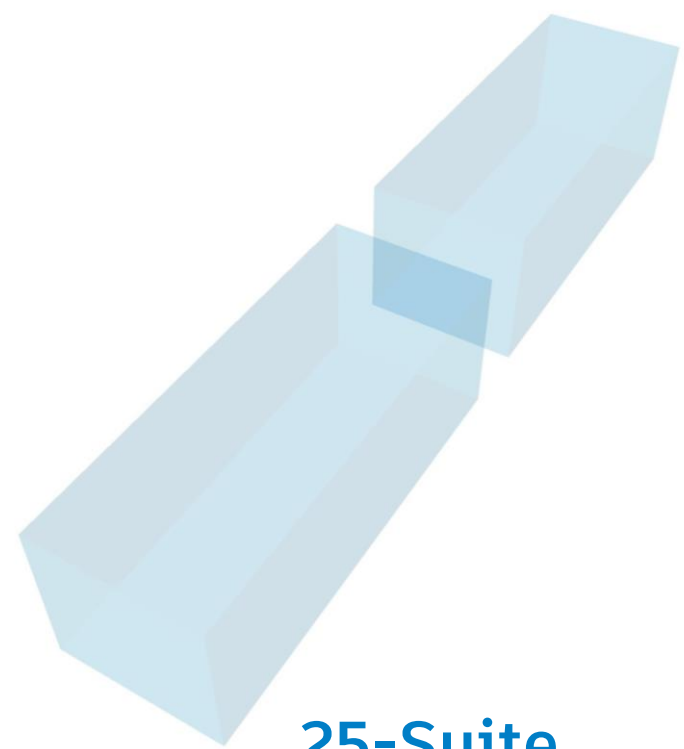




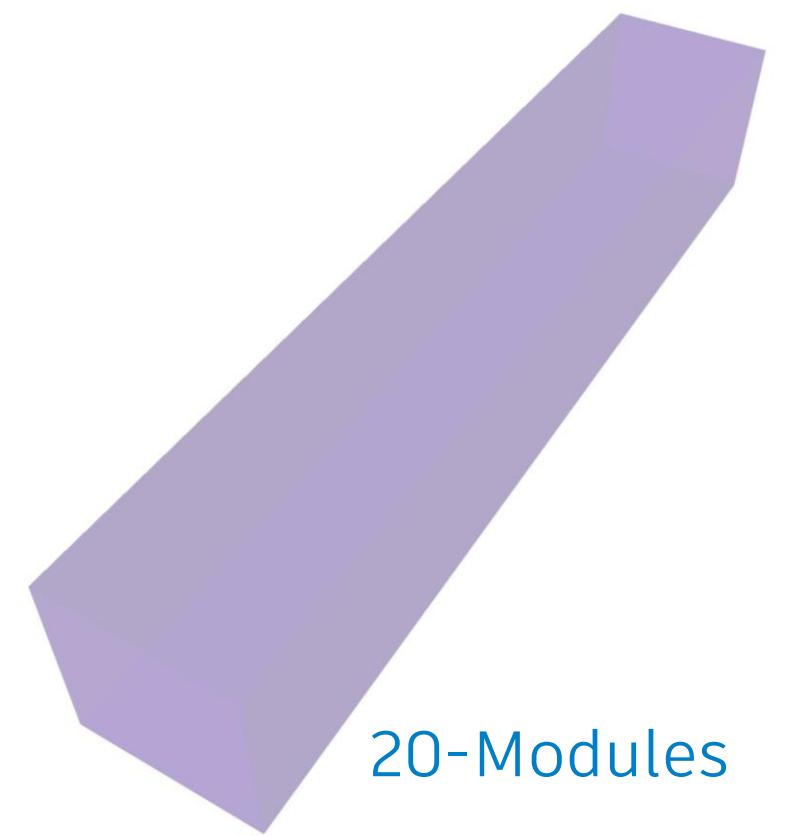
50-Assemblies



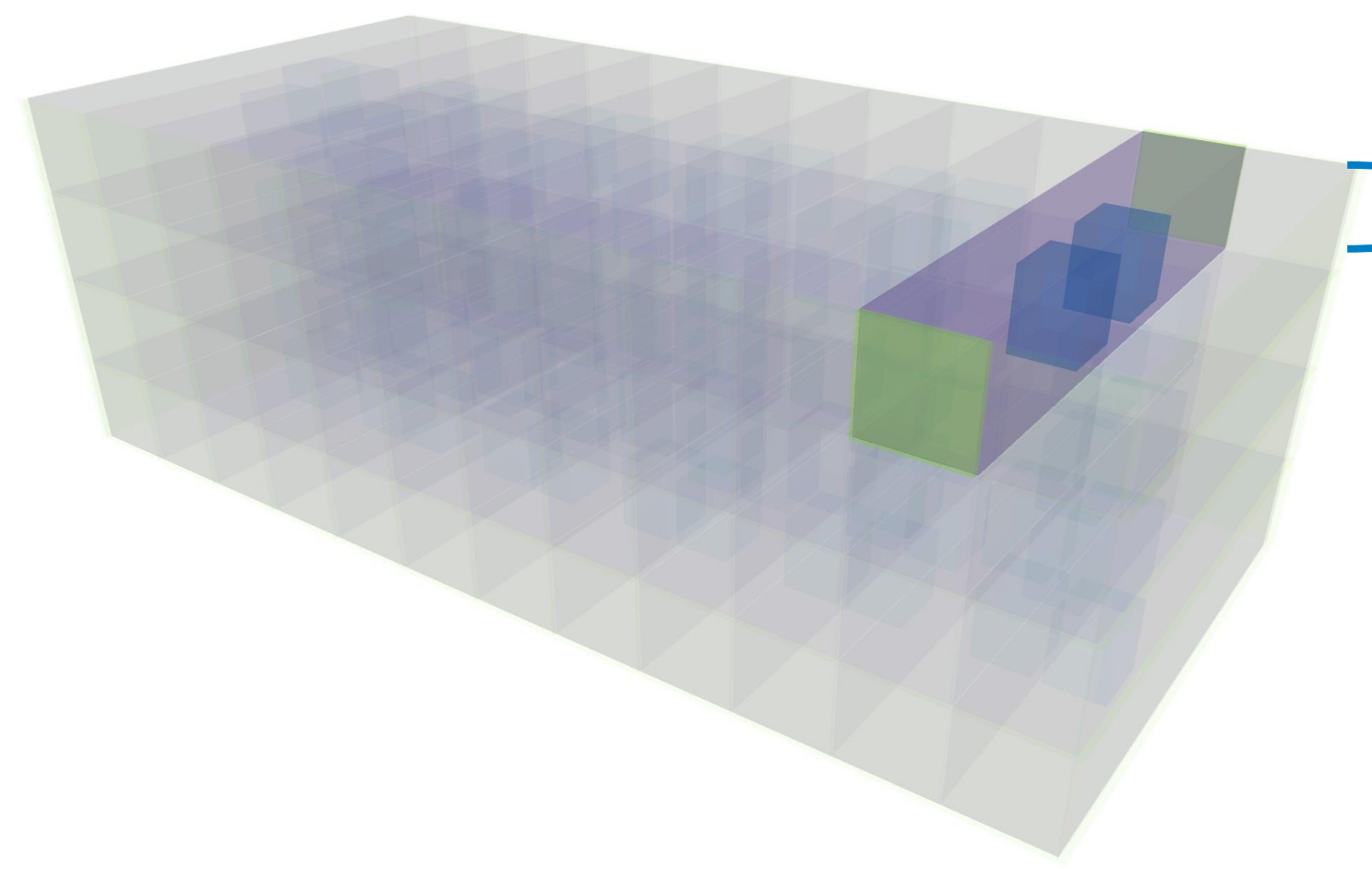
30-Pods



25-Suite



20-Modules

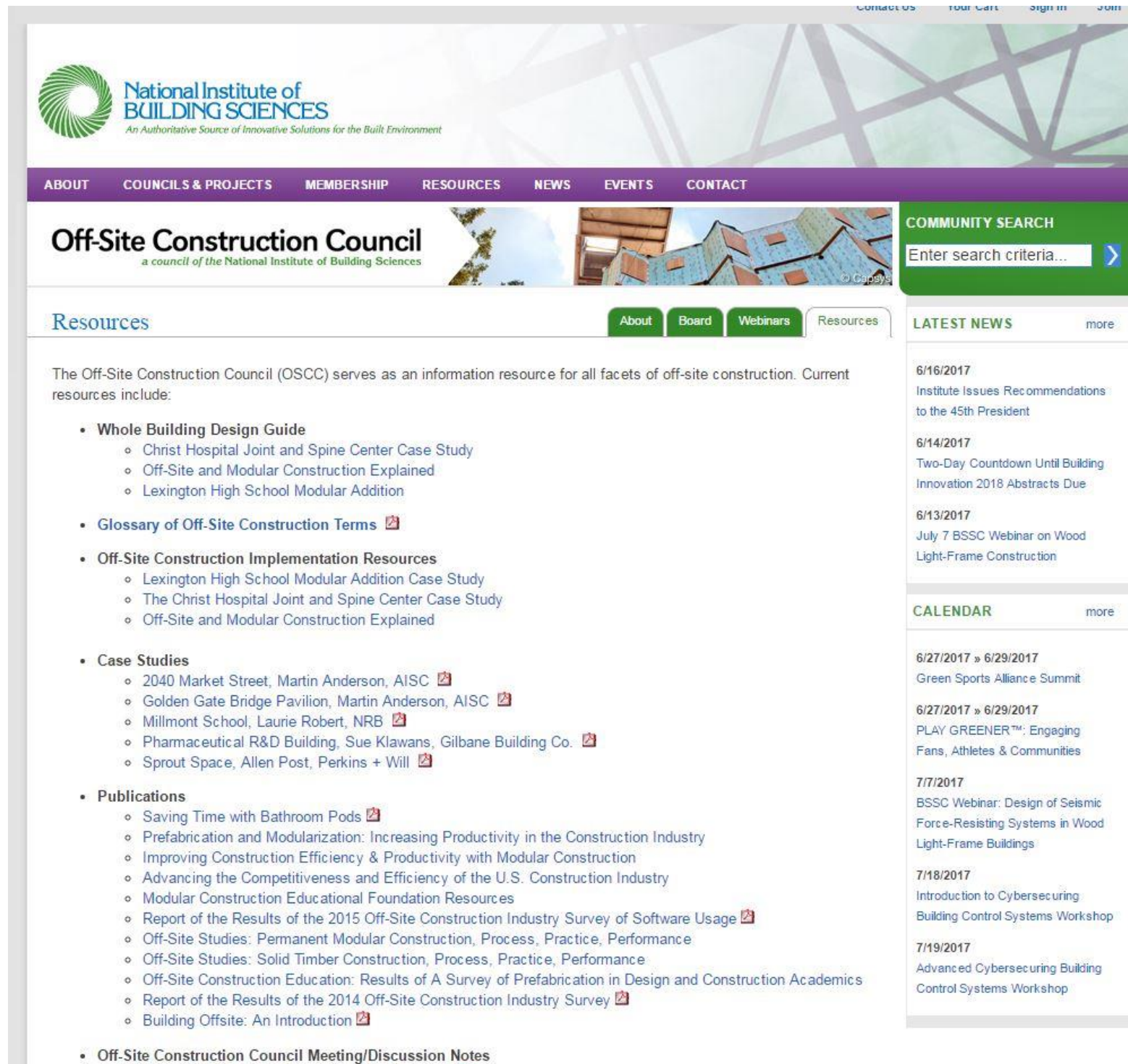


15-Level

# Further Reference

- Further information on office construction; Digital and Physical Knowledge base

# Further Reference



The screenshot shows the website of the National Institute of Building Sciences (NIBS). The header includes the NIBS logo and a navigation menu with links: ABOUT, COUNCILS & PROJECTS, MEMBERSHIP, RESOURCES, NEWS, EVENTS, and CONTACT. Below the header, there is a banner for the Off-Site Construction Council (OSCC), which is a council of the National Institute of Building Sciences. The main content area is titled "Resources" and contains a list of resources. The resources are categorized into: Whole Building Design Guide, Glossary of Off-Site Construction Terms, Off-Site Construction Implementation Resources, Case Studies, Publications, and Off-Site Construction Council Meeting/Discussion Notes. The right sidebar contains a "COMMUNITY SEARCH" box, a "LATEST NEWS" section with three news items, and a "CALENDAR" section with three events.

**National Institute of Building Sciences**  
An Authoritative Source of Innovative Solutions for the Built Environment

**Off-Site Construction Council**  
a council of the National Institute of Building Sciences

**Resources**

The Off-Site Construction Council (OSCC) serves as an information resource for all facets of off-site construction. Current resources include:

- **Whole Building Design Guide**
  - Christ Hospital Joint and Spine Center Case Study
  - Off-Site and Modular Construction Explained
  - Lexington High School Modular Addition
- **Glossary of Off-Site Construction Terms**
- **Off-Site Construction Implementation Resources**
  - Lexington High School Modular Addition Case Study
  - The Christ Hospital Joint and Spine Center Case Study
  - Off-Site and Modular Construction Explained
- **Case Studies**
  - 2040 Market Street, Martin Anderson, AISC
  - Golden Gate Bridge Pavilion, Martin Anderson, AISC
  - Millmont School, Laurie Robert, NRB
  - Pharmaceutical R&D Building, Sue Klawans, Gilbane Building Co.
  - Sprout Space, Allen Post, Perkins + Will
- **Publications**
  - Saving Time with Bathroom Pods
  - Prefabrication and Modularization: Increasing Productivity in the Construction Industry
  - Improving Construction Efficiency & Productivity with Modular Construction
  - Advancing the Competitiveness and Efficiency of the U.S. Construction Industry
  - Modular Construction Educational Foundation Resources
  - Report of the Results of the 2015 Off-Site Construction Industry Survey of Software Usage
  - Off-Site Studies: Permanent Modular Construction, Process, Practice, Performance
  - Off-Site Studies: Solid Timber Construction, Process, Practice, Performance
  - Off-Site Construction Education: Results of A Survey of Prefabrication in Design and Construction Academics
  - Report of the Results of the 2014 Off-Site Construction Industry Survey
  - Building Offsite: An Introduction
- **Off-Site Construction Council Meeting/Discussion Notes**

**COMMUNITY SEARCH**  
Enter search criteria...

**LATEST NEWS**

- 6/16/2017  
Institute Issues Recommendations to the 45th President
- 6/14/2017  
Two-Day Countdown Until Building Innovation 2018 Abstracts Due
- 6/13/2017  
July 7 BSSC Webinar on Wood Light-Frame Construction

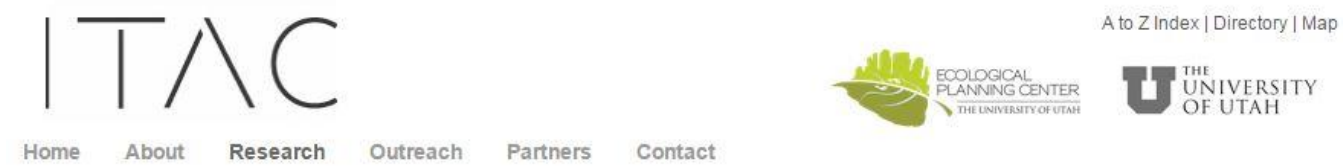
**CALENDAR**

- 6/27/2017 » 6/29/2017  
Green Sports Alliance Summit
- 6/27/2017 » 6/29/2017  
PLAY GREENER™: Engaging Fans, Athletes & Communities
- 7/7/2017  
BSSC Webinar: Design of Seismic Force-Resisting Systems in Wood Light-Frame Buildings
- 7/18/2017  
Introduction to Cybersecuring Building Control Systems Workshop
- 7/19/2017  
Advanced Cybersecuring Building Control Systems Workshop

## National Institute of Building Science Offsite Construction Council

<http://www.wbdg.org/resources/site-and-modular-construction-explained>

# Further Reference



## CURRENT / ONGOING PROJECTS



International KM in Offsite Construction



Interlocking CLT from beetle kill pine



Value Proposition of Panelization



Off-Site Implementation Guide



Oldcastle Building Envelope Lab (OBEL)



Built Environment Exchange



H3 Wall



5 in 5 Research Initiative

## PAST PROJECTS







## 02 : Information Exchange

# Design Delivery and BIm Exchange

Project Contract – Plan of Work

# Design Delivery and Blm Exchange

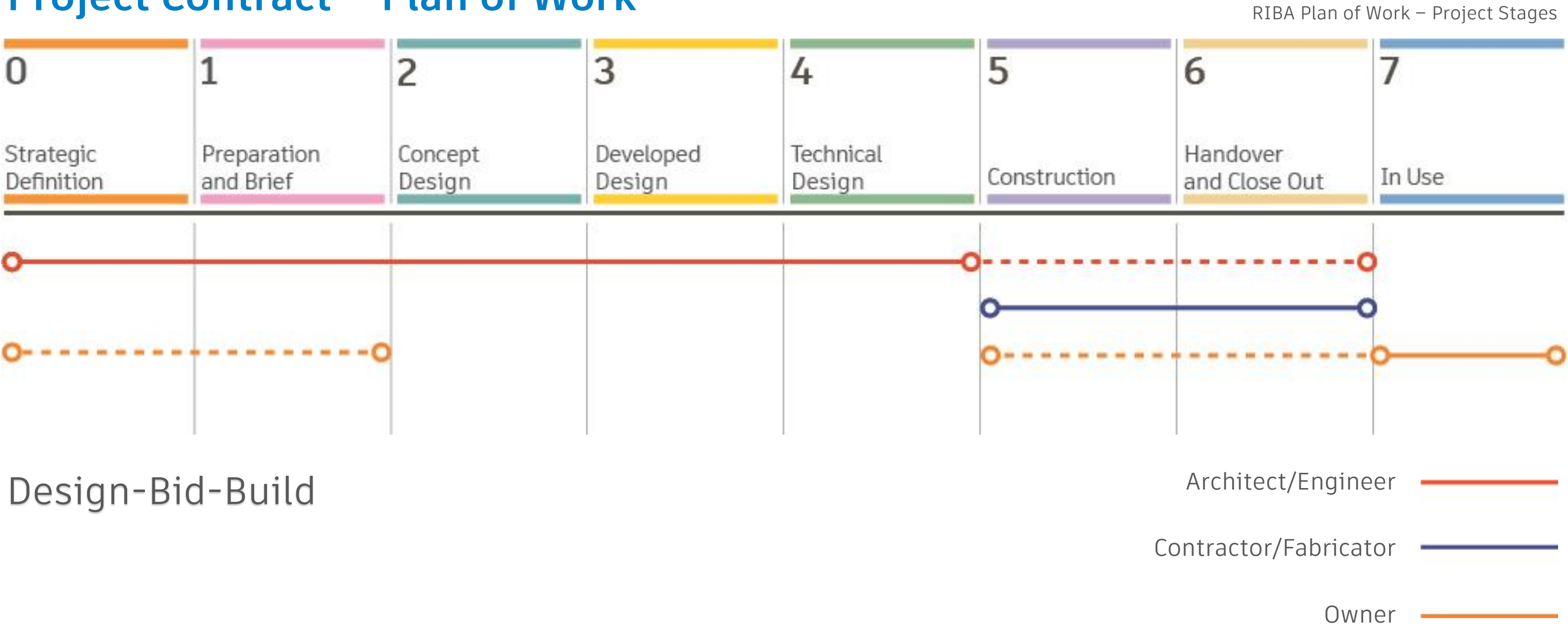
## Project Contract – Plan of Work

RIBA Plan of Work – Project Stages

0	1	2	3	4	5	6	7
Strategic Definition	Preparation and Brief	Concept Design	Developed Design	Technical Design	Construction	Handover and Close Out	In Use

# Design Delivery and Blm Exchange

## Project Contract – Plan of Work





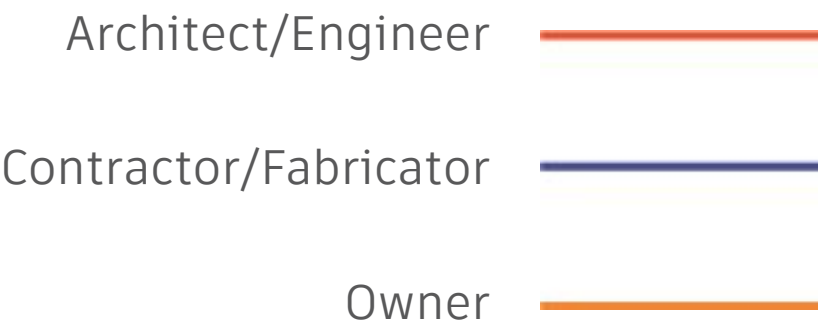
# Design Delivery and Blm Exchange

## Project Contract – Plan of Work



## Design-Bid-Build

+Preconstruction Agreement



# Design Delivery and Blm Exchange

## Project Contract – Plan of Work



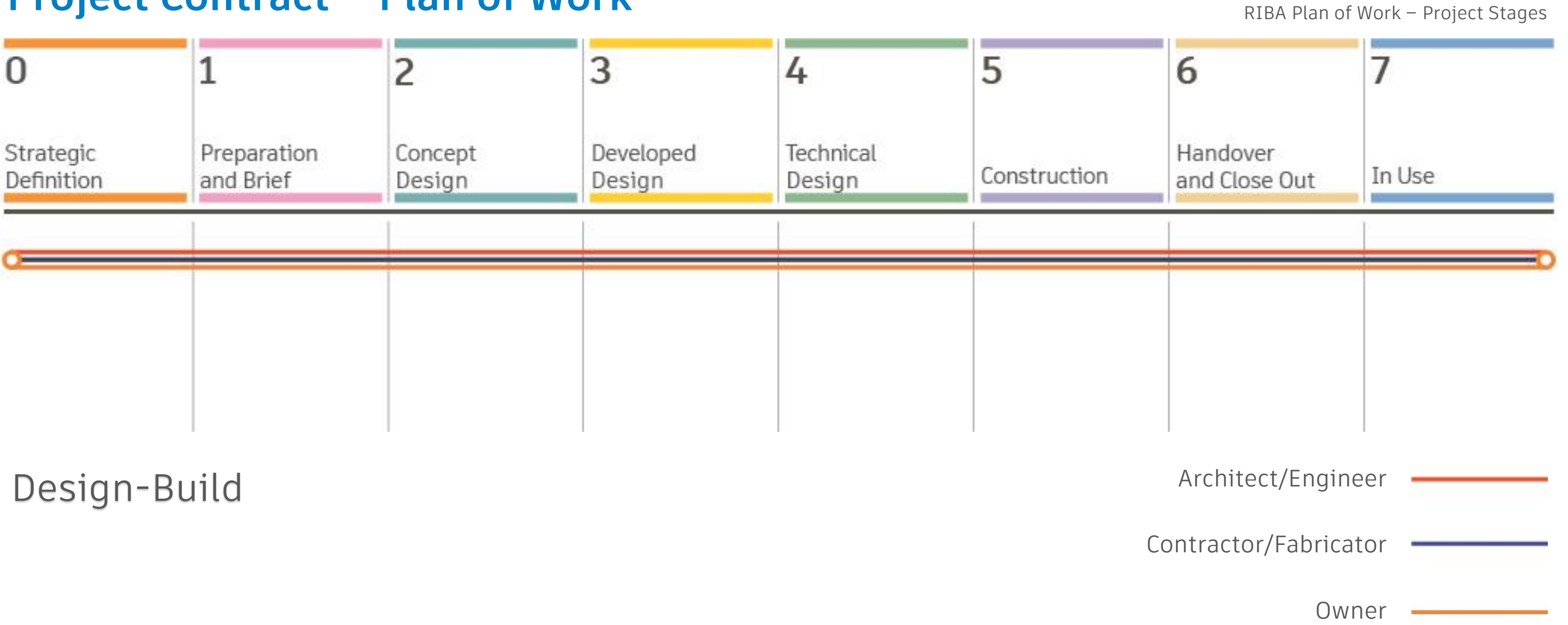
## Design-Bid-Build

+Split Design/Delivery

- Design Architect/ Engineer
- Delivery Architect/Engineer
- Contractor/Fabricator
- Owner

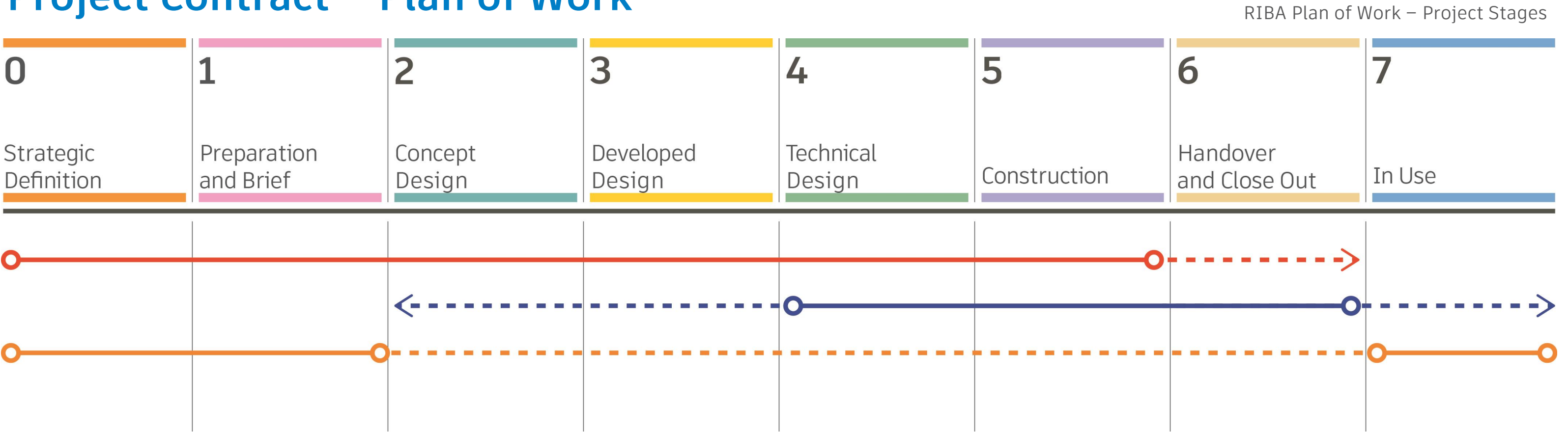
# Design Delivery and BlM Exchange

## Project Contract – Plan of Work



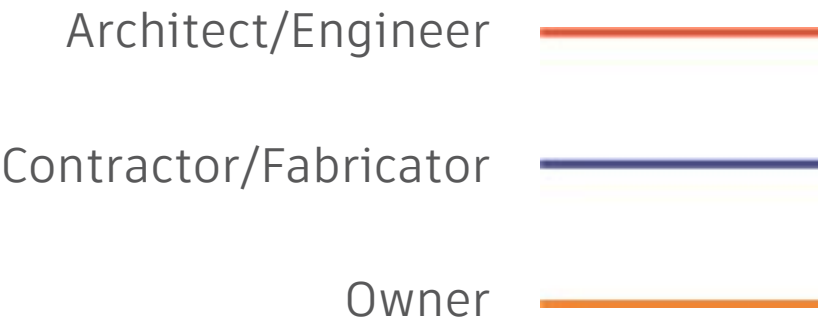
# Design Delivery and BlM Exchange

## Project Contract – Plan of Work



## Effective Process for Offsite Design Delivery

Shared Responsibility, Information Exchange Transparent Data Access

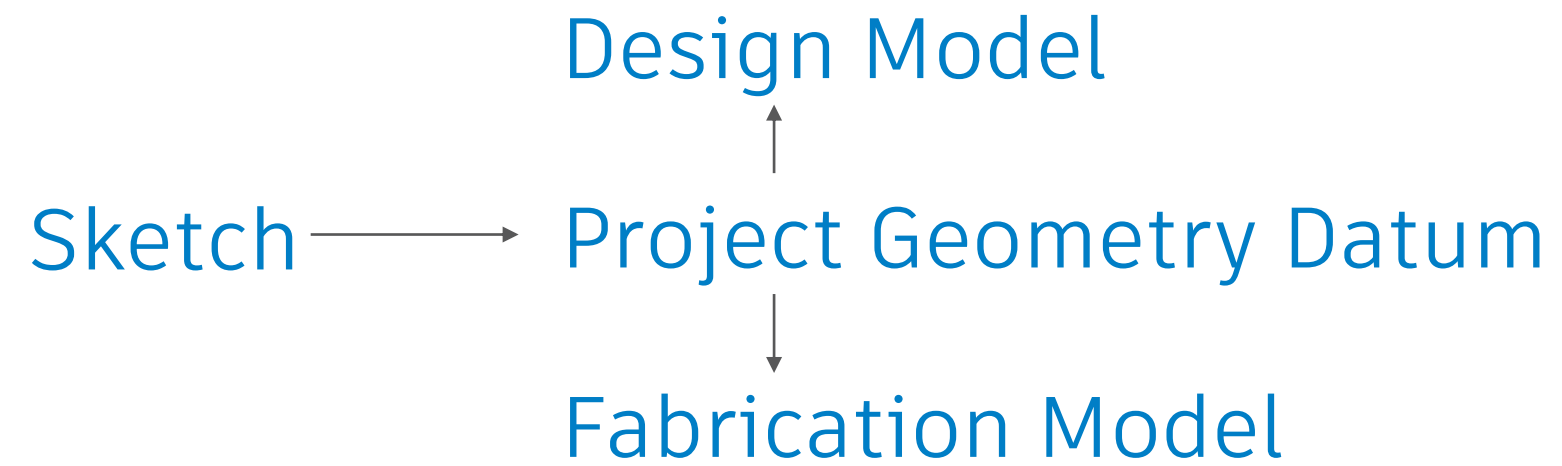




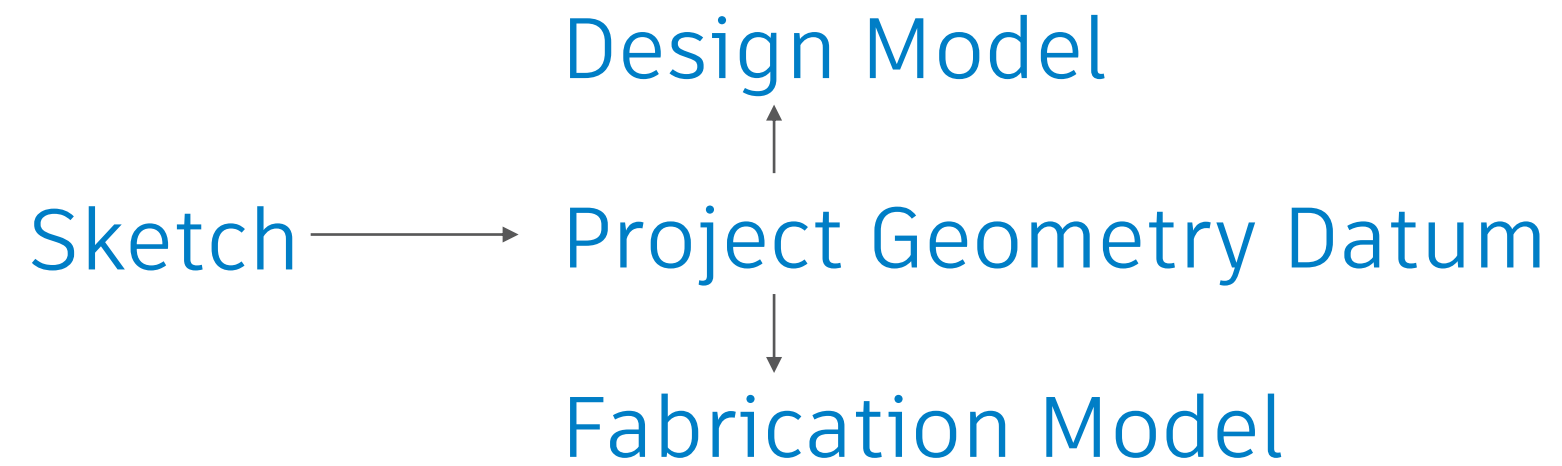
The background of the slide is a complex, abstract wireframe mesh. The mesh is composed of numerous interconnected lines forming a series of organic, flowing shapes that resemble a stylized, interconnected network or a series of overlapping, curved planes. The lines are thin and grey, set against a white background. A solid blue horizontal bar spans the bottom portion of the slide, providing a contrasting background for the white text.

## 03 : Design Process

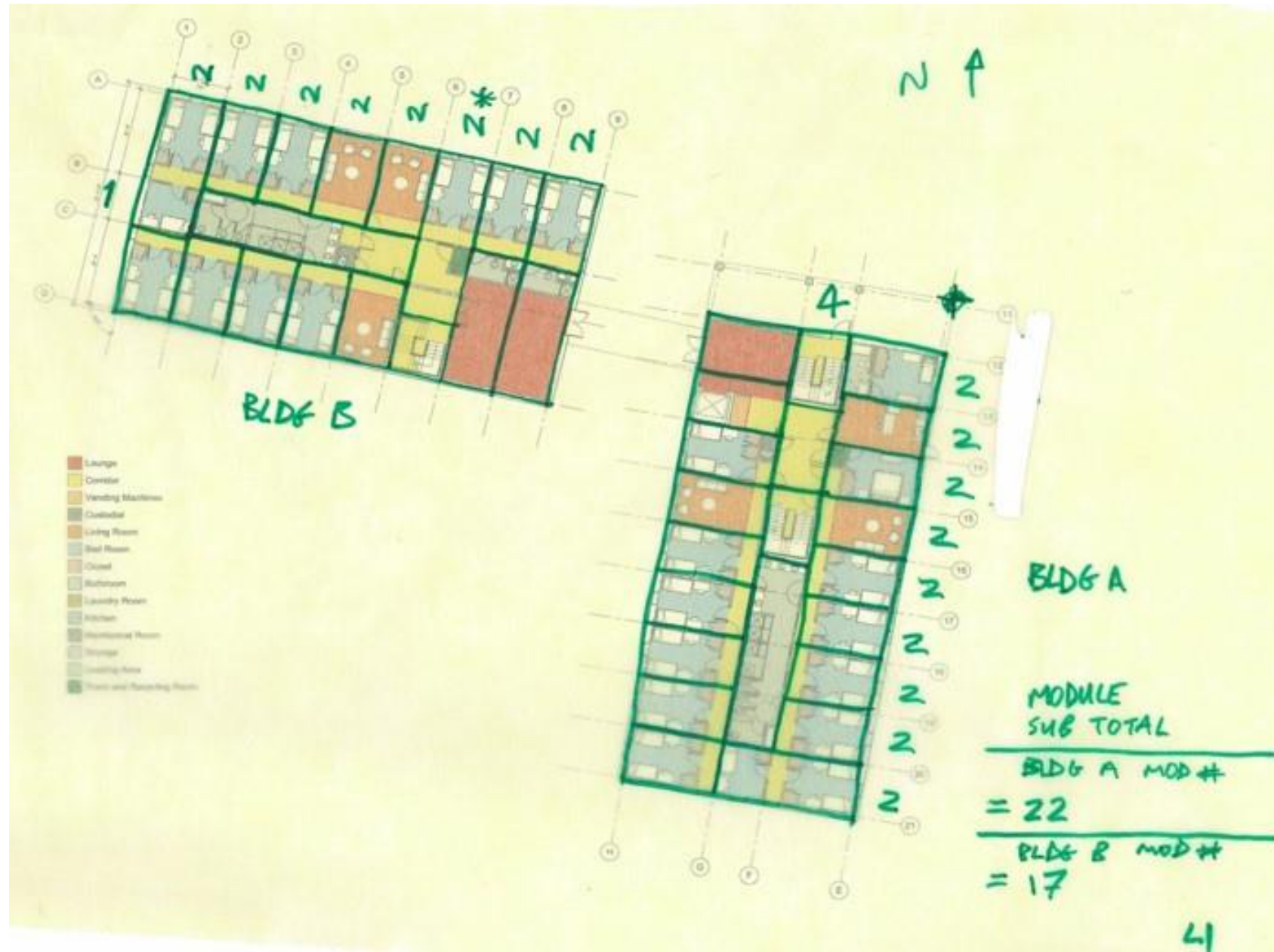
# Design Process



# Design Process



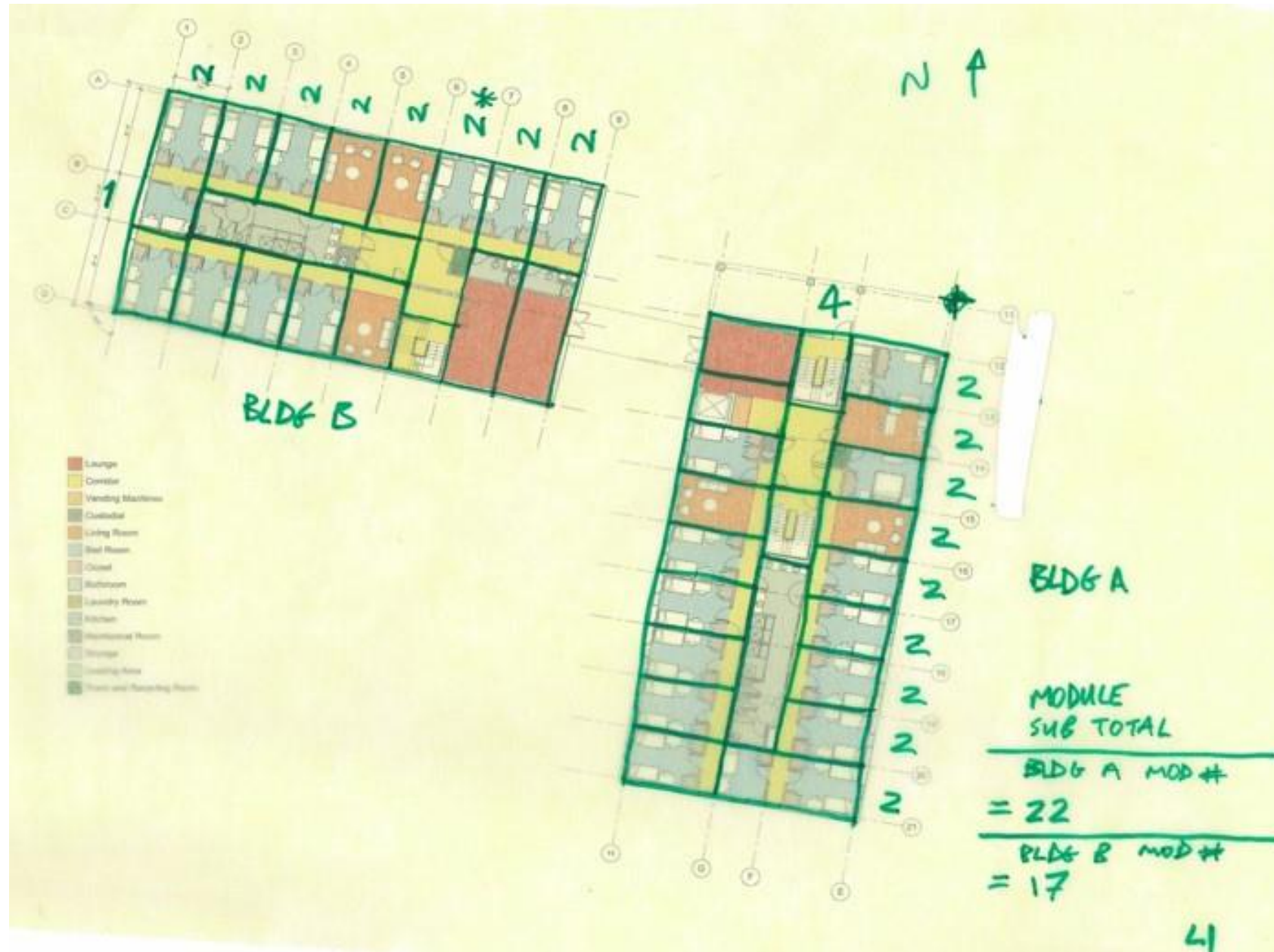
# Design Process



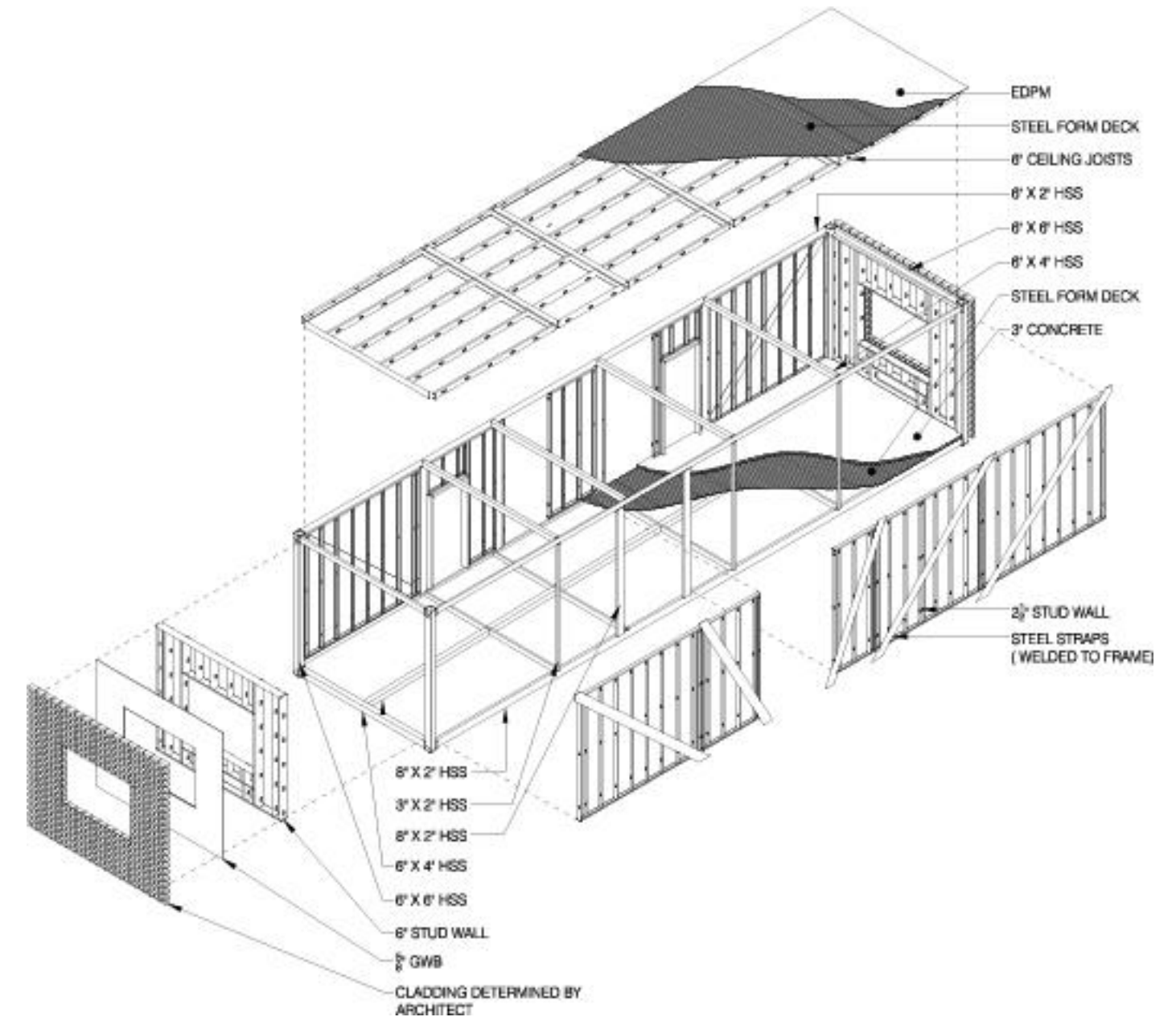
Sketch



# Design Process

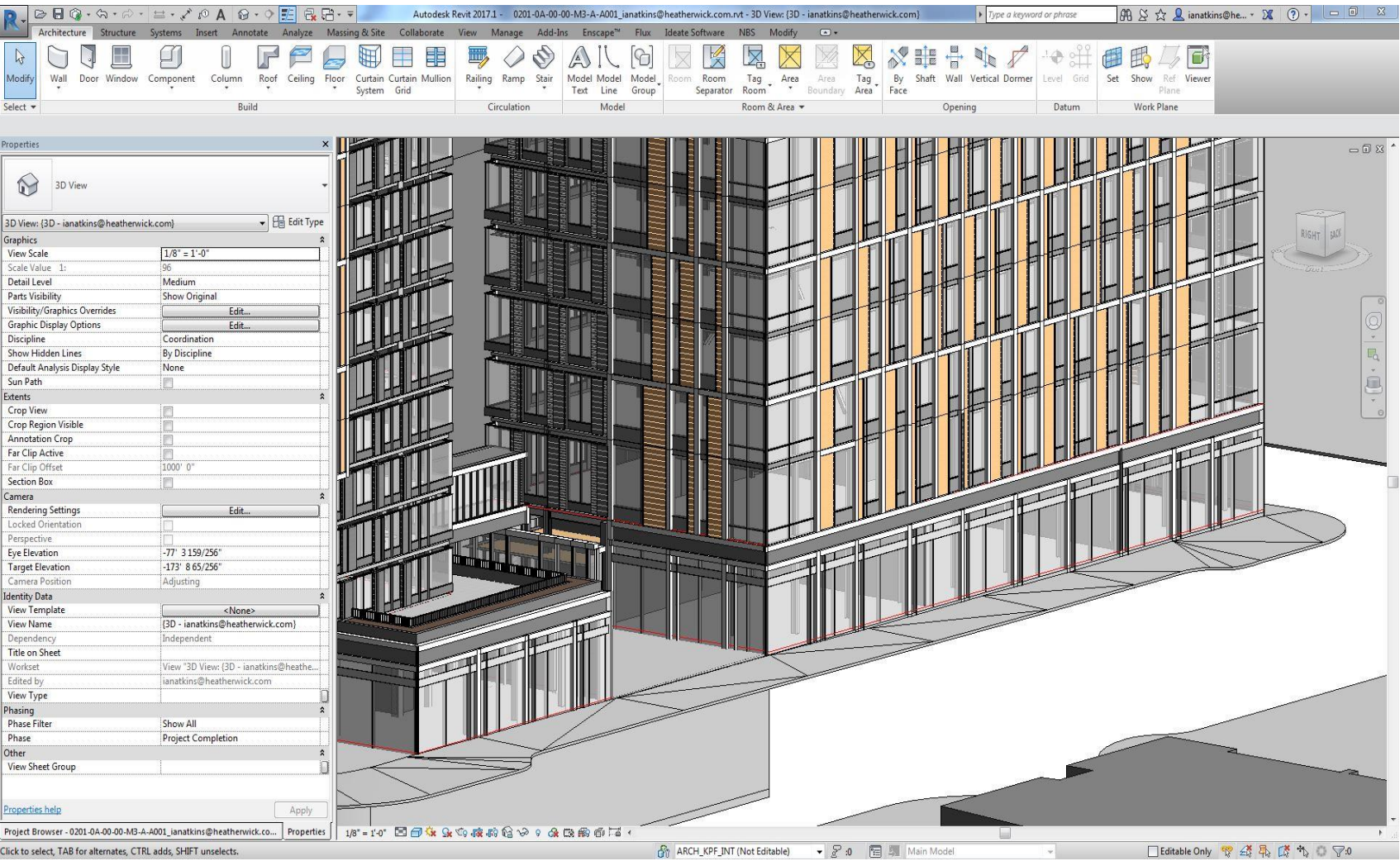


## Sketch

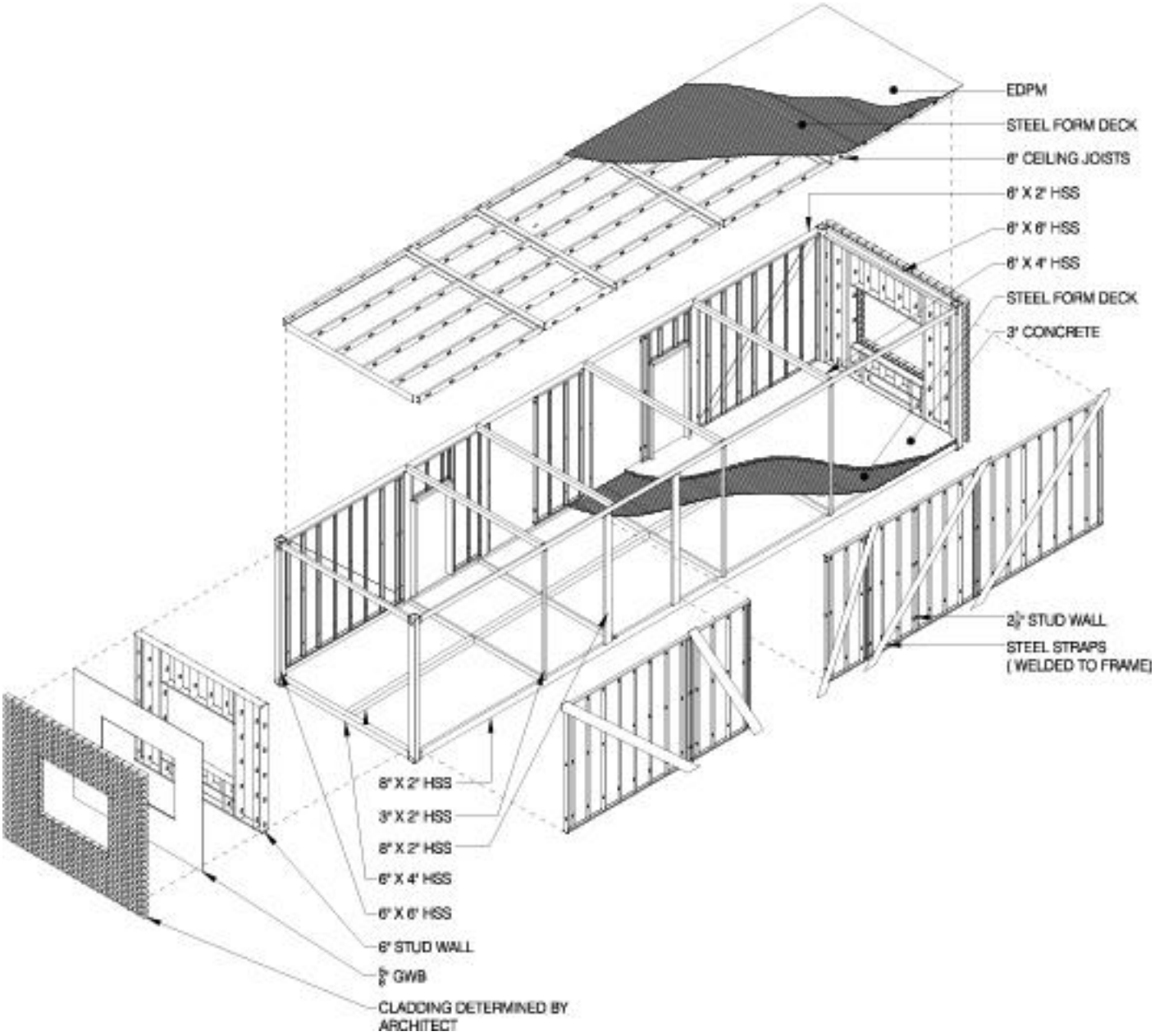


# Fabrication Model



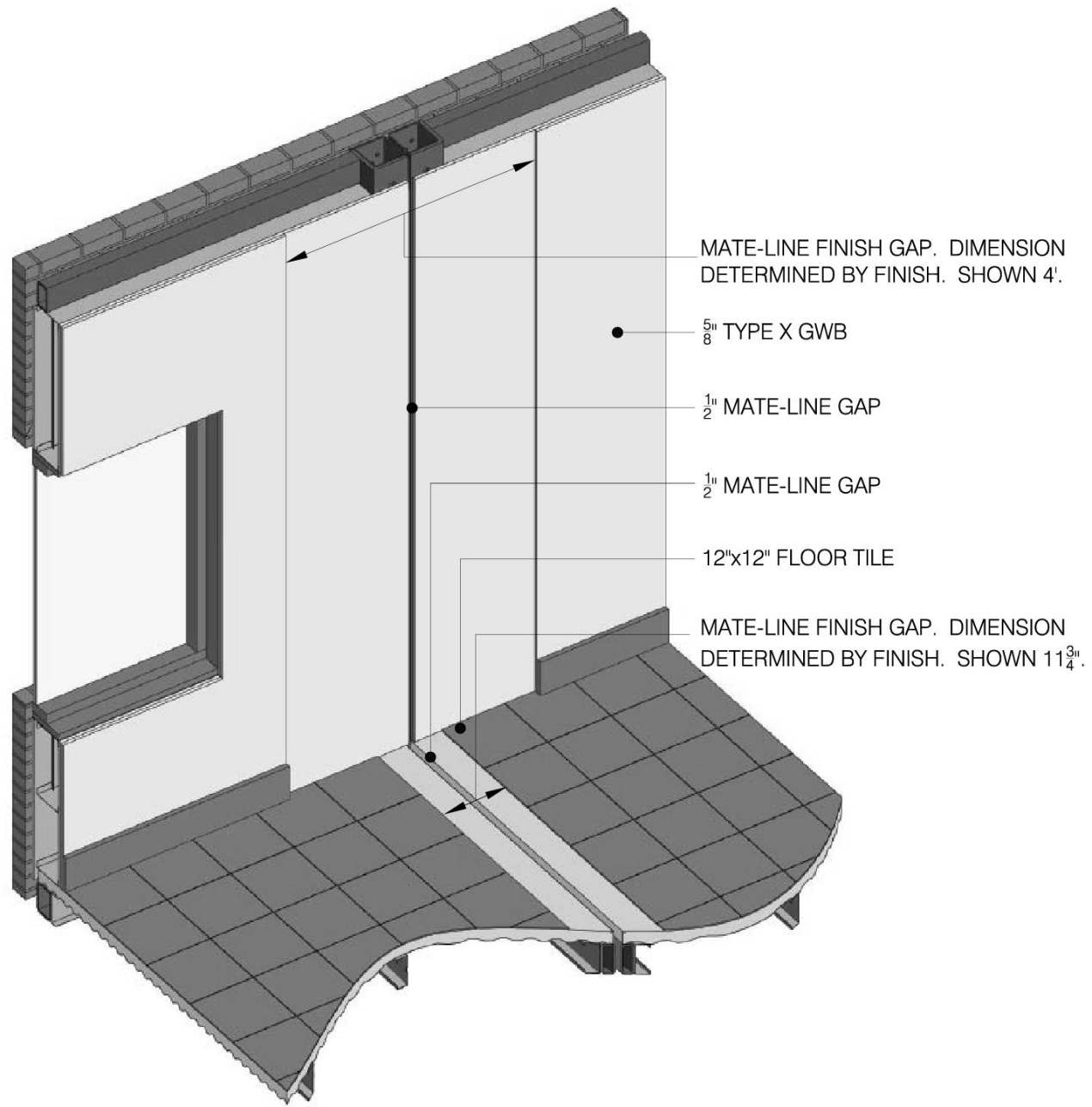
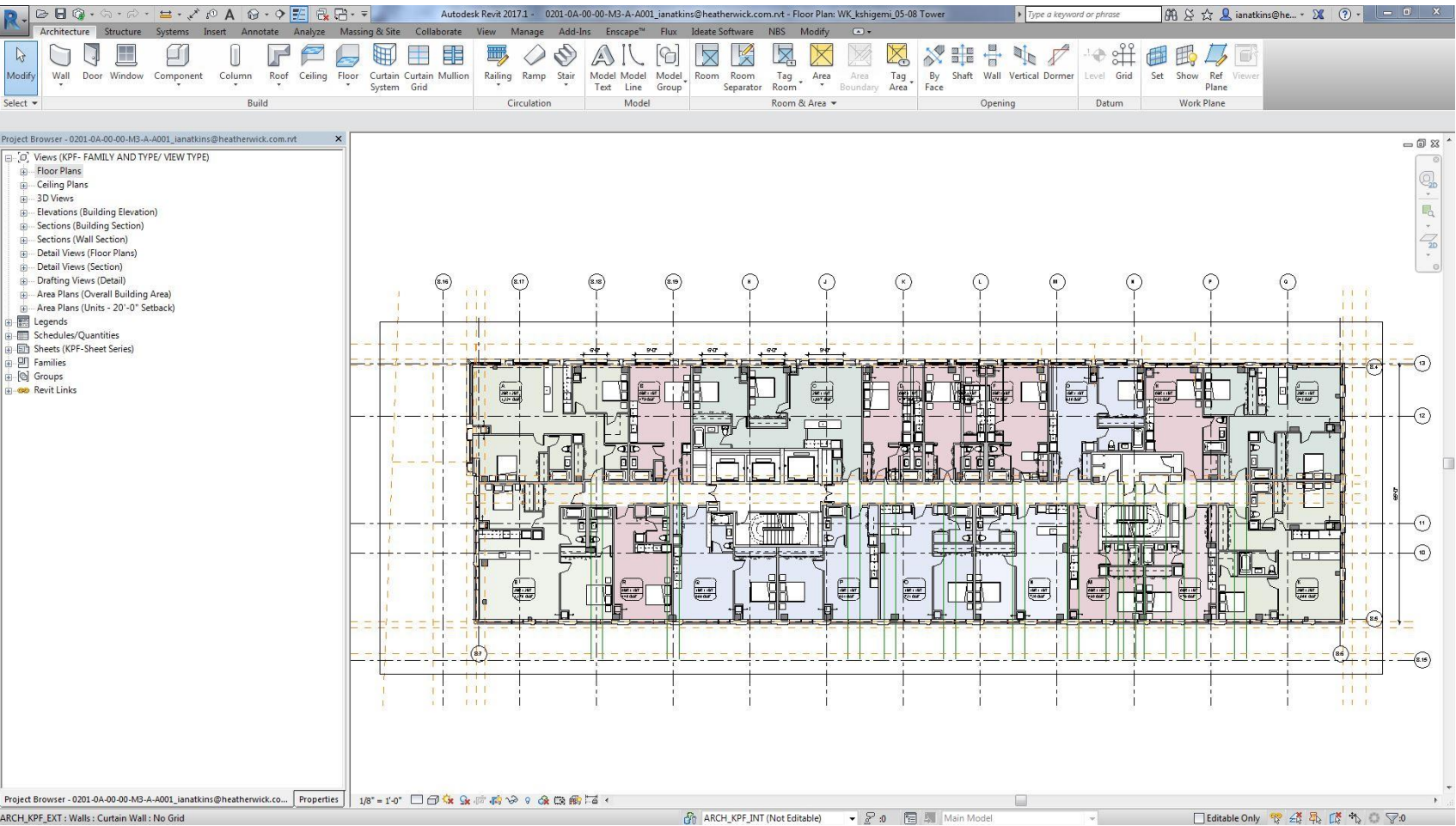


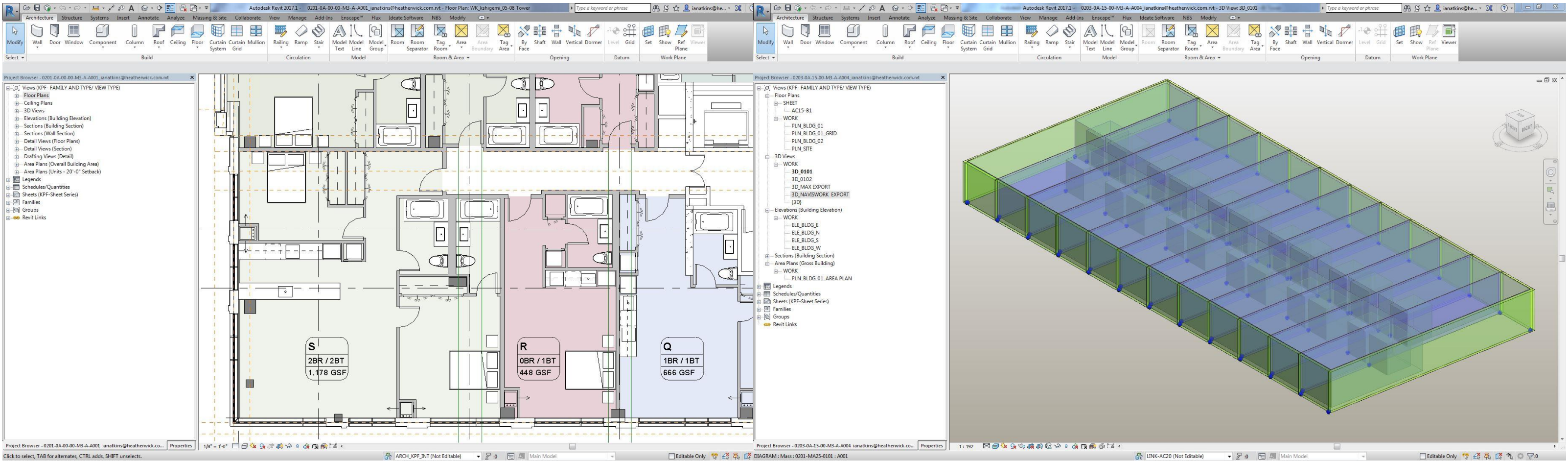
Design Model



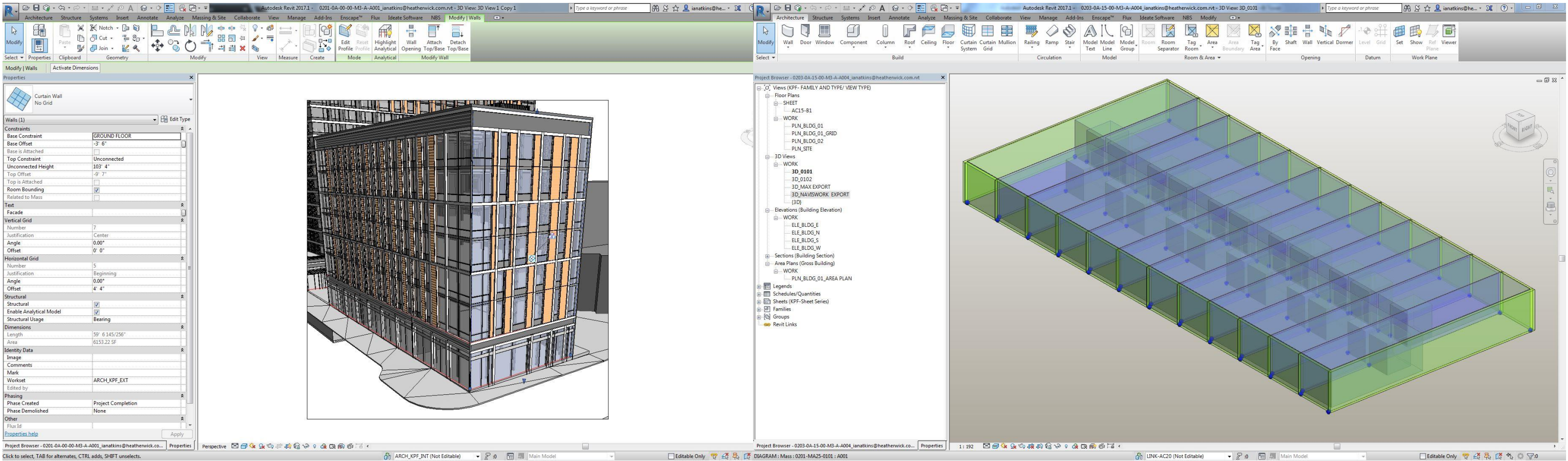
Fabrication Model



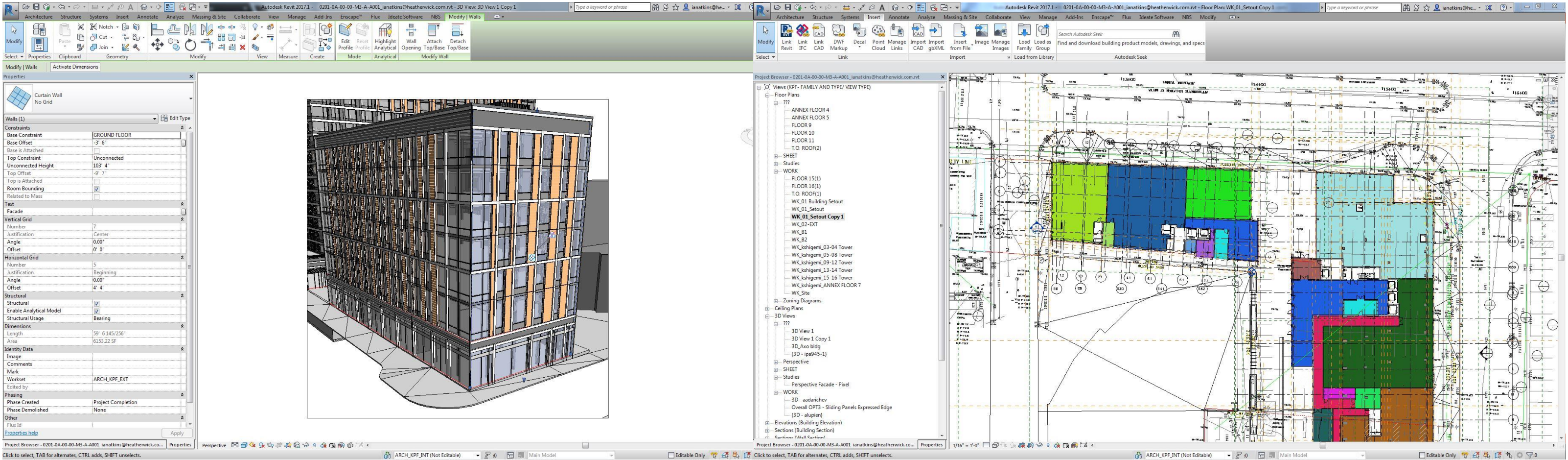




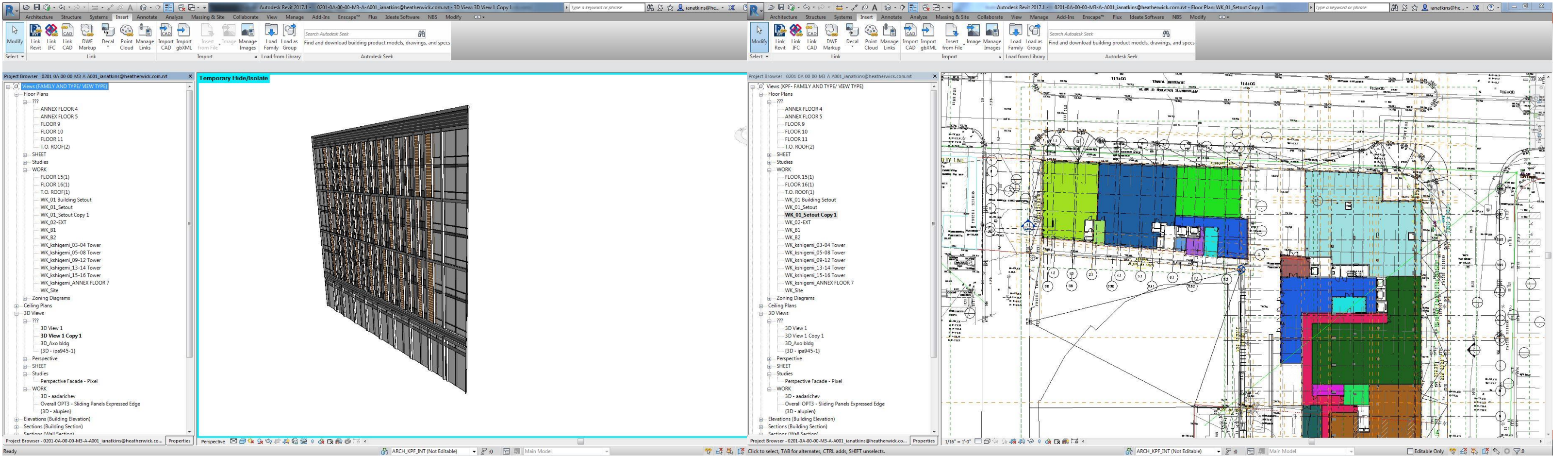


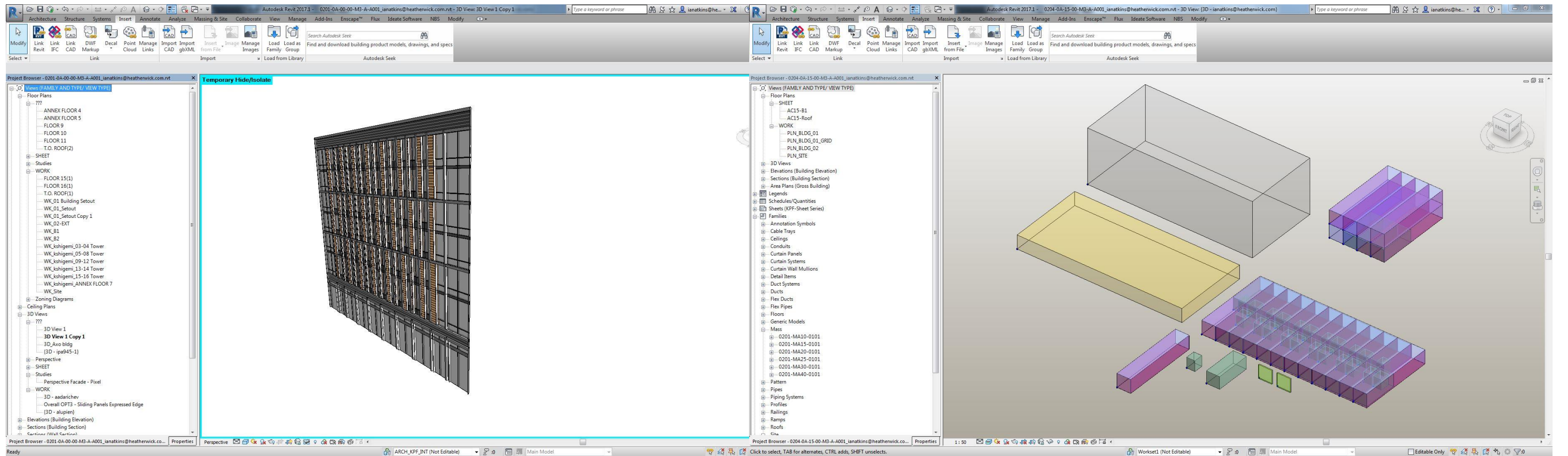










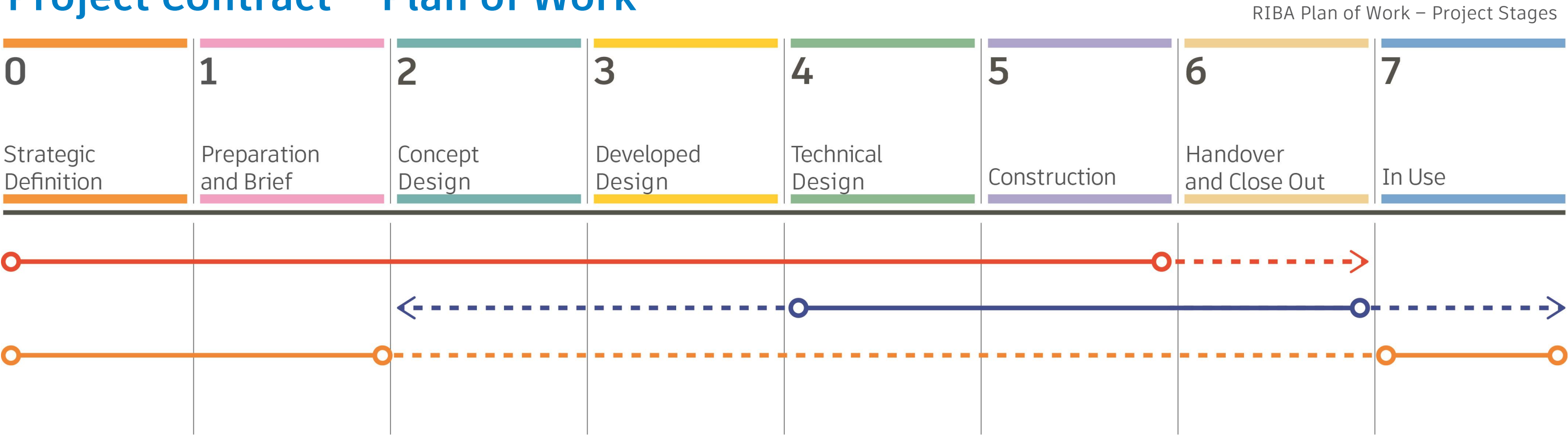


## Fabrication Strategy - Module Layout



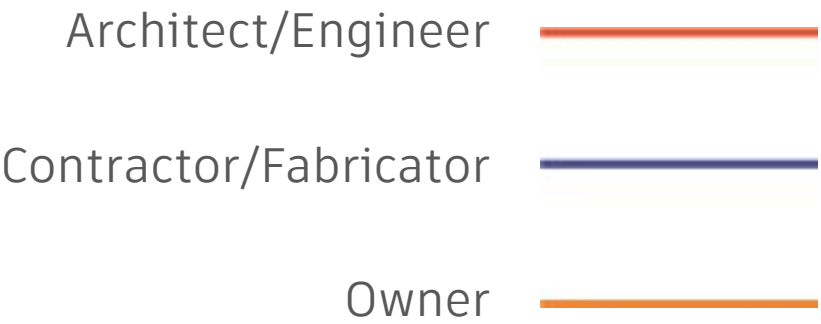
# Design Delivery and BlM Exchange

## Project Contract – Plan of Work



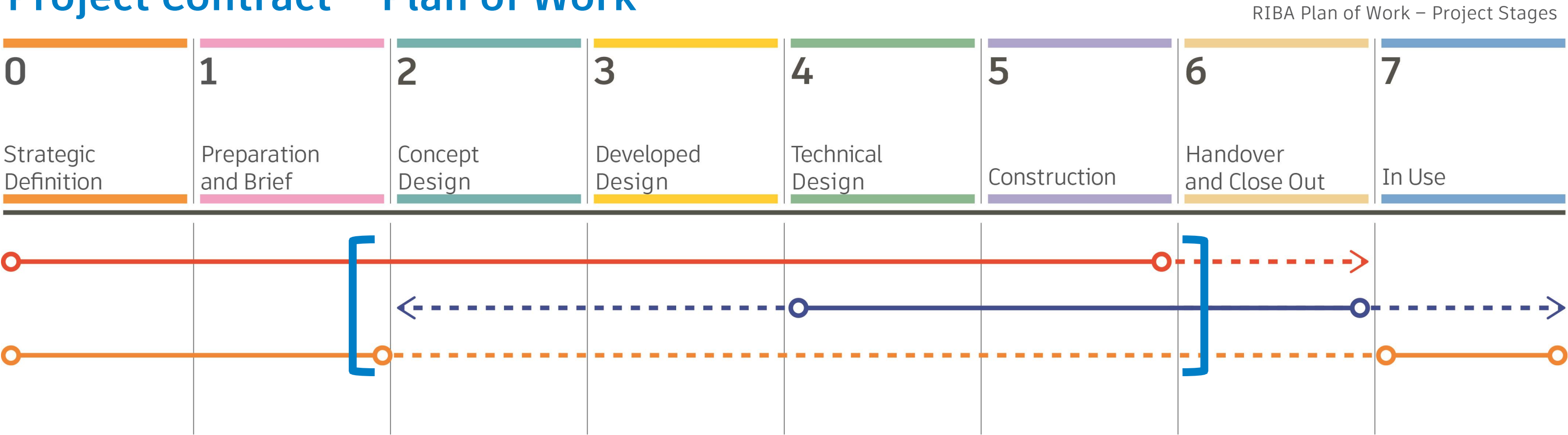
## Effective Process for Offsite Design Delivery

Shared Responsibility, Information Exchange Transparent Data Access



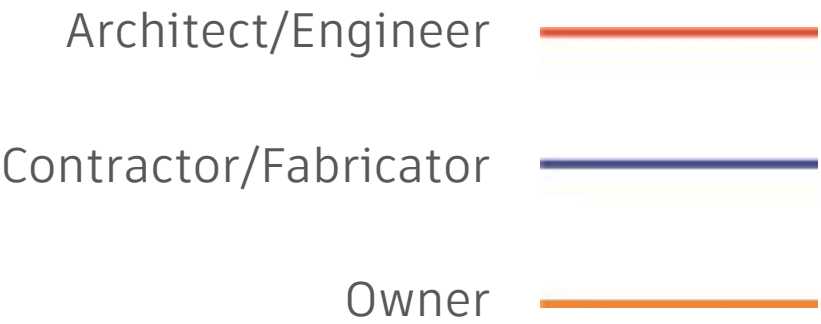
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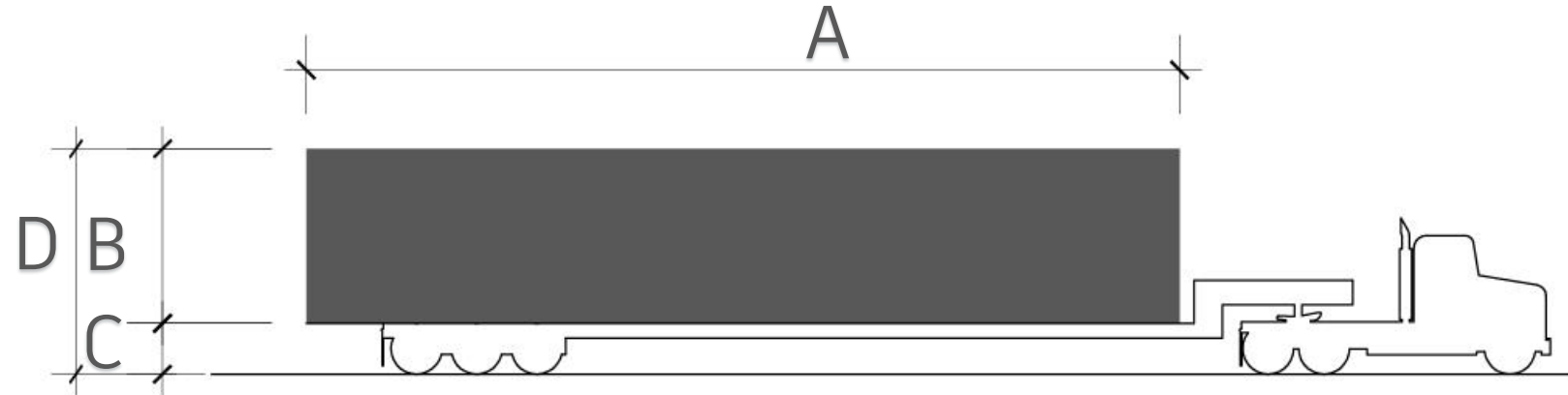
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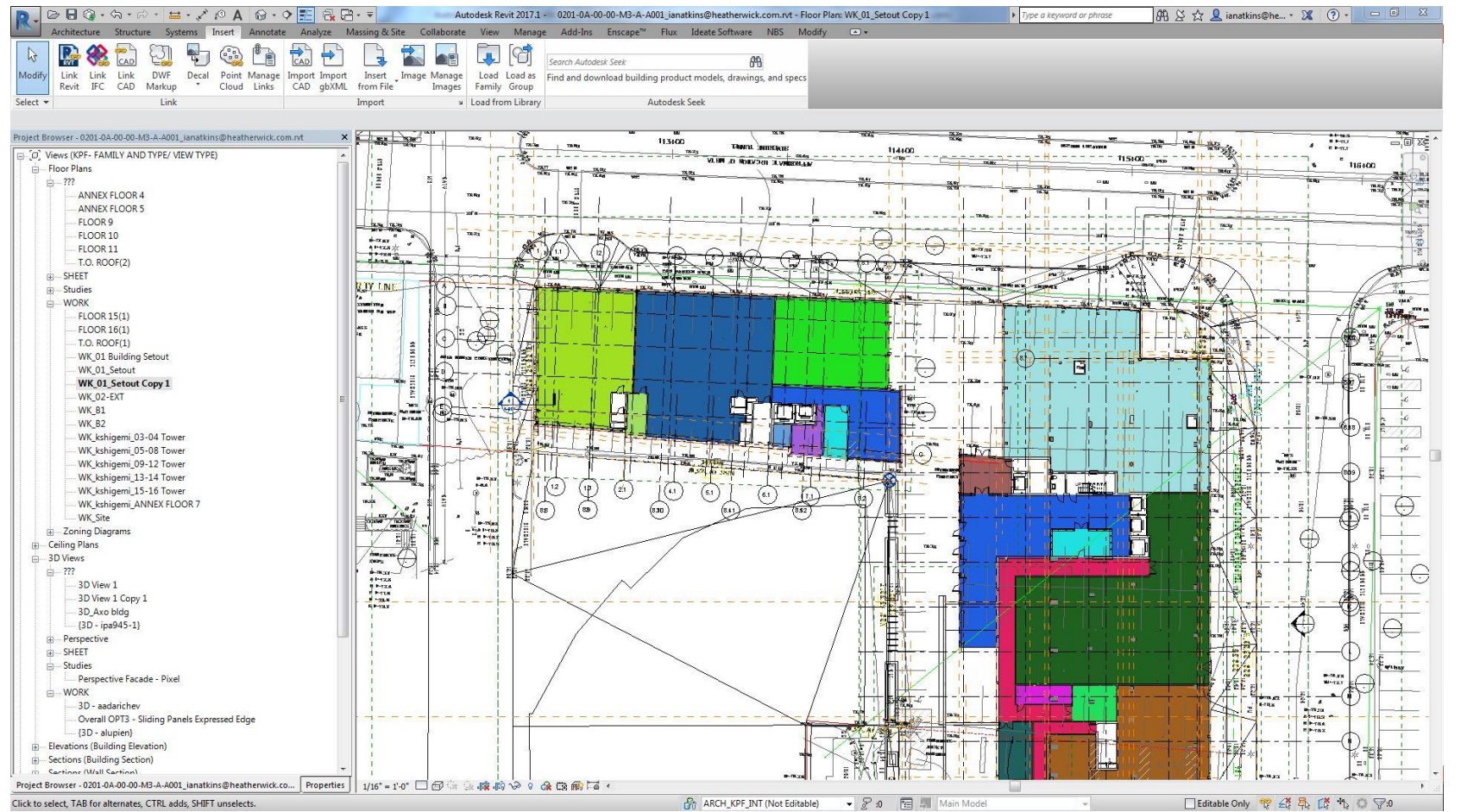
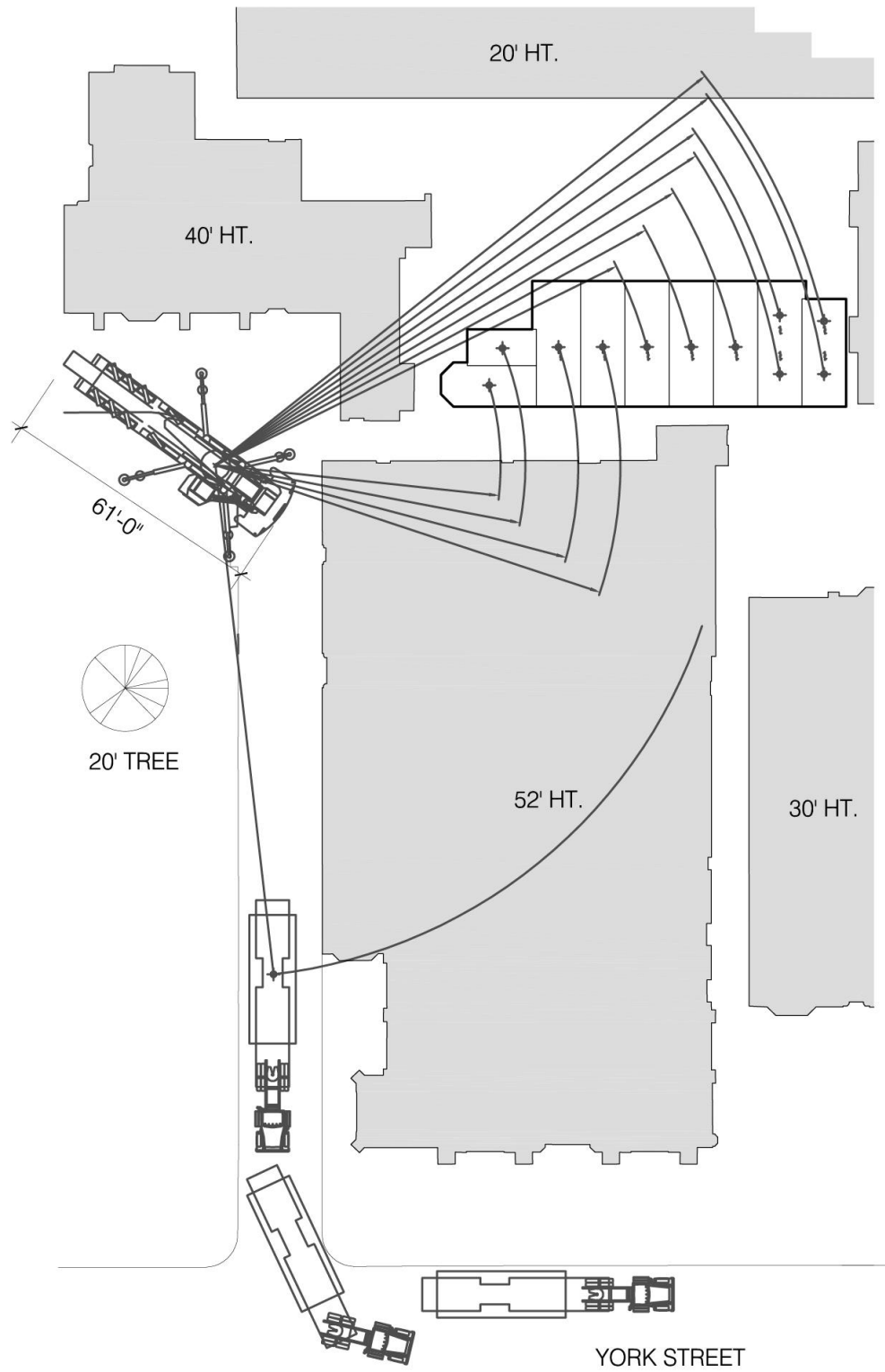
## 04 : Design Parameters



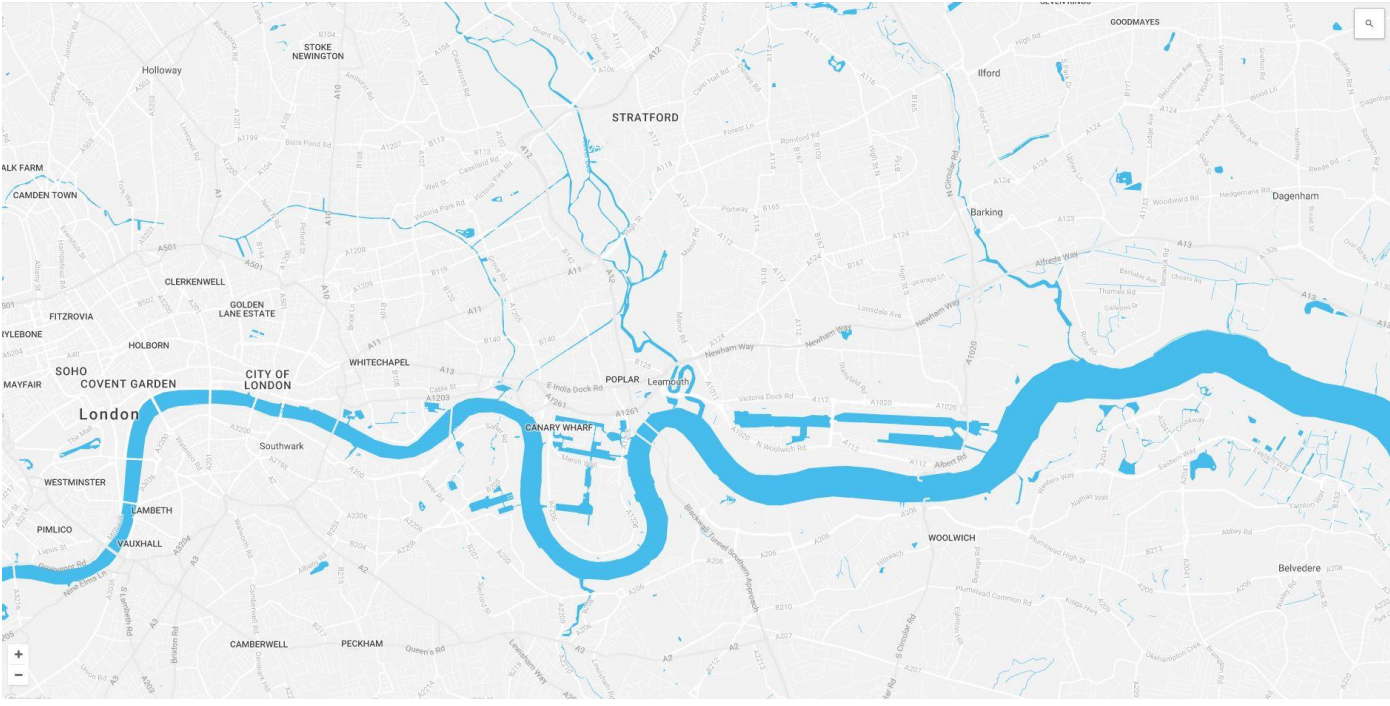
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B	13'-0"	12'-0"
C	2'-0"	3'-2"
D	15'-0"	15'-2"
E	13'-0"	13'0"



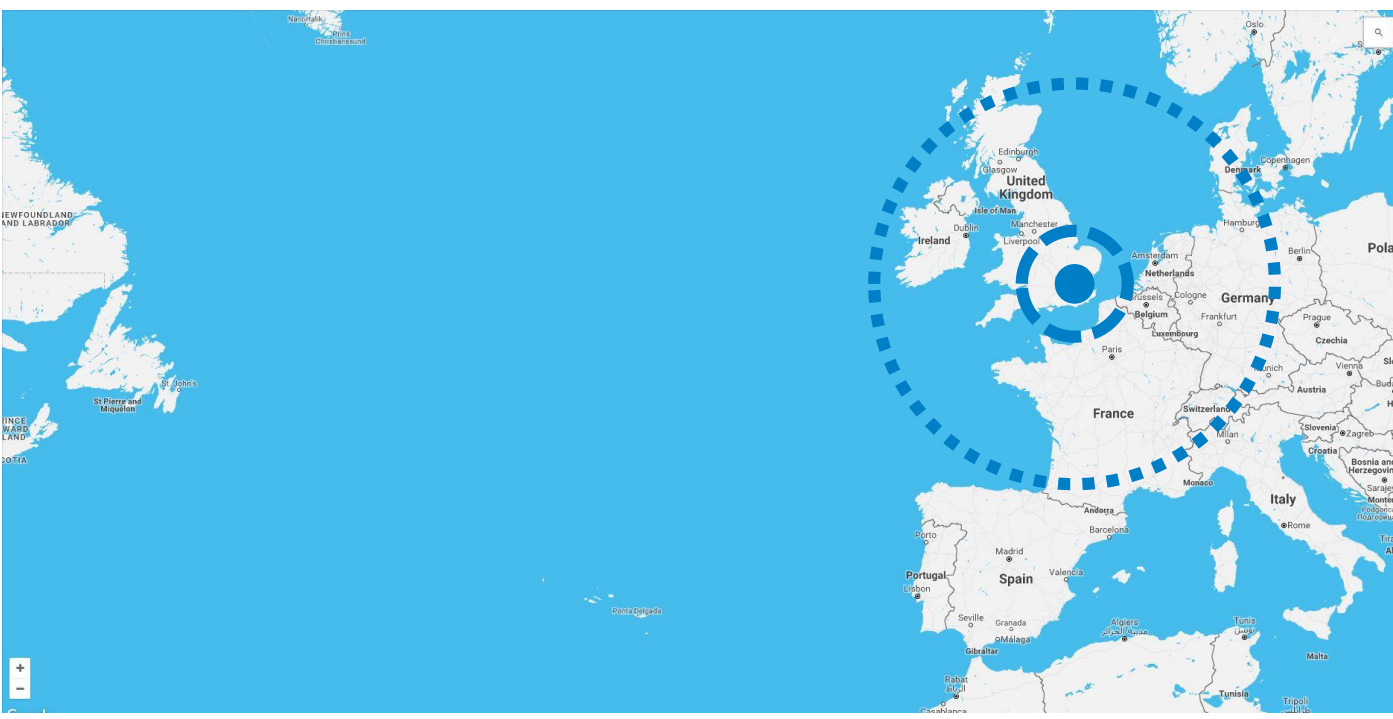










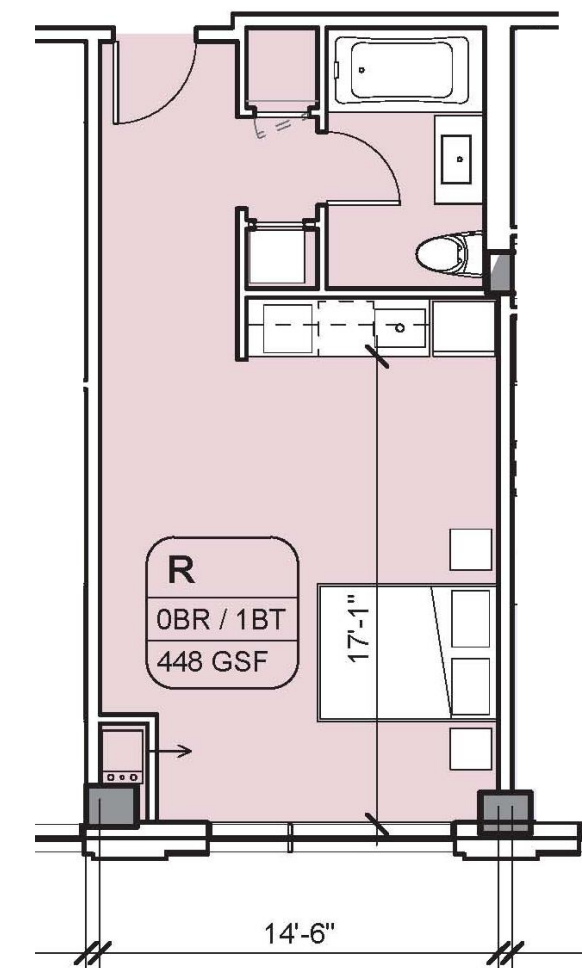
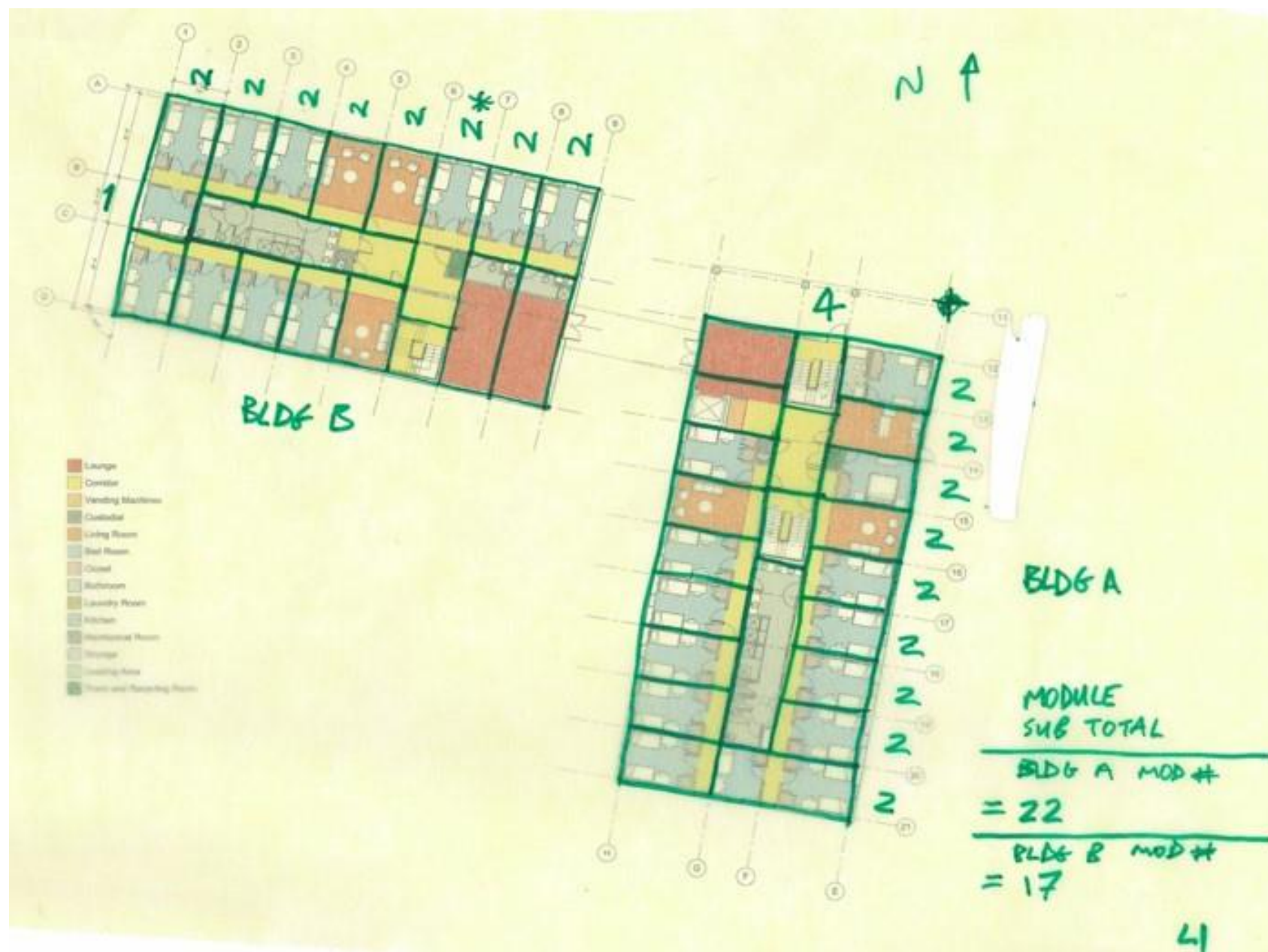


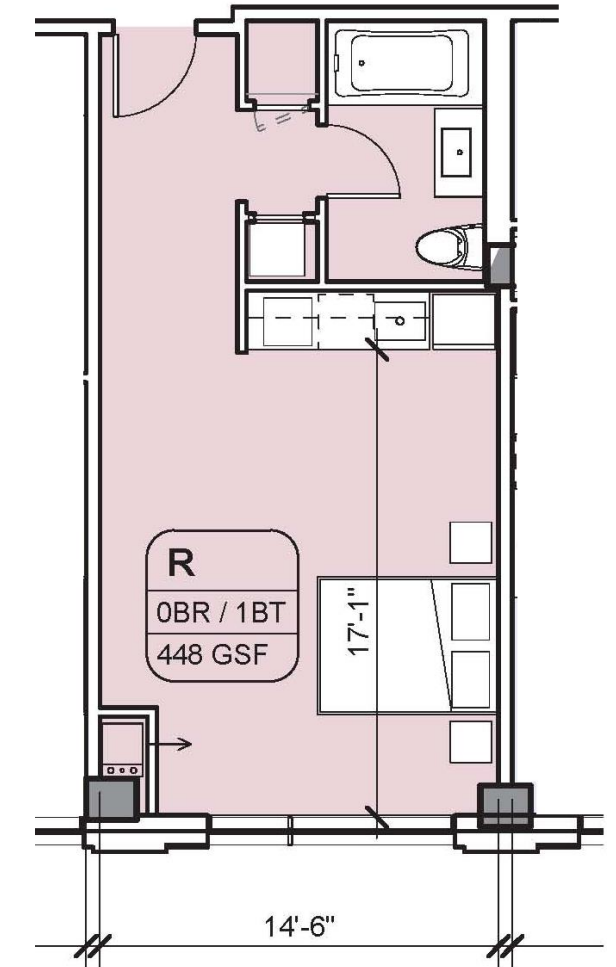
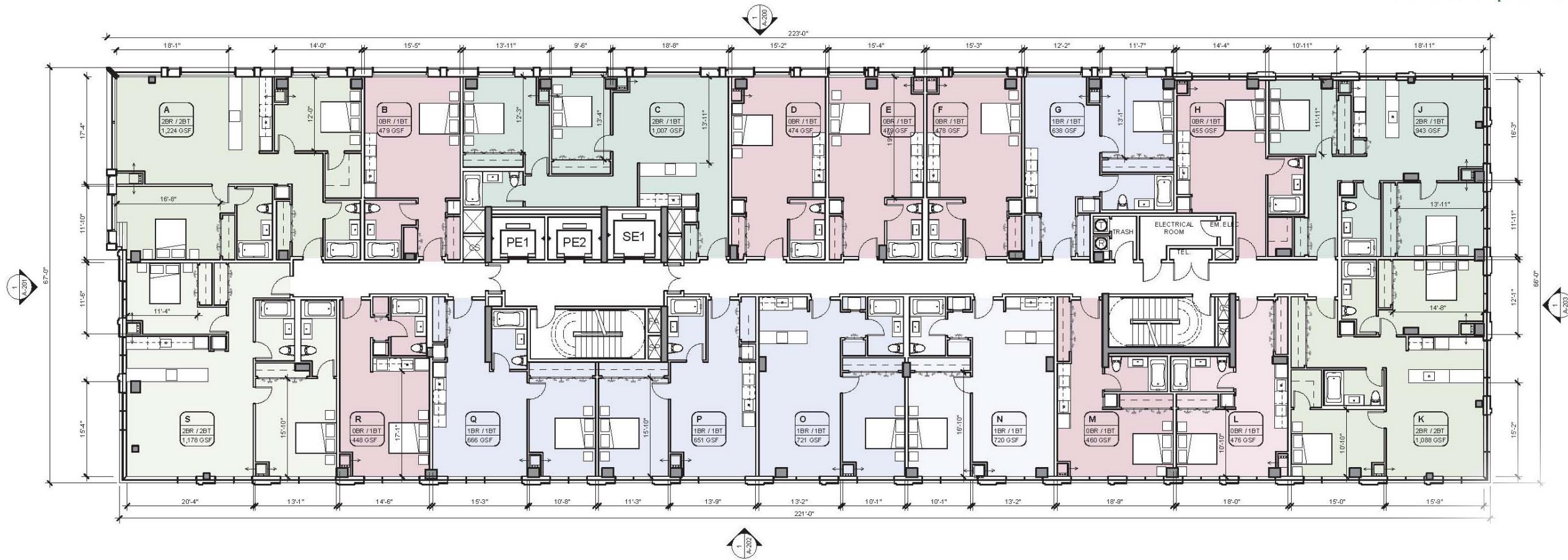




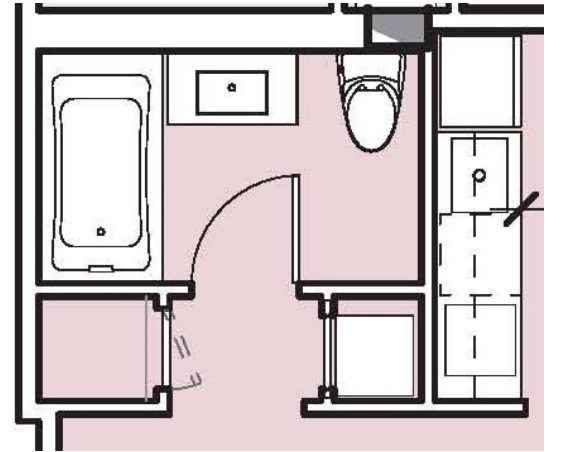
# 05 : Component Assembly



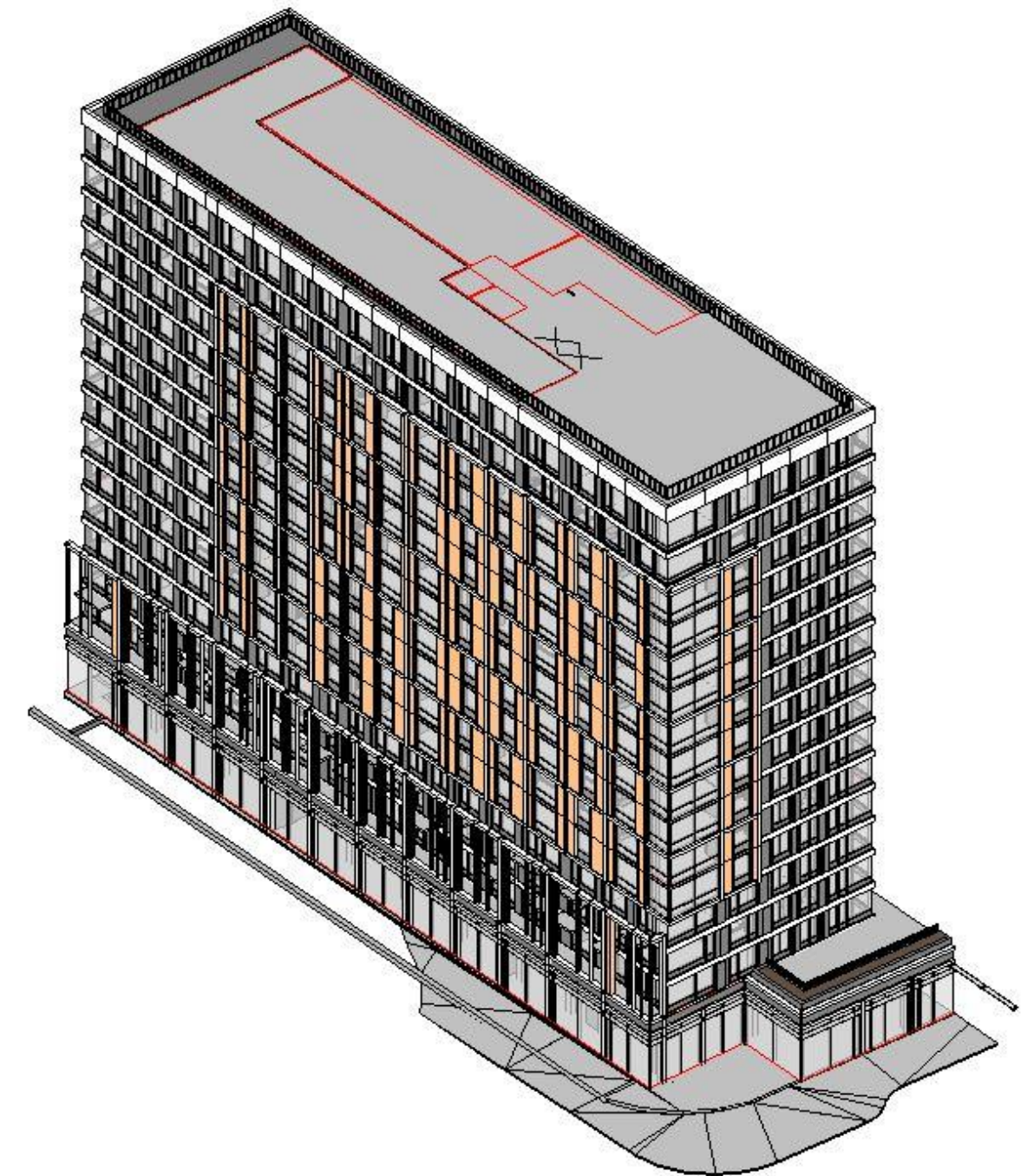
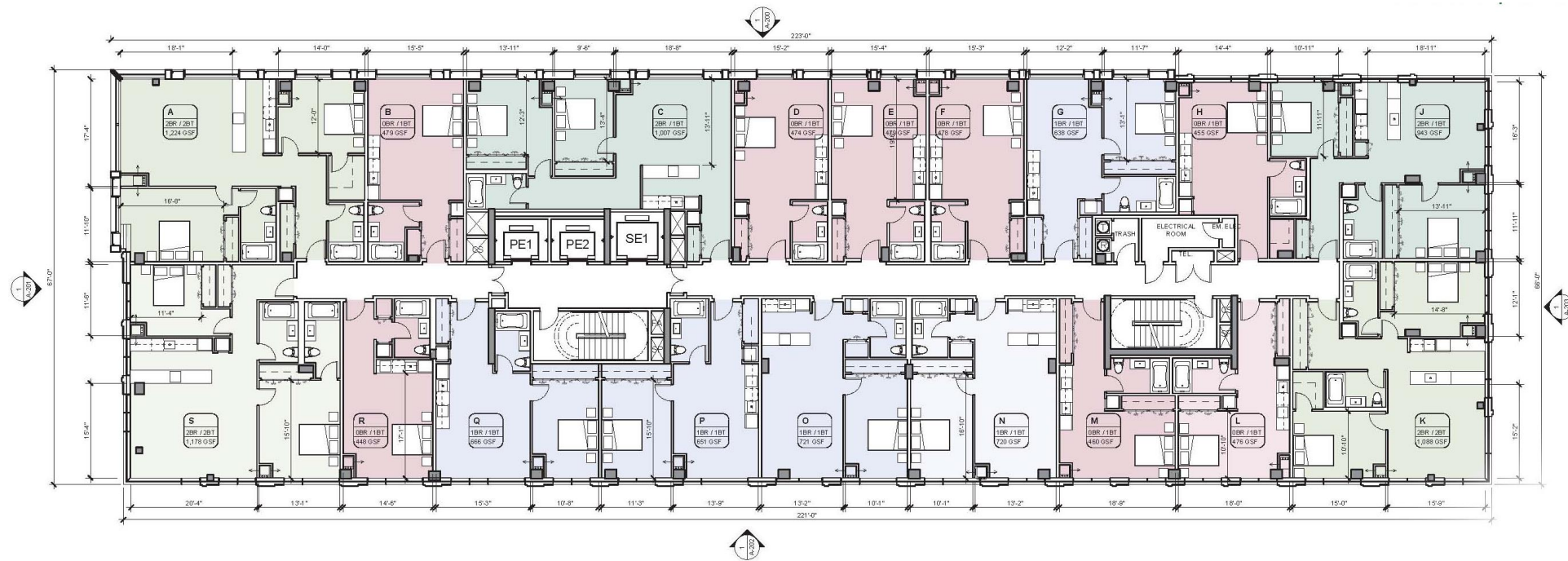




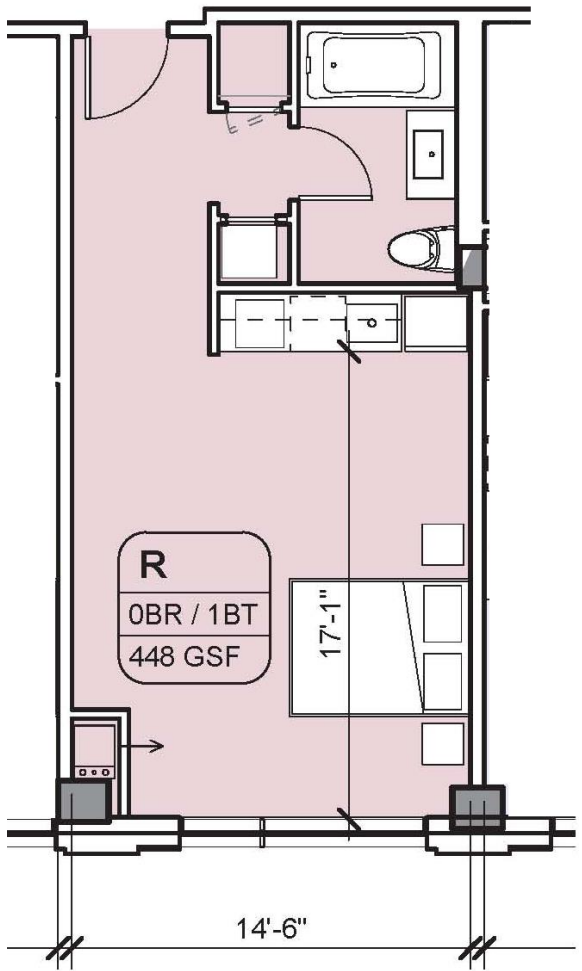
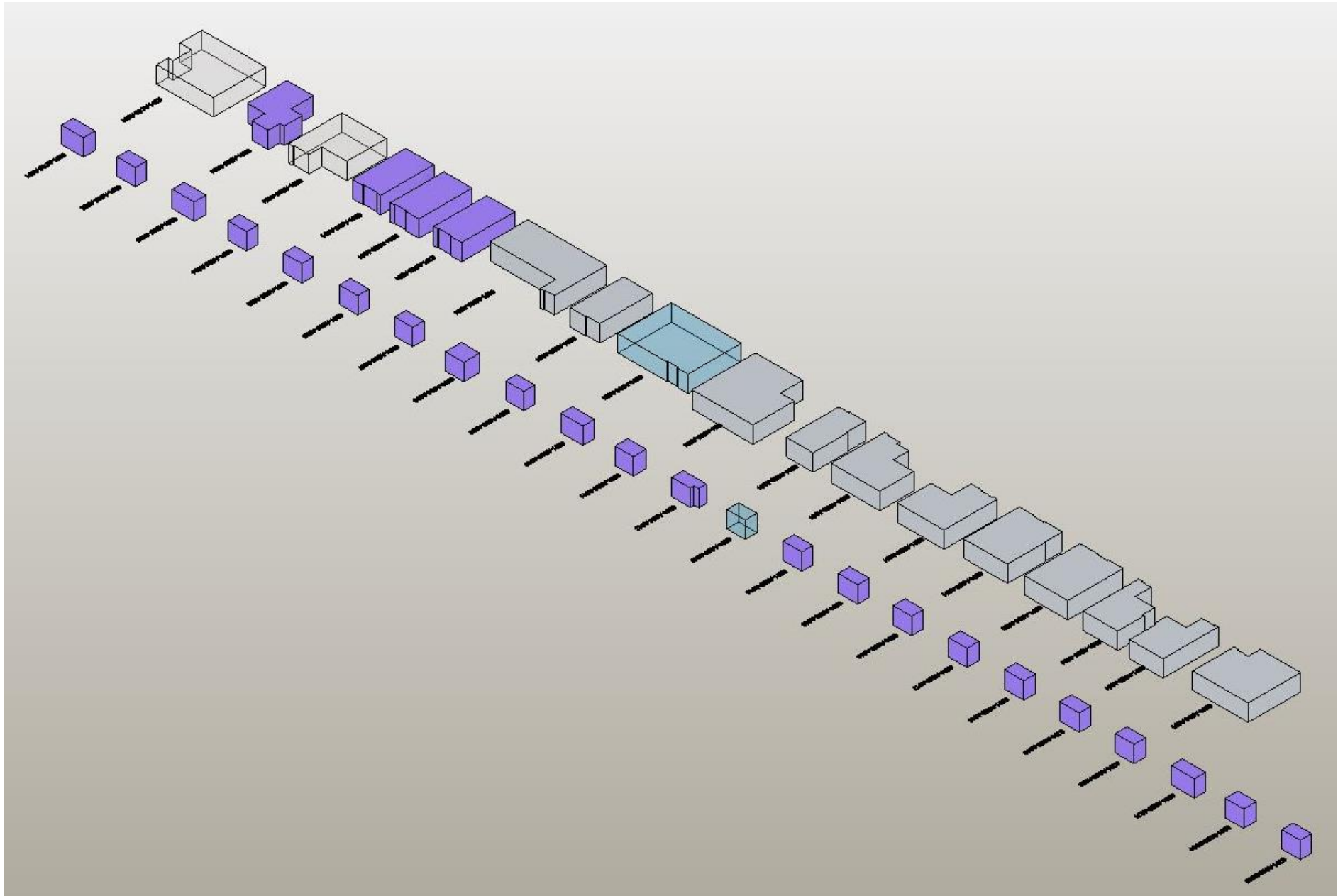




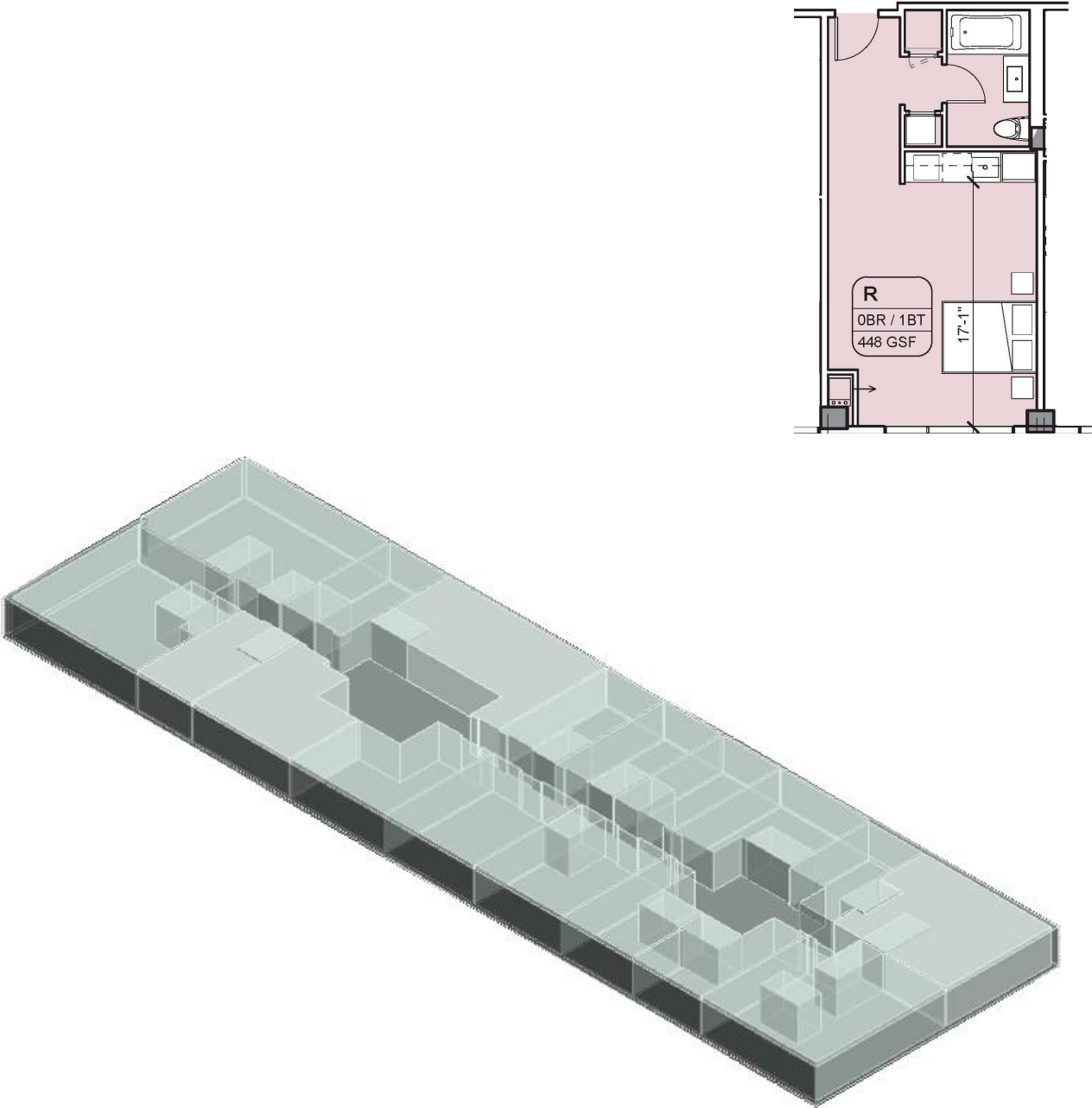
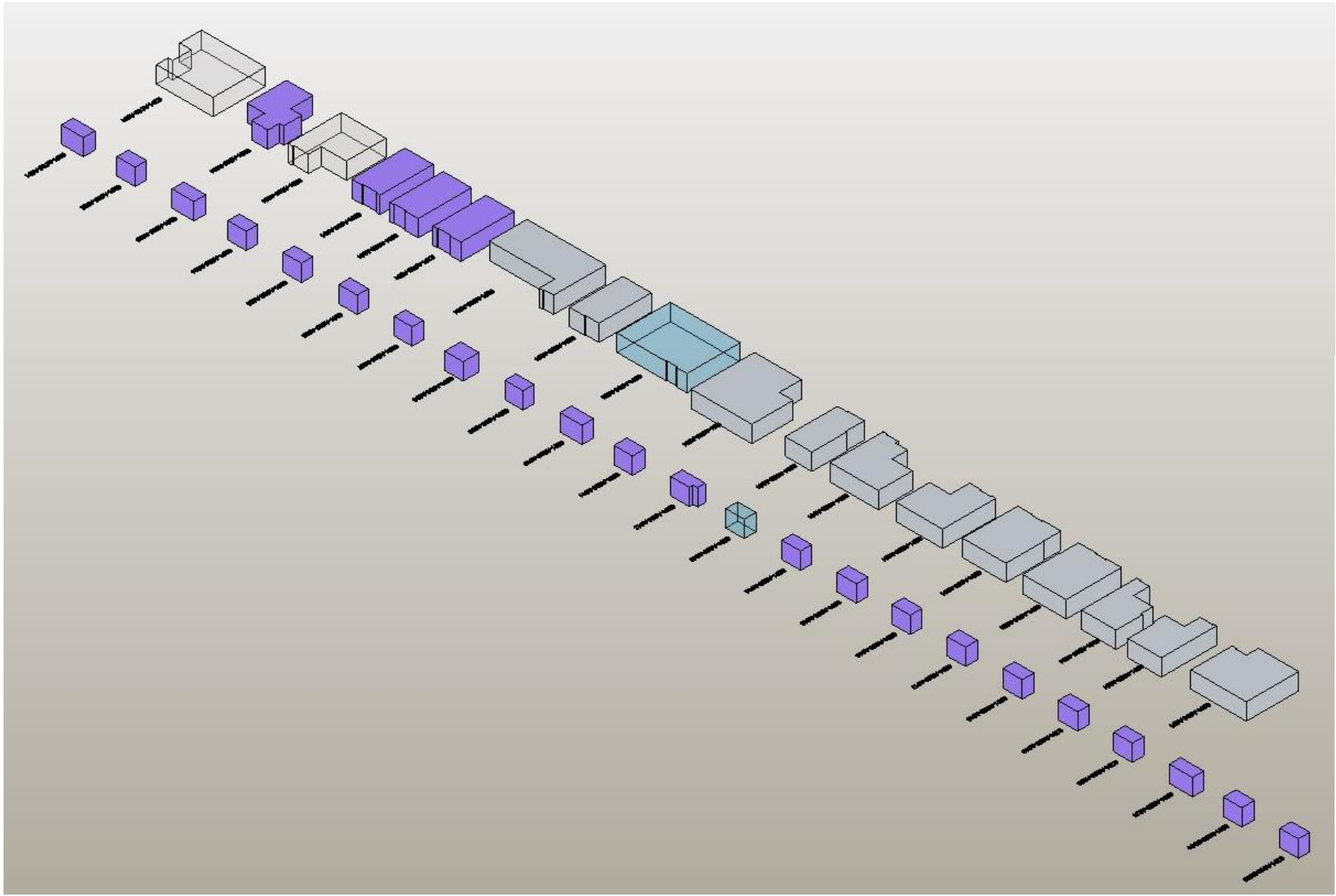




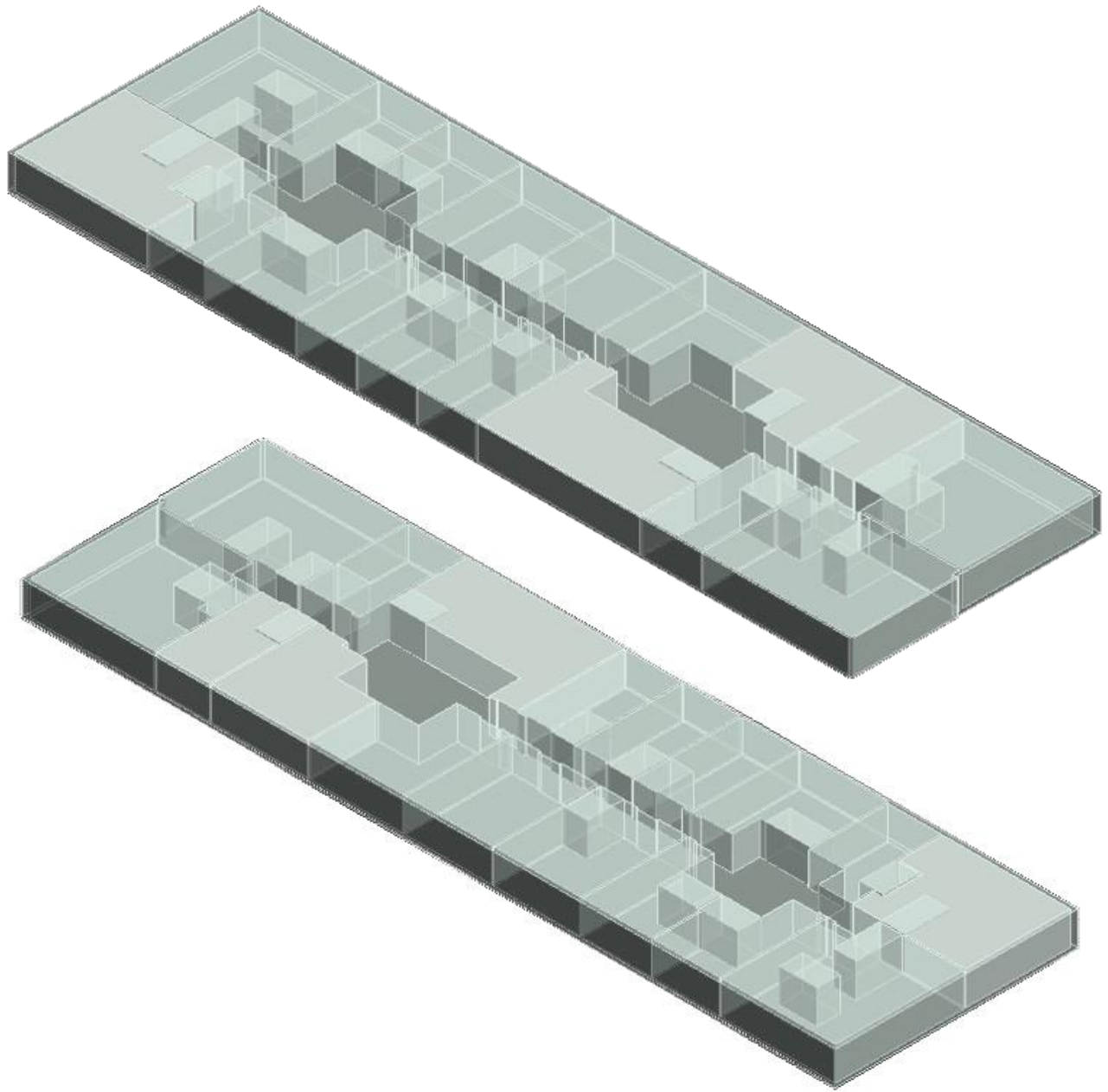
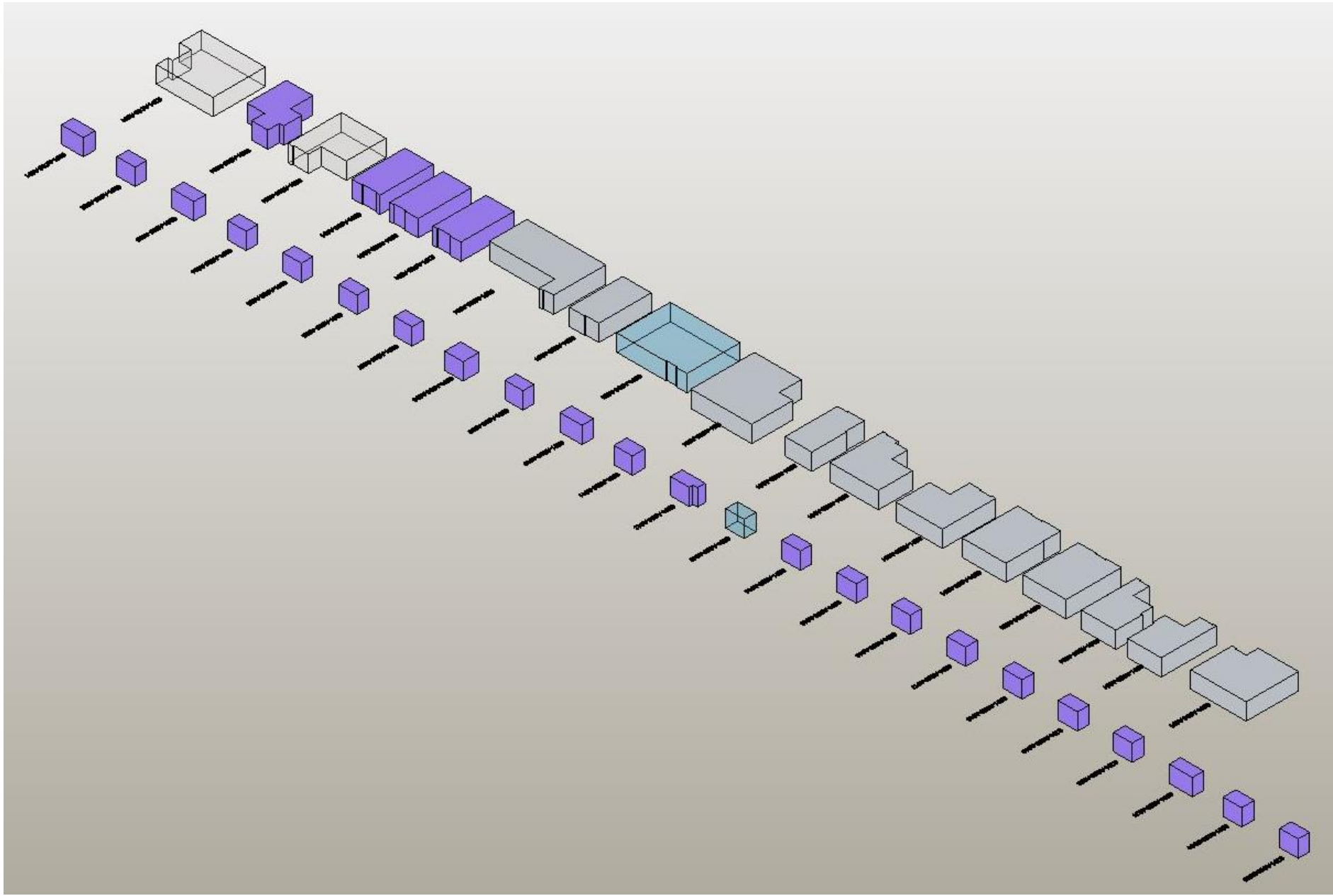
Architecture Model













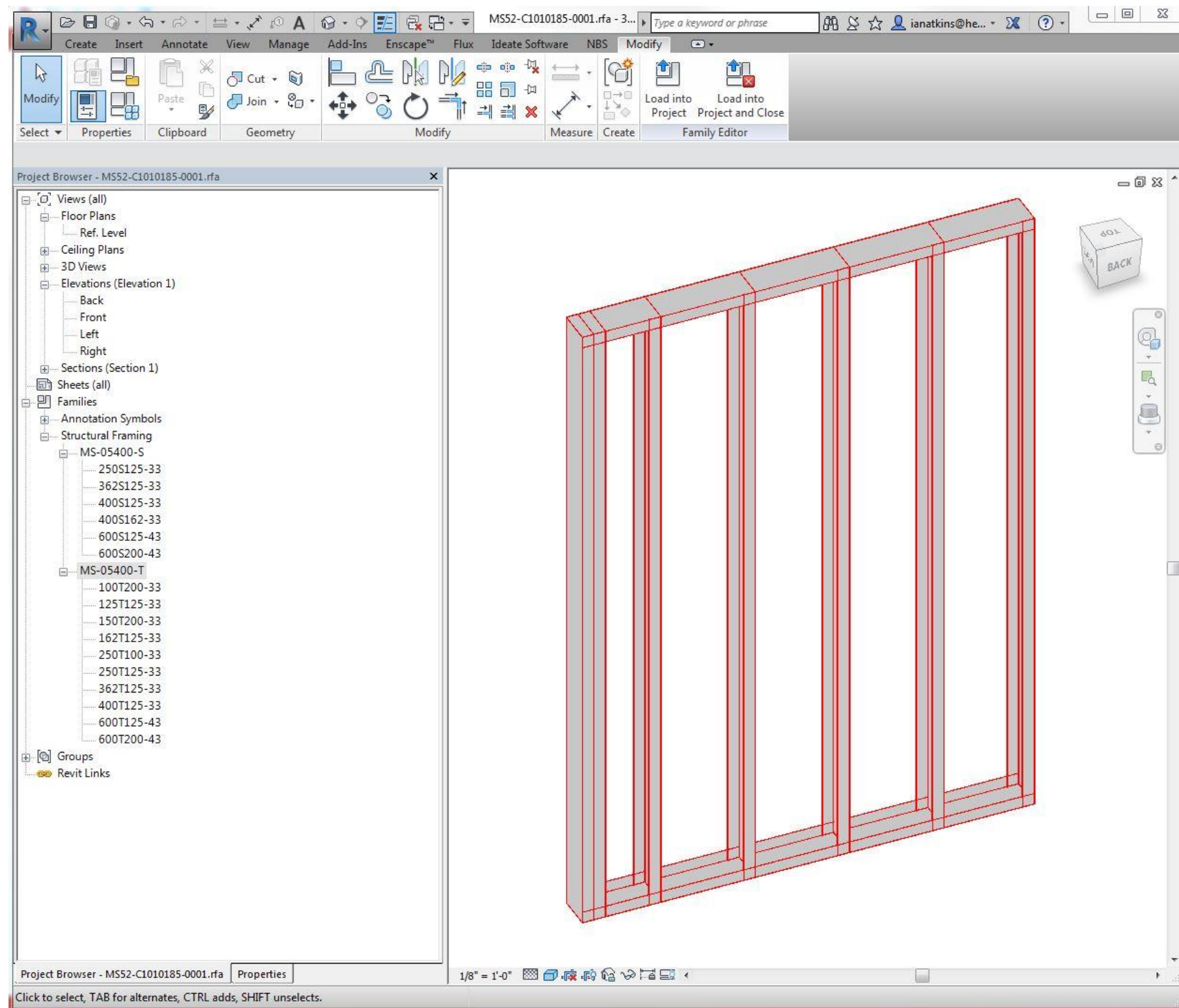
# Model Proliferation and Repetition



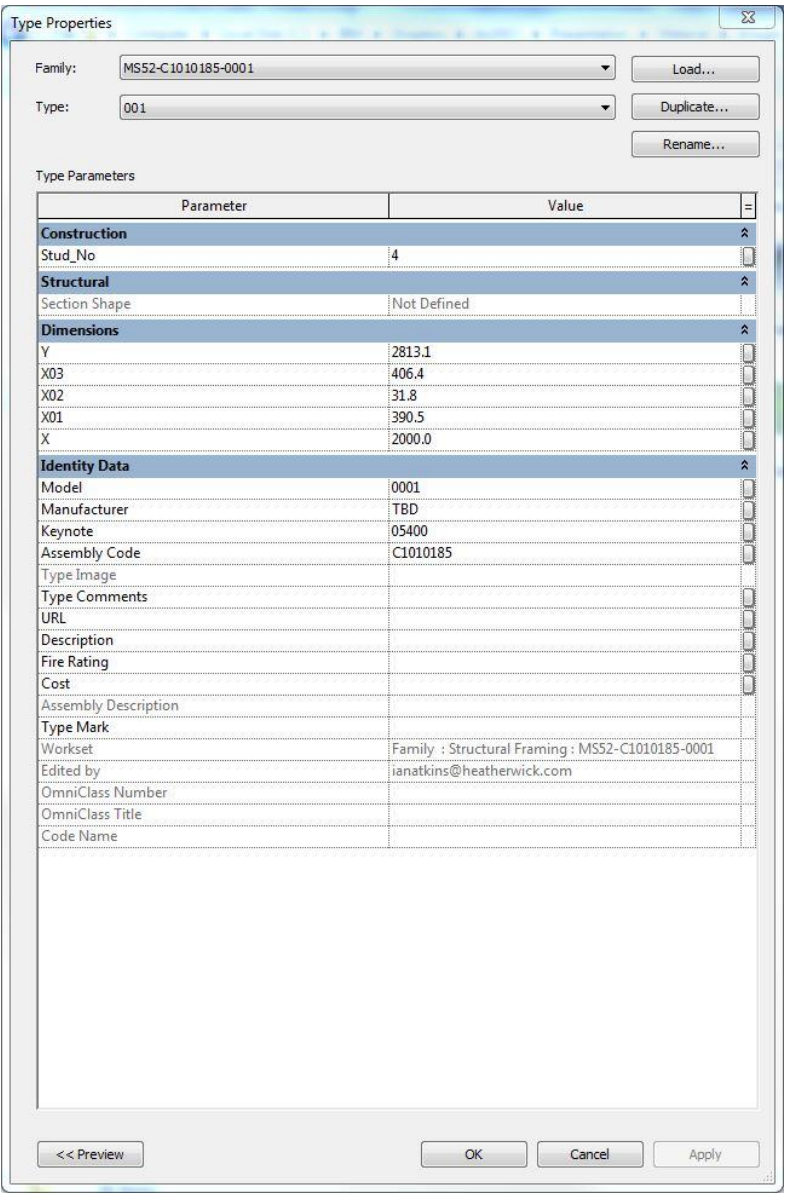
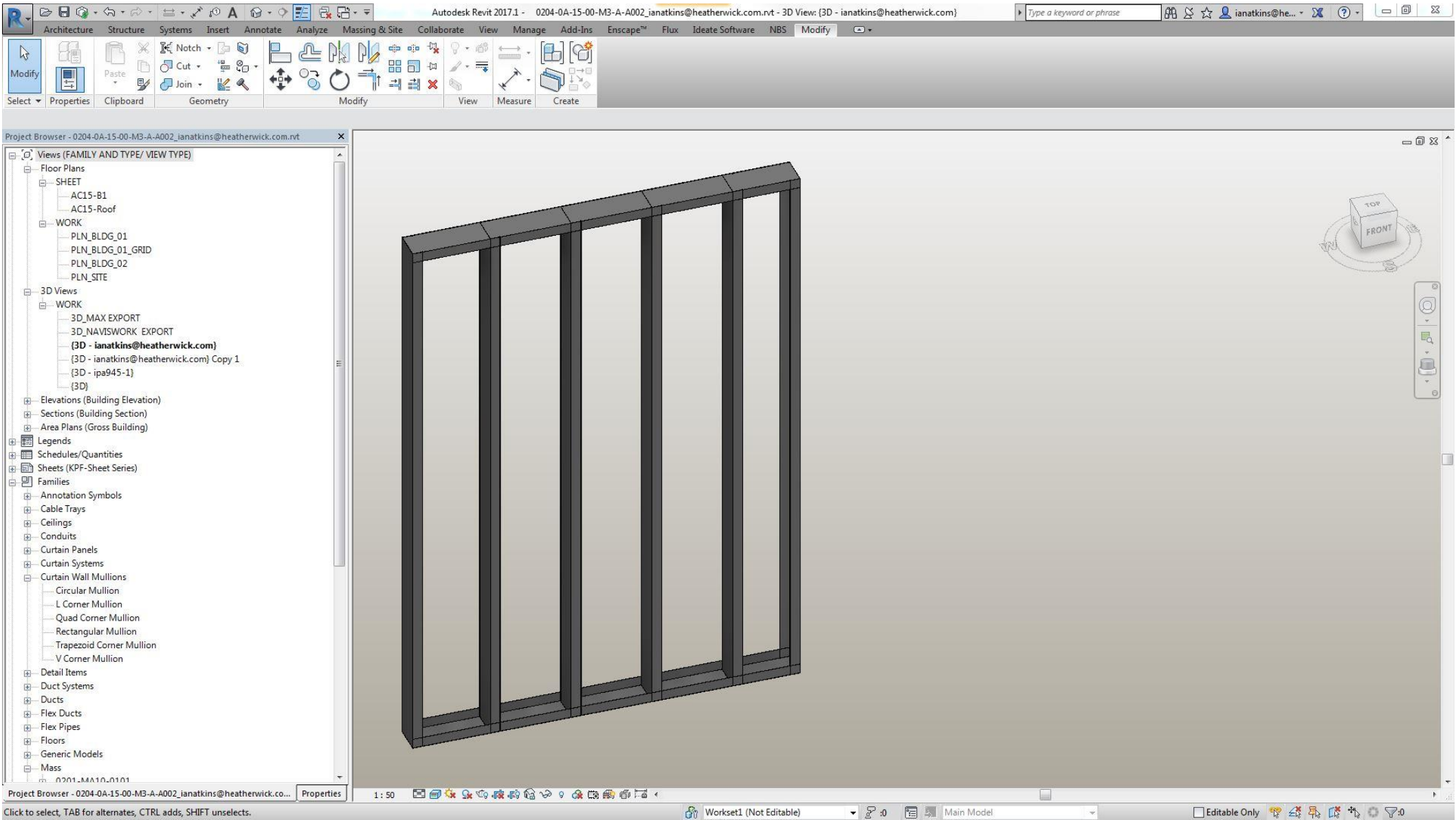
# Model Proliferation and Repetition

- Families (+Nested Families)

# Model Proliferation and Repetition

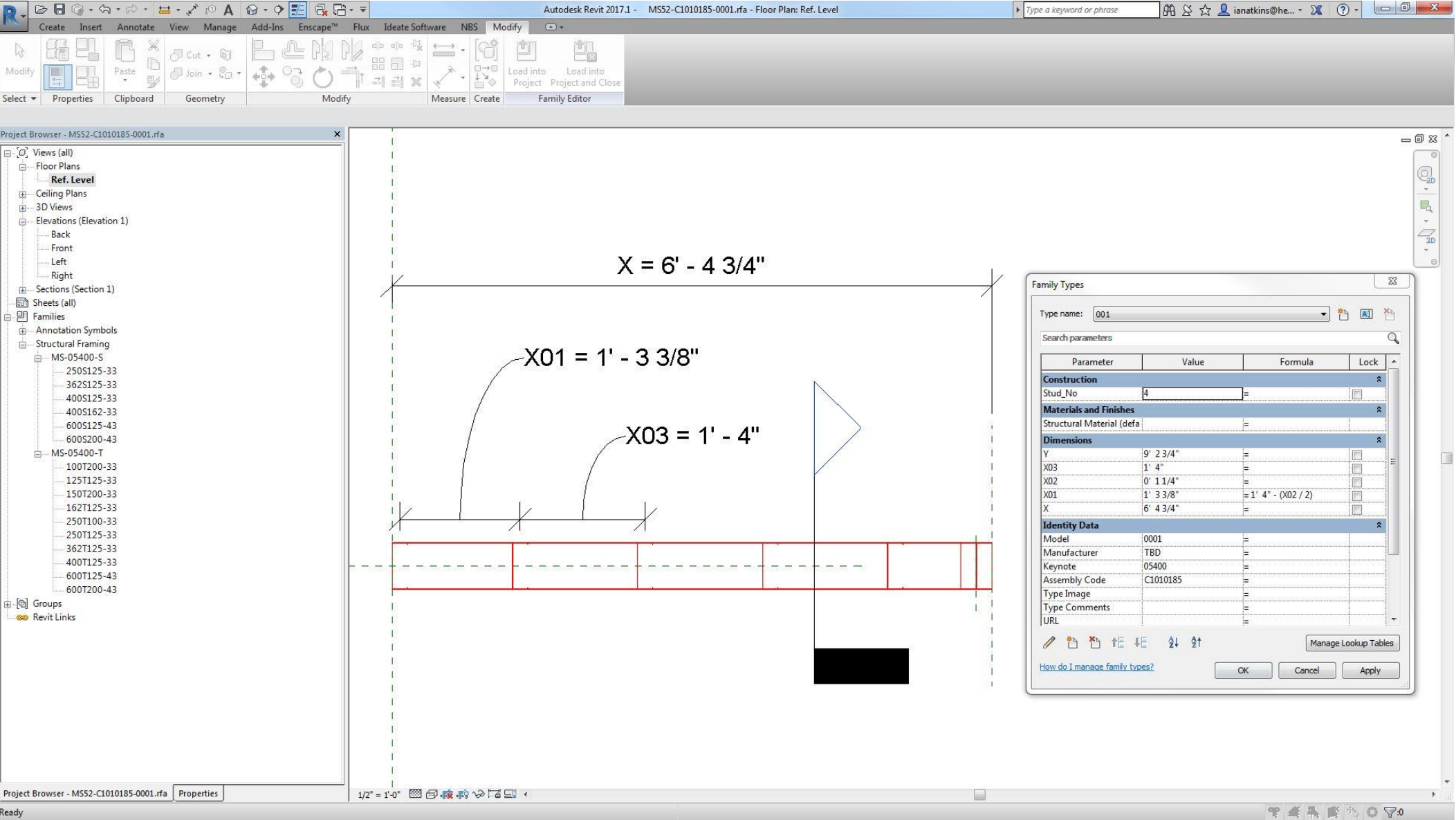


# Model Proliferation and Repetition

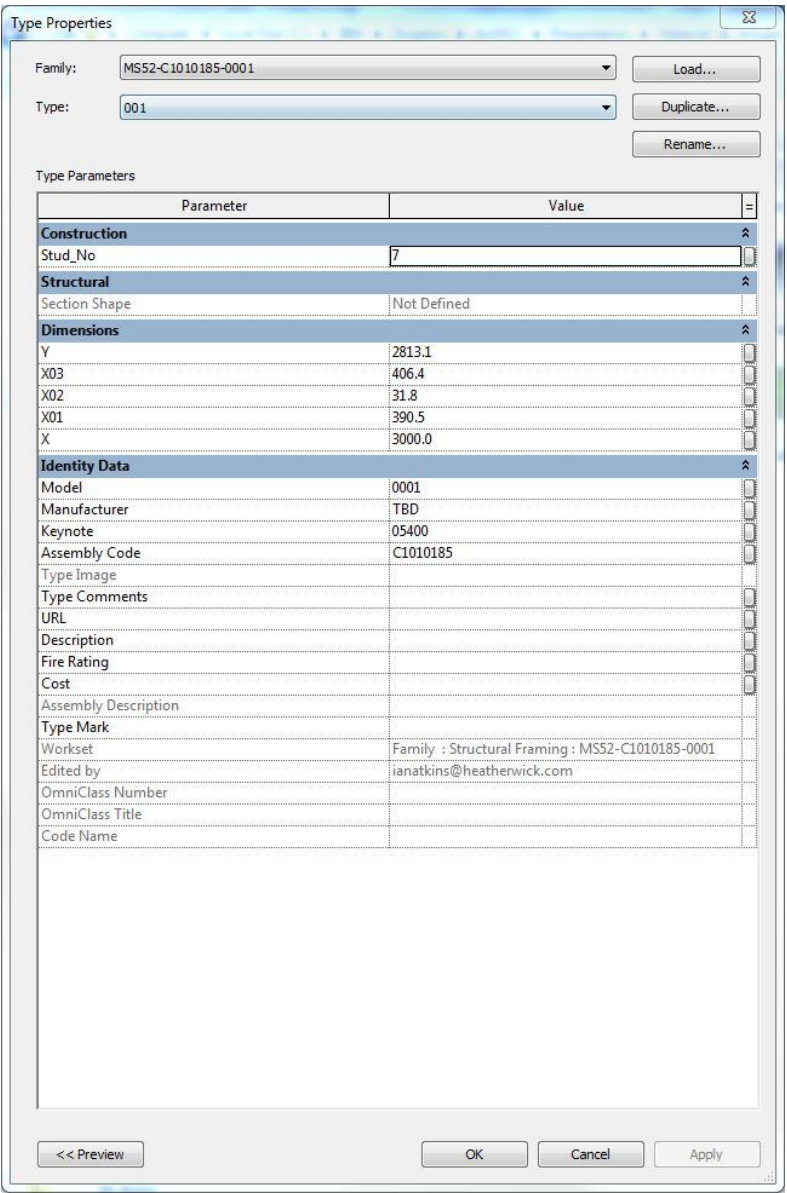
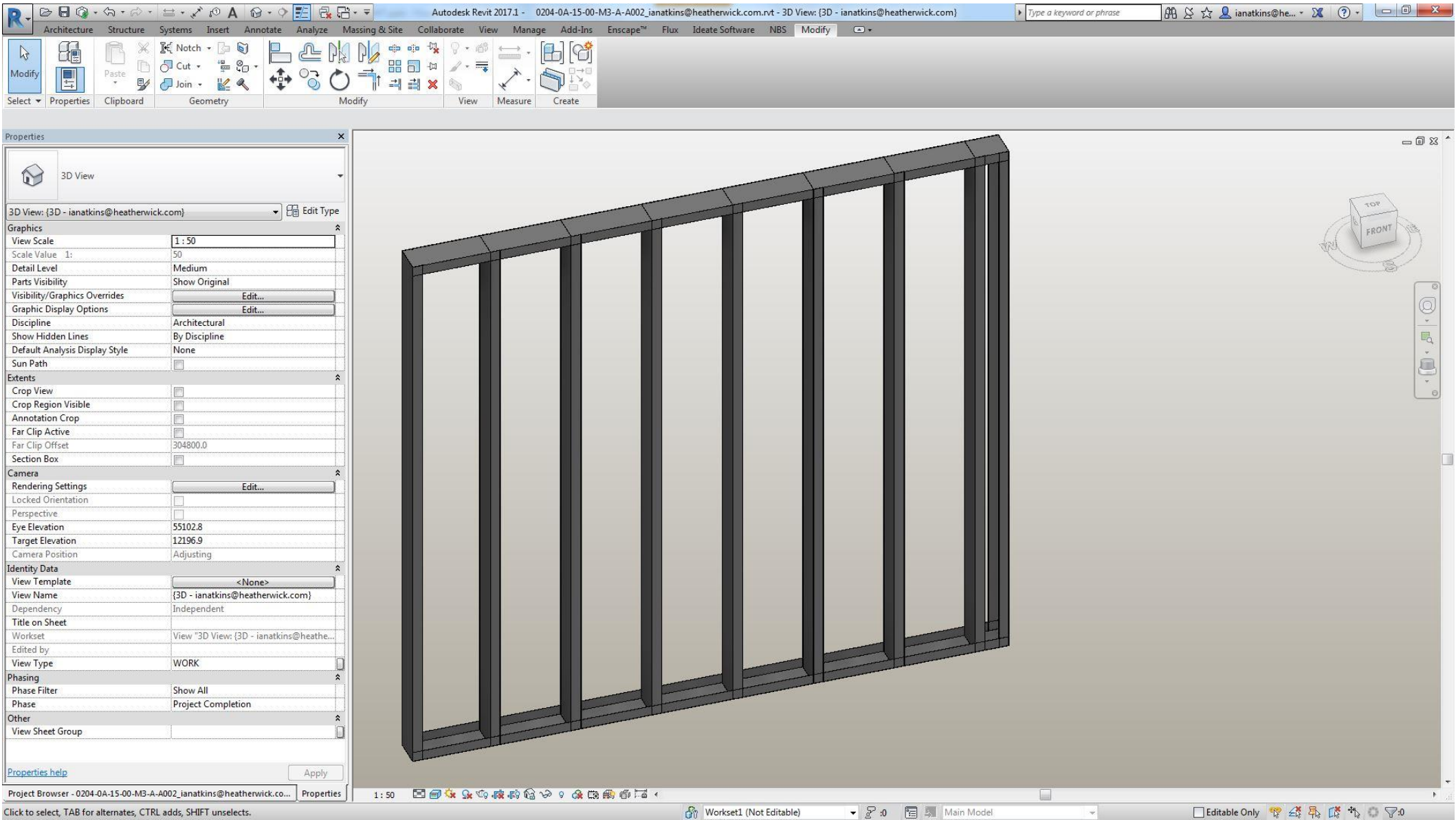




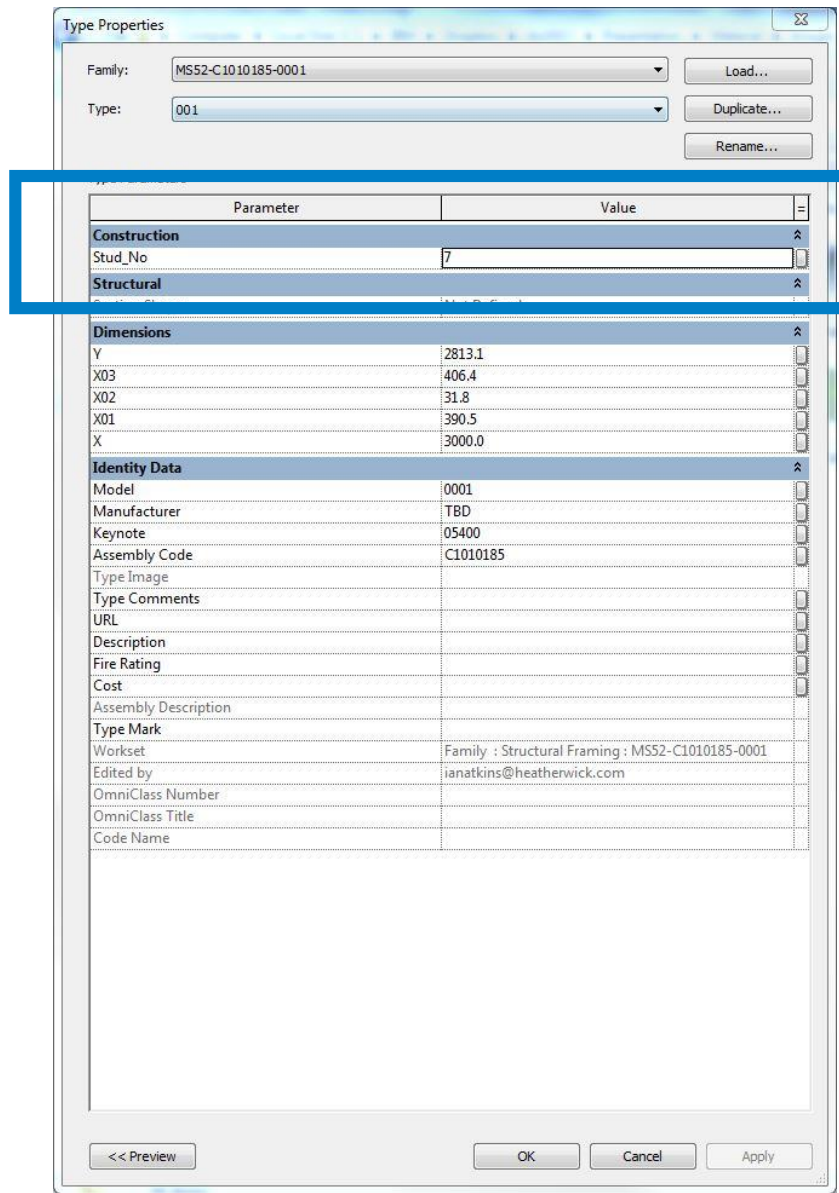
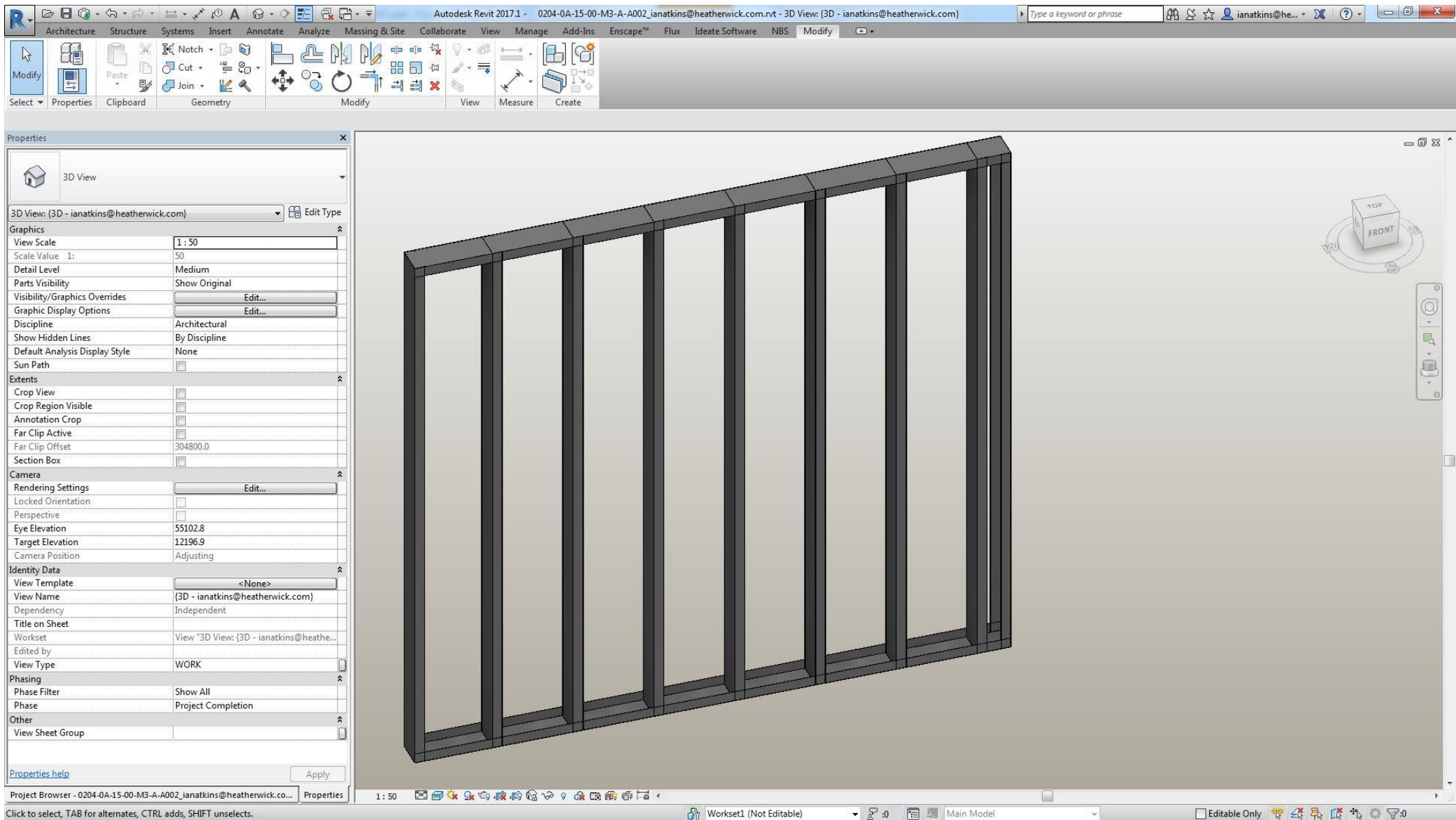
# Model Proliferation and Repetition



# Model Proliferation and Repetition

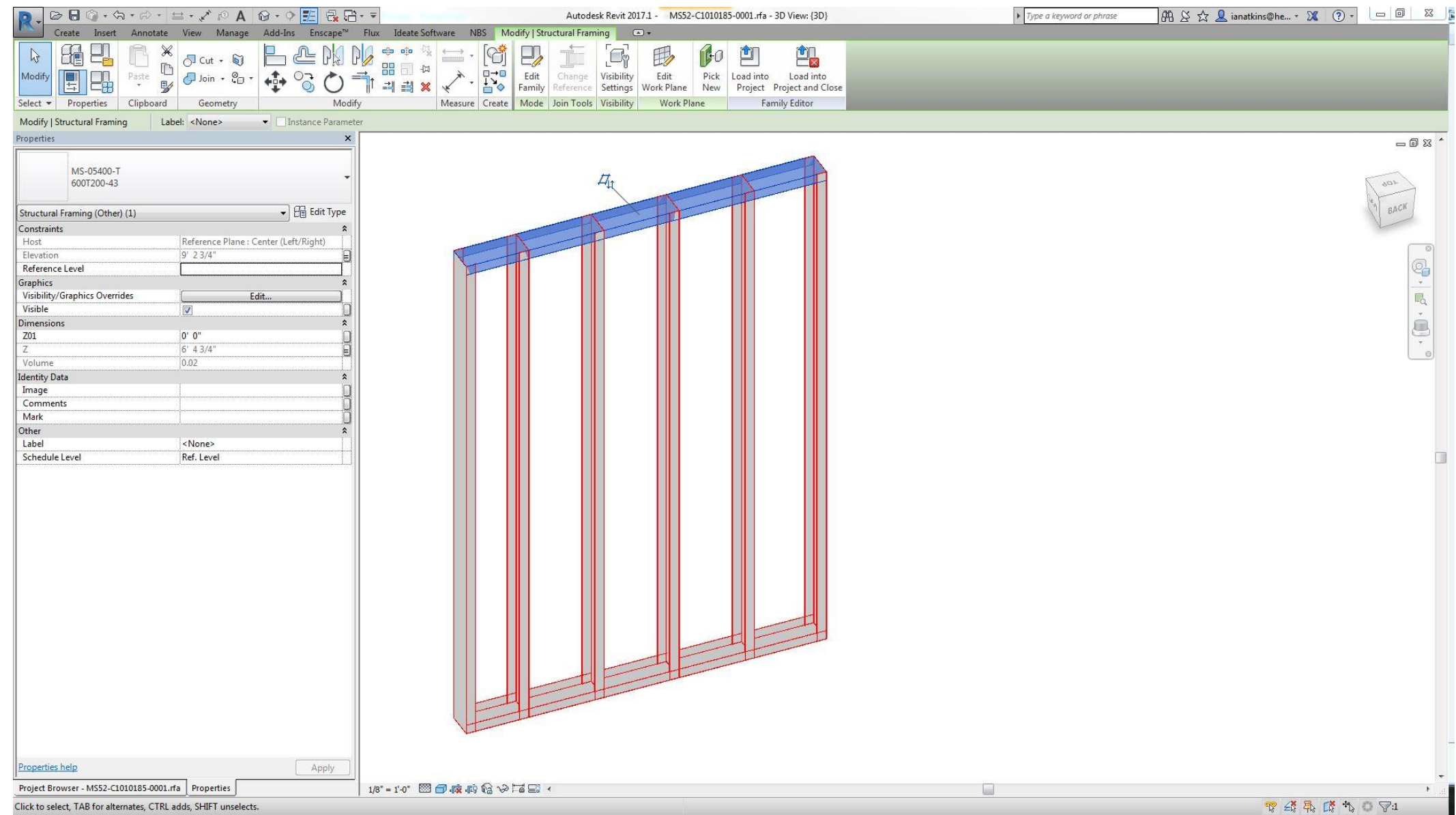


# Model Proliferation and Repetition

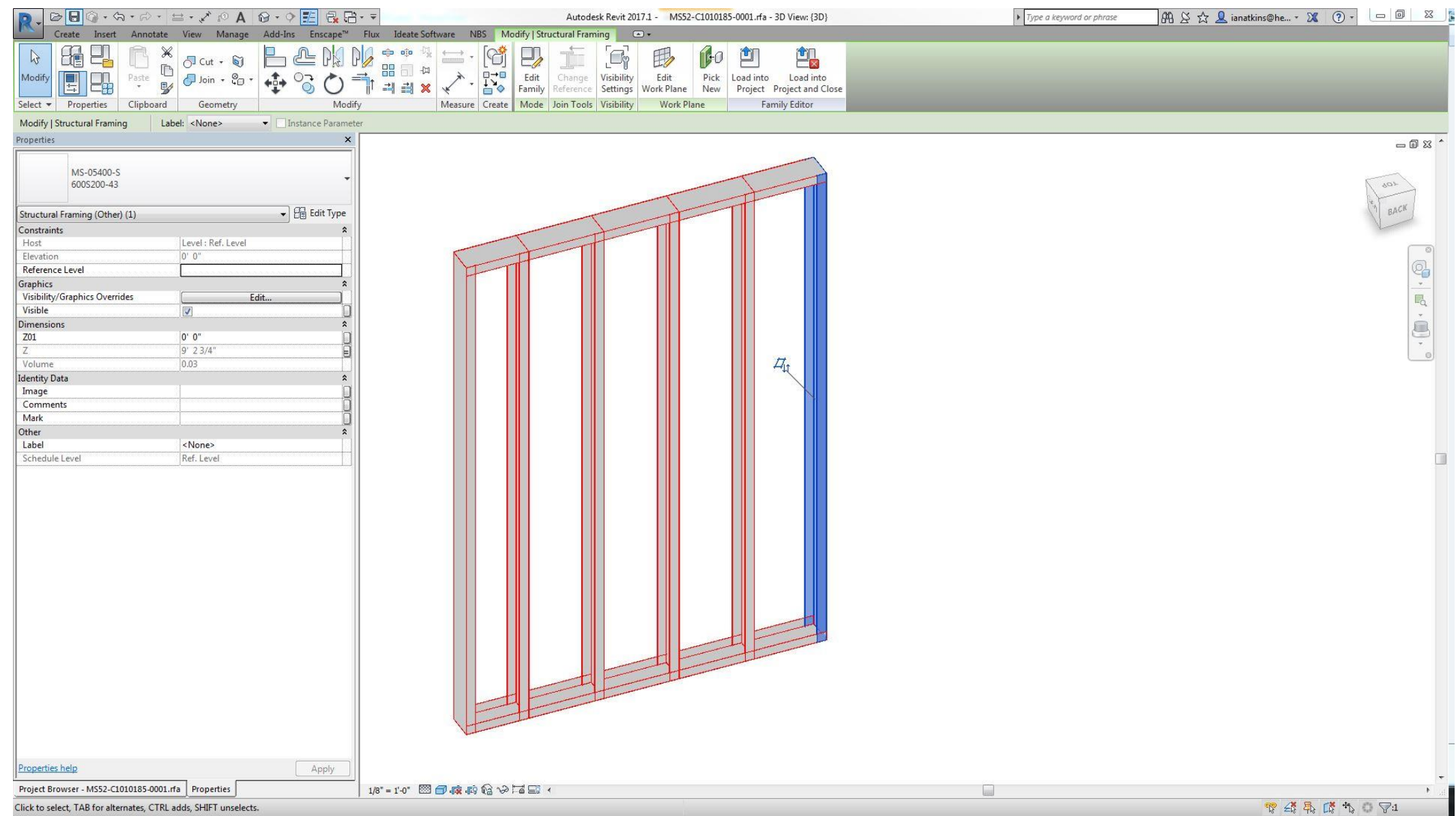




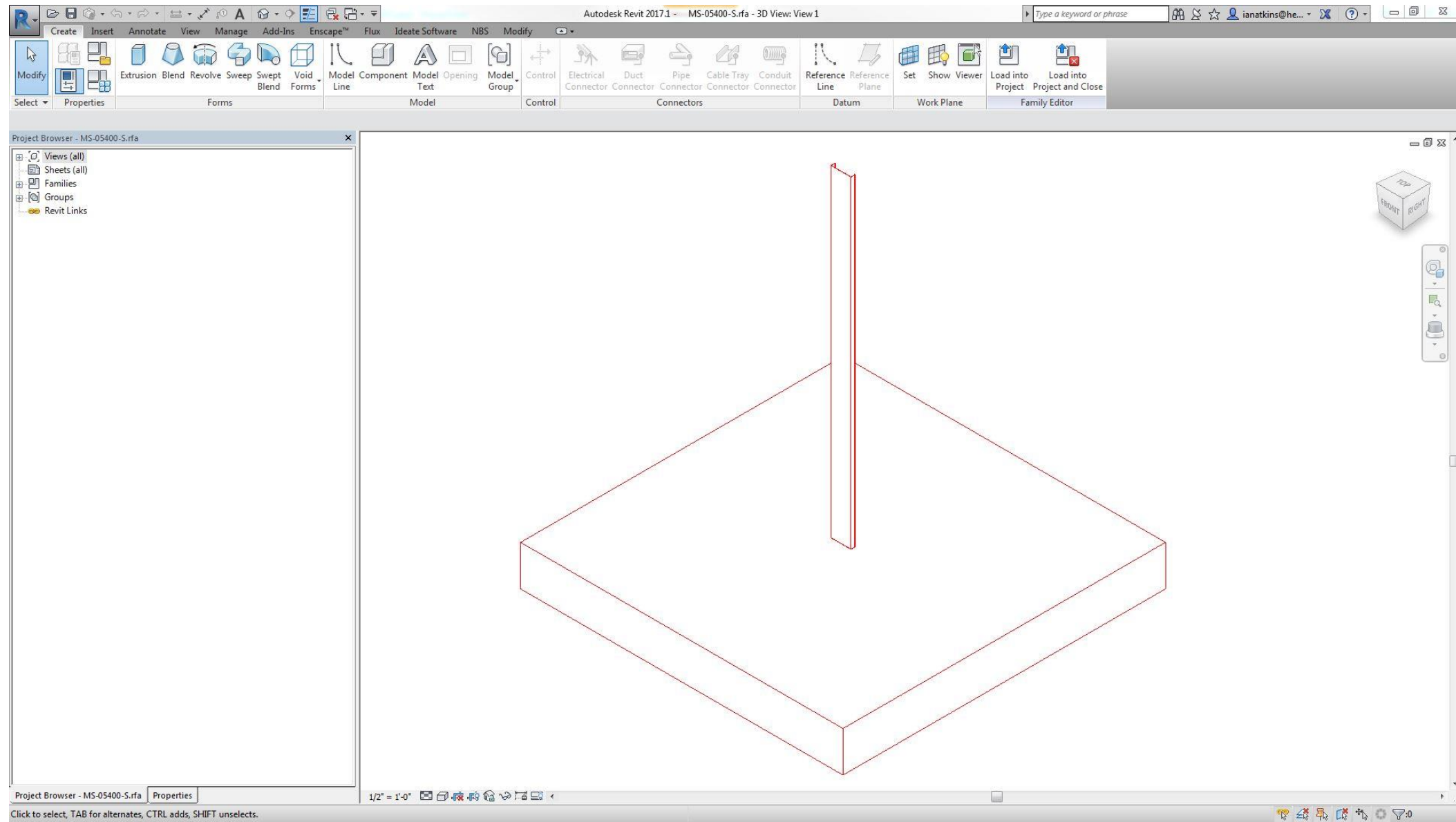
# Model Proliferation and Repetition



# Model Proliferation and Repetition

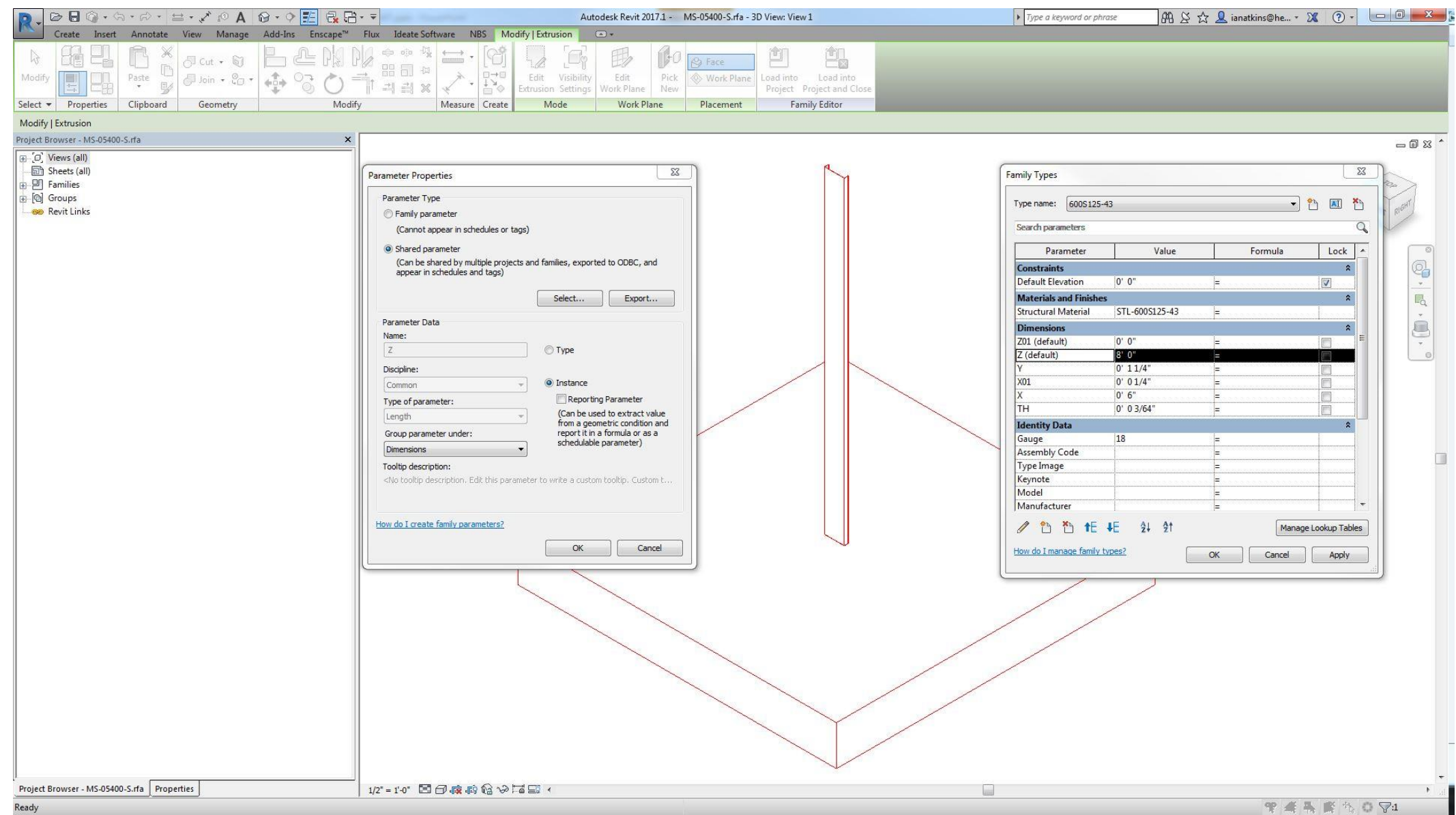


# Model Proliferation and Repetition

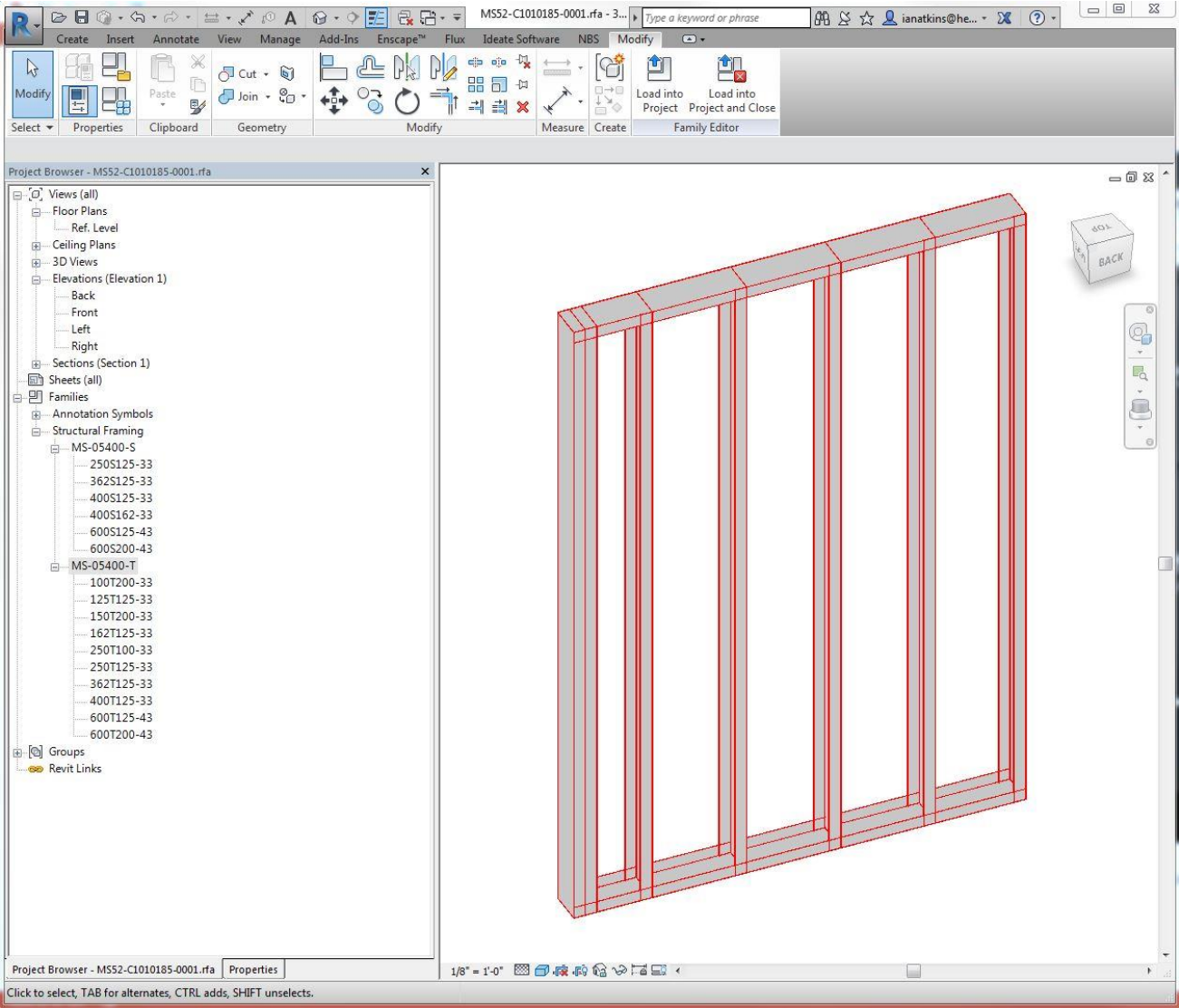
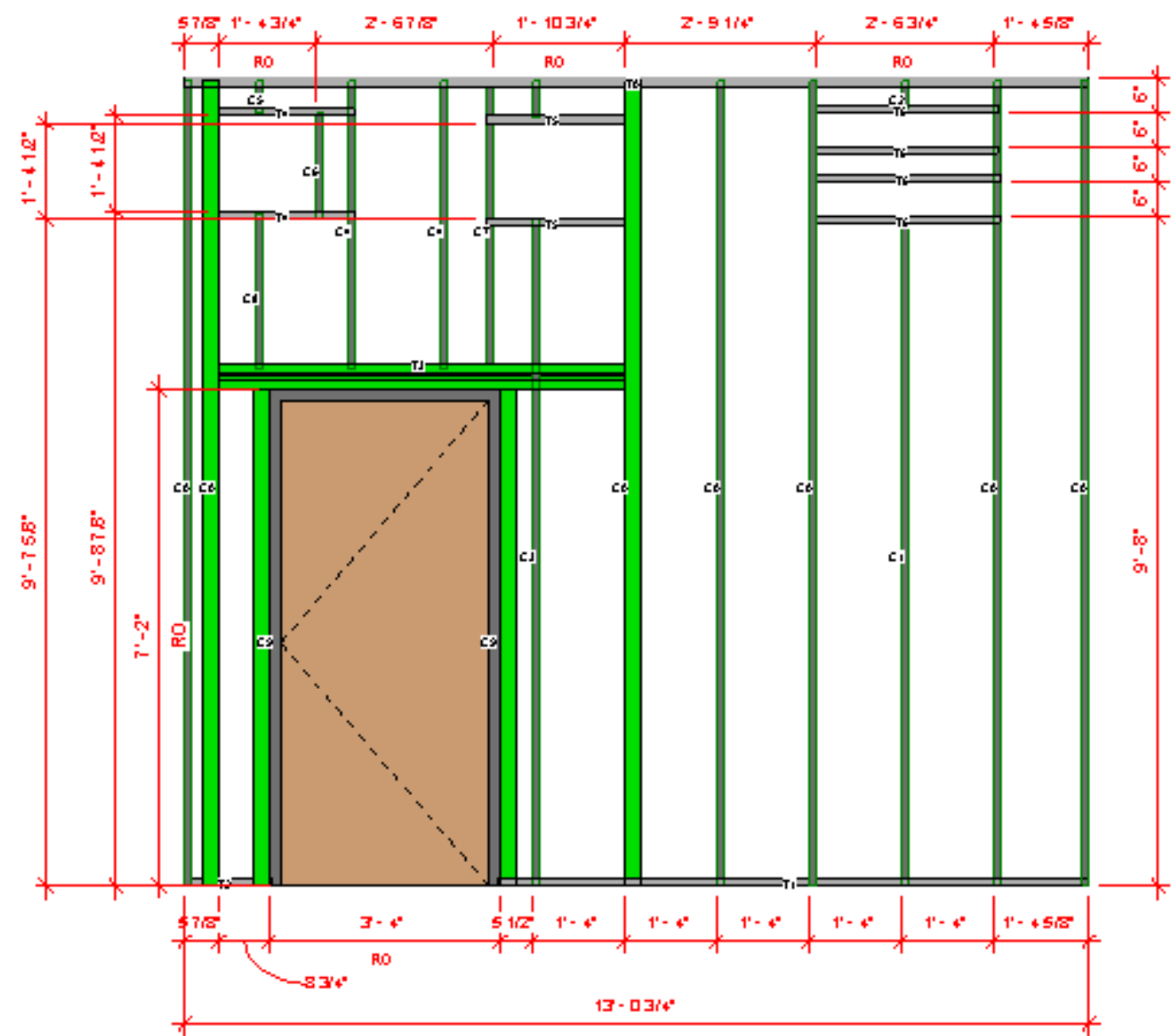




# Model Proliferation and Repetition

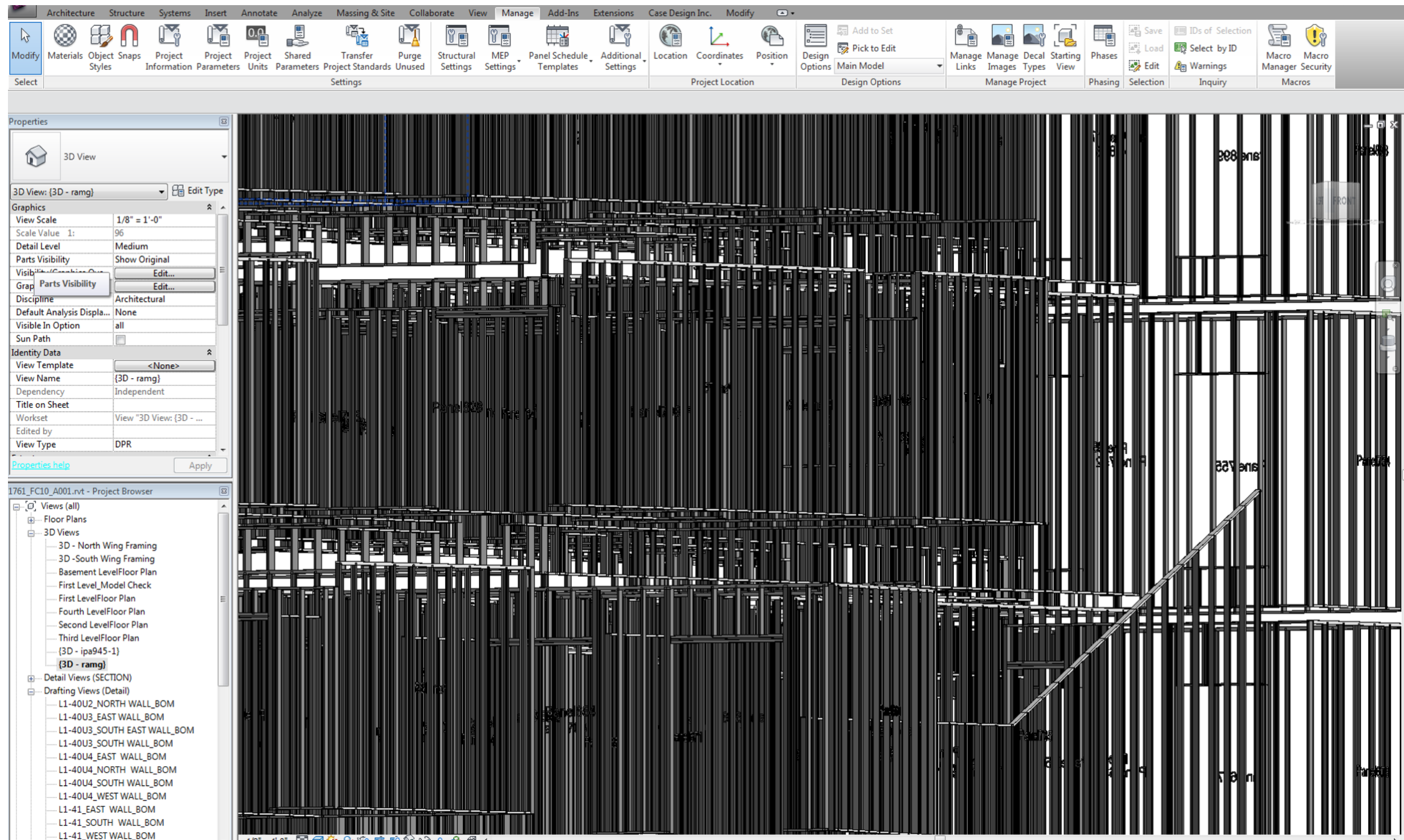


# Model Proliferation and Repetition



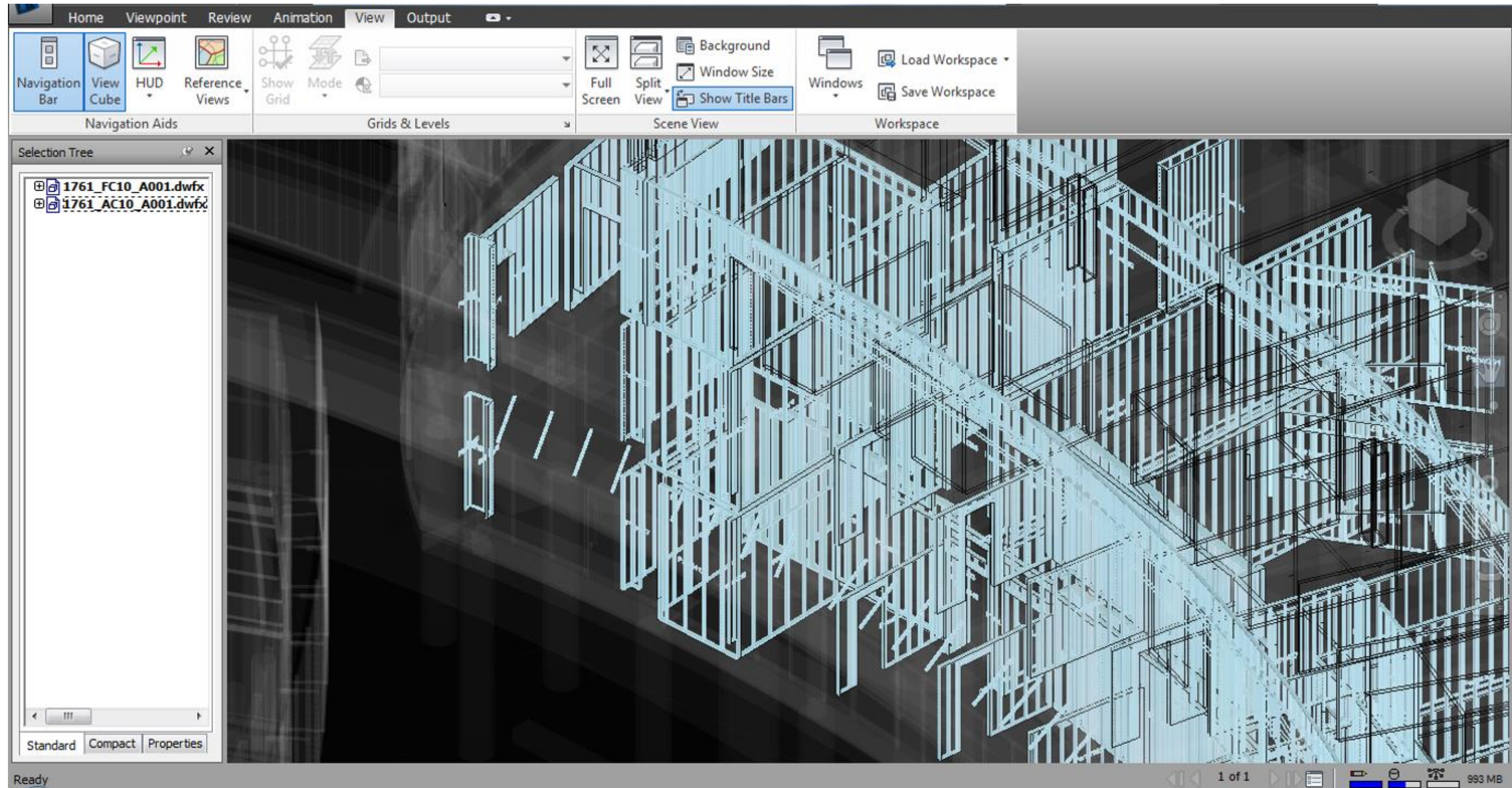
4 Elevation Framing  
SCALE: 1/2" = 1'-0"

# Model Proliferation and Repetition



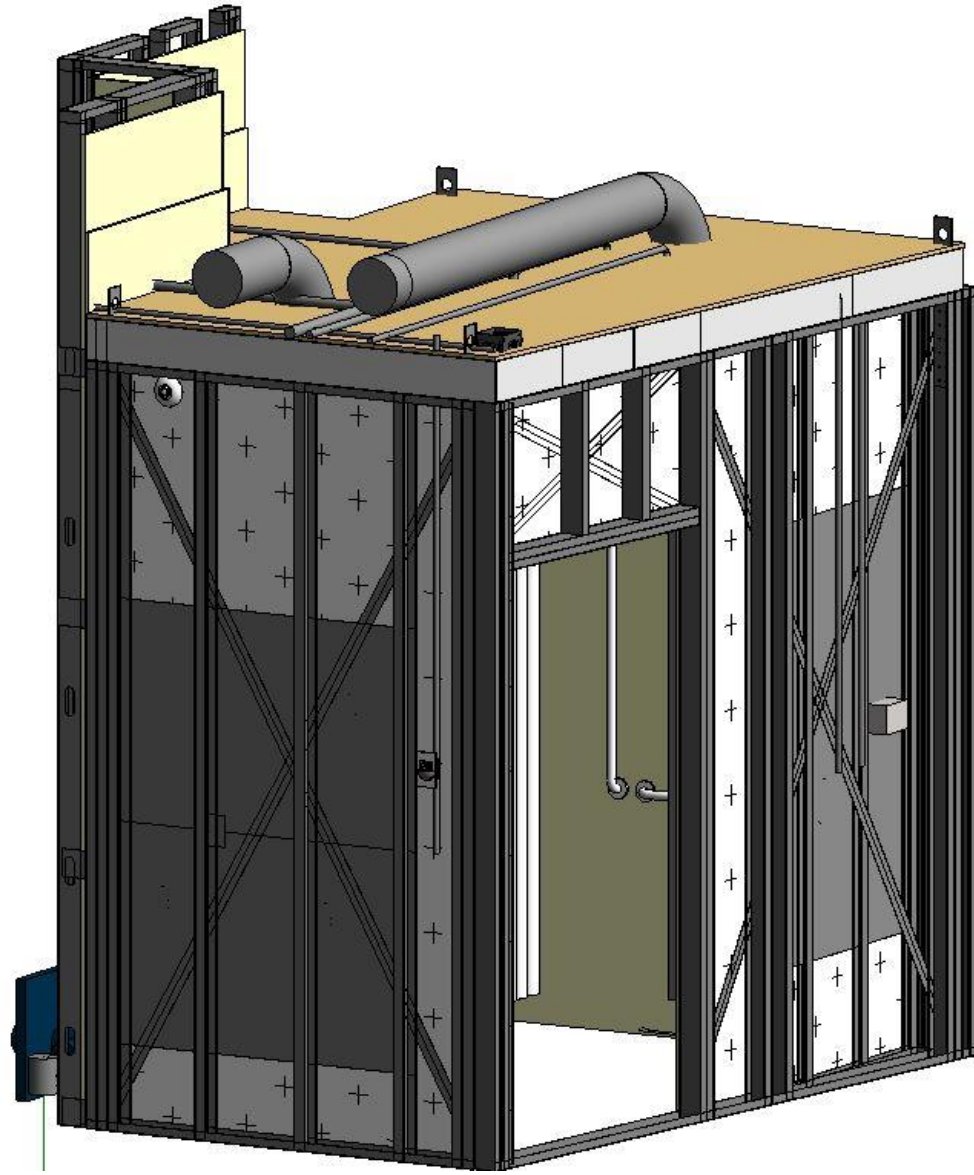


# Model Proliferation and Repetition

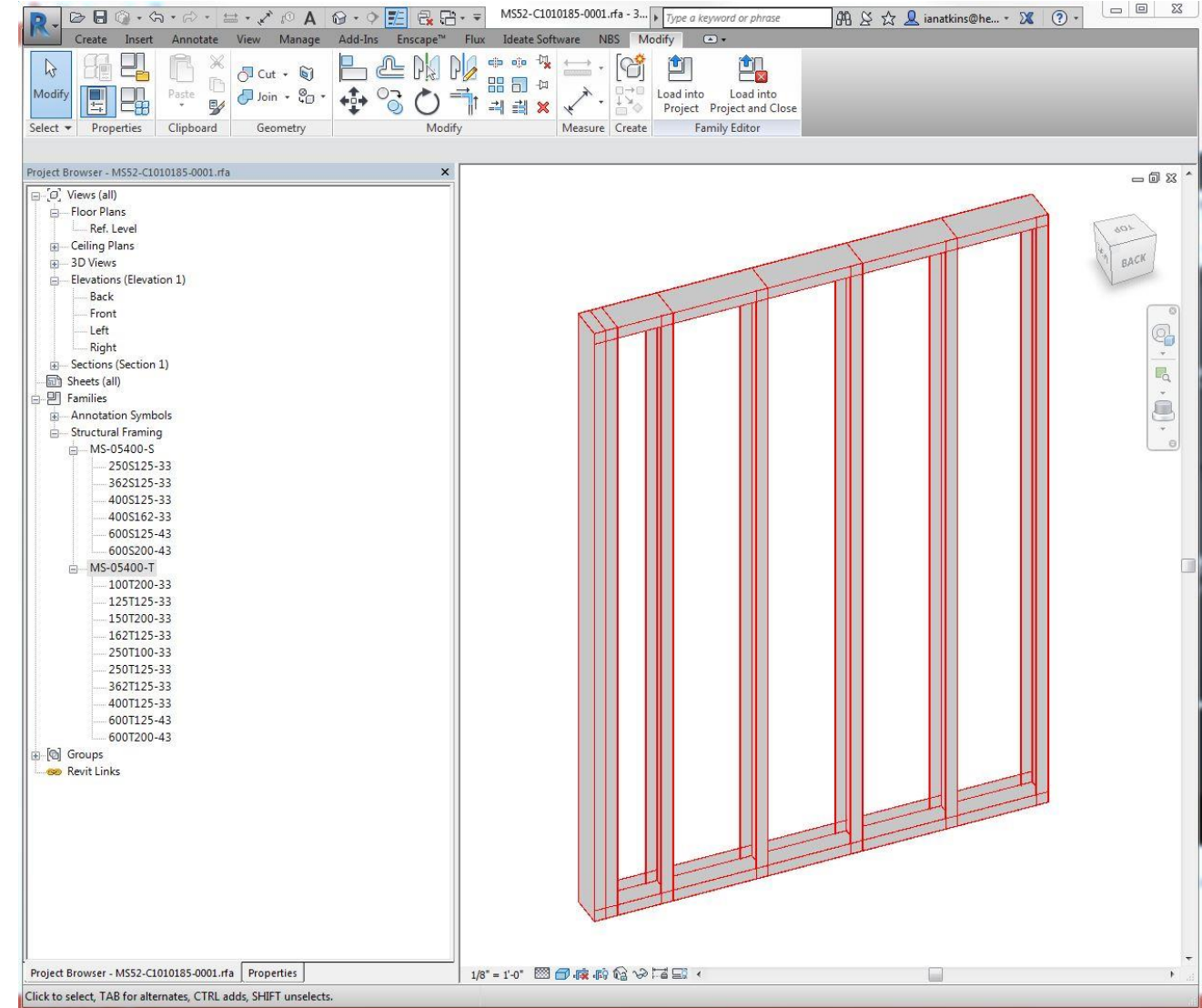




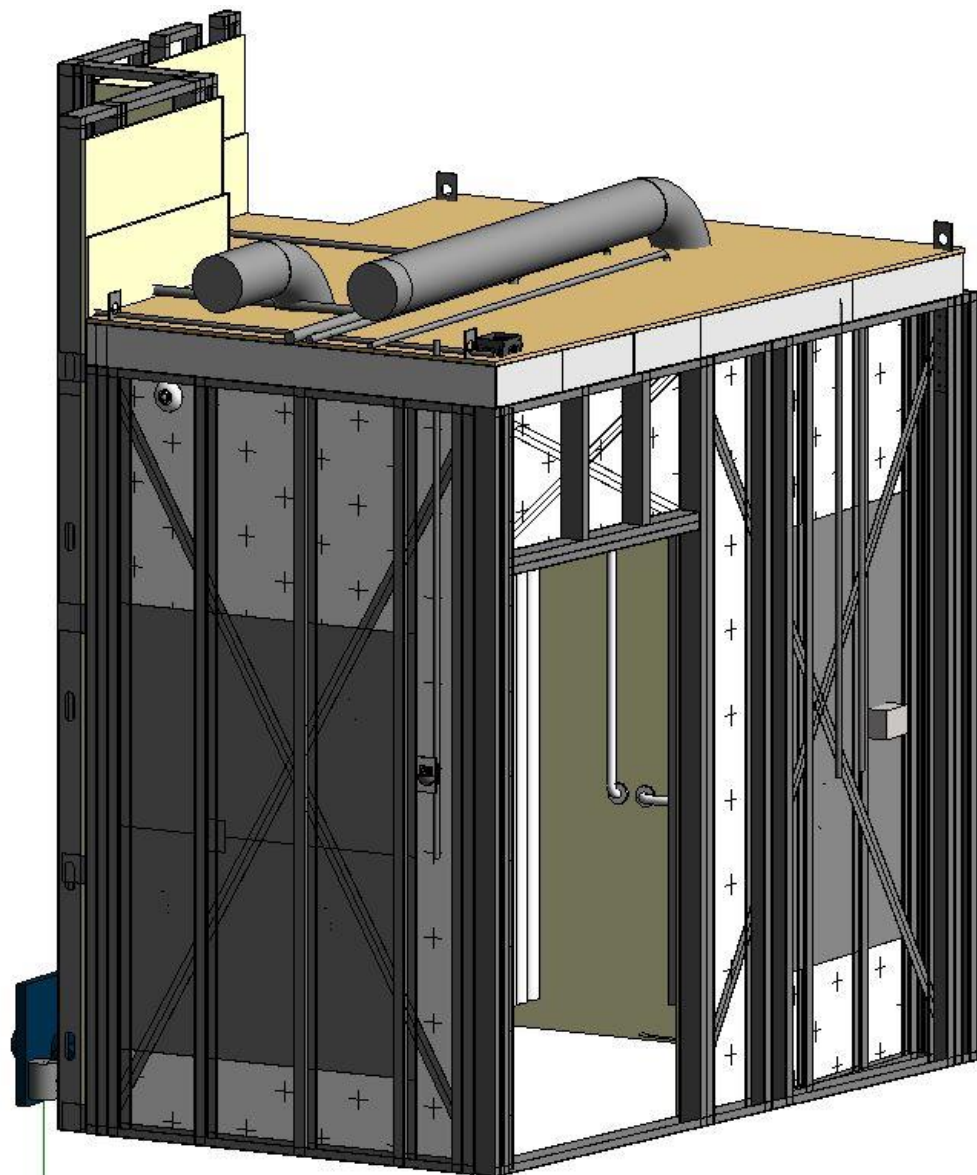
# Model Proliferation and Repetition



Fabrication Model

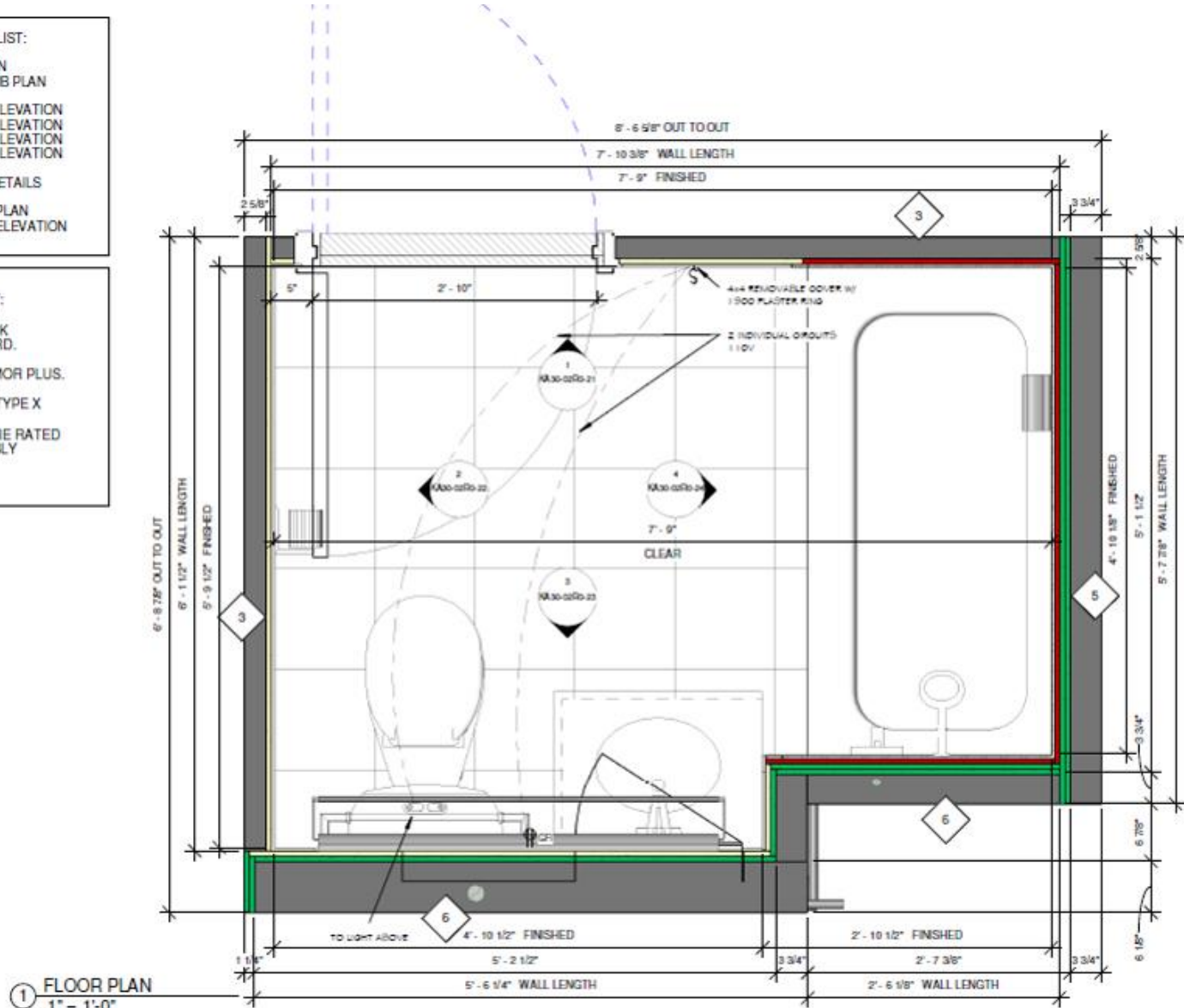


# Model Proliferation and Repetition



- ARCHITECTURAL DRAWING LIST:
- A30-100-A - FLOOR PLAN
  - A30-101-A - HONEYCOMB PLAN
  - A30-02R0-21 - INTERIOR ELEVATION
  - A30-02R0-22 - INTERIOR ELEVATION
  - A30-02R0-23 - INTERIOR ELEVATION
  - A30-02R0-24 - INTERIOR ELEVATION
  - A30-0400 - GENERAL DETAILS
  - M30-01R0-20 - PLUMBING PLAN
  - M30-01R0-21 - PLUMBING ELEVATION

- DRYWALL KEY:
- 5/8" DURAROCK CEMENT BOARD.
  - 5/8" DENS ARMOR PLUS.
  - 5/8" PROROC TYPE X GYPSUM (REFER TO FIRE RATED WALL ASSEMBLY DETAILS)

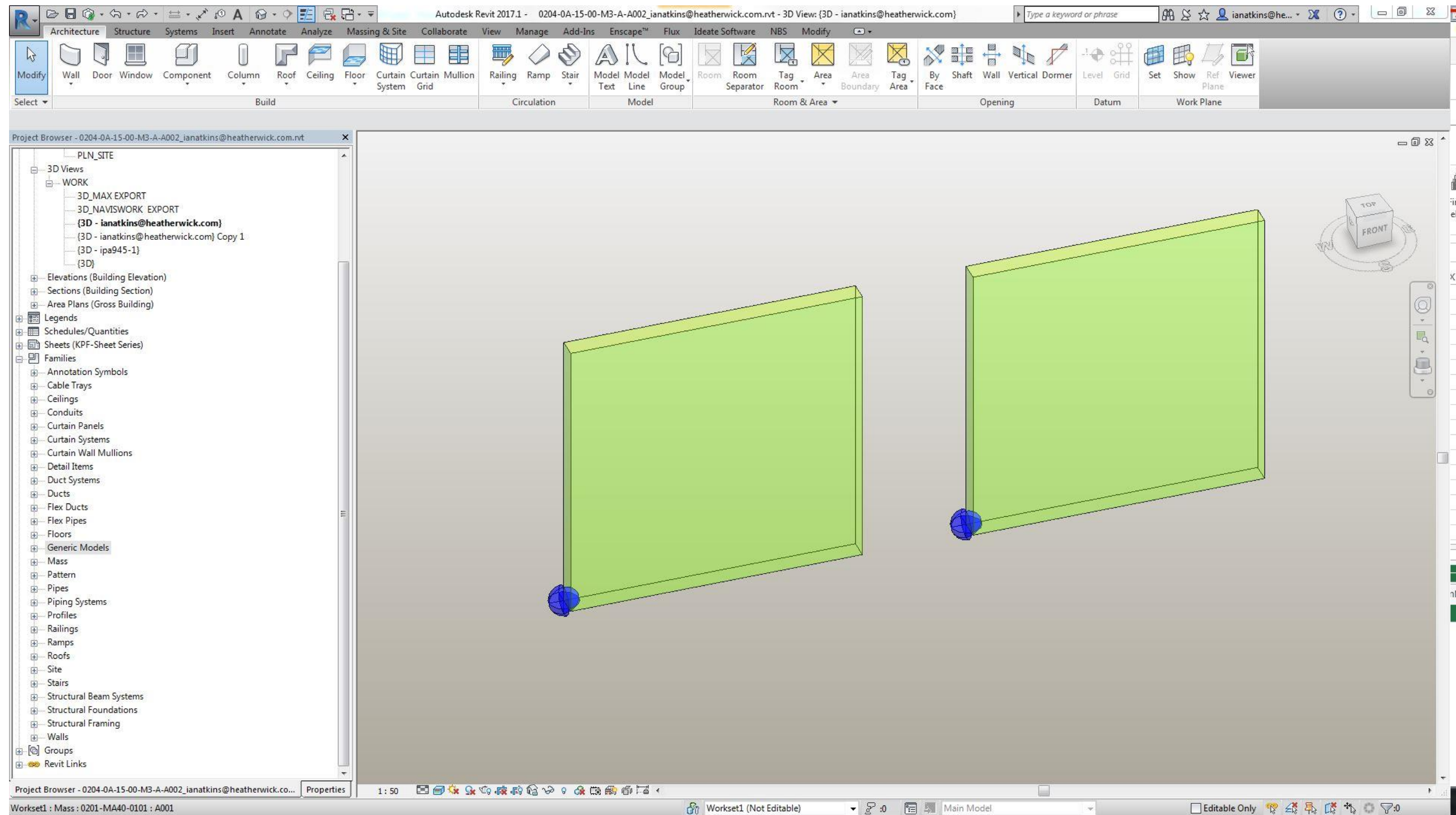


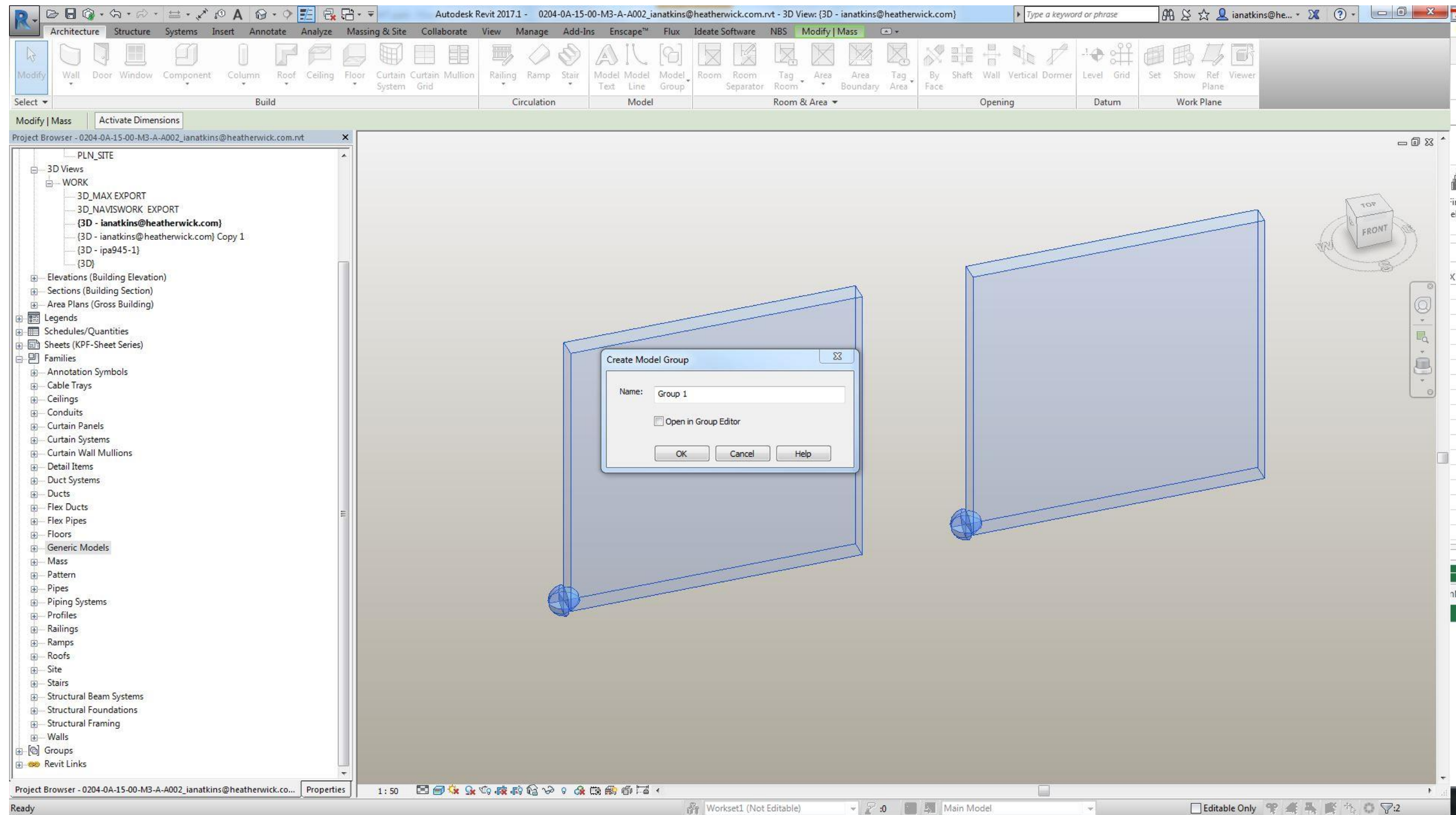
Fabrication Model



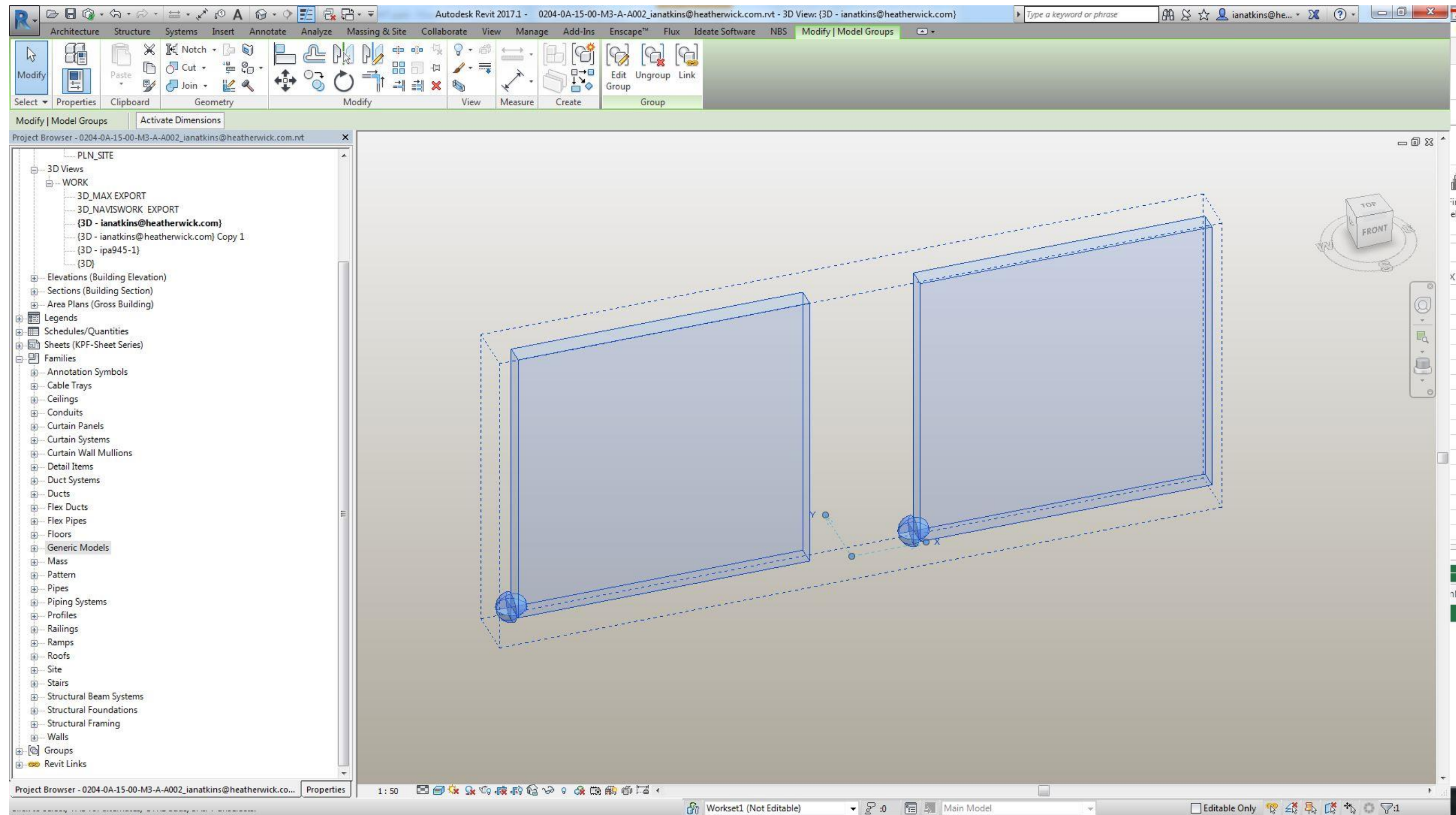
# Model Proliferation and Repetition

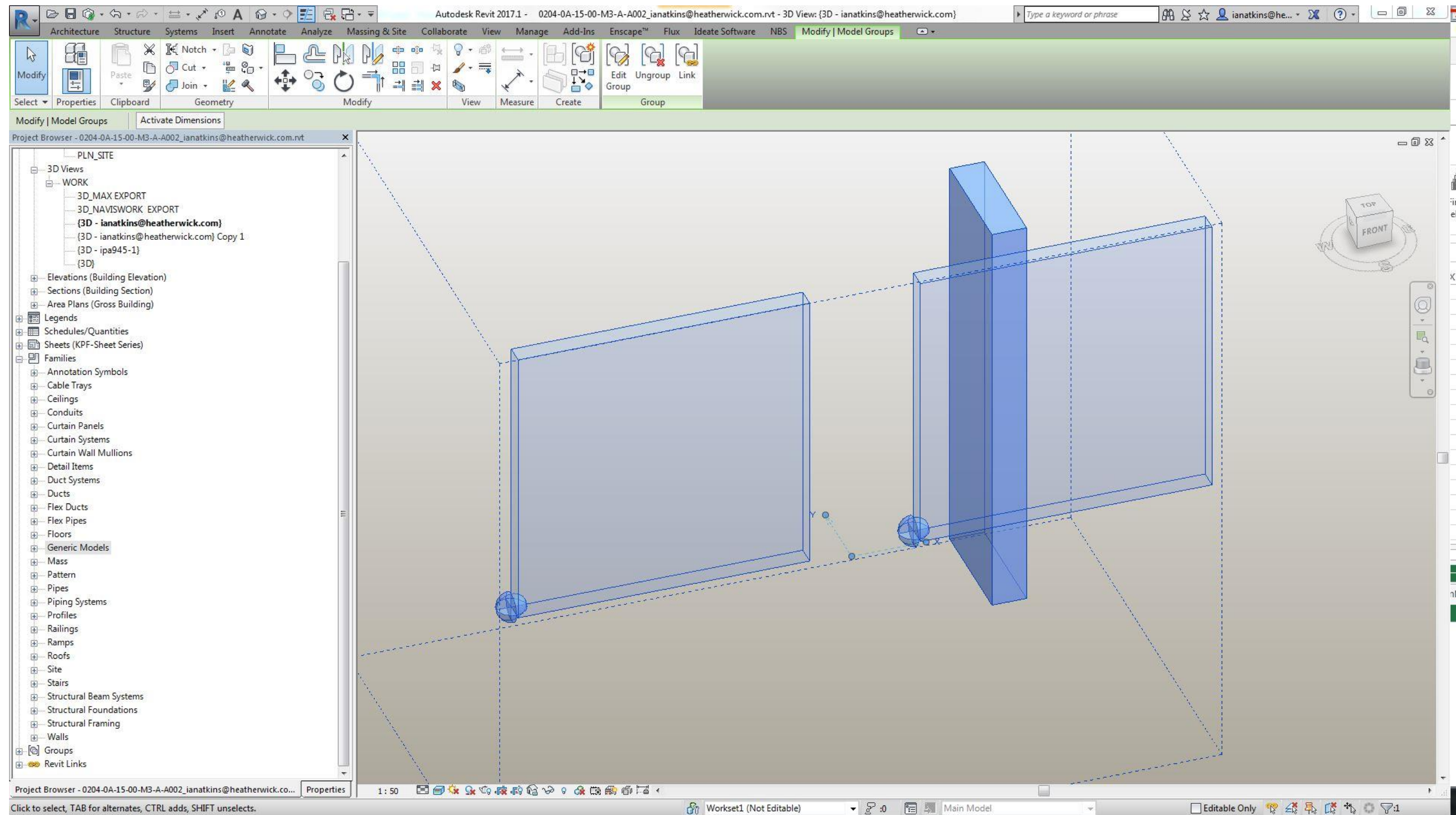
- Families (+Nested Families)
- Groups



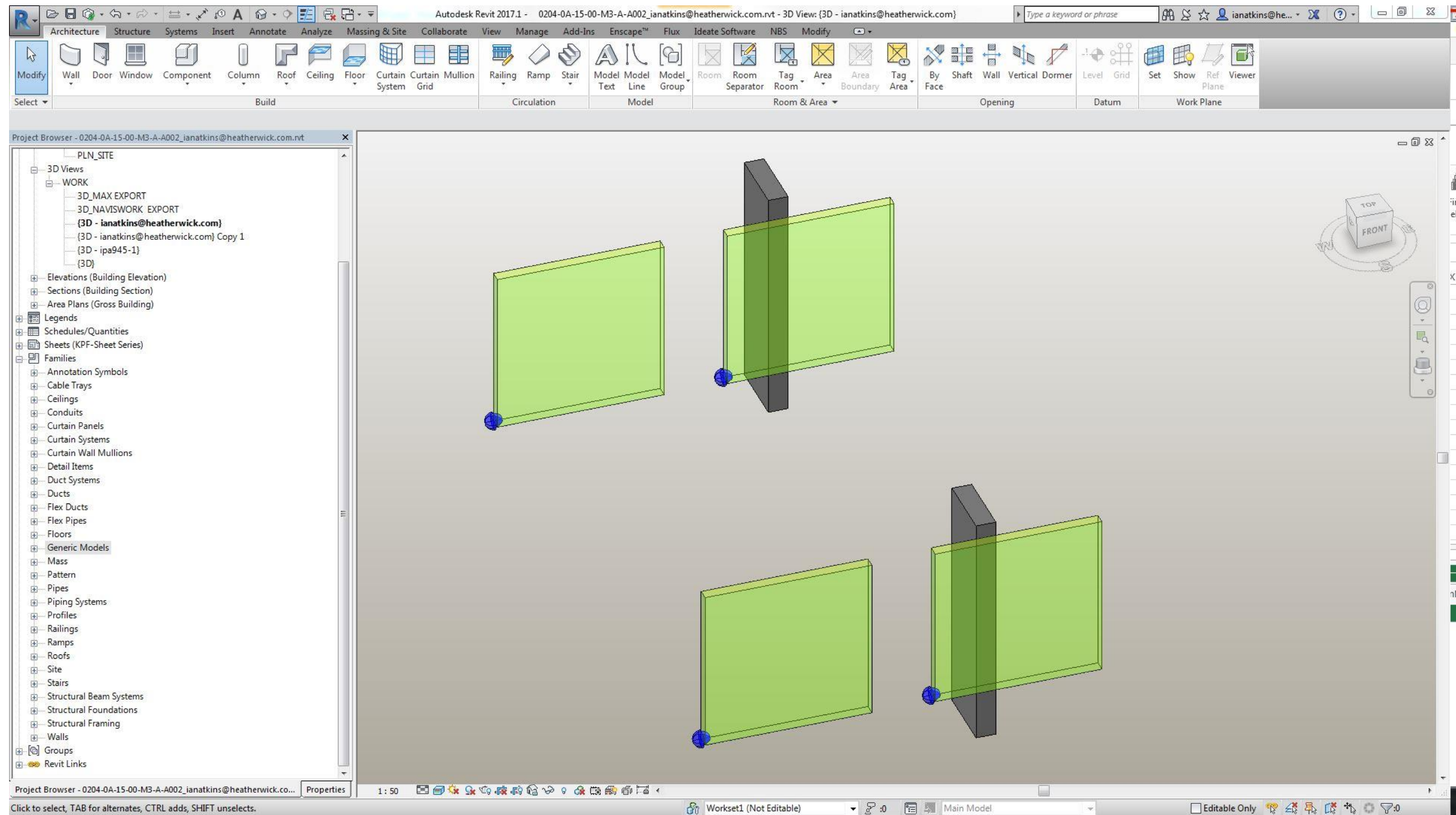




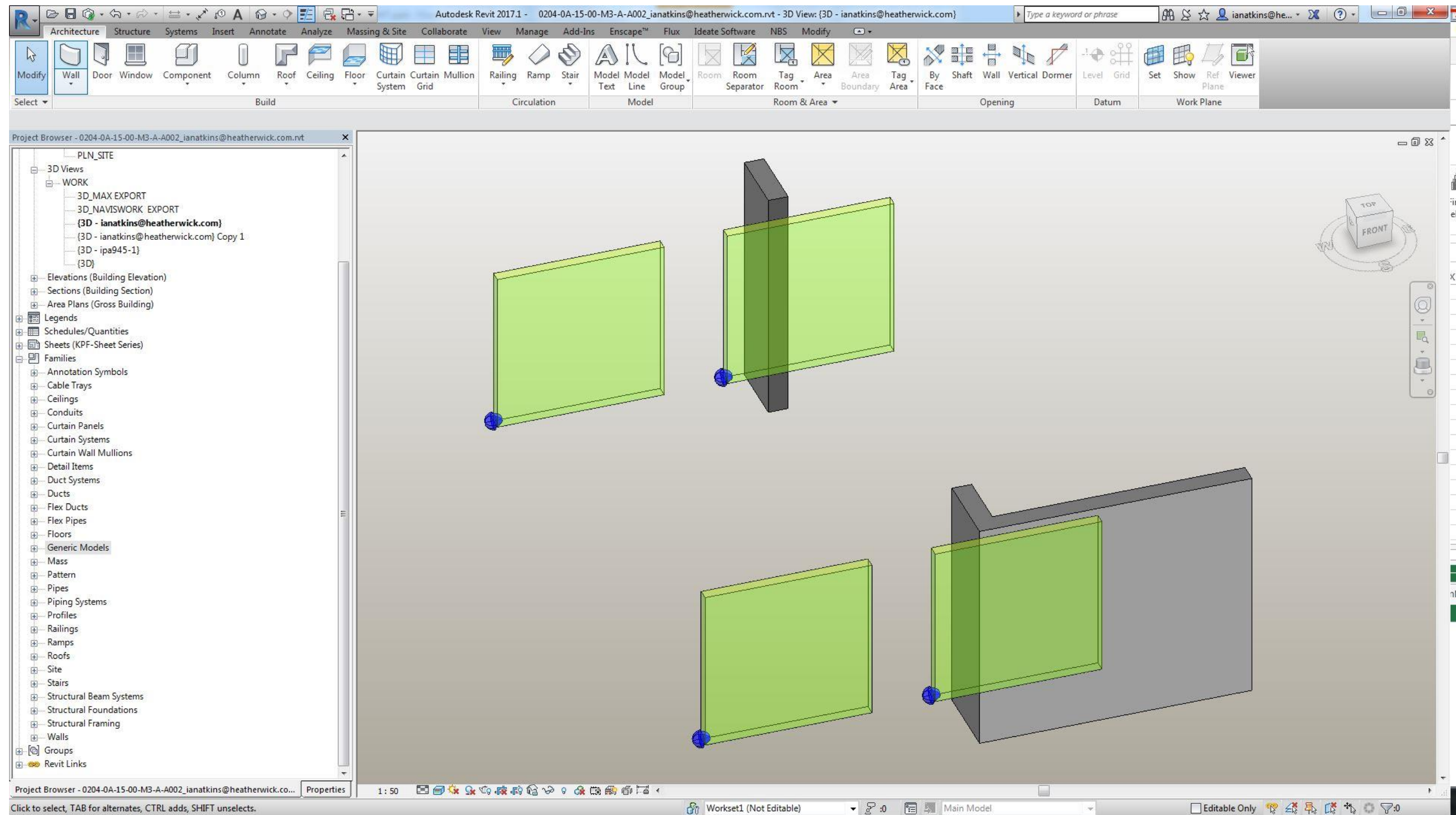












Autodesk Revit 2017.1 - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.com.rvt - 3D View: {3D - ianatkins@heatherwick.com}

Type a keyword or phrase

ianatkins@he...

ArchitectureStructureSystemsInsertAnnotateAnalyzeMassing & SiteCollaborateViewManageAdd-InsEnscape™FluxIdeate SoftwareNBS

Modify | Walls

Modify

Select ▾

Properties

Clipboard

Geometry

Modify

View

Measure

Create

Mode

Modify Wall

Modify | Walls

Properties

Basic Wall

Exterior - Brick on Mtl. Stud

Walls (1)

Edit Type

Constraints

Location Line

Wall Centerline

Base Constraint

AC15-B1

Base Offset

0.0

Base is Attached

☐

Base Extension Distance

0.0

Top Constraint

Unconnected

Unconnected Height

4267.2

Top Offset

0.0

Top is Attached

☐

Top Extension Distance

0.0

Room Bounding

☒

Related to Mass

☐

Structural

Structural

☐

Enable Analytical Model

☐

Structural Usage

Non-bearing

Dimensions

Length

1220.0

Area

64.13 SF

Volume

74.15 CF

Identity Data

Image

Comments

Mark

Workset

Workset1

Edited by

ianatkins@heatherwick.com

Phasing

Phase Created

Project Completion

Phase Demolished

None

Other

FluxId

Properties help

Apply

Add Remove Attach Finish Cancel

Edit Group

TOP

FRONT

10500.0

1220.0

4500.0

1: 50

Workset1 (Not Editable)

Main Model

Editable Only



Autodesk Revit 2017.1 - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.com.rvt - 3D View: {3D - ianatkins@heatherwick.com}

Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Enscape™ Flux Ideate Software NBS Modify | Walls

Modify | Walls

Properties

Basic Wall  
Exterior - Brick on Mtl. Stud

Walls (1) Edit Type

Constraints

Location Line	Wall Centerline
Base Constraint	AC15-B1
Base Offset	0.0
Base is Attached	<input type="checkbox"/>
Base Extension Distance	0.0
Top Constraint	Unconnected
Unconnected Height	4267.2
Top Offset	0.0
Top is Attached	<input type="checkbox"/>
Top Extension Distance	0.0
Room Bounding	<input checked="" type="checkbox"/>
Related to Mass	<input type="checkbox"/>

Structural

Structural	<input type="checkbox"/>
Enable Analytical Model	<input type="checkbox"/>
Structural Usage	Non-bearing

Dimensions

Length	1220.0
Area	64.13 SF
Volume	74.15 CF

Identity Data

Image

Mark

Workset	Workset1
Edited by	ianatkins@heatherwick.com

Phasing

Phase Created	Project Completion
Phase Demolished	None

Other

FluxId

Properties help Apply

Project Browser - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.co... Properties

1 : 50

Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

Workset1 (Not Editable)

Main Model

Editable Only



Autodesk Revit 2017.1 - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.com.rvt - 3D View: {3D - ianatkins@heatherwick.com}

ArchitectureStructureSystemsInsertAnnotateAnalyzeMassing & SiteCollaborateViewManageAdd-InsEnscape™FluxIdeate SoftwareNBSModify

Modify

WallDoorWindowComponentColumnRoofCeilingFloorCurtain SystemCurtain GridMullion

RailingRampStairModel Model LineModel GroupRoomRoom SeparatorTag RoomAreaArea BoundaryTag AreaBy FaceShaftWallVertical DormerLevelGridSetShowRef Viewer

SelectBuildCirculationModelRoom & AreaOpeningDatumWork Plane

Properties

3D View

3D View: {3D - ianatkins@heatherwick.com}

Graphics

View Scale1 : 50Scale Value 1: 50Detail LevelMediumParts VisibilityShow OriginalVisibility/Graphics OverridesEdit...Graphic Display OptionsEdit...DisciplineArchitecturalShow Hidden LinesBy DisciplineDefault Analysis Display StyleNoneSun Path

Extents

Crop ViewCrop Region VisibleAnnotation CropFar Clip ActiveFar Clip Offset304800.0Section Box

Camera

Rendering SettingsEdit...Locked OrientationPerspectiveEye Elevation55102.8Target Elevation12196.9Camera PositionAdjusting

Identity Data

View Template<None>View Name{3D - ianatkins@heatherwick.com}DependencyIndependentTitle on SheetWorksetView "3D View: {3D - ianatkins@heathe...}Edited byView TypeWORKPhasingPhase FilterShow AllPhaseProject CompletionOtherView Sheet Group

Properties helpApply

Project Browser - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.com...Properties

1 : 50

Workset1 (Not Editable)Main Model

Editable Only

Autodesk Revit 2017.1 - 0204-0A-15-00-M3-A-A002\_ianatkins@heatherwick.com.rvt - 3D View: {3D - ianatkins@heatherwick.com}

Type a keyword or phrase

ianatkins@he...

ArchitectureStructureSystemsInsertAnnotateAnalyzeMassing & SiteCollaborateViewManageAdd-InsEnscape™FluxIdeate SoftwareNBSModify

Modify

WallDoorWindowComponentColumnRoofCeilingFloorCurtain SystemCurtain GridMullion

RailingRampStairModel Model LineModel GroupRoomRoom SeparatorTag RoomAreaArea BoundaryTag AreaBy FaceShaftWallVerticalDormerLevelGridSetShowRef ViewerPlane

SelectBuildCirculationModelRoom & AreaOpeningDatumWork Plane

3D View

3D View: {3D - ianatkins@heatherwick.com}

Edit Type

Graphics

View Scale1 : 50

Scale Value 1:50

Detail LevelMedium

Parts VisibilityShow Original

Visibility/Graphics OverridesEdit...

Graphic Display OptionsEdit...

DisciplineArchitectural

Show Hidden LinesBy Discipline

Default Analysis Display StyleNone

Sun Path

Extents

Crop View

Crop Region Visible

Annotation Crop

Far Clip Active

Far Clip Offset304800.0

Section Box

Camera

Rendering SettingsEdit...

Locked Orientation

Perspective

Eye Elevation55102.8

Target Elevation12196.9

Camera PositionAdjusting

Identity Data

View Template<None>

View Name{3D - ianatkins@heatherwick.com}

DependencyIndependent

Title on Sheet

WorksetView "3D View: {3D - ianatkins@heathe..."

Edited by

View TypeWORK

Phasing

Phase FilterShow All

PhaseProject Completion

Other

View Sheet Group

Properties help

Apply

1 : 50

Workset1 (Not Editable)

Main Model

Editable Only

Click to select, TAB for alternates, CTRL adds, SHIFT unselects.

Autodesk Revit 2016

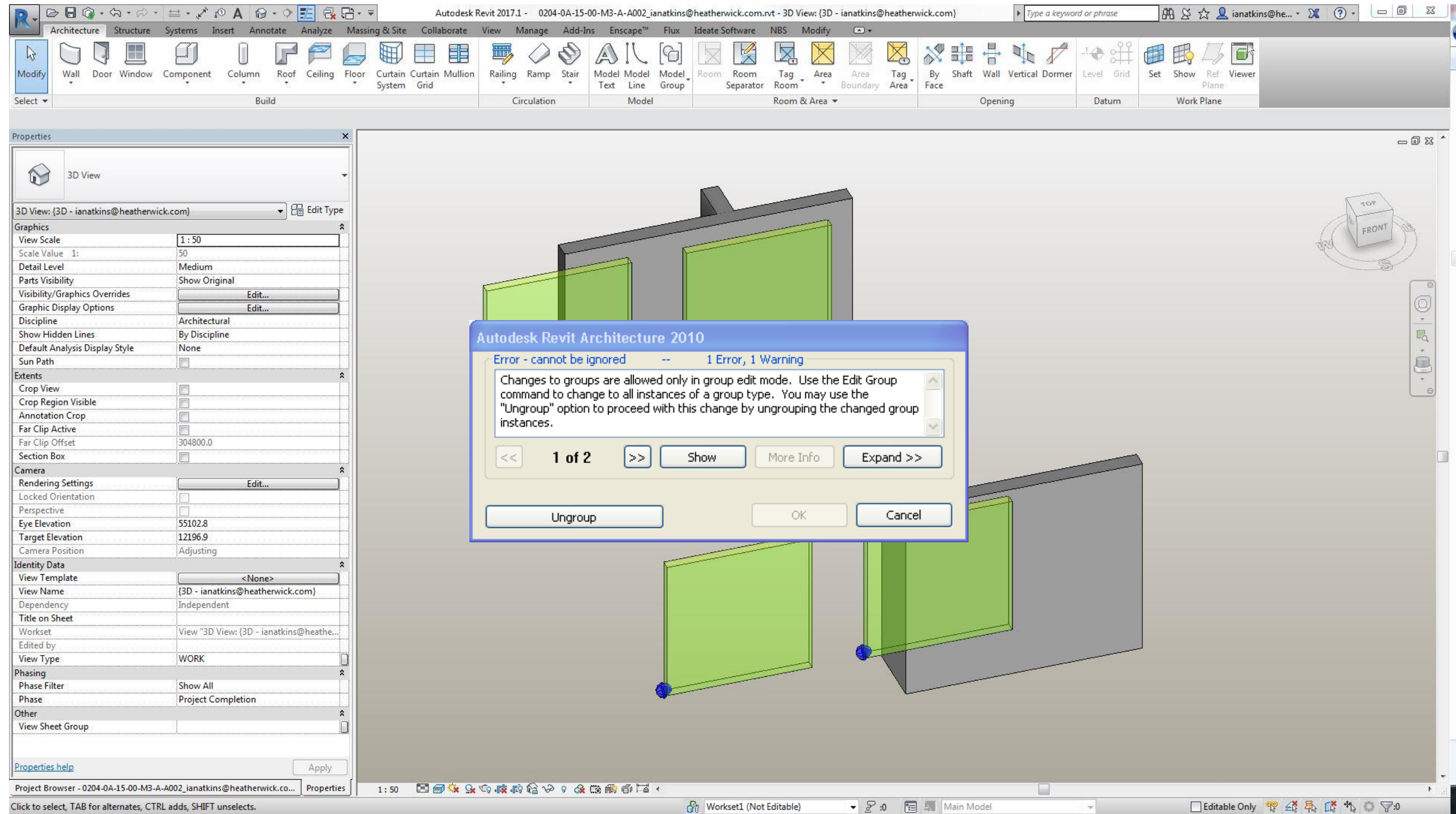
Error - cannot be ignored

Group instances of the same type do not contain identical members. Press "Fix Groups..." to select from options to make the groups consistent. Corresponding group members in different group instances diverge in the following respects:

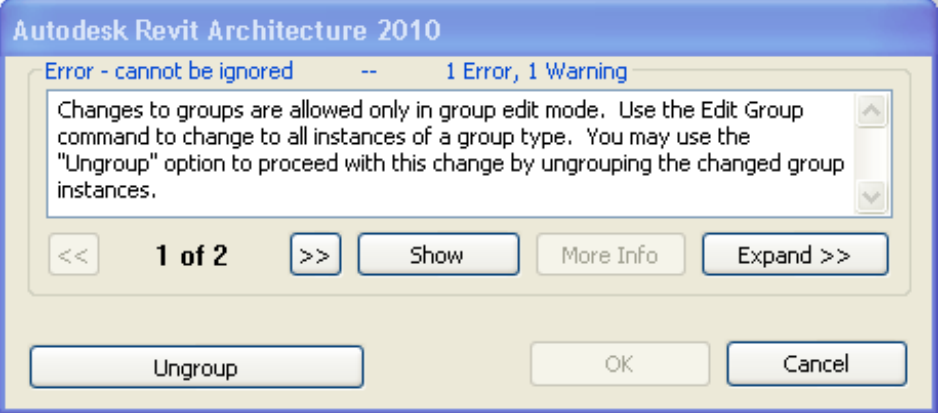
ShowMore InfoExpand >>

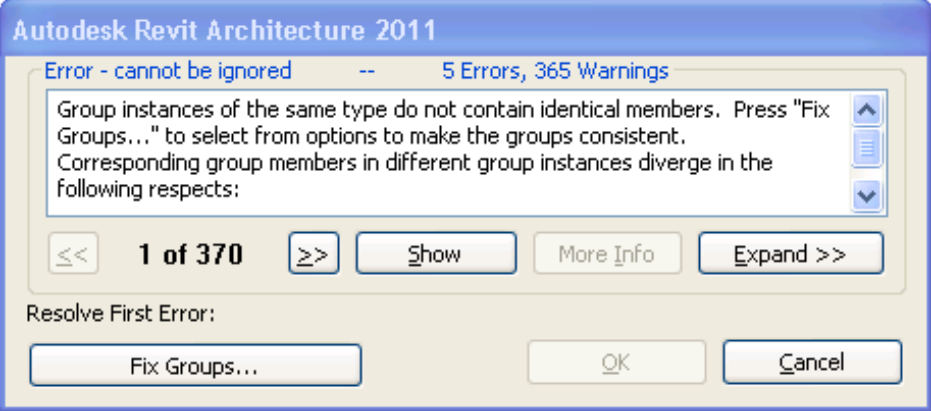
Fix Groups...OKCancel

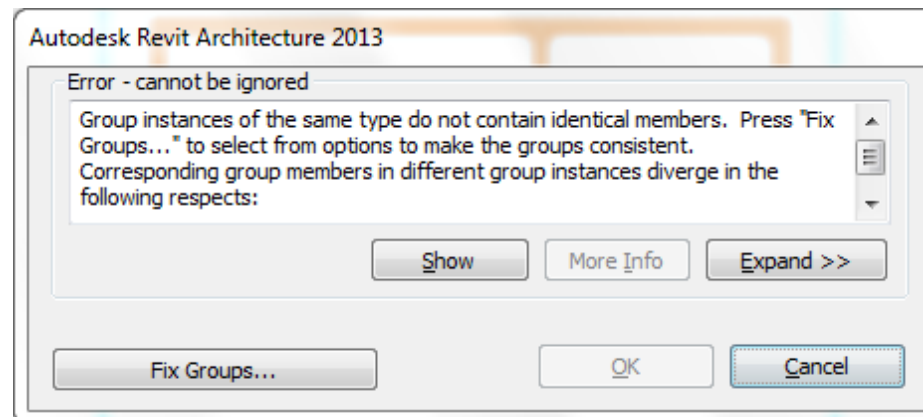




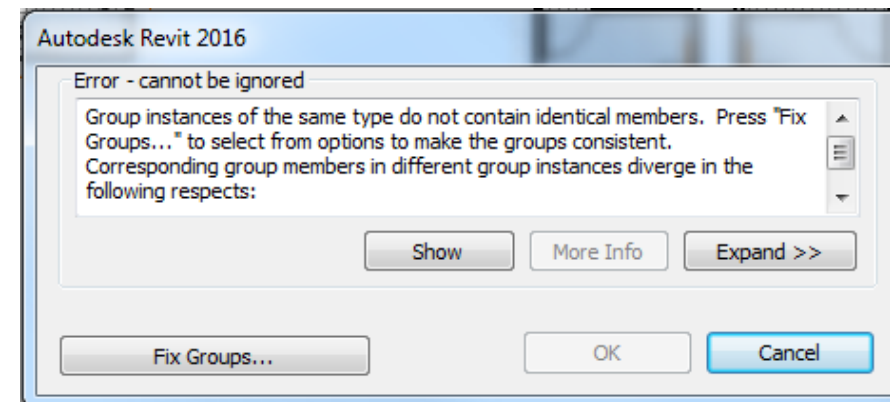






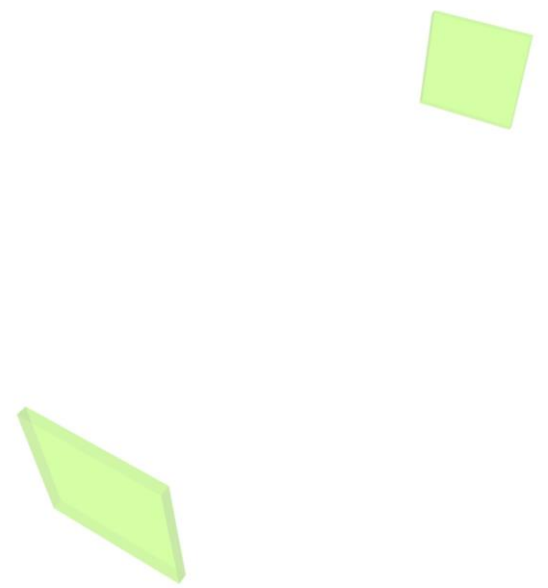




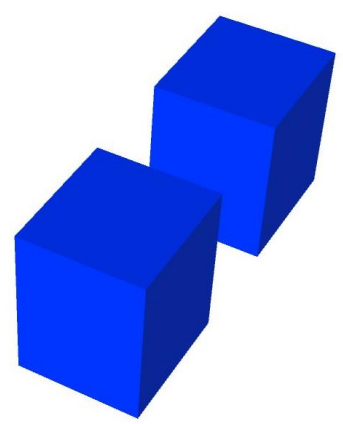


# Model Proliferation and Repetition

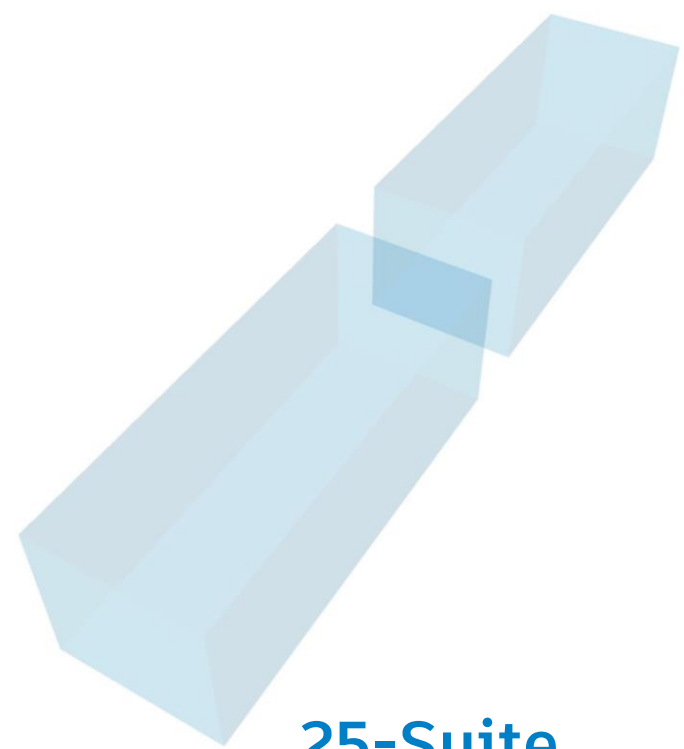
- Families (+Nested Families)
- Groups (No)
- Linked Files



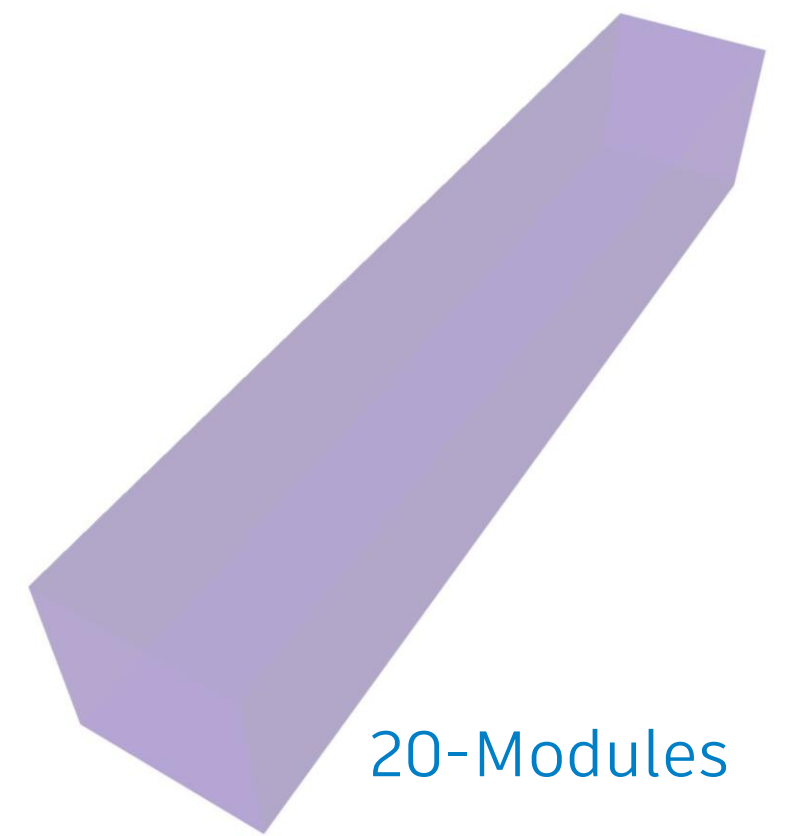
50-Assemblies



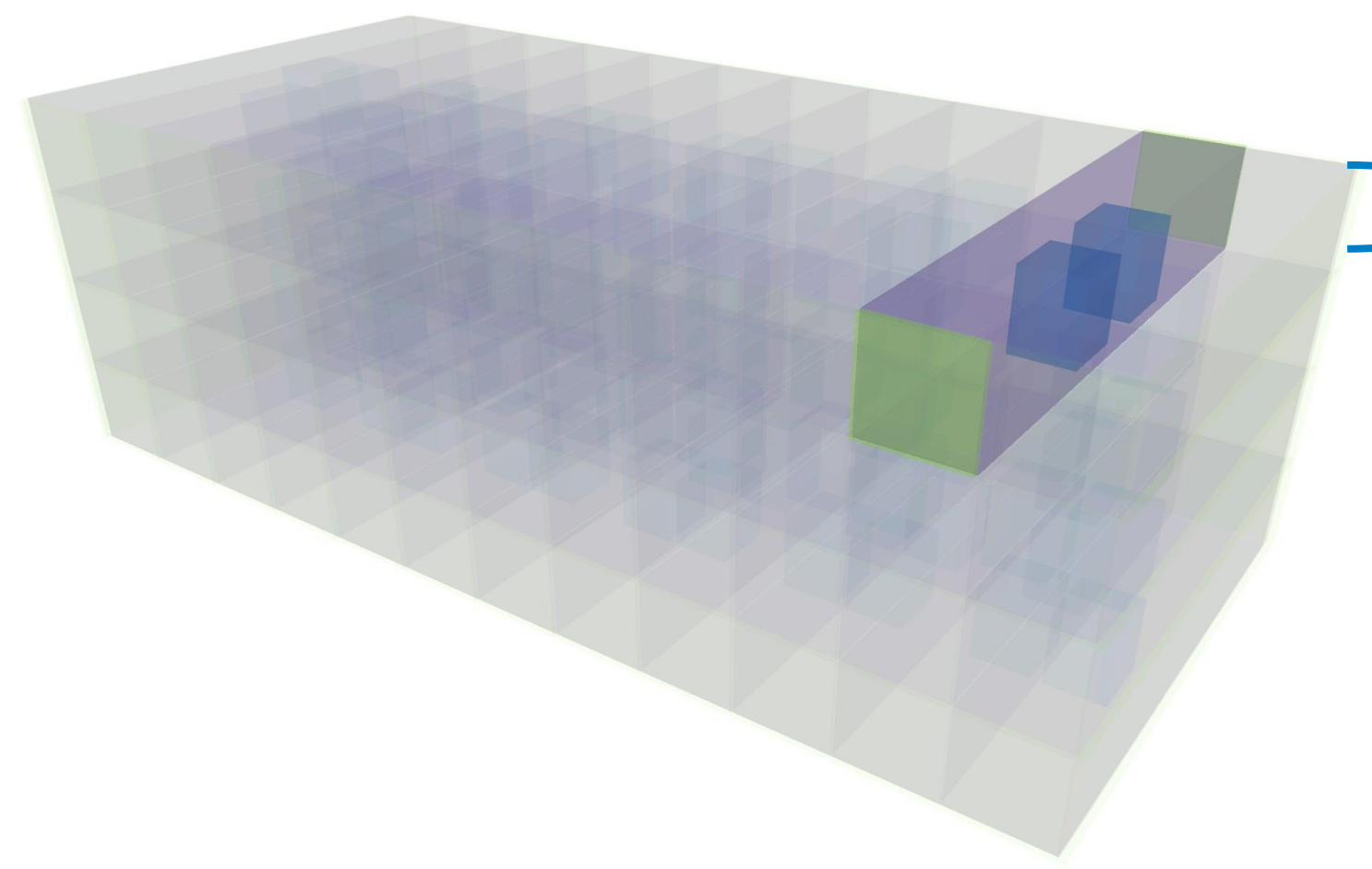
30-Pods



25-Suite

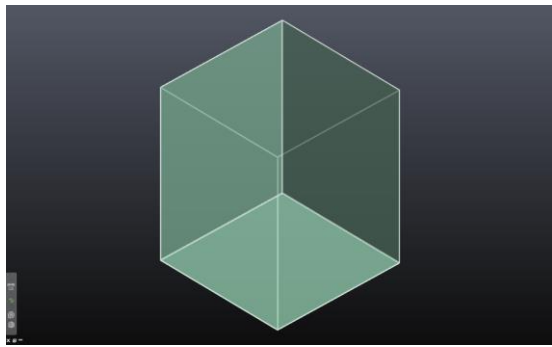


20-Modules

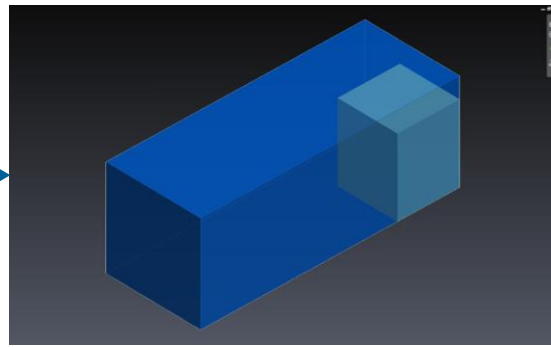


15-Level

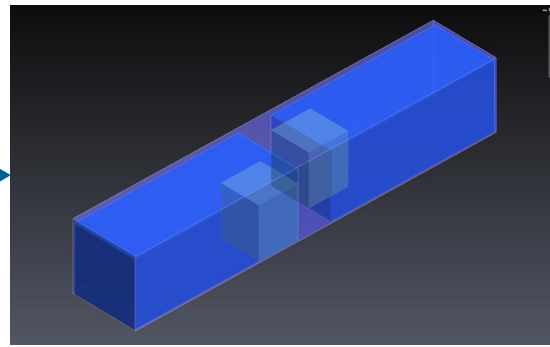




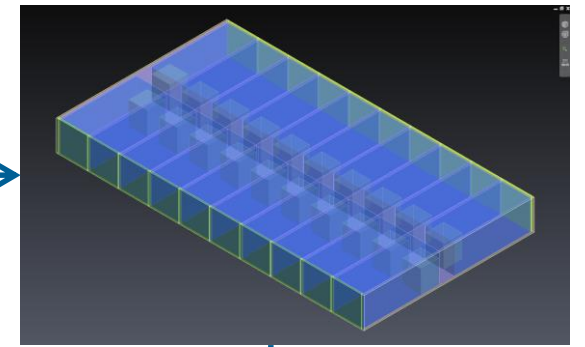
Attach



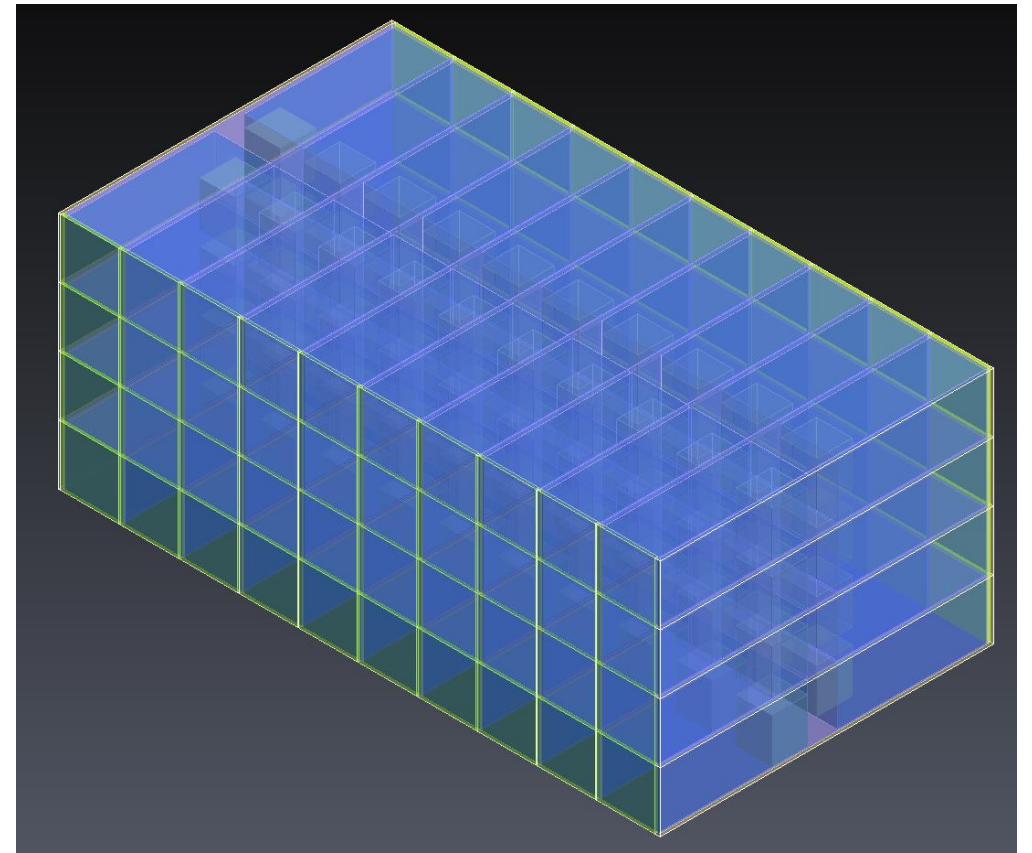
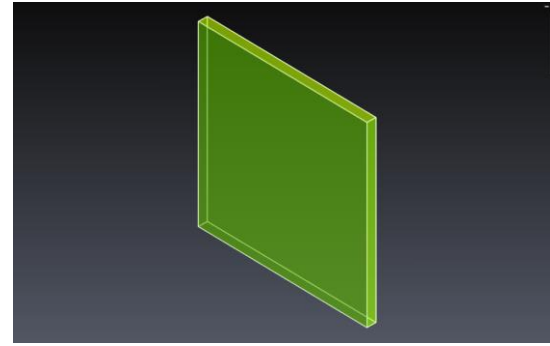
Attach



Attach

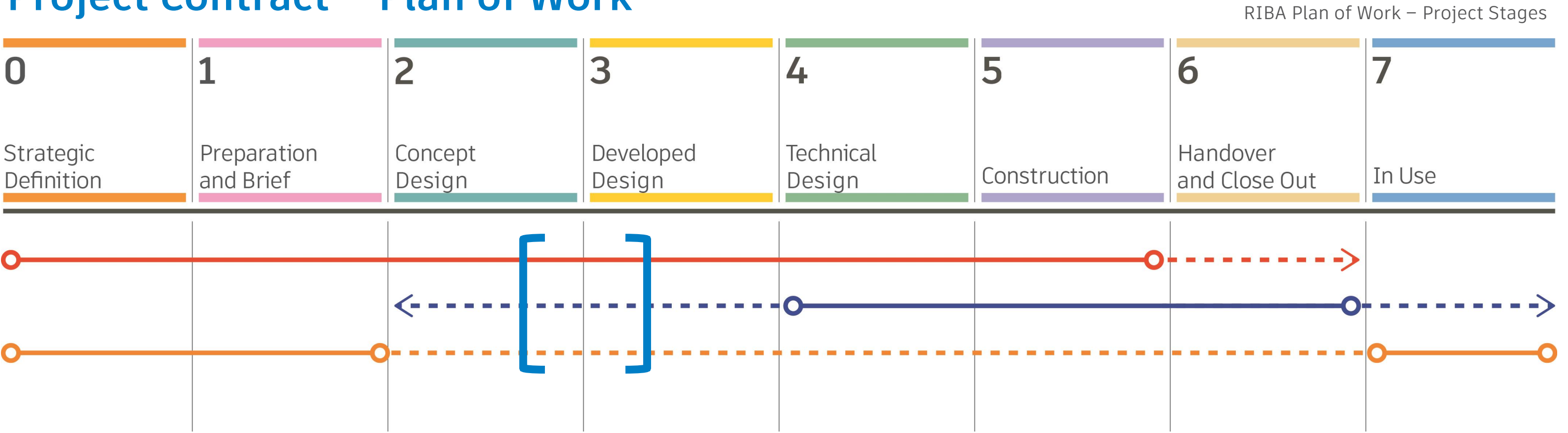


Attach



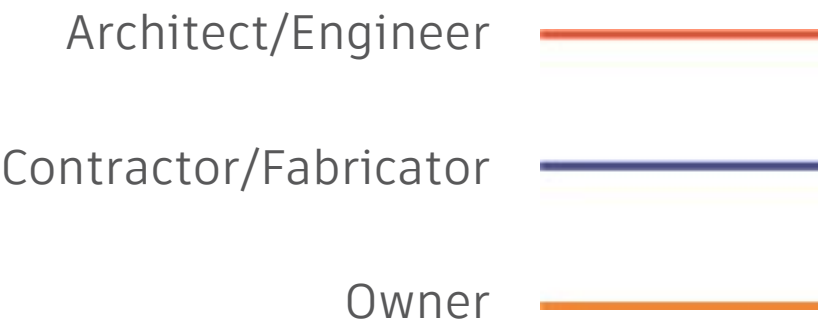
# Design Delivery and BlM Exchange

## Project Contract – Plan of Work

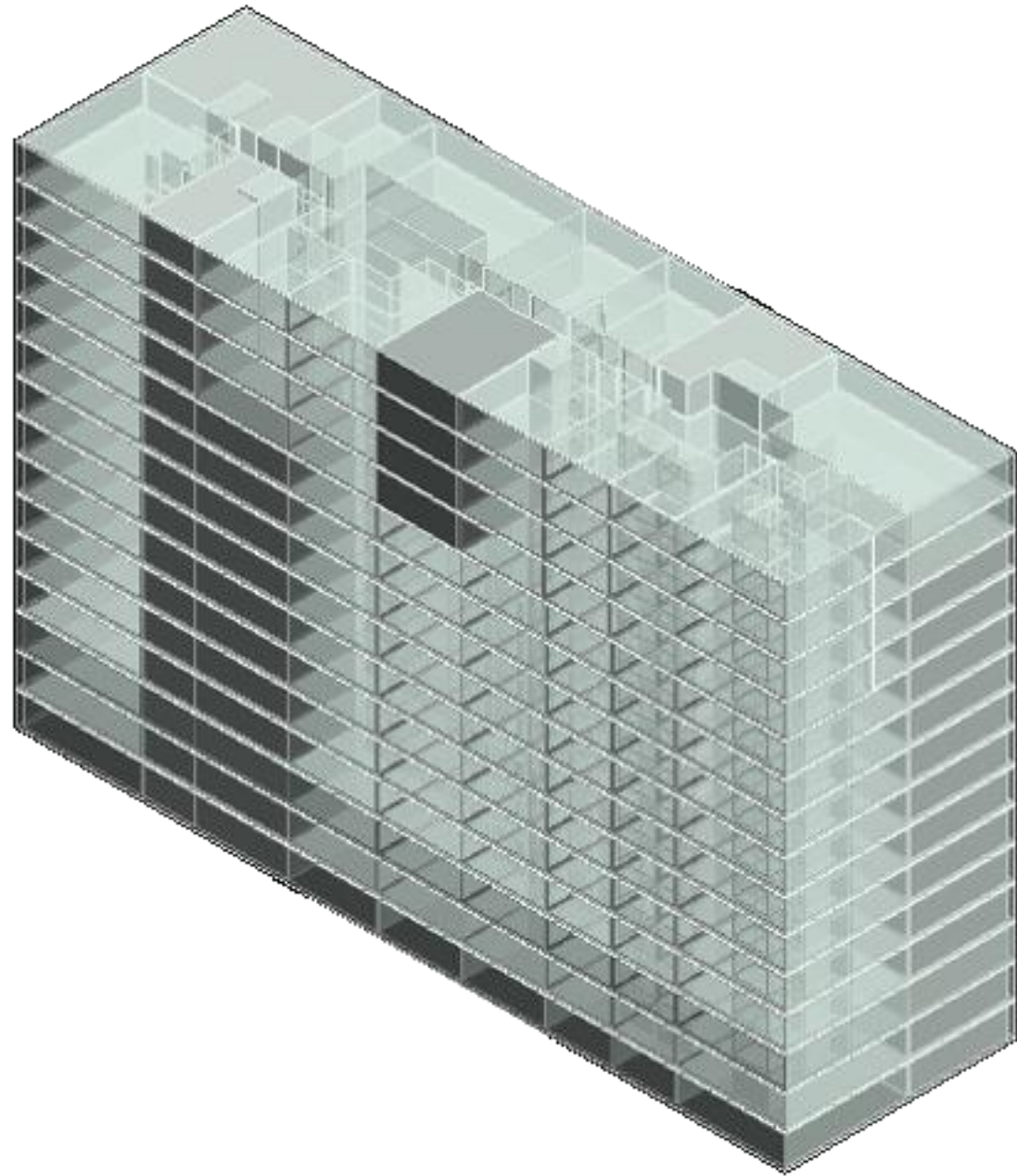


## Effective Process for Offsite Design Delivery

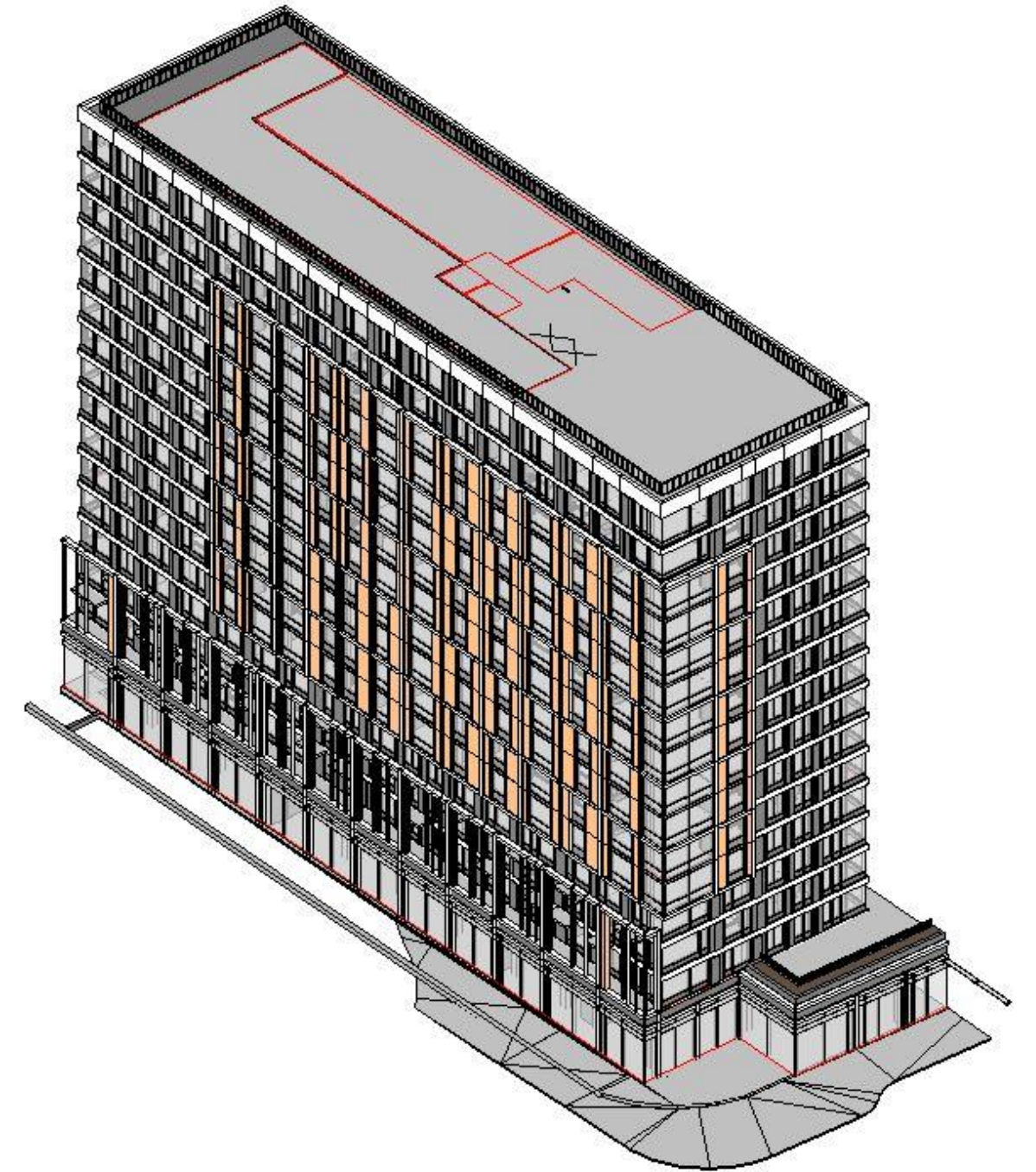
Shared Responsibility, Information Exchange Transparent Data Access







Module Diagram

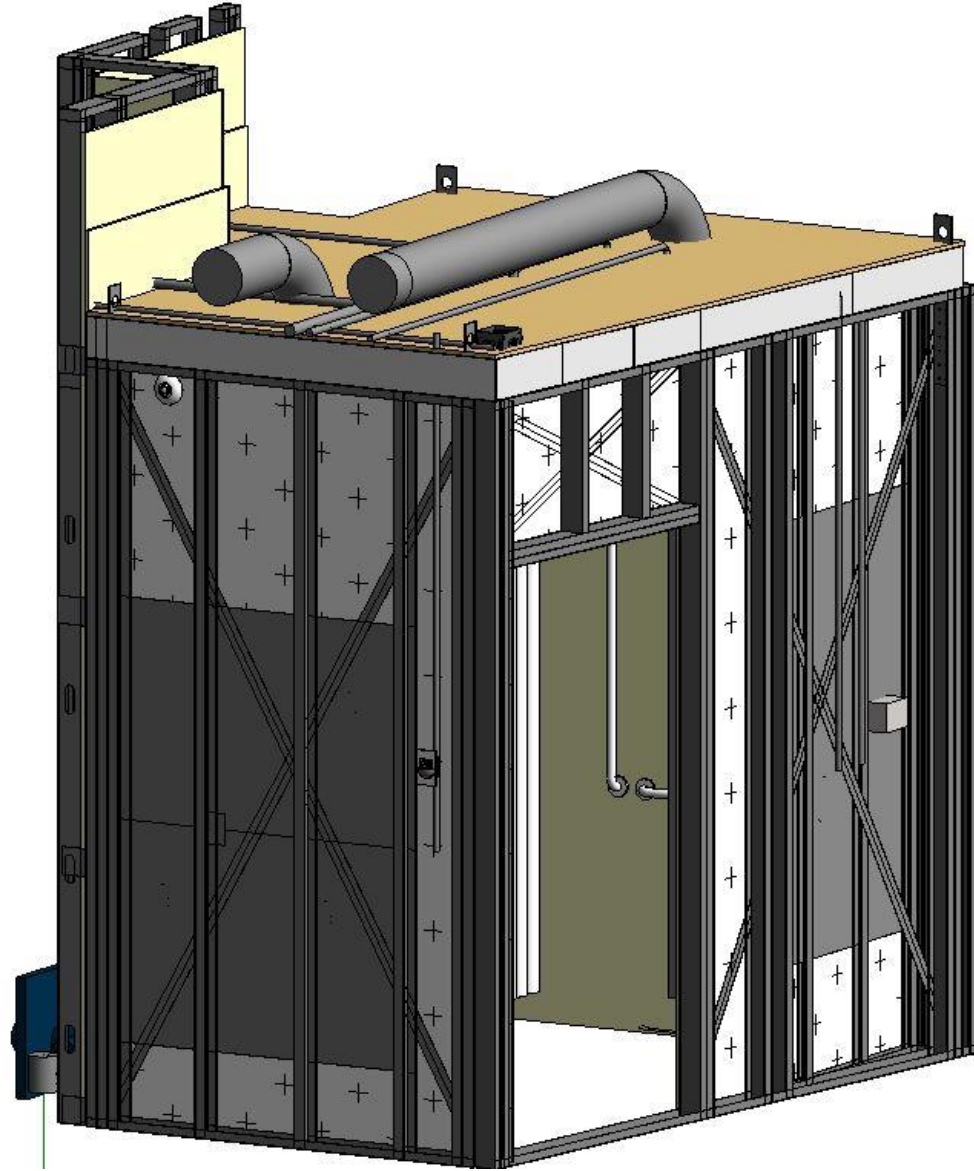


Architecture Model



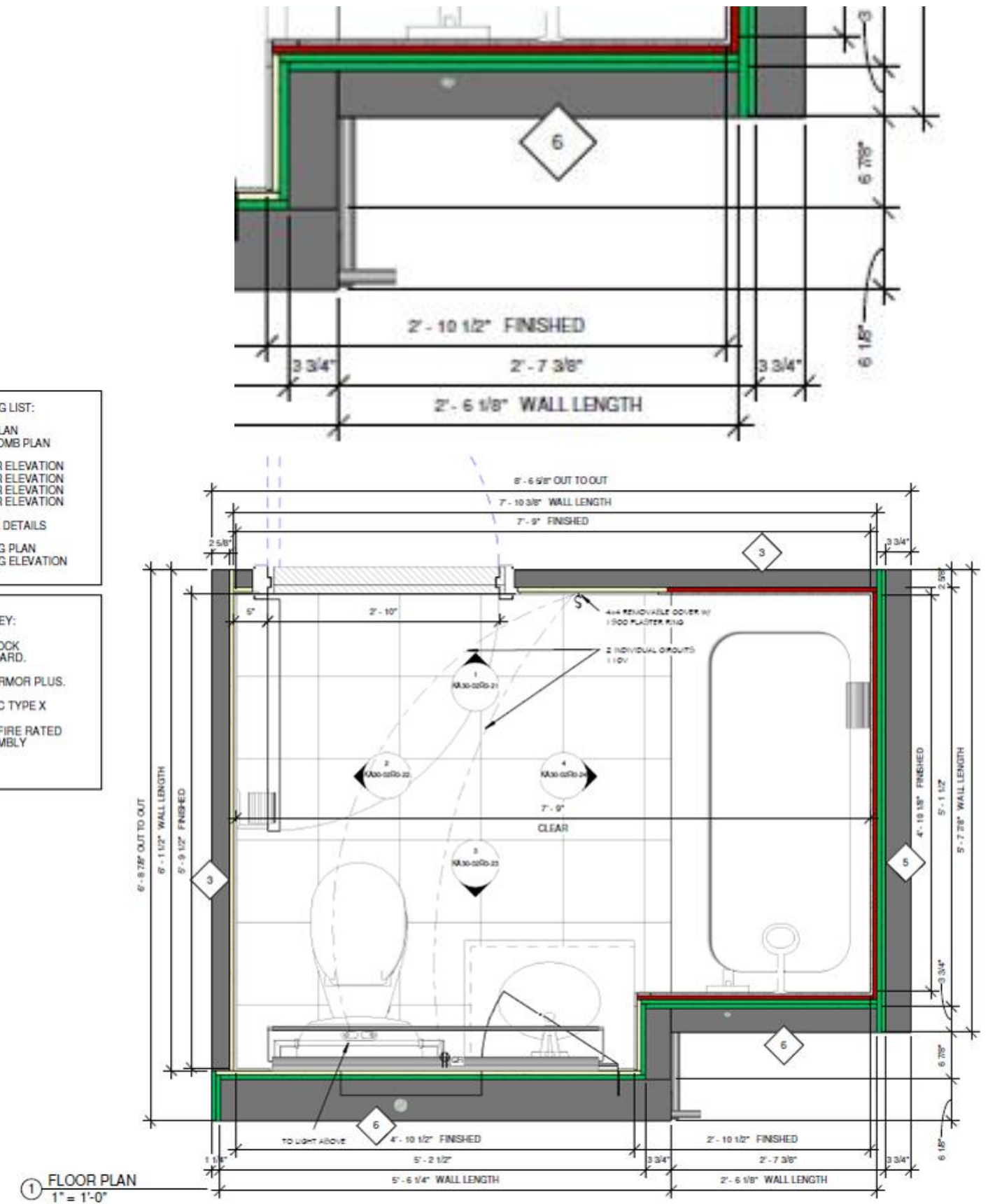


## 06 : Structuring [Building] Data

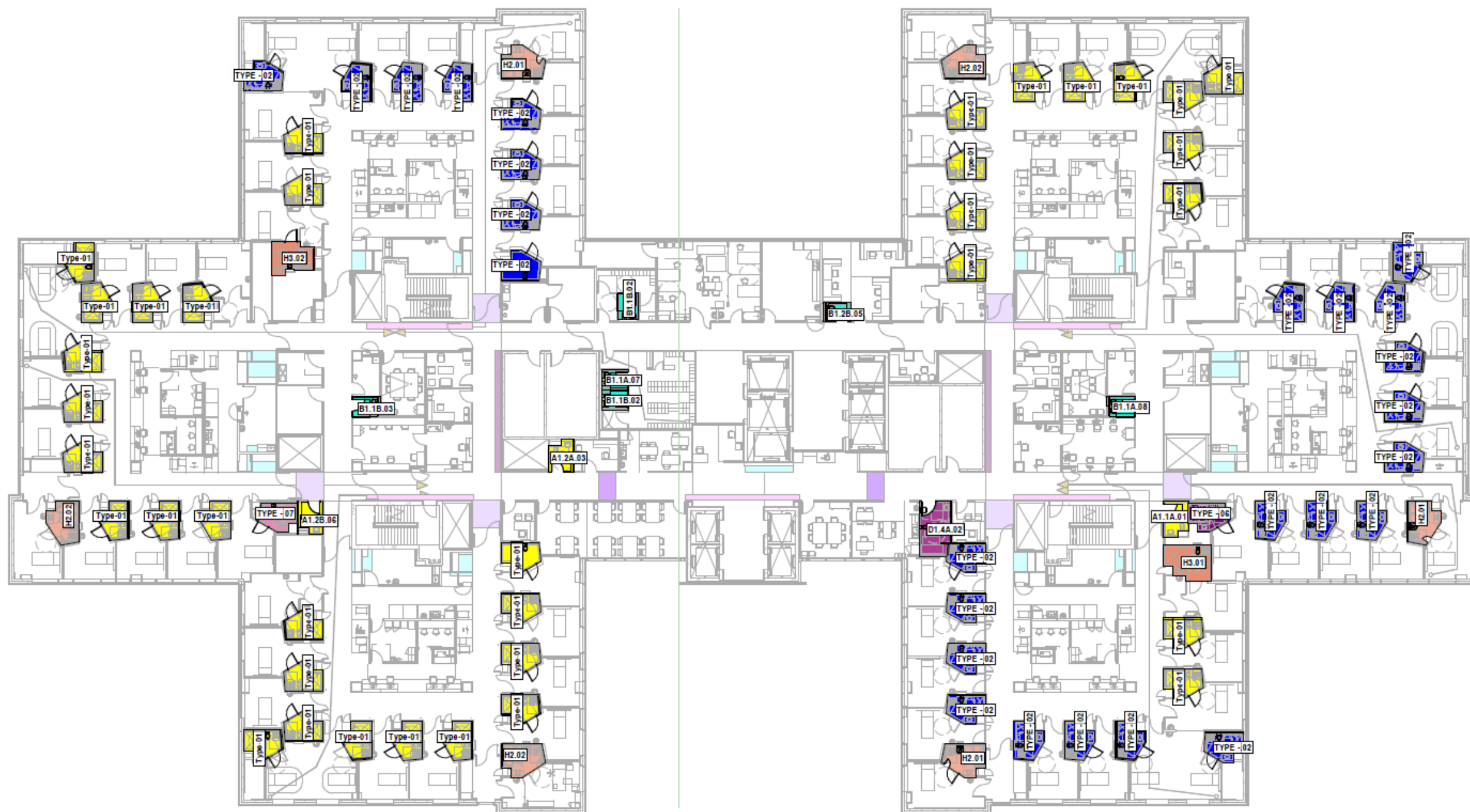


Fabrication Model

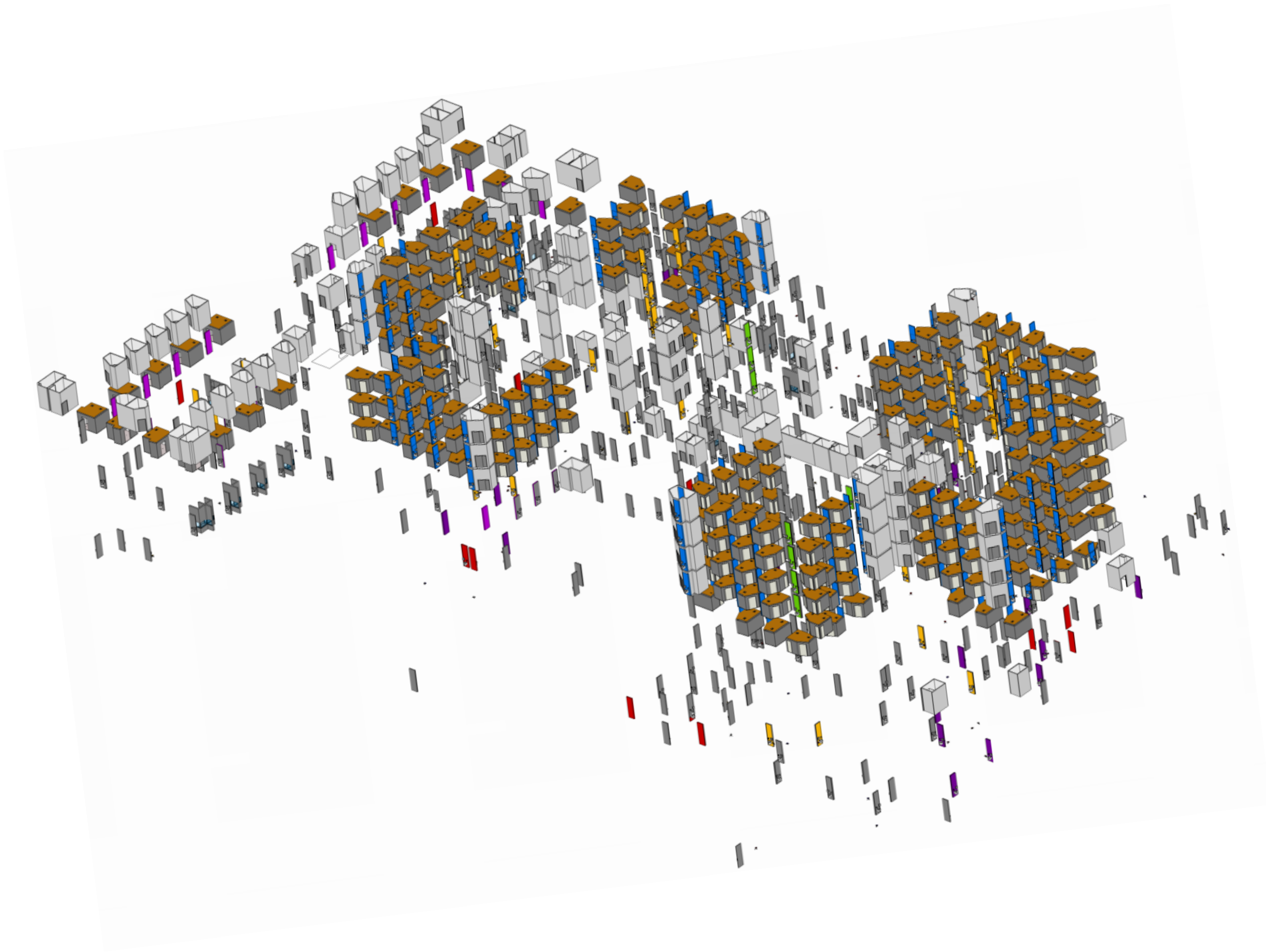
- ARCHITECTURAL DRAWING LIST:
- A30-100-A - FLOOR PLAN
  - A30-101-A - HONEYCOMB PLAN
  - A30-02R0-21 - INTERIOR ELEVATION
  - A30-02R0-22 - INTERIOR ELEVATION
  - A30-02R0-23 - INTERIOR ELEVATION
  - A30-02R0-24 - INTERIOR ELEVATION
  - A30-0400 - GENERAL DETAILS
  - M30-01R0-20 - PLUMBING PLAN
  - M30-01R0-21 - PLUMBING ELEVATION
- DRYWALL KEY:
- 5/8" DURAROCK CEMENT BOARD.
  - 5/8" DENS ARMOR PLUS.
  - 5/8" PROROC TYPE X GYPSUM (REFER TO FIRE RATED WALL ASSEMBLY DETAILS)

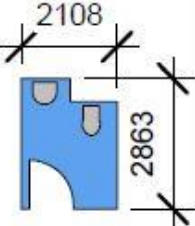
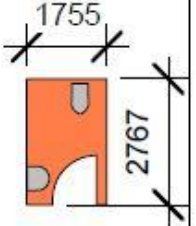
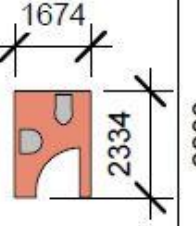
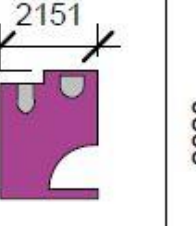
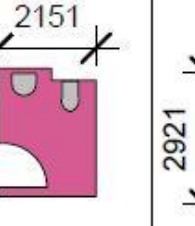
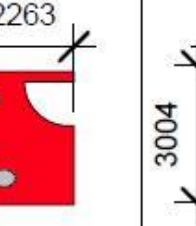
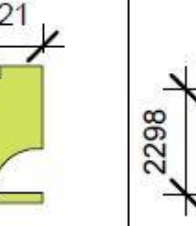
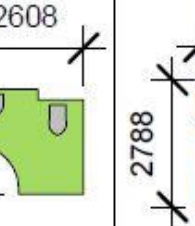
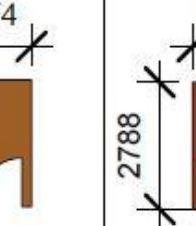
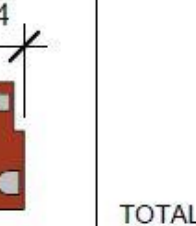






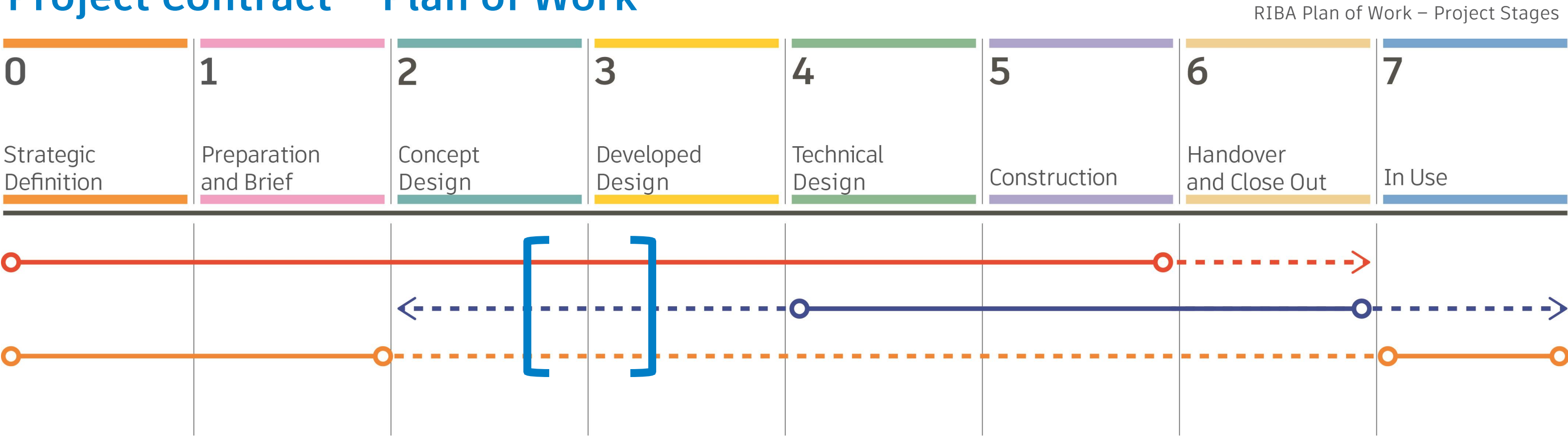




PROPOSED WASHROOM KEY - BUILDING B1											
LOCATION	 TYPE A TYPICAL PUBLIC WASHROOM	 TYPE B.1 TYPICAL PUBLIC WASHROOM	 TYPE B.2 TYPICAL PUBLIC WASHROOM	 TYPE C.1 TYPICAL PUBLIC WASHROOM	 TYPE C.2 TYPICAL PUBLIC WASHROOM	 TYPE D TYPICAL PUBLIC WASHROOM	 TYPE E TYPICAL PUBLIC WASHROOM	 TYPE F TYPICAL PUBLIC WASHROOM	 TYPE G.1 TYPICAL PUBLIC WASHROOM	 TYPE G.2 TYPICAL PUBLIC WASHROOM	TOTAL
LEVEL 1	-	1	-	-	-	-	-	1	-	1	3
LEVEL 2	-	2	-	1	-	-	1	1	1	1	7
LEVEL 3	4	-	1	-	-	-	-	-	1	1	7
LEVEL 4	1	-	-	2	1	-	-	-	-	-	4
LEVEL 5	2	4	1	-	1	-	1	-	-	-	9
LEVEL 6	2	-	1	1	2	-	-	1	1	1	9
LEVEL 7	2	-	2	-	-	-	-	1	-	-	4
LEVEL 8	2	-	2	-	-	-	-	1	-	-	5
TOTAL	13	7	7	4	4	-	2	5	3	4	49

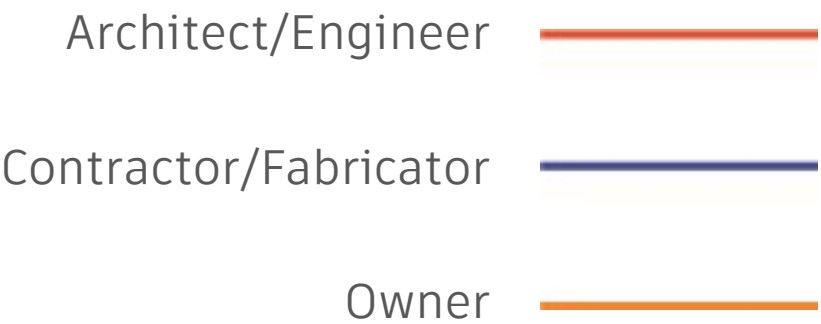
# Design Delivery and BlM Exchange

## Project Contract – Plan of Work



## Effective Process for Offsite Design Delivery

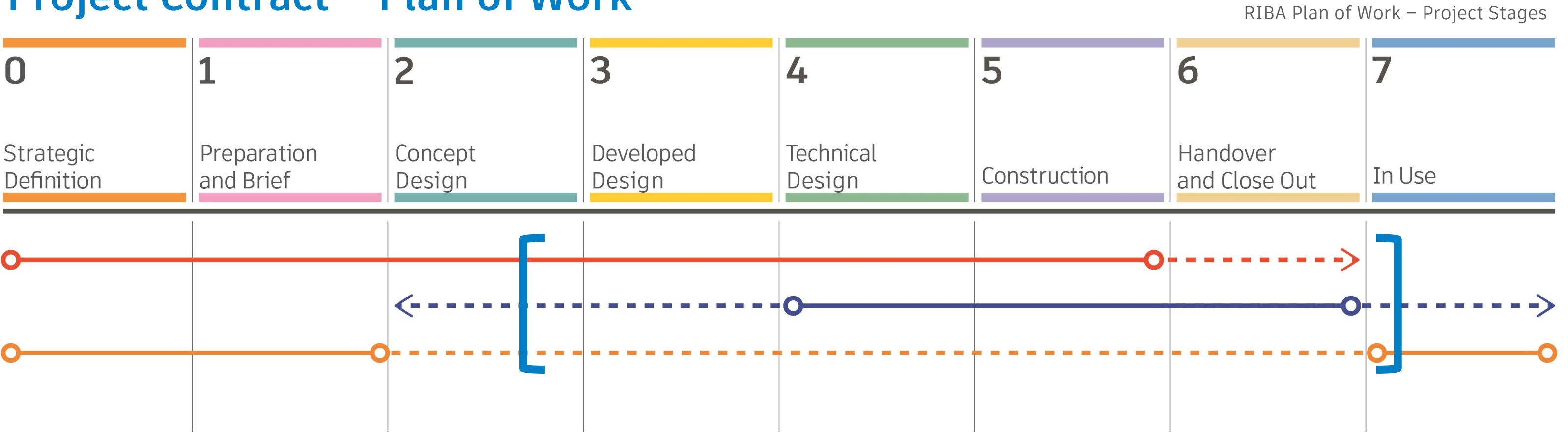
Shared Responsibility, Information Exchange Transparent Data Access





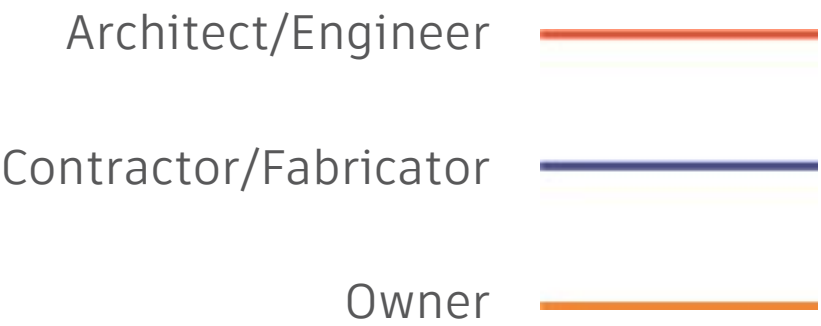
# Design Delivery and BIm Exchange

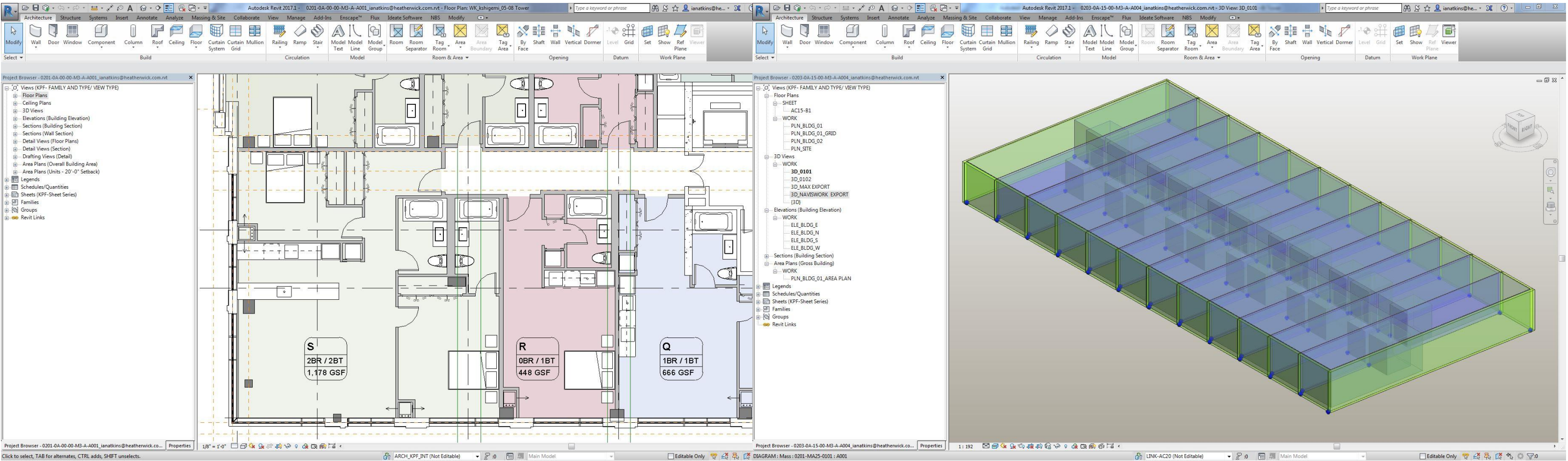
## Project Contract – Plan of Work



## Effective Process for Offsite Design Delivery

Shared Responsibility, Information Exchange Transparent Data Access





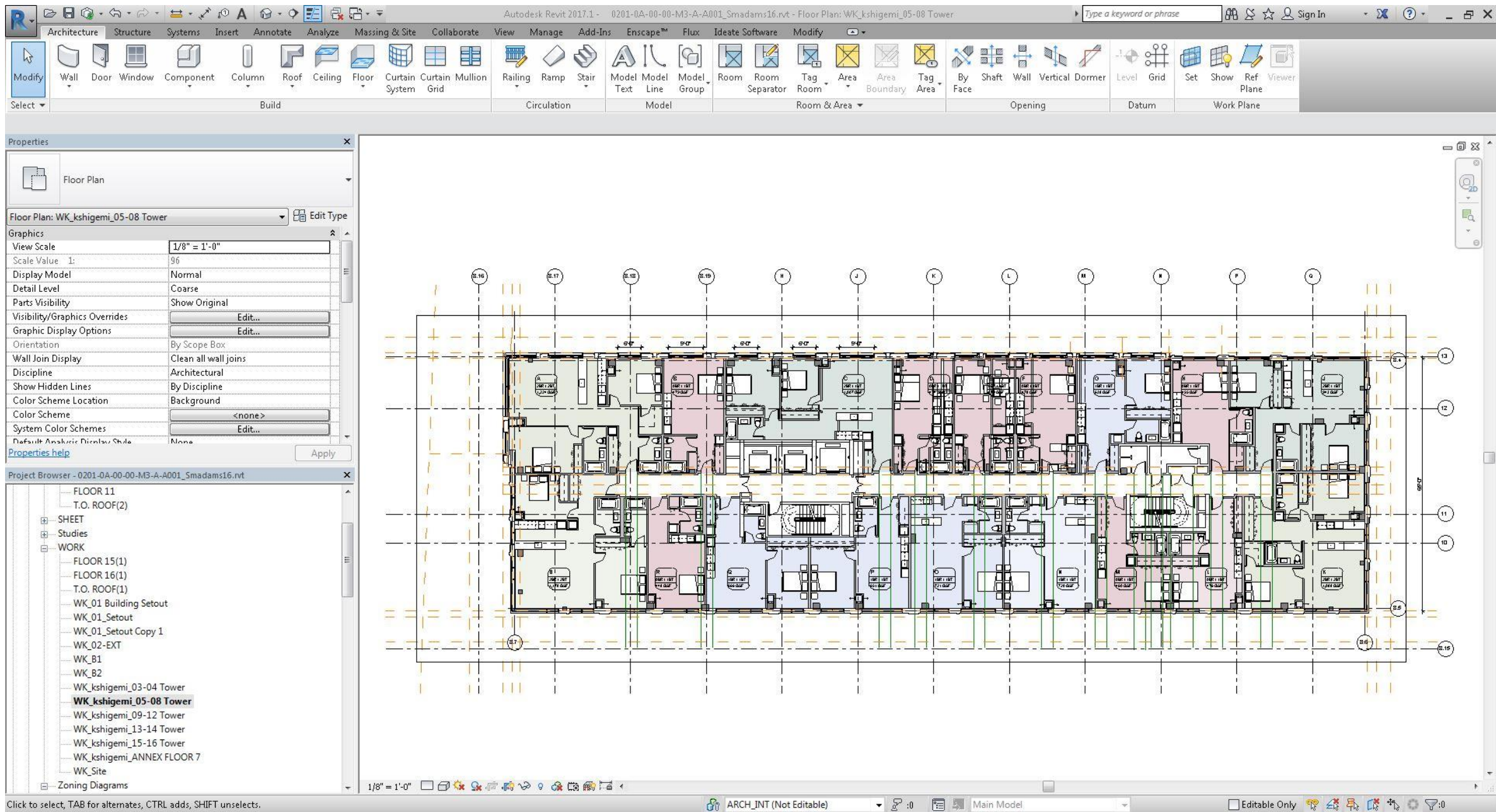






# File Structure – Data Preparation

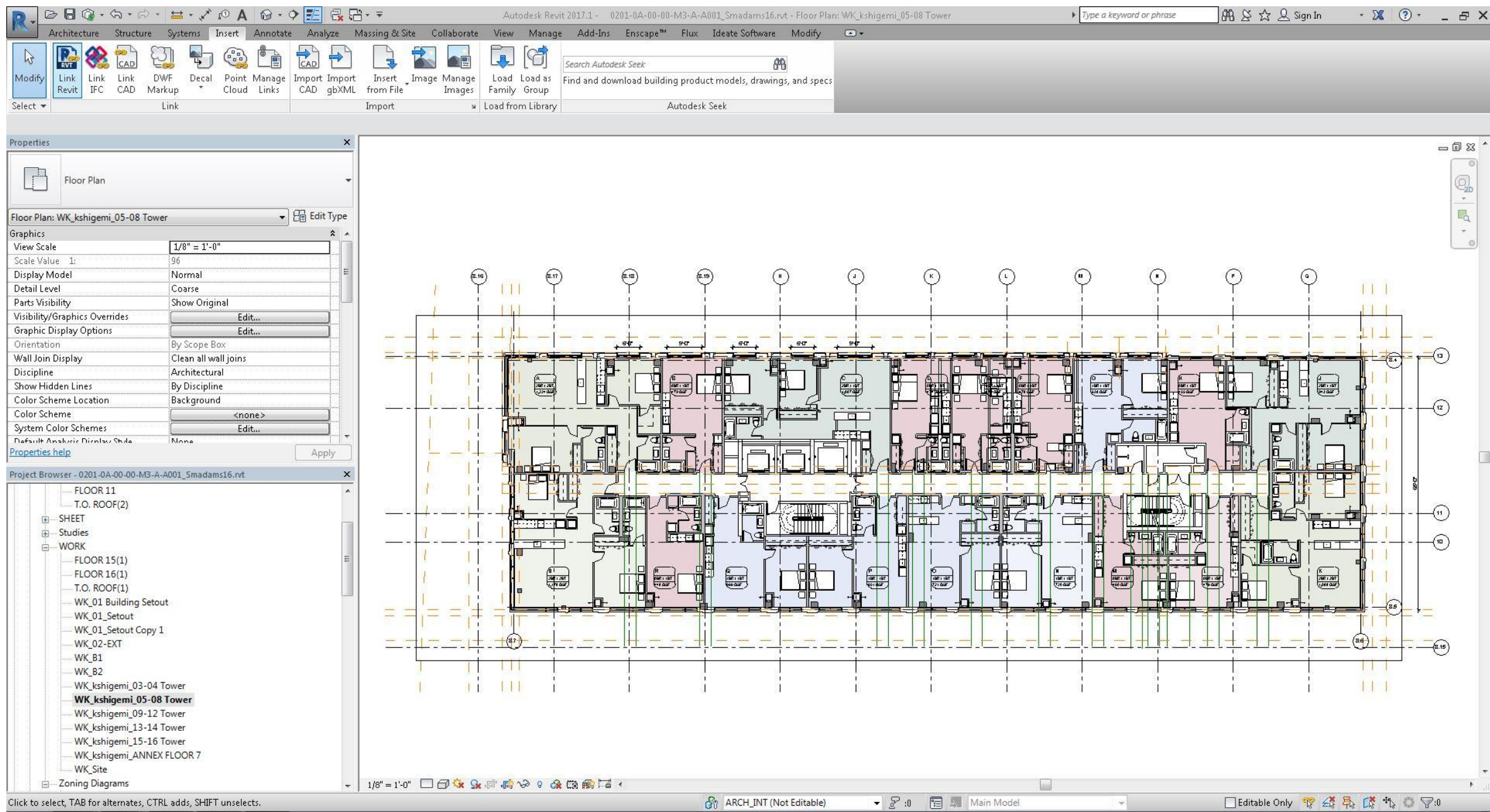
## Grids





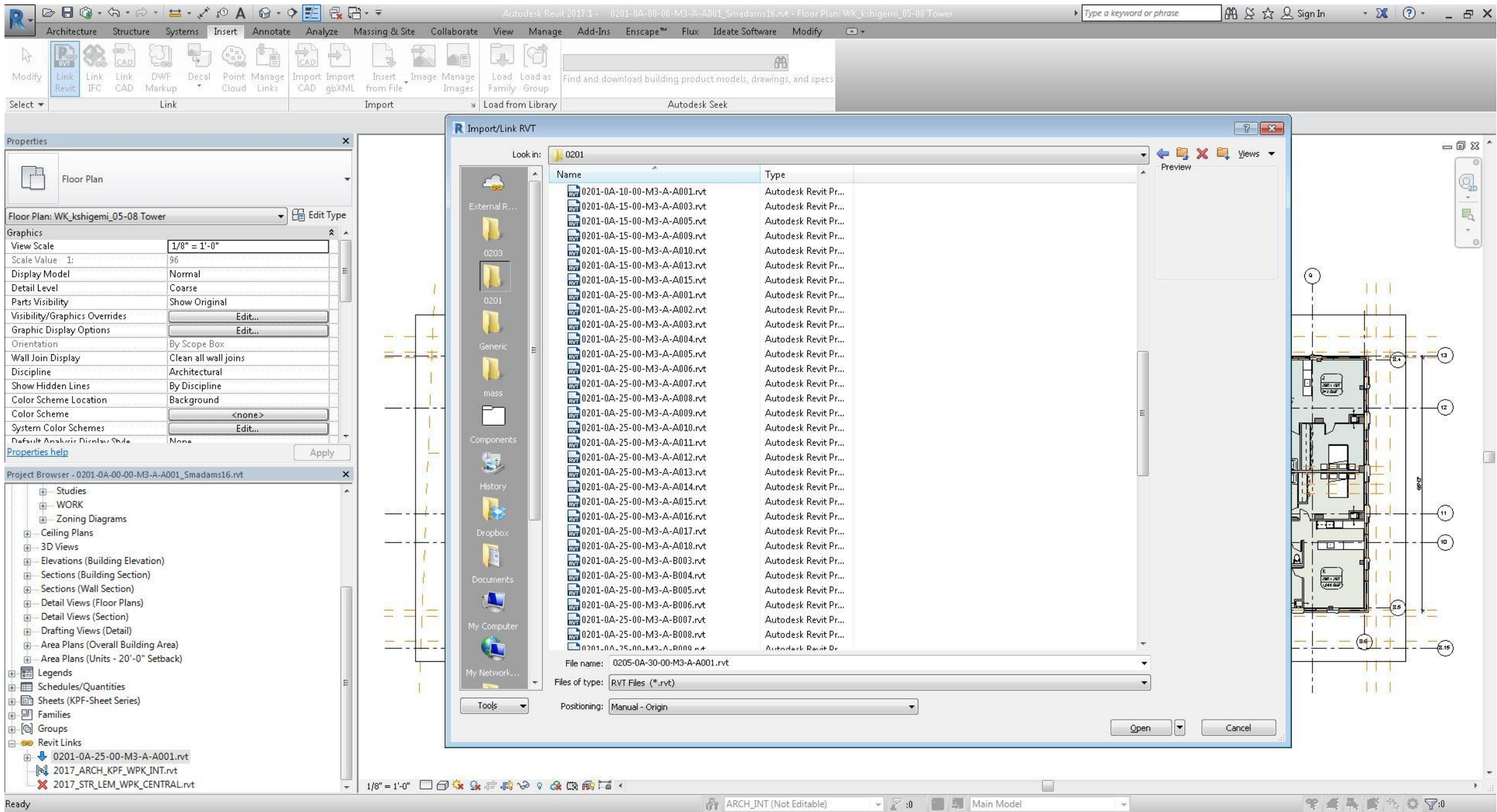
# File Structure – Data Preparation

## Grids



# File Structure – Data Preparation

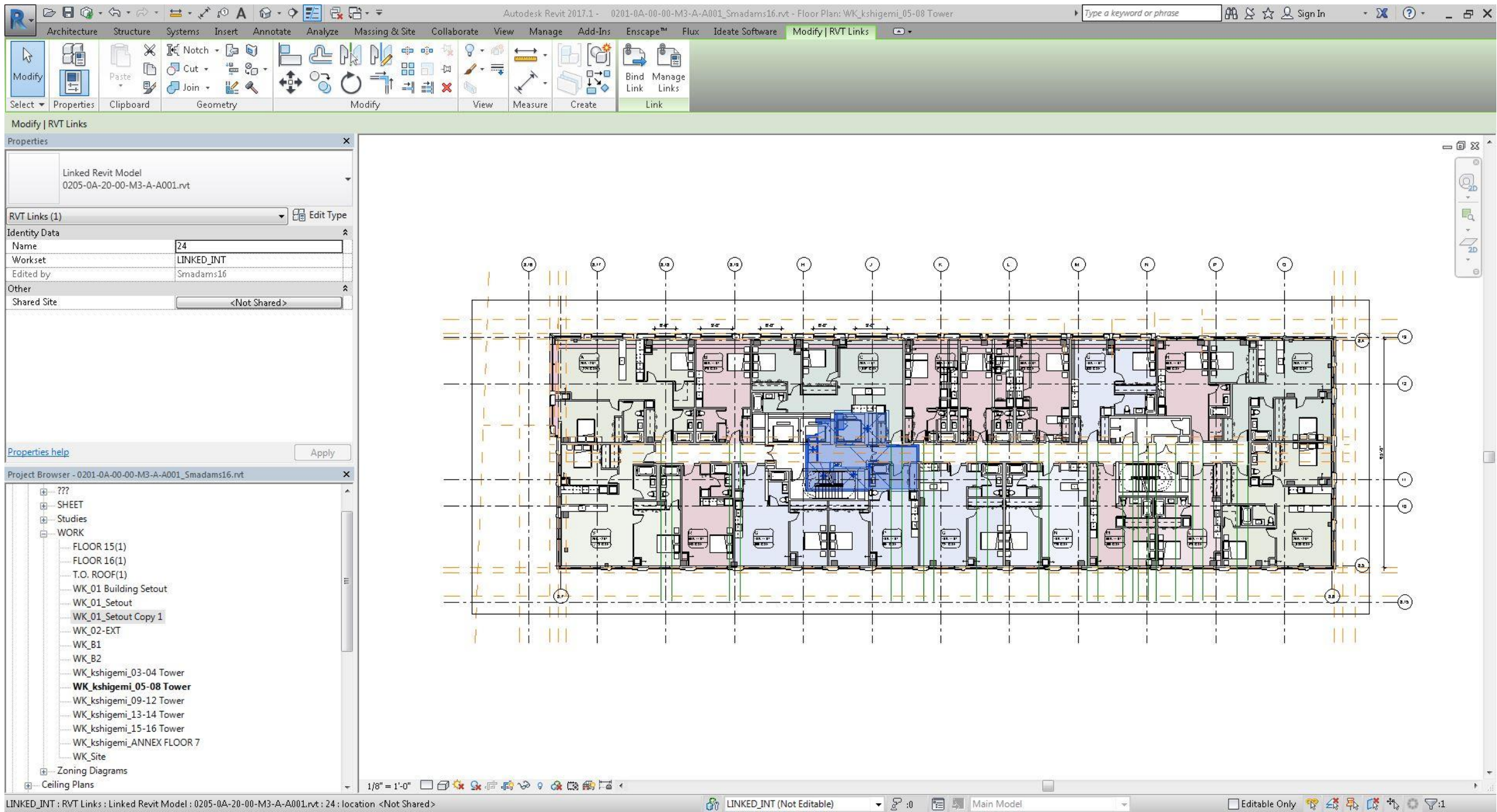
## Grids

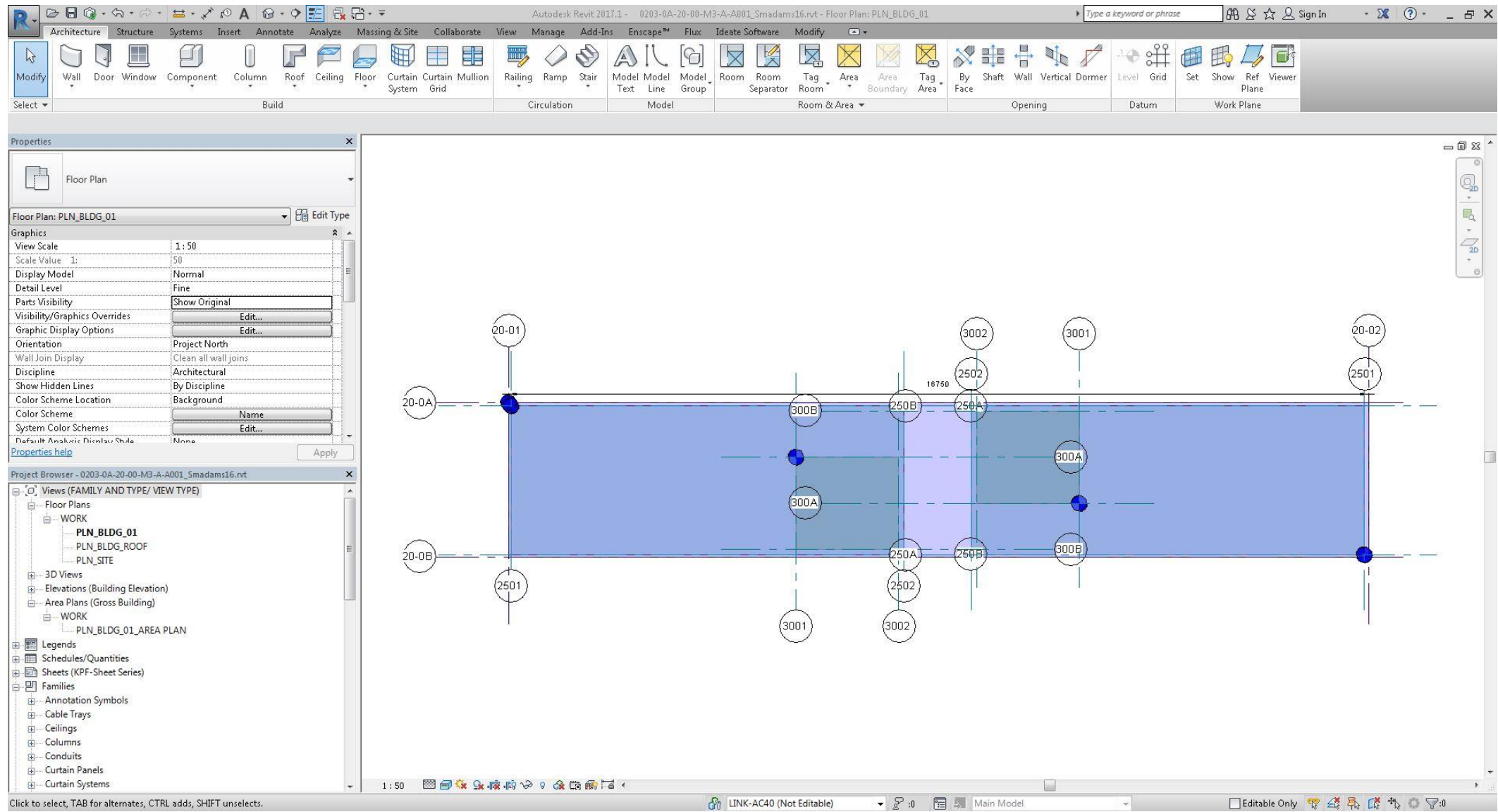


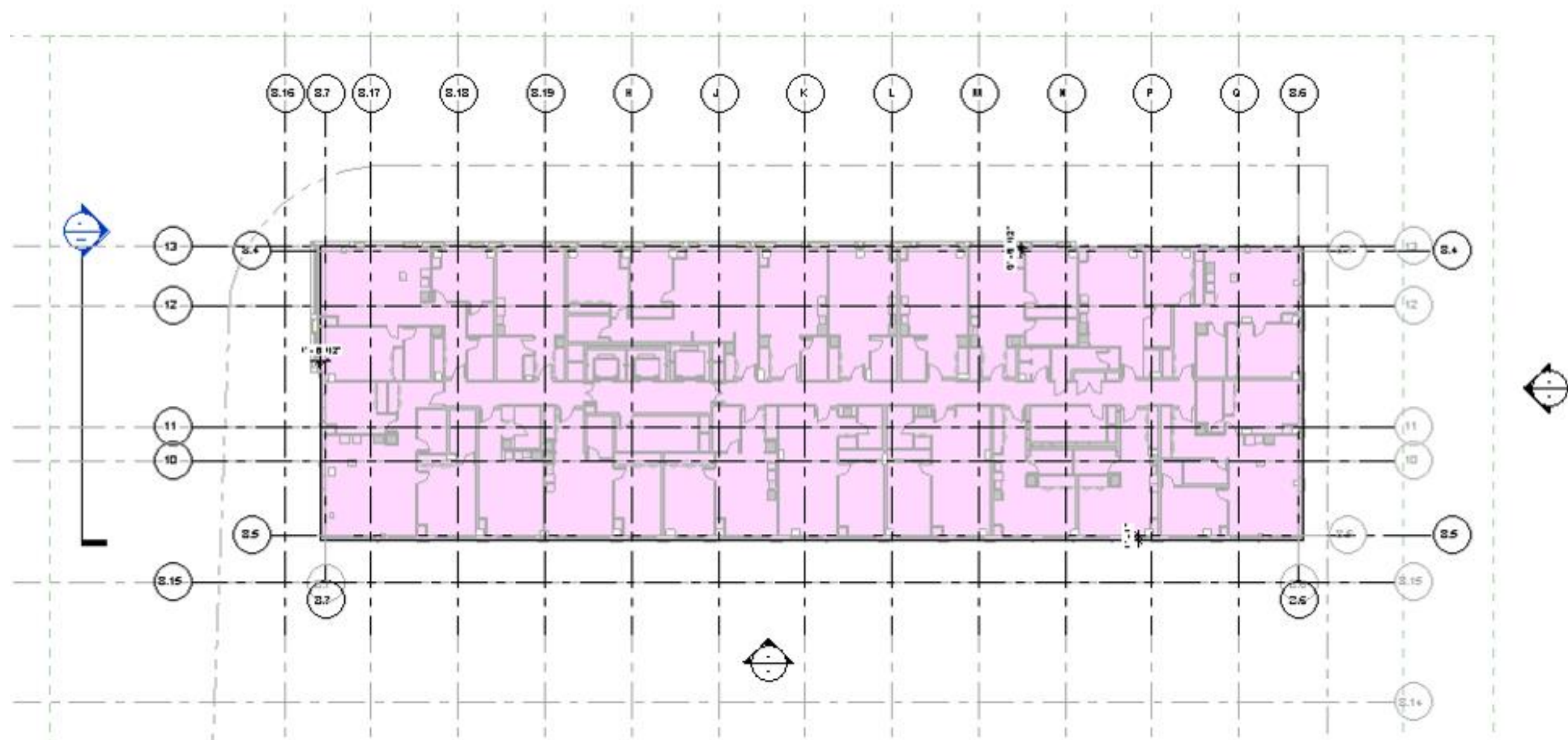


# File Structure – Data Preparation

## Grids



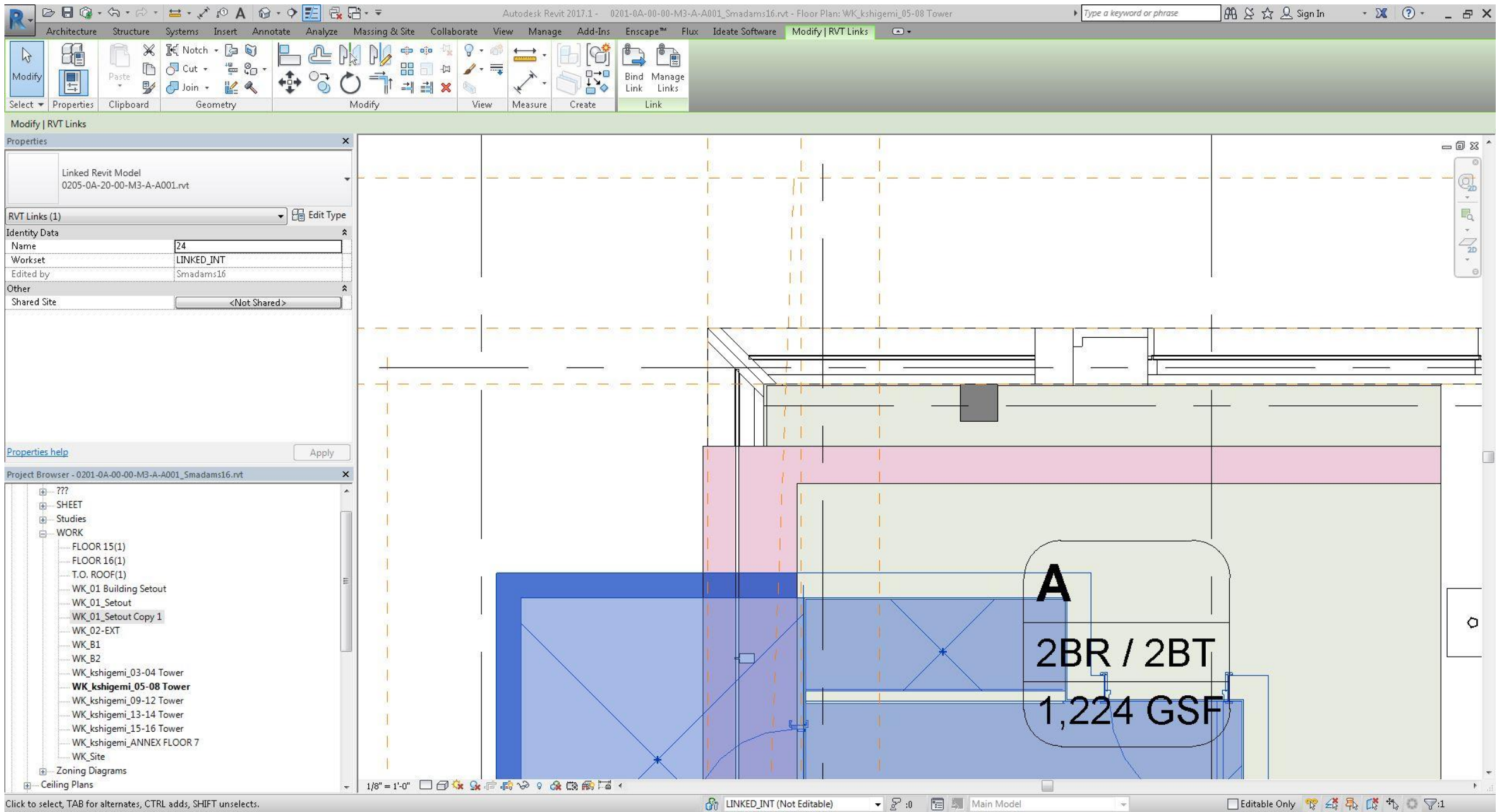




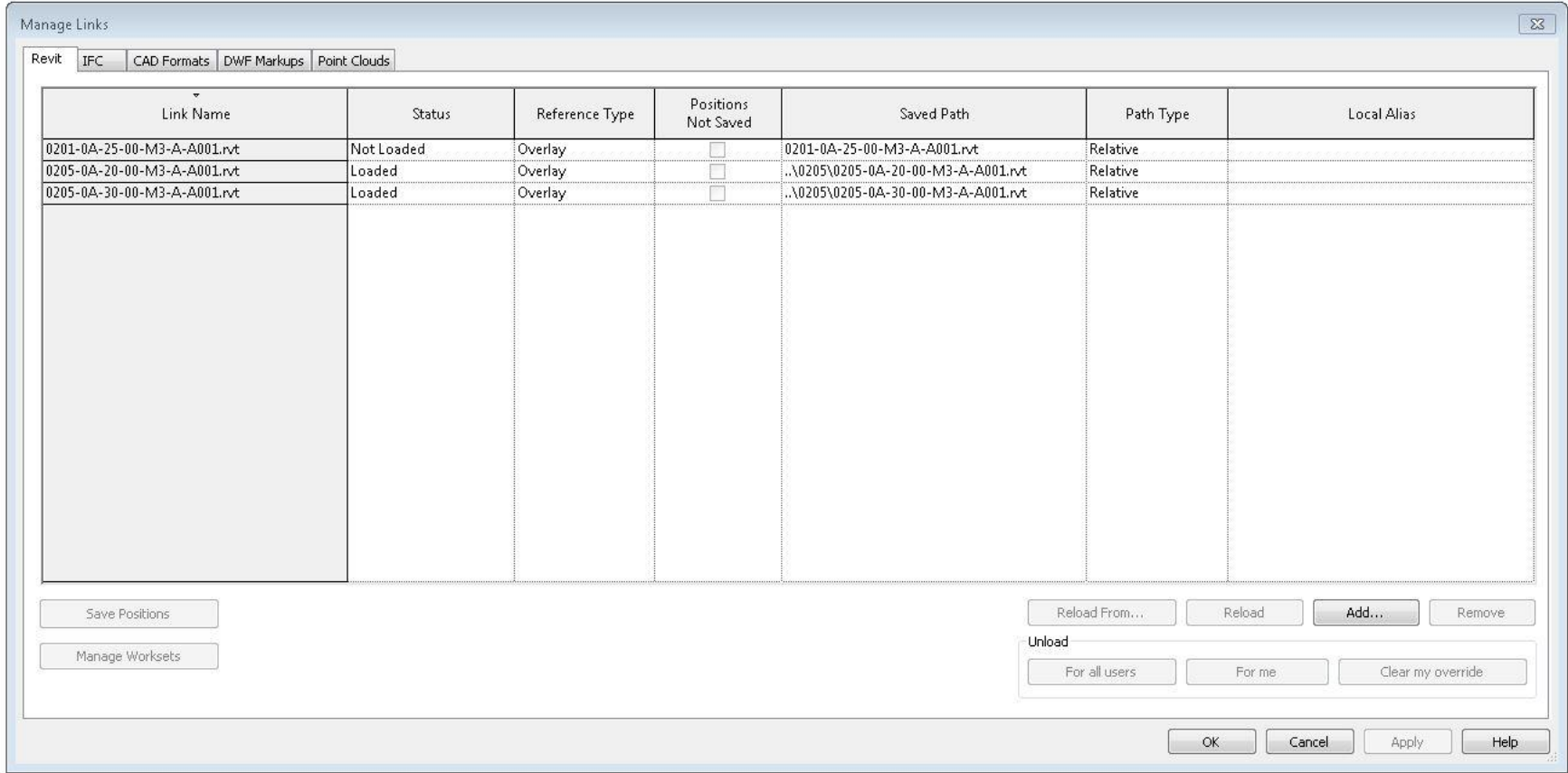


# File Structure – Data Preparation

## Grids

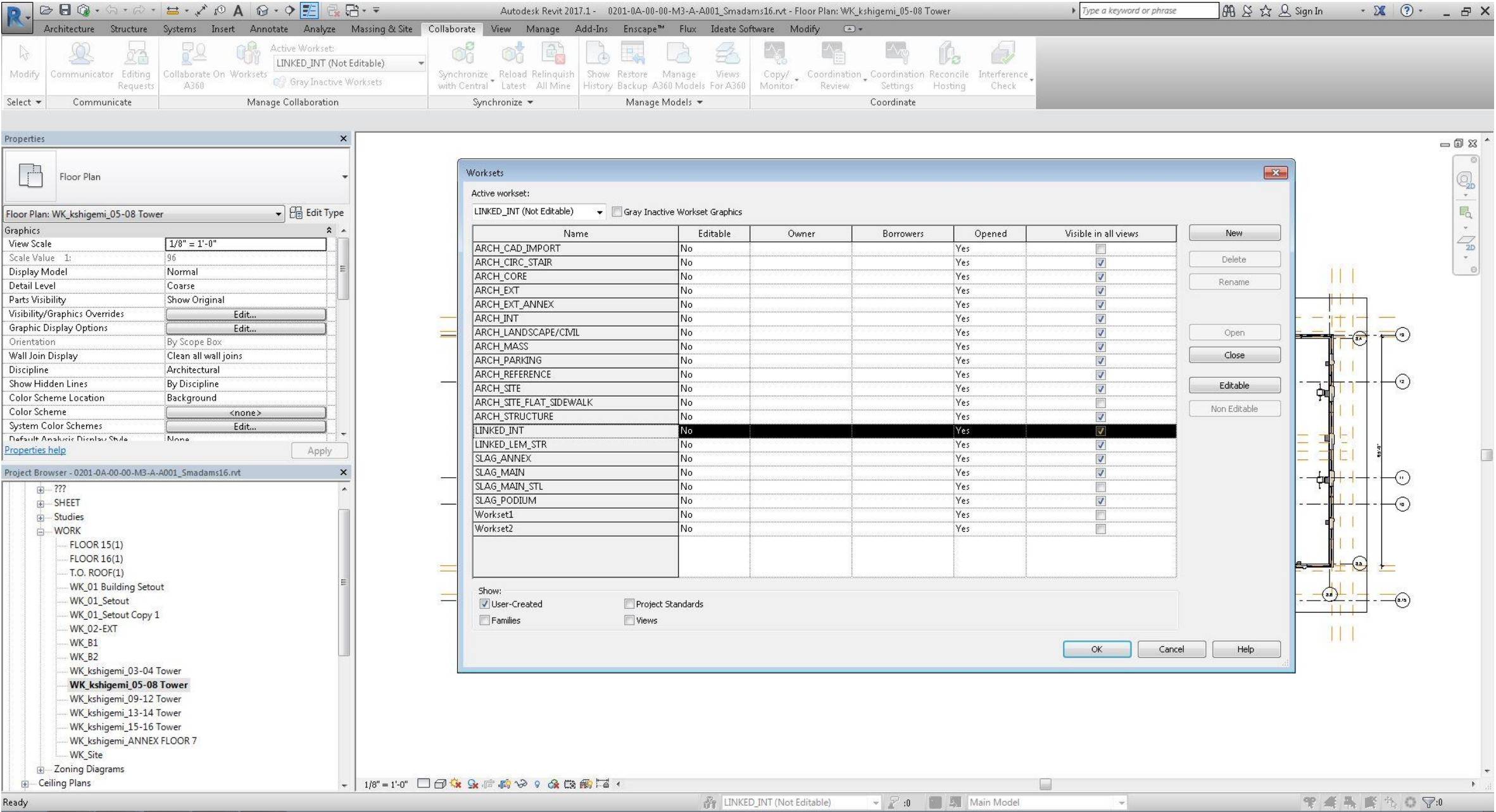


## Links



# File Structure – Data Preparation

## Links/Worksets





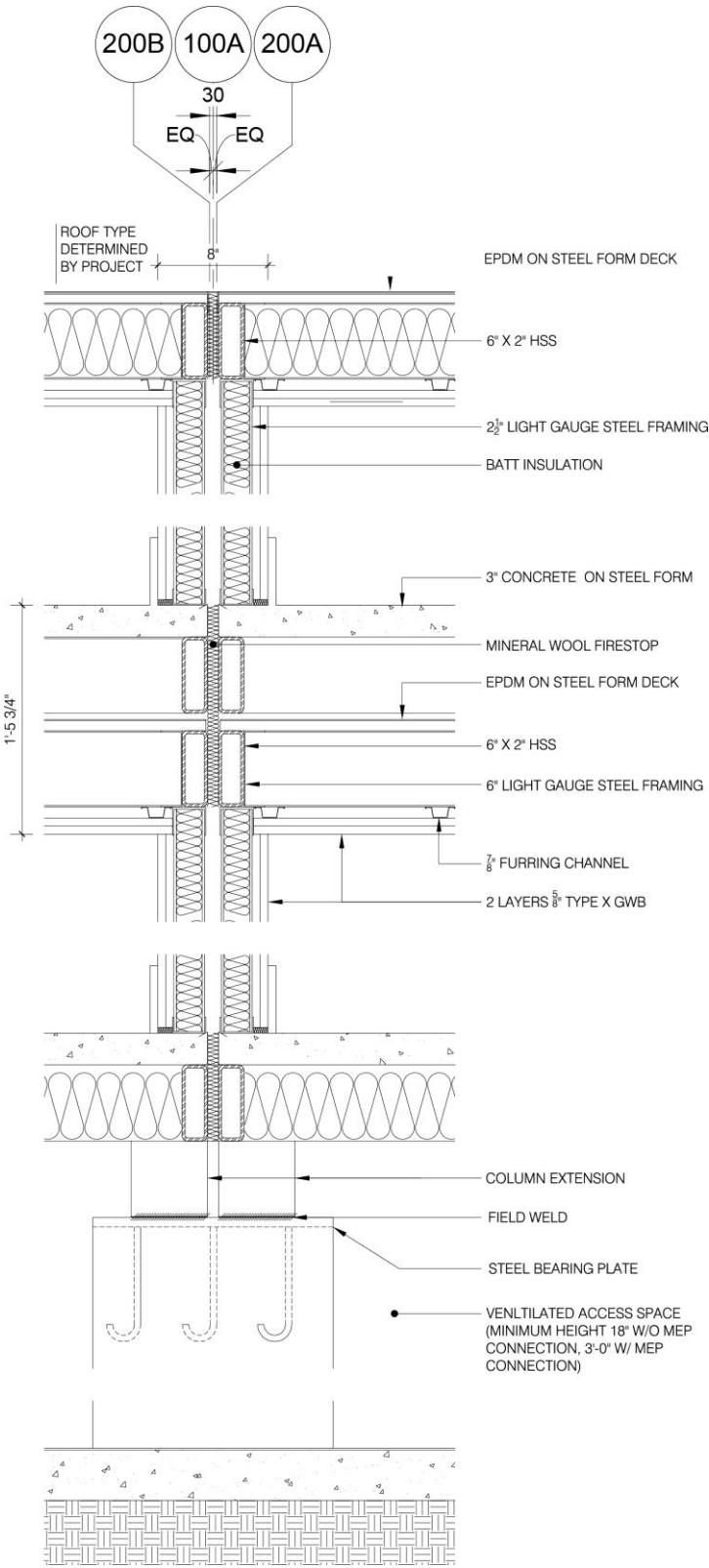
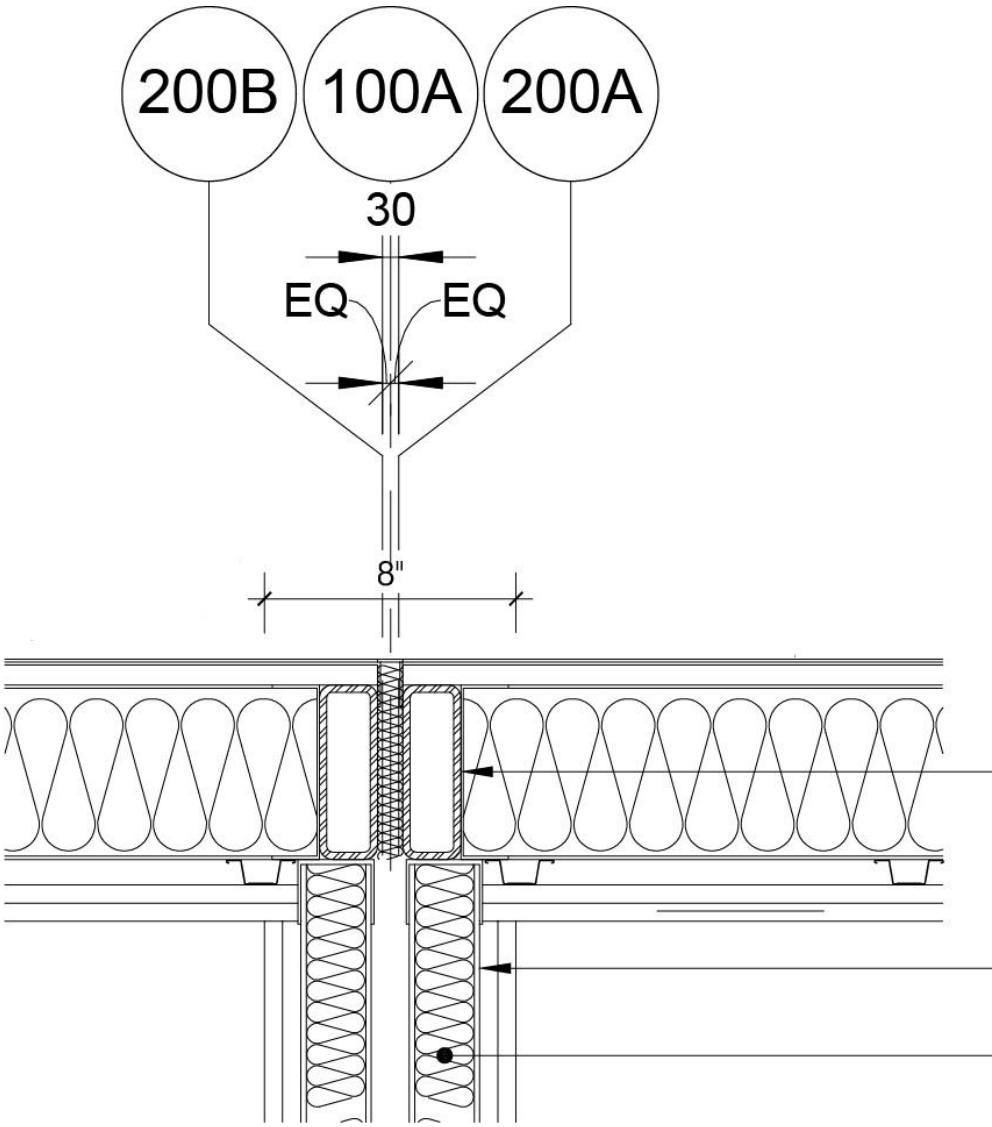
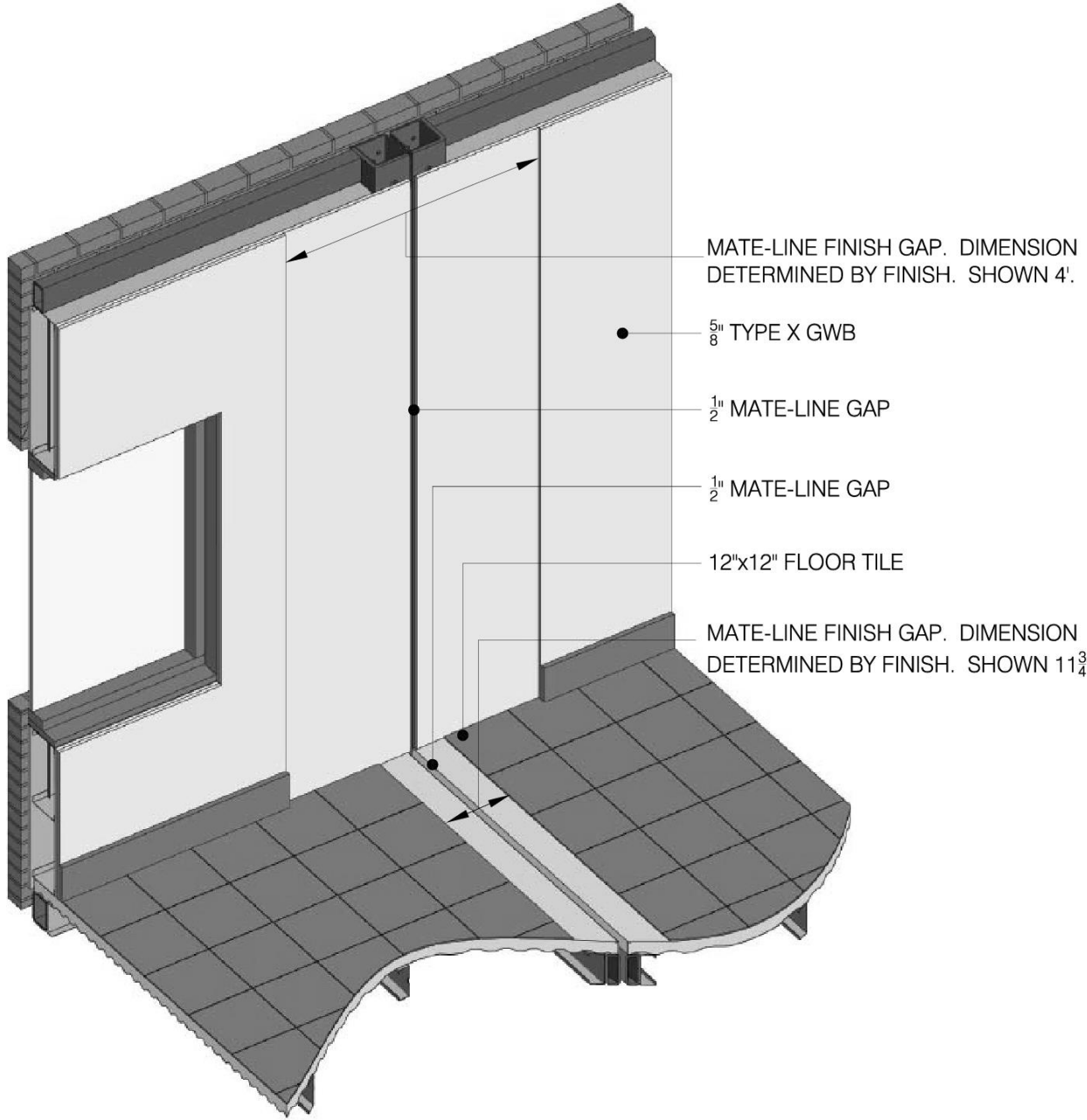
# File Structure – Data Preparation

## Worksets

ARCH_CAD_IMPORT
ARCH_CIRC_STAIR
ARCH_CORE
ARCH_EXT
ARCH_EXT_ANNEX
ARCH_INT
ARCH_LANDSCAPE/CIVIL
ARCH_MASS
ARCH_PARKING
ARCH_REFERENCE
ARCH_SITE
ARCH_SITE_FLAT_SIDEWALK
ARCH_STRUCTURE
LINKED_INT
LINKED_LEM_STR
SLAG_ANNEX
SLAG_MAIN
SLAG_MAIN_STL
SLAG_PODIUM
Workset1
Workset2

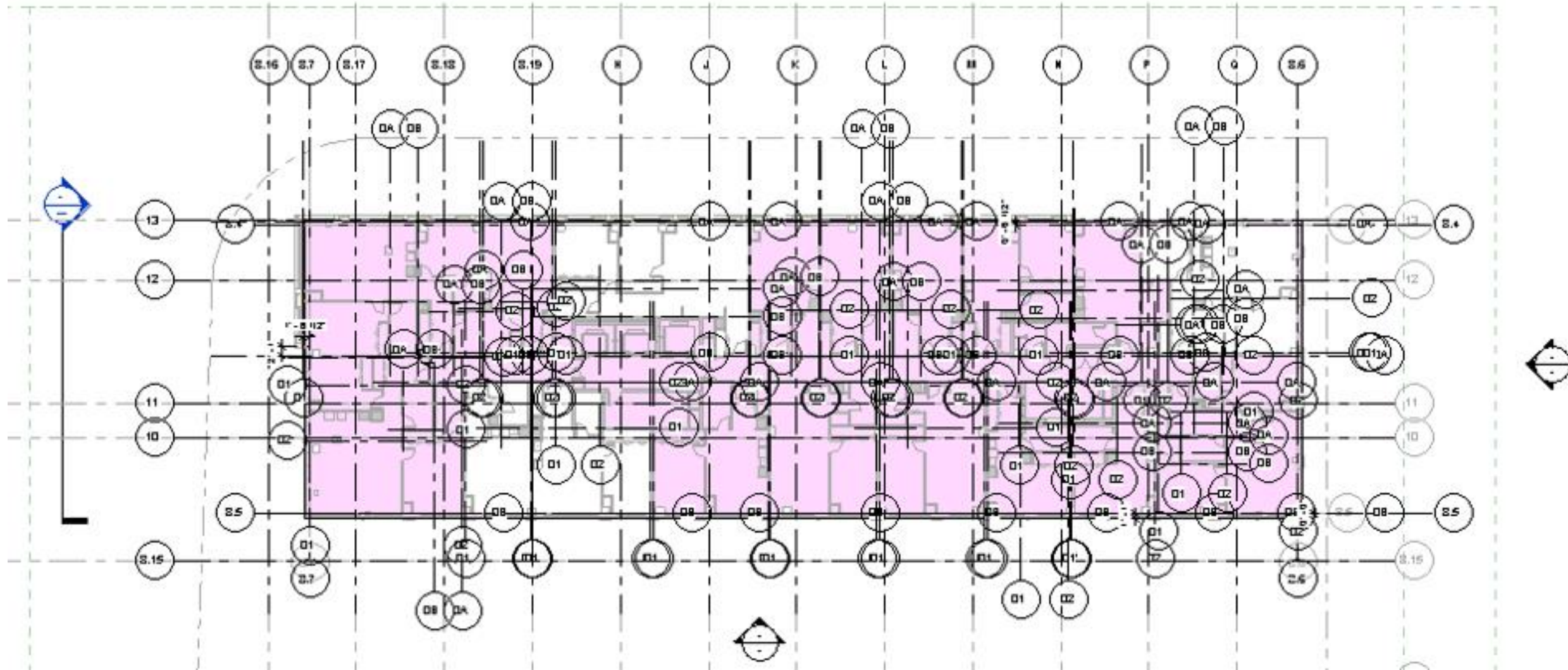
# File Structure – Data Preparation

## Grids



# File Structure – Data Preparation

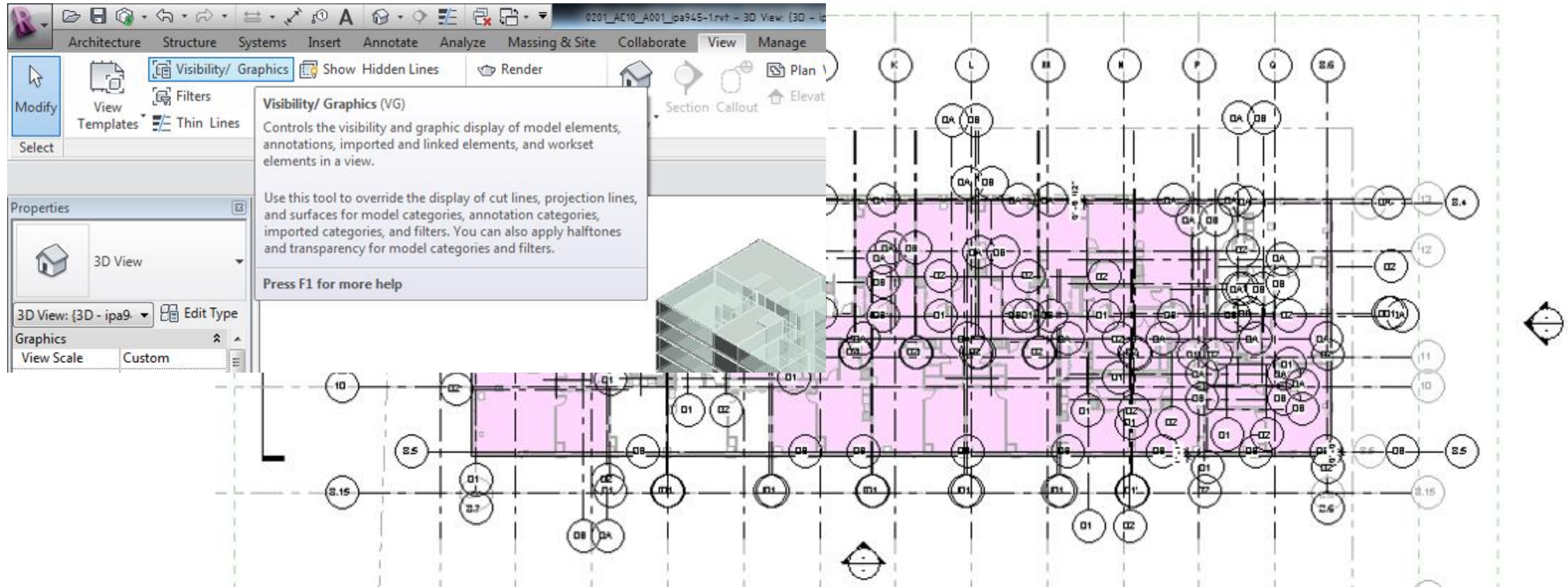
# Grids





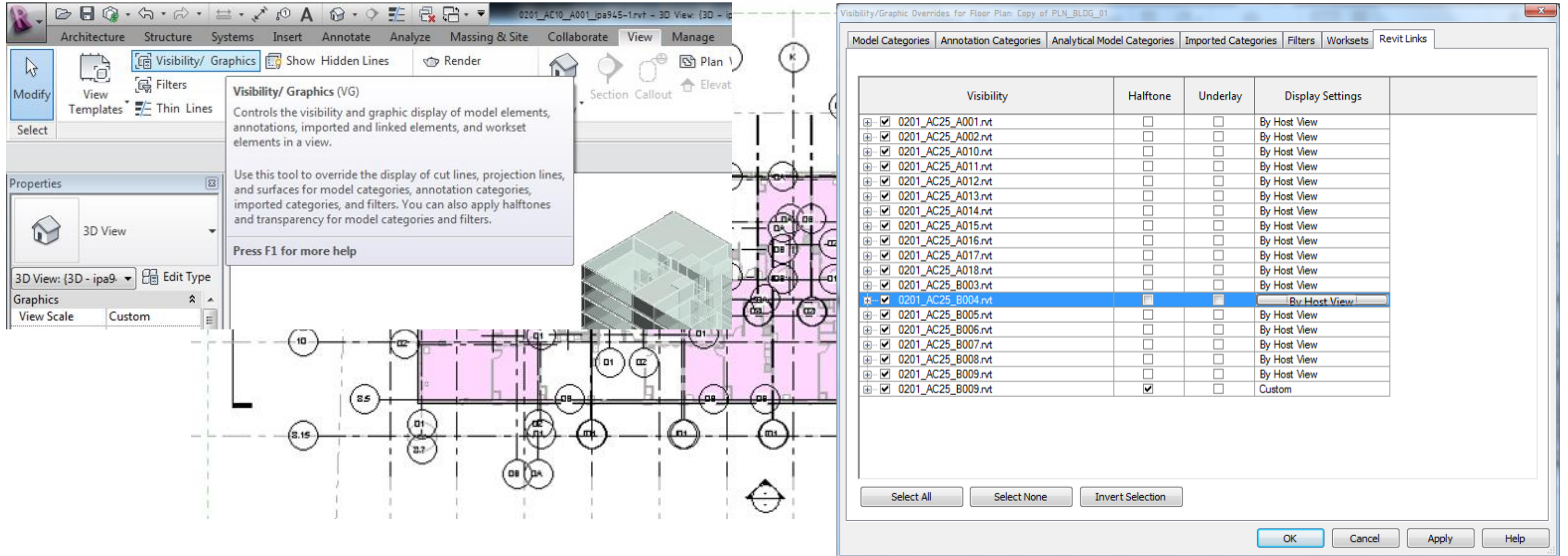
# File Structure – Data Preparation

## Grids



# File Structure – Data Preparation

## Grids



The screenshot displays the Revit software interface. On the left, the 'Visibility/ Graphics' (VG) tool is active, showing a tooltip that explains its function: 'Controls the visibility and graphic display of model elements, annotations, imported and linked elements, and workset elements in a view.' The 'Properties' panel on the left shows the '3D View' and 'Graphics' settings, with 'View Scale' set to 'Custom'.

On the right, the 'Visibility/Graphic Overrides for Floor Plan: Copy of PLN\_BLDG\_01' dialog box is open. It contains a table with columns for 'Visibility', 'Halftone', 'Underlay', and 'Display Settings'. The table lists various model categories and their corresponding settings. The '0201\_AC25\_B004.rvt' entry is highlighted in blue.

Visibility	Halftone	Underlay	Display Settings
<input checked="" type="checkbox"/> 0201_AC25_A001.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A002.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A010.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A011.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A012.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A013.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A014.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A015.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A016.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A017.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A018.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B003.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B004.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B005.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B006.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B007.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B008.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B009.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B009.rvt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Custom

At the bottom of the dialog box, there are buttons for 'Select All', 'Select None', and 'Invert Selection'. The 'OK', 'Cancel', 'Apply', and 'Help' buttons are located at the bottom right.



# File Structure – Data Preparation

## Grids

The image displays two Revit dialog boxes side-by-side, illustrating the configuration of RVT link display settings for a floor plan view.

**RVT Link Display Settings (Left Dialog):**

- Tab: **Annotation Categories**
- Annotation categories: **<Custom>**
- ☒ Show annotation categories in this view
- Filter list: **<show all>**
- Table columns: **Visibility**, **Projection/Surface** (Lines, Patterns, Transparency), **Cut Patterns**, **Halftone**
- Table rows (selected rows are highlighted):
  - ☒ Electrical Fixture Tags
  - ☒ Fire Alarm Device Tags
  - ☒ Flex Duct Tags
  - ☒ Flex Pipe Tags
  - ☒ Floor Tags
  - ☒ Foundation Span Direction Sym...
  - ☒ Furniture System Tags
  - ☒ Furniture Tags
  - ☒ Generic Annotations
  - ☒ Generic Model Tags
  - ☒ **Grids**
  - ☒ Guide Grid
  - ☒ Internal Area Load Tags
  - ☒ Internal Line Load Tags
  - ☒ Internal Point Load Tags
  - ☒ Keynote Tags
  - ☒ Levels
- Buttons: **All**, **None**, **Invert**, **Expand All**
- Buttons: **OK**, **Cancel**, **Apply**, **Help**

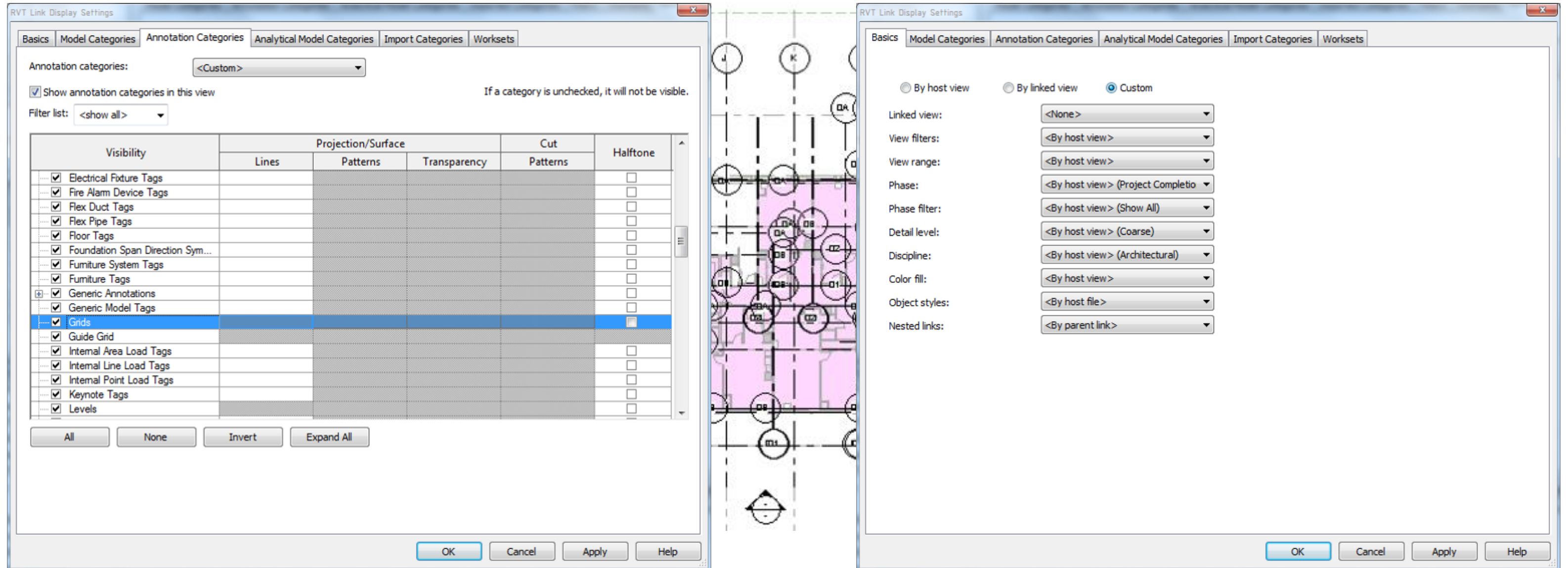
**Visibility/Graphic Overrides for Floor Plan: Copy of PLN\_BLDG\_01 (Right Dialog):**

- Tab: **Revit Links**
- Table columns: **Visibility**, **Halftone**, **Underlay**, **Display Settings**
- Table rows (selected row is highlighted):
  - ☒ 0201\_AC25\_A001.rvt
  - ☒ 0201\_AC25\_A002.rvt
  - ☒ 0201\_AC25\_A010.rvt
  - ☒ 0201\_AC25\_A011.rvt
  - ☒ 0201\_AC25\_A012.rvt
  - ☒ 0201\_AC25\_A013.rvt
  - ☒ 0201\_AC25\_A014.rvt
  - ☒ 0201\_AC25\_A015.rvt
  - ☒ 0201\_AC25\_A016.rvt
  - ☒ 0201\_AC25\_A017.rvt
  - ☒ 0201\_AC25\_A018.rvt
  - ☒ 0201\_AC25\_B003.rvt
  - ☒ **0201\_AC25\_B004.rvt**
  - ☒ 0201\_AC25\_B005.rvt
  - ☒ 0201\_AC25\_B006.rvt
  - ☒ 0201\_AC25\_B007.rvt
  - ☒ 0201\_AC25\_B008.rvt
  - ☒ 0201\_AC25\_B009.rvt
  - ☒ 0201\_AC25\_B009.rvt
- Buttons: **Select All**, **Select None**, **Invert Selection**
- Buttons: **OK**, **Cancel**, **Apply**, **Help**



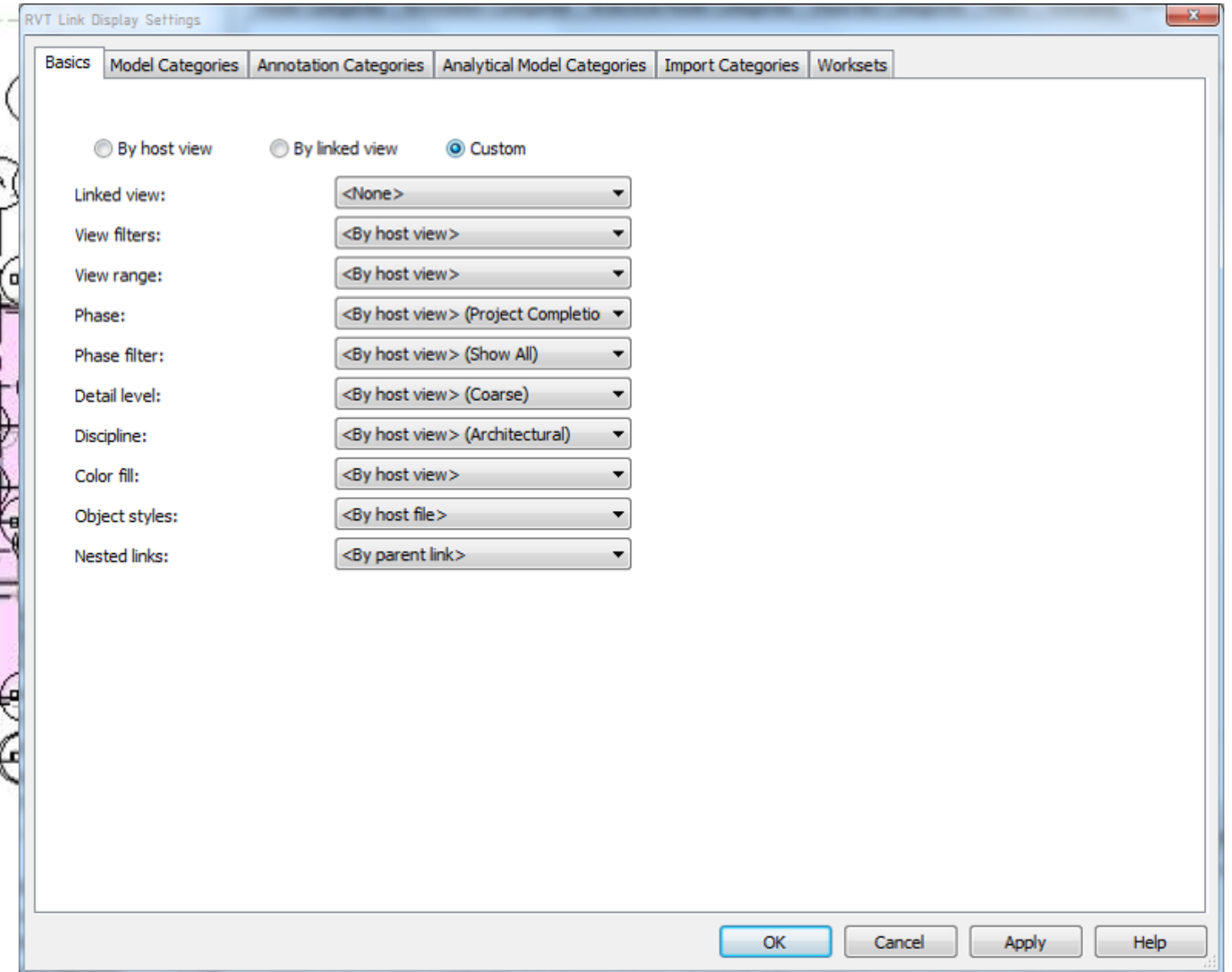
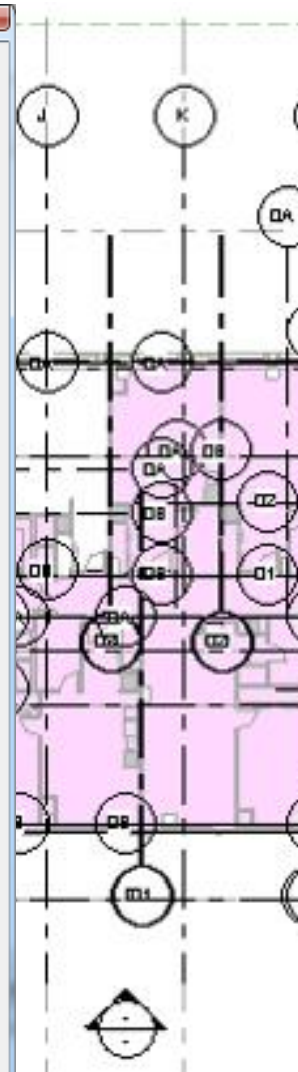
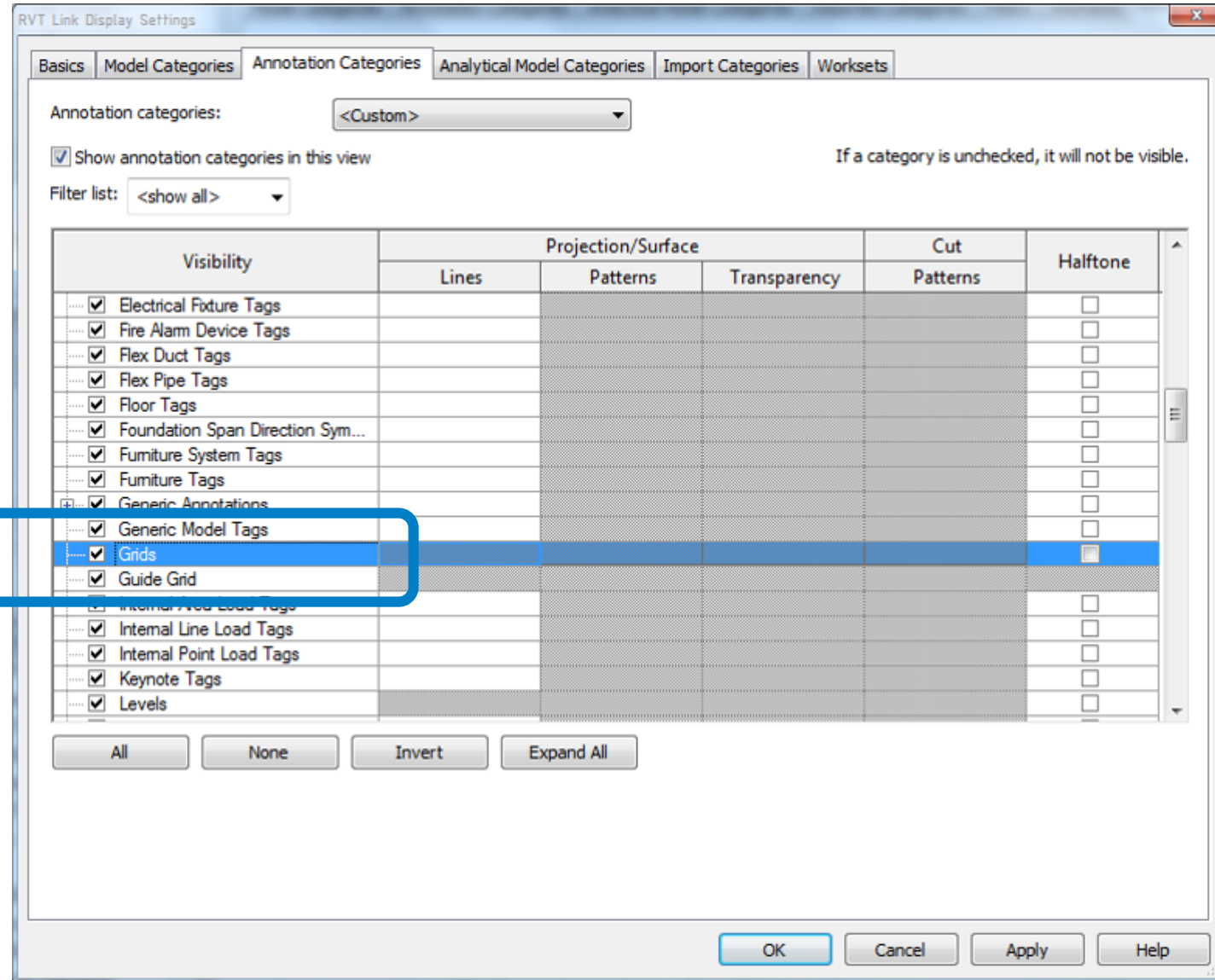
# File Structure – Data Preparation

## Grids



# File Structure – Data Preparation

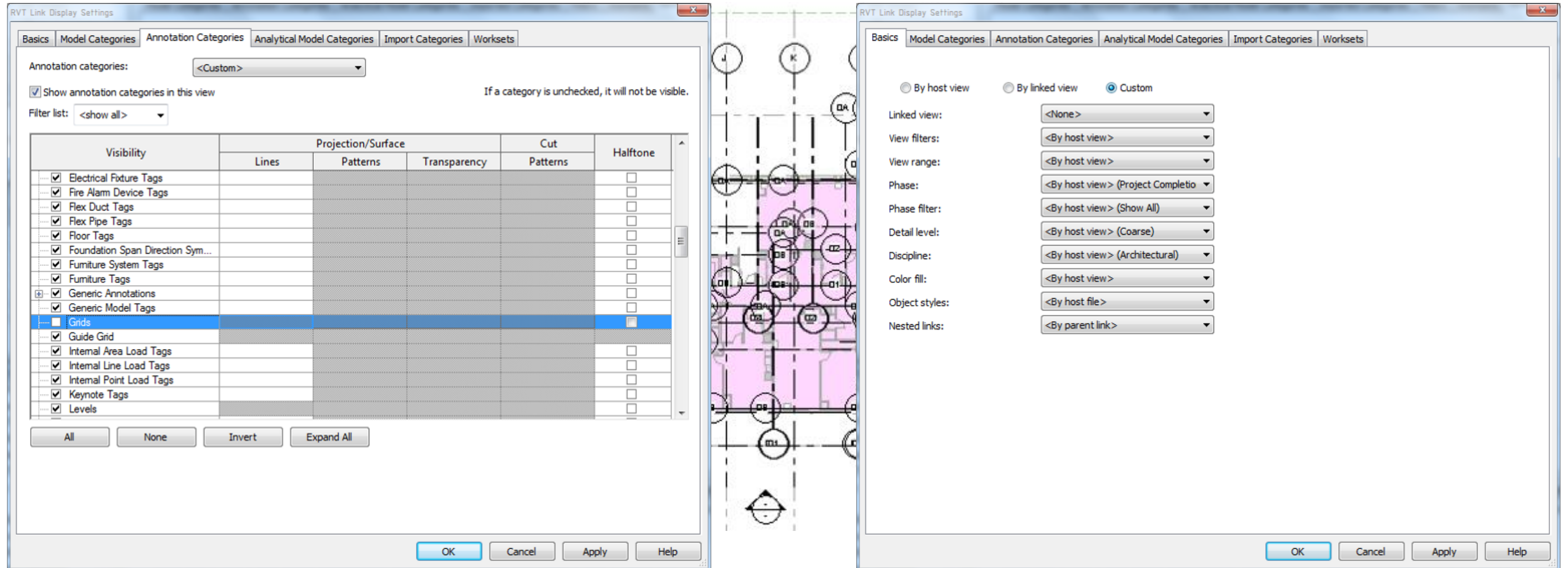
## Grids





# File Structure – Data Preparation

## Grids





# File Structure – Data Preparation

## Grids

Visibility/Graphic Overrides for Floor Plan: Copy of PLN\_BLDG\_01

Model Categories

Annotation Categories

Analytical Model Categories

Imported Categories

Filters

Worksets

Revit Links

Visibility	Halftone	Underlay	Display Settings
<input checked="" type="checkbox"/> 0201_AC25_A001.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A002.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A010.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A011.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A012.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A013.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A014.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A015.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A016.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A017.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_A018.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B003.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B004.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B005.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B006.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B007.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B008.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B009.rvt	<input type="checkbox"/>	<input type="checkbox"/>	By Host View
<input checked="" type="checkbox"/> 0201_AC25_B009.rvt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Custom

Select All

Select None

Invert Selection

OK

Cancel

Apply

Help

View Templates

View Templates

Discipline filter:  
<all>

View type filter:  
<all>

Names:  
A1 Sheet set  
ENLARGED ELEVATIONS  
KPF\_3D\_Colour  
KPF\_3D\_Max Export  
KPF\_3D\_Naviswork Export  
KPF\_Building Elevation  
KPF\_Building Section  
KPF\_Building Section Background  
KPF\_Floor Plan\_Color  
KPF\_Floor Plan\_Export to CAD  
KPF\_Floor Plan\_Furniture  
KPF\_Floor Plan\_Sheet\_100  
KPF\_Floor Plan\_Sheet\_200

View Properties

Number of views with this template assigned: 0

Parameter	Value	Include
View Scale	Custom	<input checked="" type="checkbox"/>
Scale Value 1:	150	
Display Model	Normal	<input checked="" type="checkbox"/>
Detail Level	Coarse	<input checked="" type="checkbox"/>
Parts Visibility	Show Original	<input checked="" type="checkbox"/>
V/G Overrides Model	Edit...	<input checked="" type="checkbox"/>
V/G Overrides Annotati	Edit...	<input checked="" type="checkbox"/>
V/G Overrides Analytic	Edit...	<input checked="" type="checkbox"/>
V/G Overrides Import	Edit...	<input checked="" type="checkbox"/>
V/G Overrides Filters	Edit...	<input checked="" type="checkbox"/>
V/G Overrides Worksets	Edit...	<input checked="" type="checkbox"/>
V/G Overrides RVT Link	Edit...	<input checked="" type="checkbox"/>
Model Display	Edit...	<input checked="" type="checkbox"/>
Shadows	Edit...	<input checked="" type="checkbox"/>
Lighting	Edit...	<input checked="" type="checkbox"/>
Photographic Exposure	Edit...	<input checked="" type="checkbox"/>
Underlay Orientation	Plan	<input type="checkbox"/>

OK

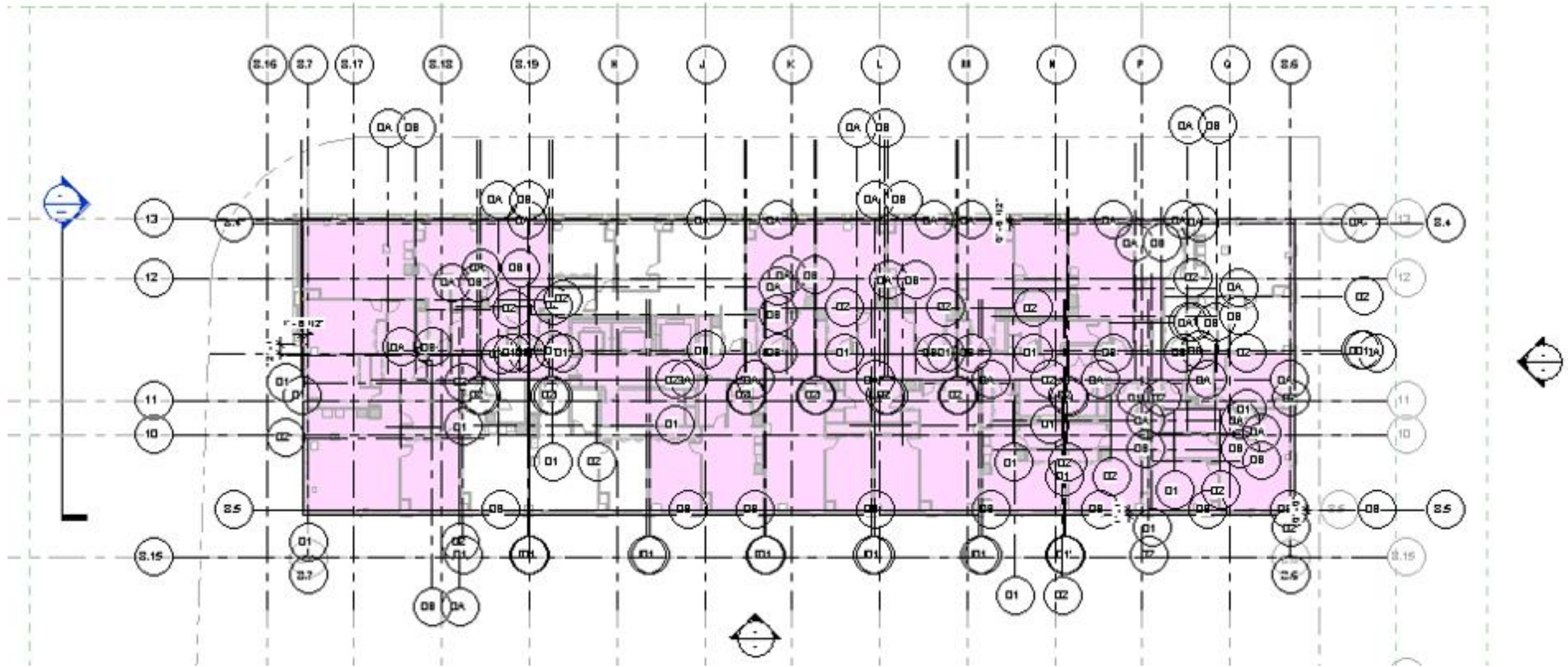
Cancel

Apply Properties

Help

# File Structure – Data Preparation

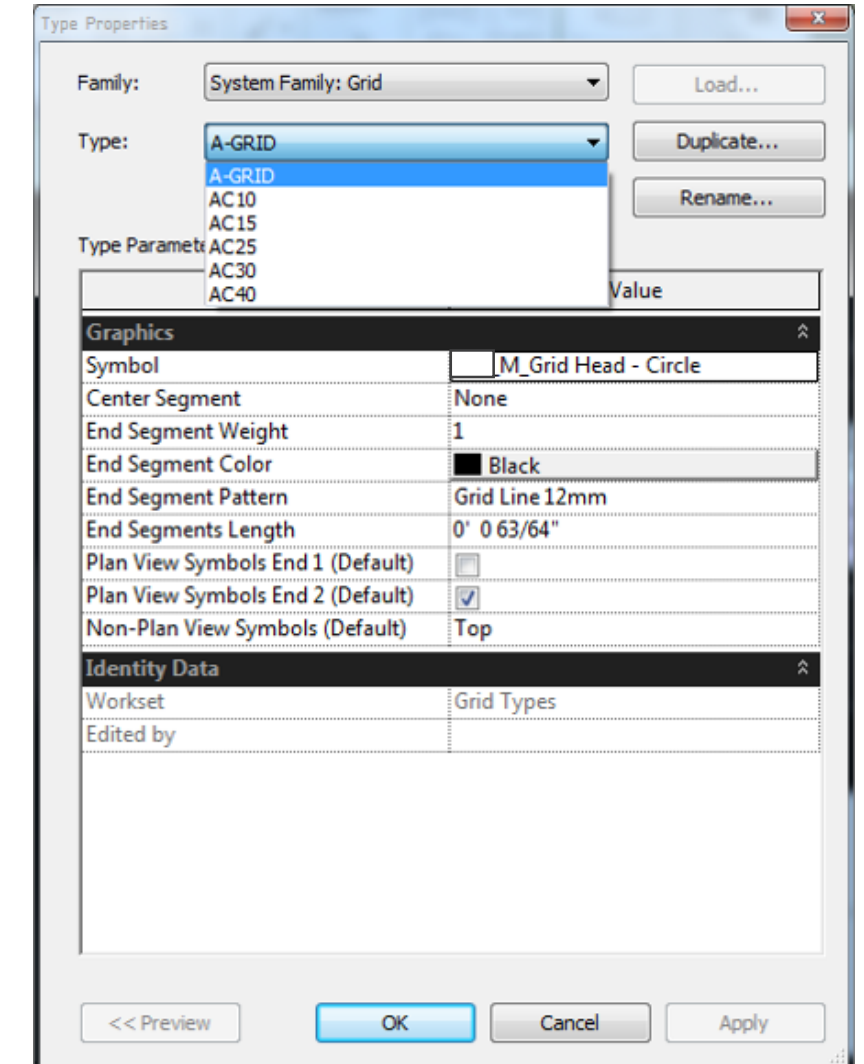
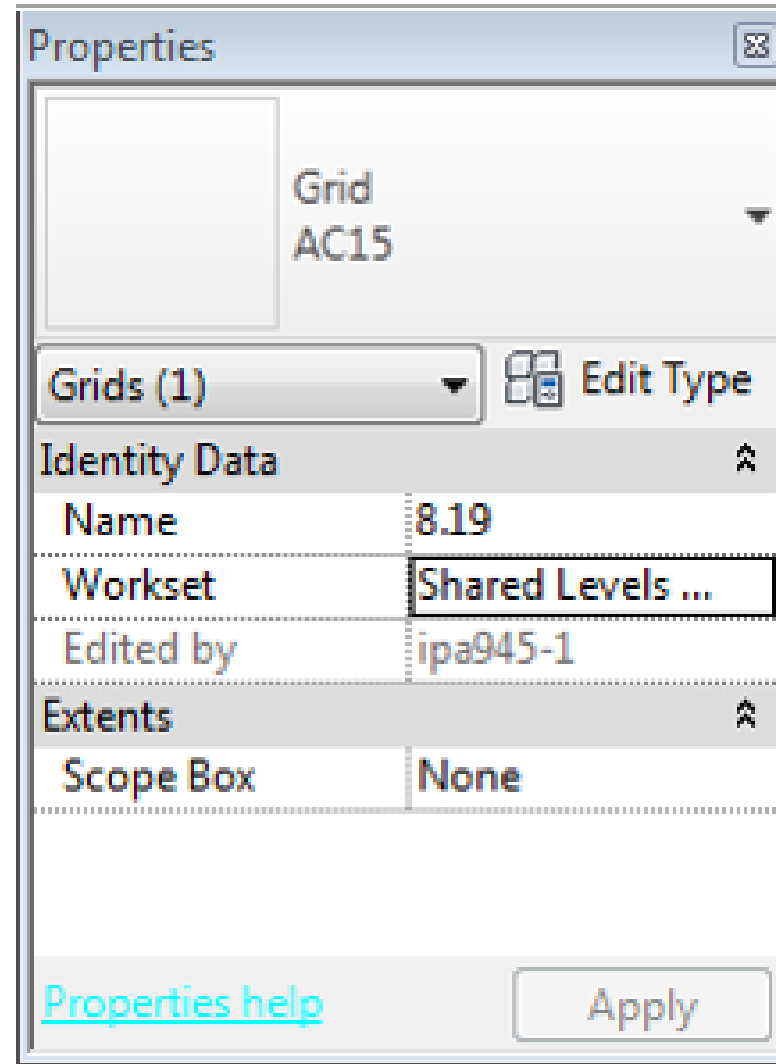
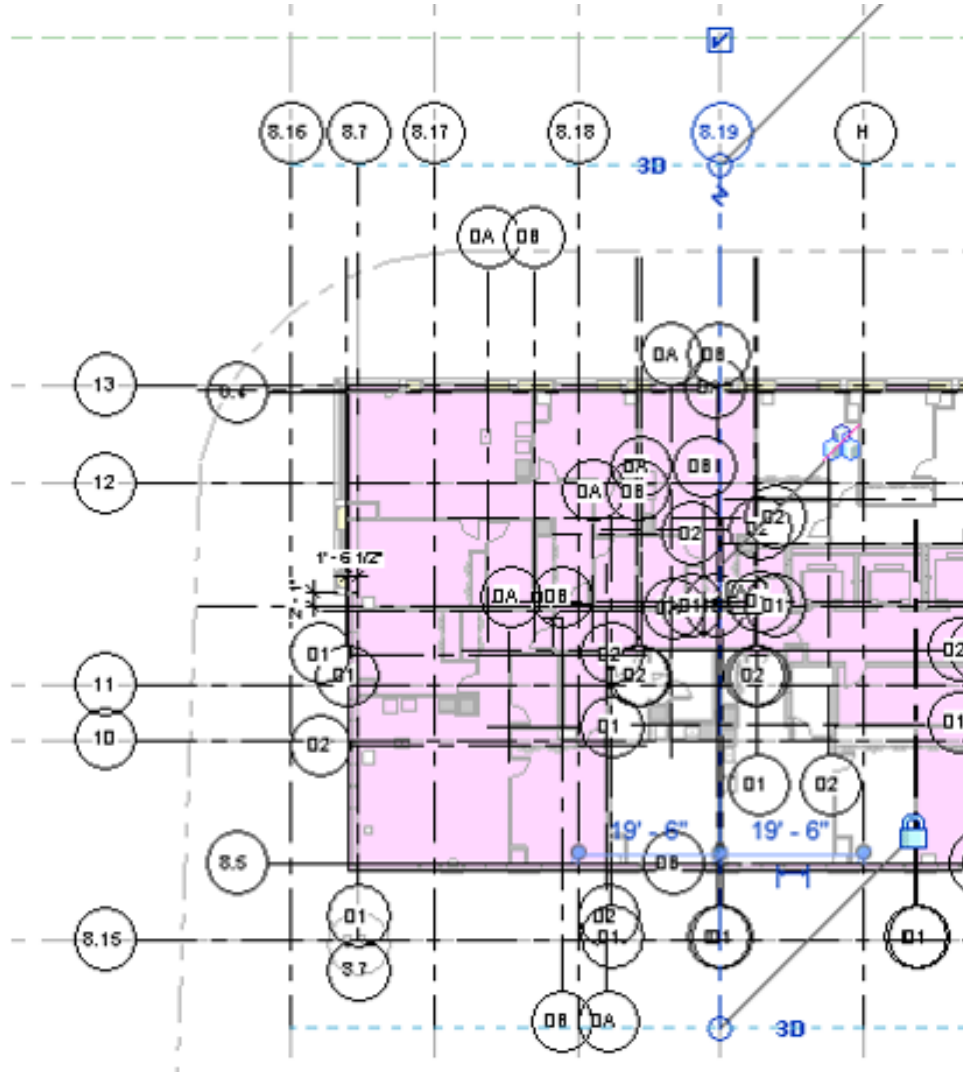
## Grids



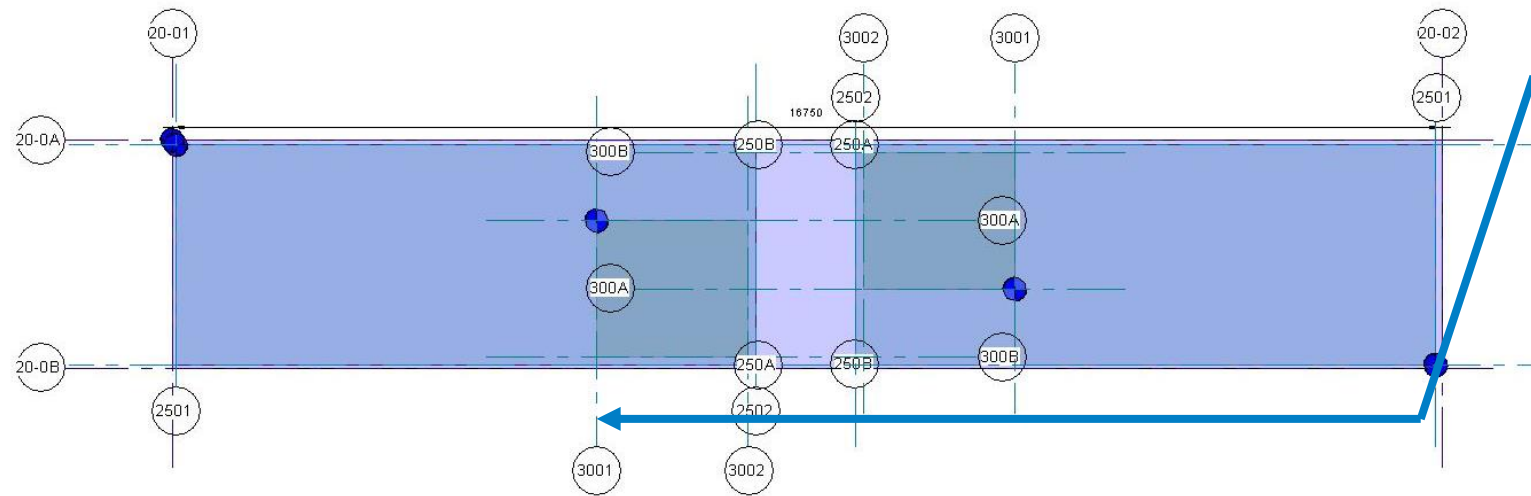


# File Structure – Data Preparation

## Grids - Filters







### Properties

Grid AC30

Grids (1) [Edit Type](#)

#### Identity Data

Name	0B
Workset	Shared Levels ...
Edited by	

#### Extents

Scope Box	None
-----------	------

[Properties help](#) [Apply](#)

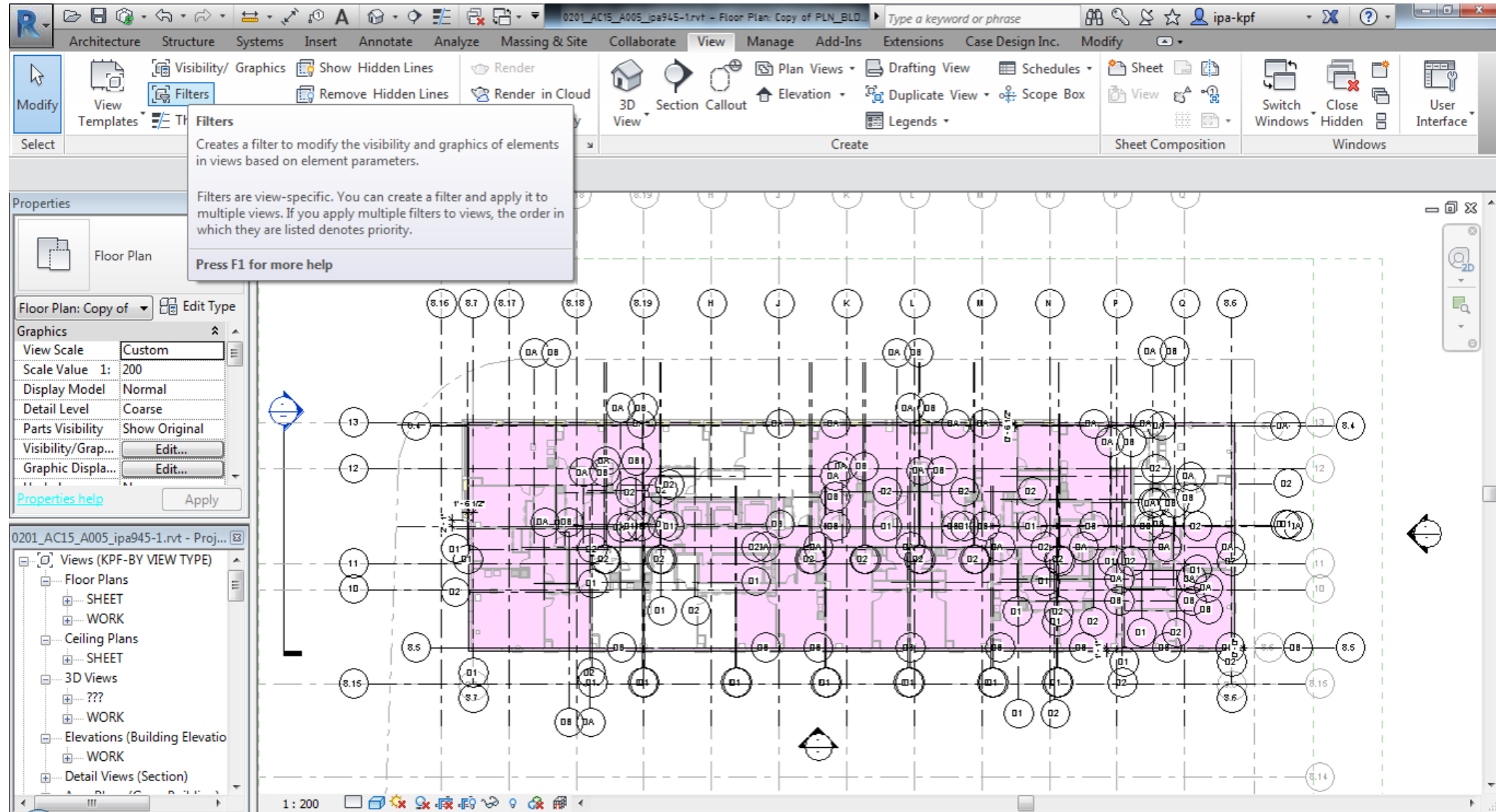
### Type Properties

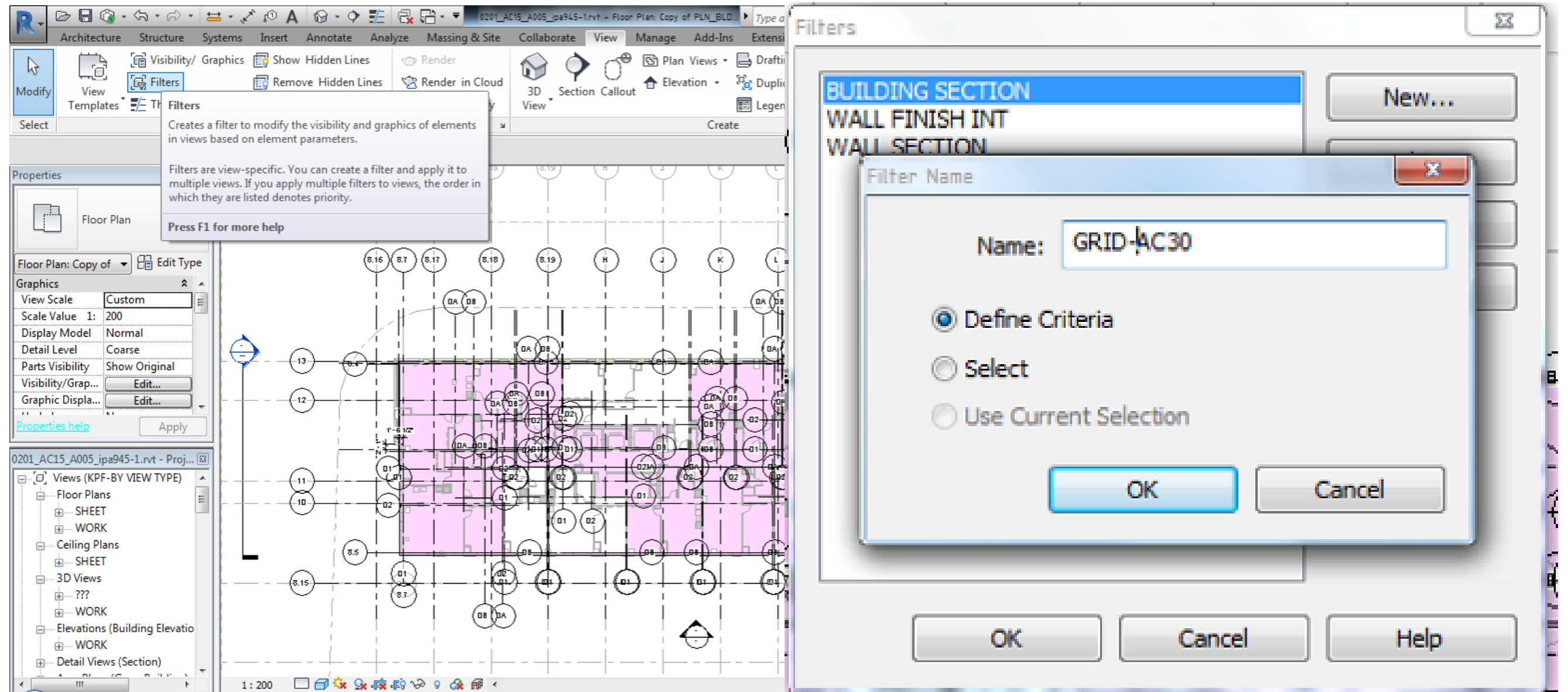
Family: System Family: Grid [Load...](#)

Type: A-GRID [Duplicate...](#)  
A-GRID [Rename...](#)  
AC10  
AC15  
AC25  
AC30  
AC40

Type Parameter	Value
<b>Graphics</b>	
Symbol	M_Grid Head - Circle
Center Segment	None
End Segment Weight	1
End Segment Color	Black
End Segment Pattern	Grid Line 12mm
End Segments Length	0' 0 63/64"
Plan View Symbols End 1 (Default)	<input type="checkbox"/>
Plan View Symbols End 2 (Default)	<input checked="" type="checkbox"/>
Non-Plan View Symbols (Default)	Top
<b>Identity Data</b>	
Workset	Grid Types
Edited by	

<< Preview [OK](#) [Cancel](#) [Apply](#)





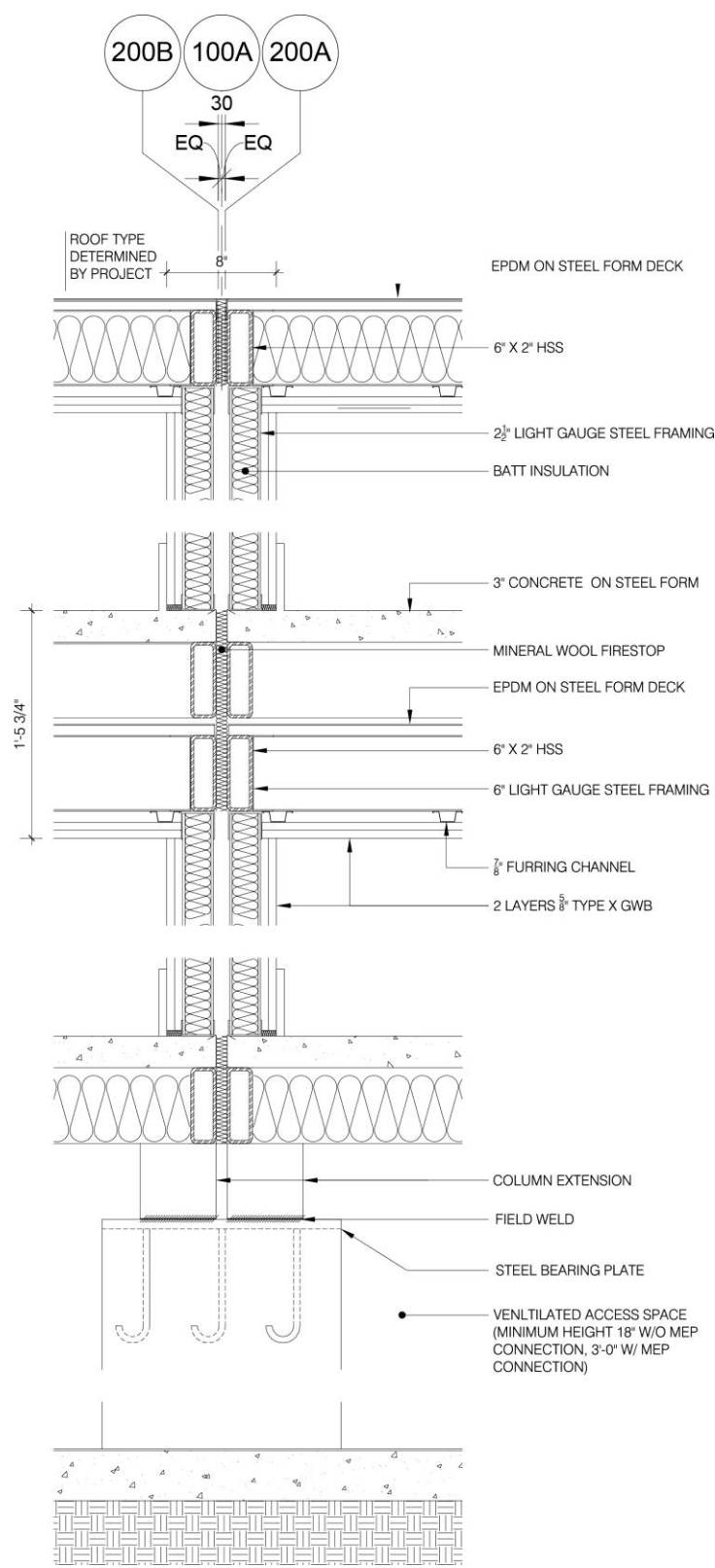
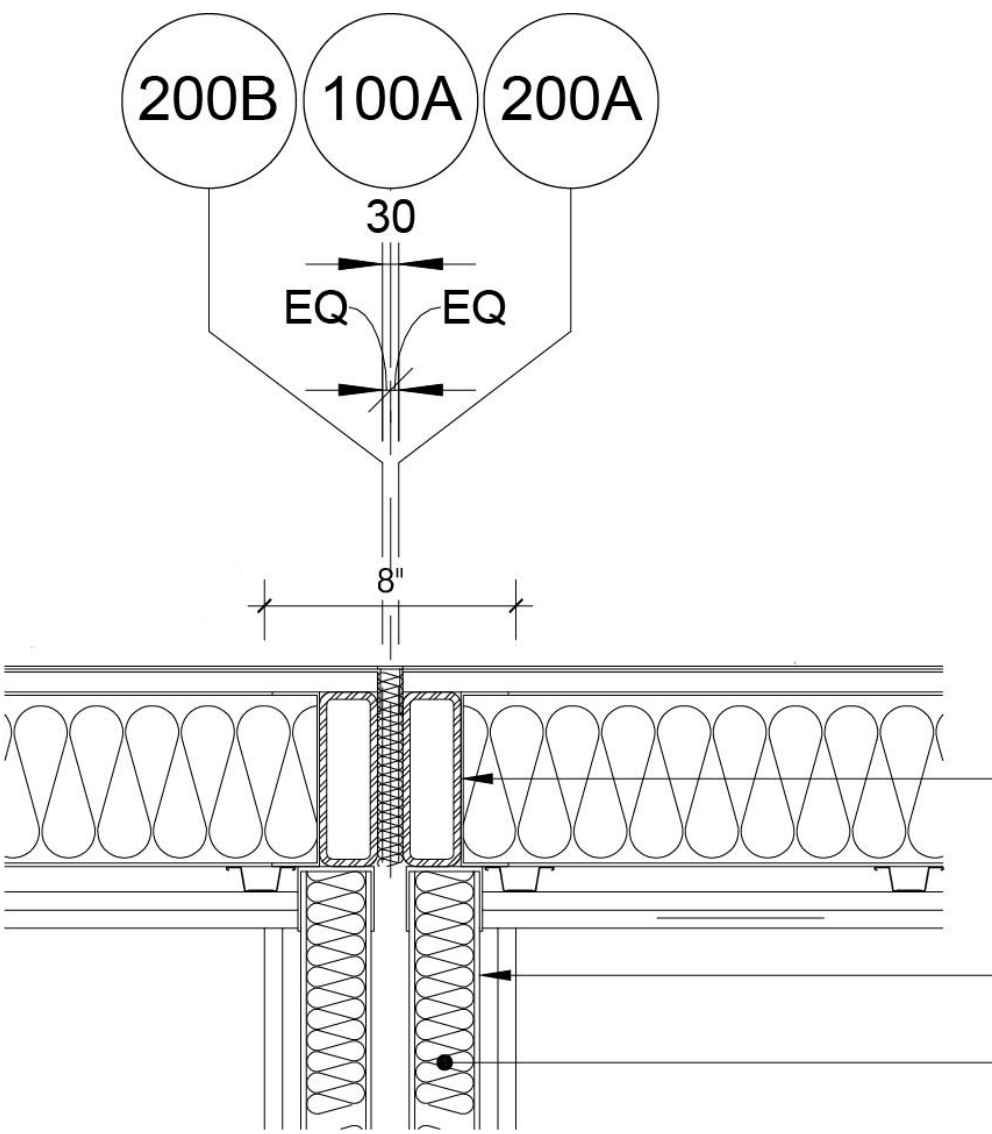
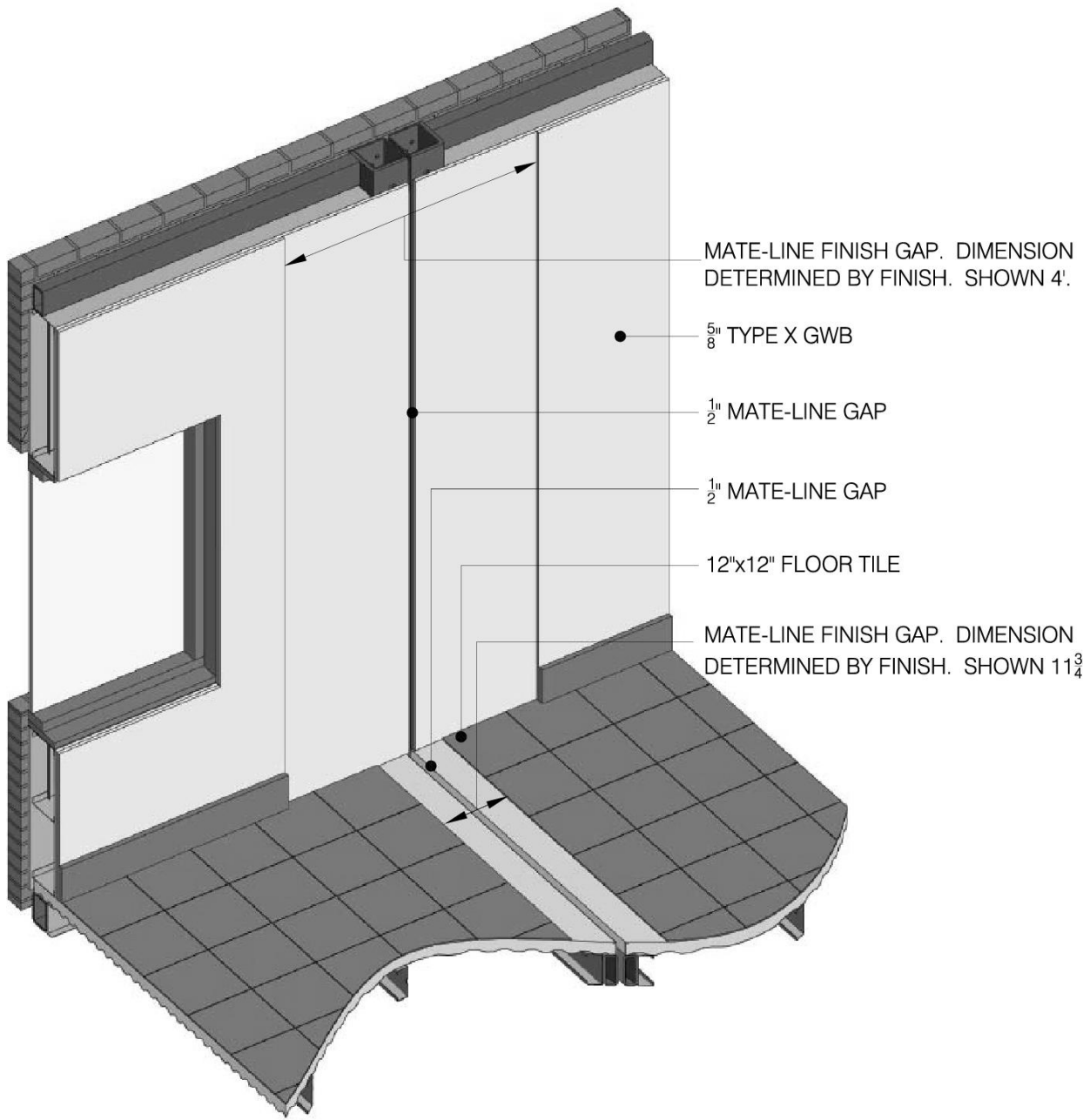






# File Structure – Data Preparation

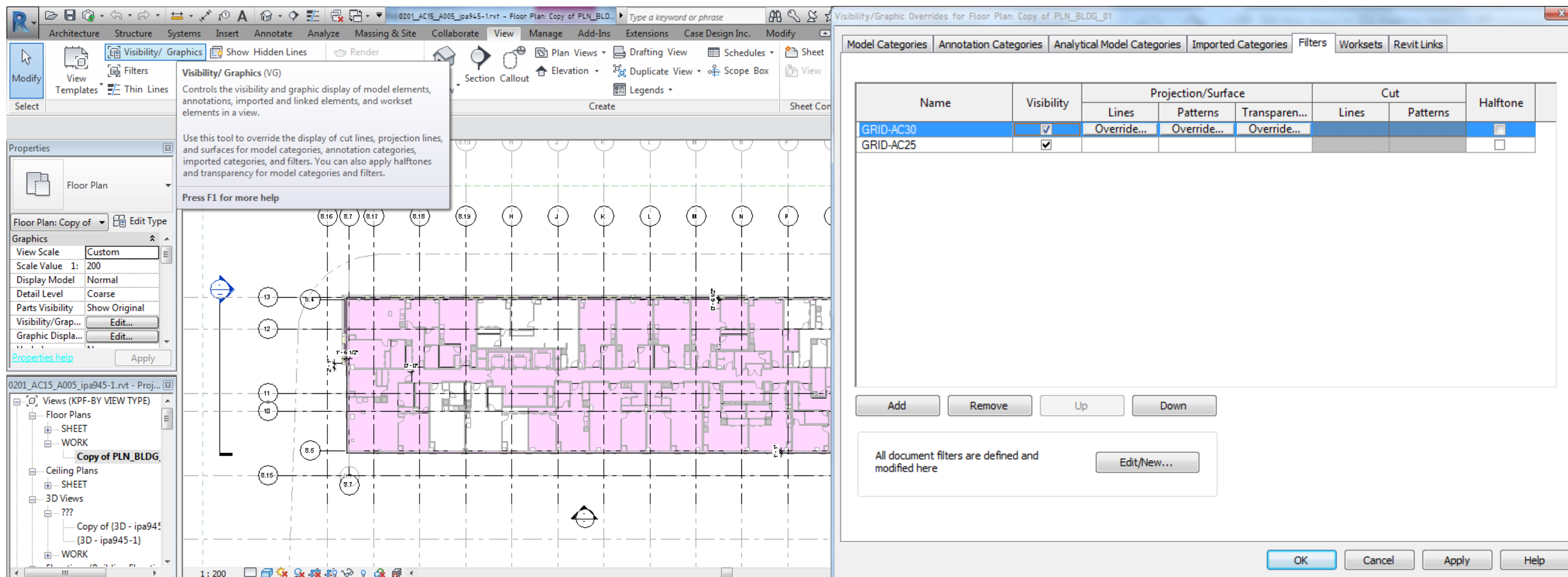
## Grids





# File Structure – Data Preparation

# Grids

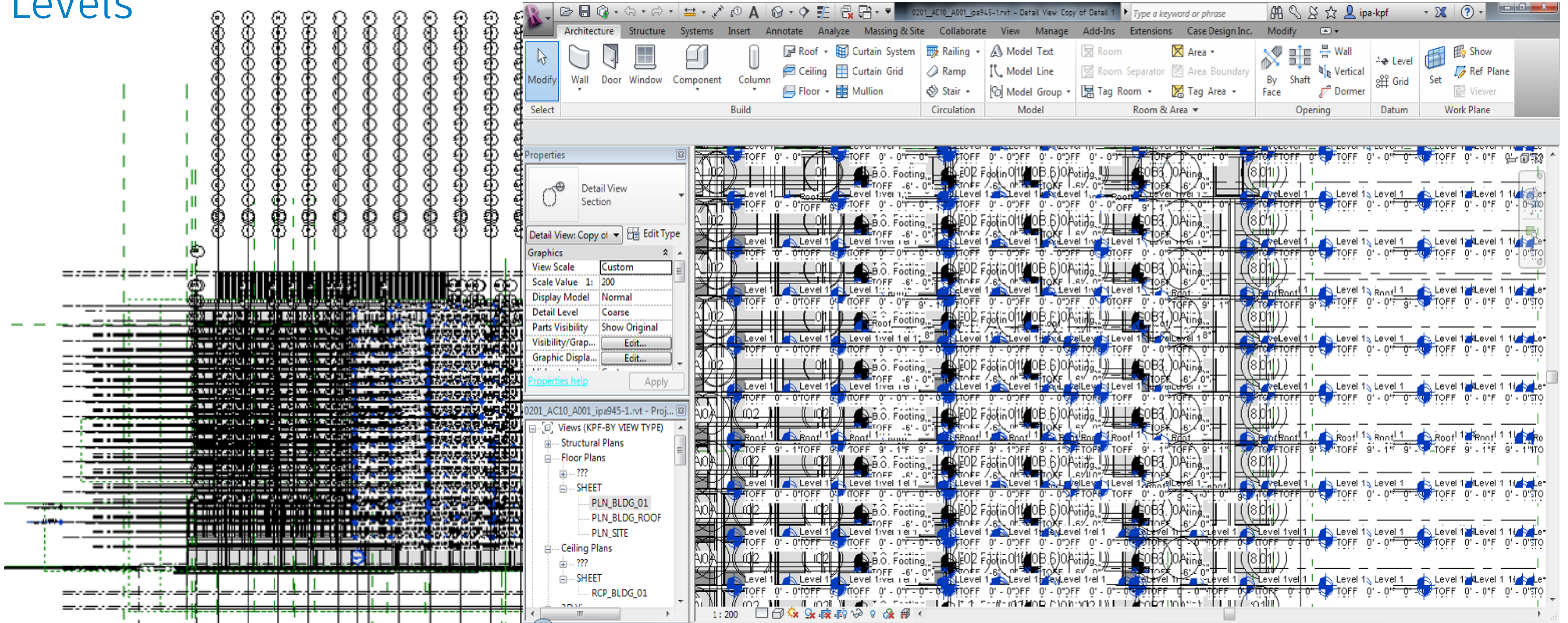


# File Structure – Data Preparation

Levels

# File Structure – Data Preparation

## Levels





# File Structure – Data Preparation

## Levels

Visibility/Graphic Overrides for Detail View: Copy of Detail 1

Model Categories

Annotation Categories

Analytical Model Categories

Imported Categories

Filters

Worksets

Revit Links

Name	Visibility	Projection/Surface			Cut		Halftone
		Lines	Patterns	Transparen...	Lines	Patterns	
LEVL-AC15	<input type="checkbox"/>						<input type="checkbox"/>
LEVL-AC20	<input type="checkbox"/>						<input type="checkbox"/>
LEVL-AC25	<input type="checkbox"/>						<input type="checkbox"/>
LEVL-AC30	<input type="checkbox"/>						<input type="checkbox"/>
GRID-AC15	<input type="checkbox"/>						<input type="checkbox"/>
GRID-AC20	<input type="checkbox"/>						<input type="checkbox"/>
GRID-AC25	<input type="checkbox"/>						<input type="checkbox"/>
GRID-AC30	<input type="checkbox"/>						<input type="checkbox"/>
GRID-AC40	<input checked="" type="checkbox"/>	Override...	Override...	Override...			<input checked="" type="checkbox"/>

Add

Remove

Up

Down

All document filters are defined and modified here

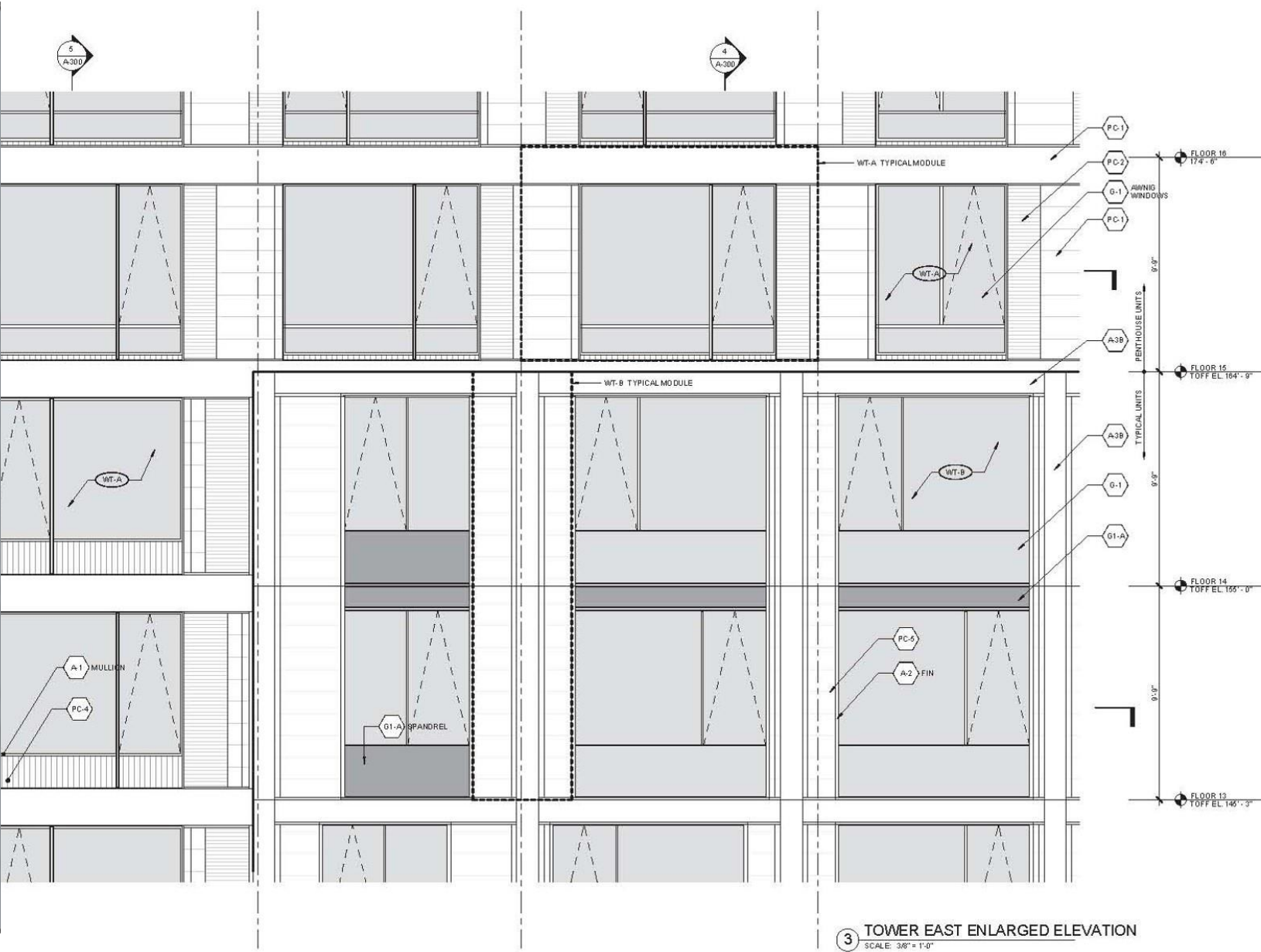
Edit/New...

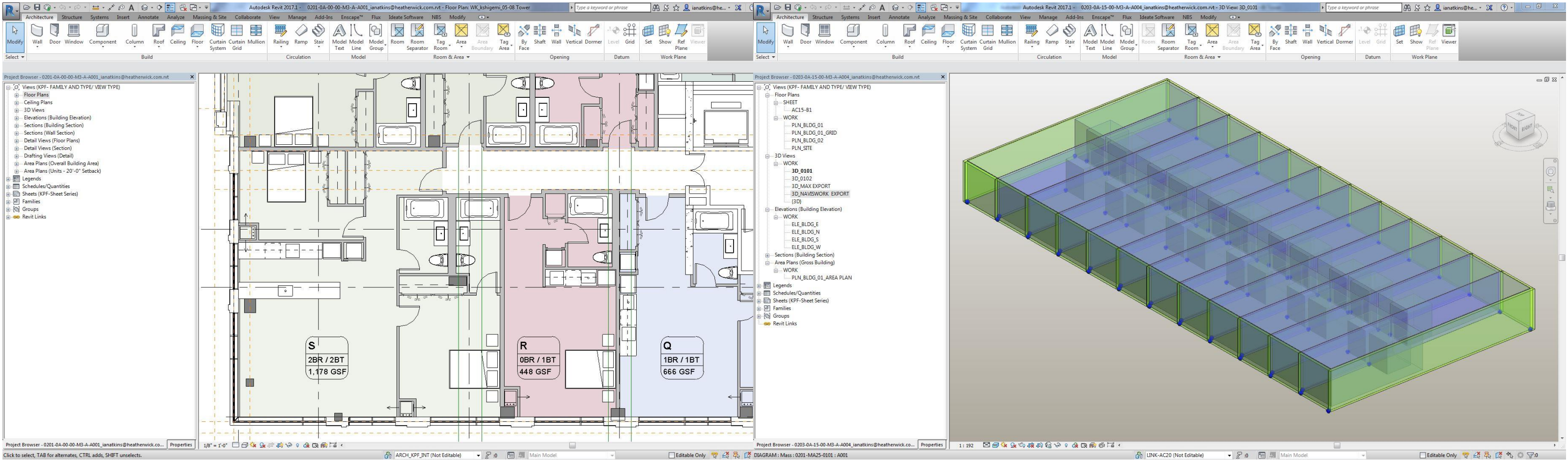
OK

Cancel

Apply

Help





# File Structure – Data Preparation

## Worksets

ARCH_CAD_IMPORT
ARCH_CIRC_STAIR
ARCH_CORE
ARCH_EXT
ARCH_EXT_ANNEX
ARCH_INT
ARCH_LANDSCAPE/CIVIL
ARCH_MASS
ARCH_PARKING
ARCH_REFERENCE
ARCH_SITE
ARCH_SITE_FLAT_SIDEWALK
ARCH_STRUCTURE
LINKED_INT
LINKED_LEM_STR
SLAG_ANNEX
SLAG_MAIN
SLAG_MAIN_STL
SLAG_PODIUM
Workset1
Workset2





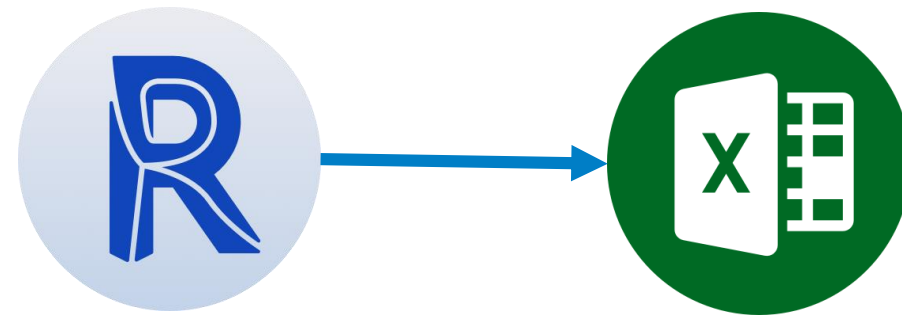
## 07 : [Degrees of] Automation

# File Structure – Data Preparation

Strategy and Datum (Degrees of Automation)

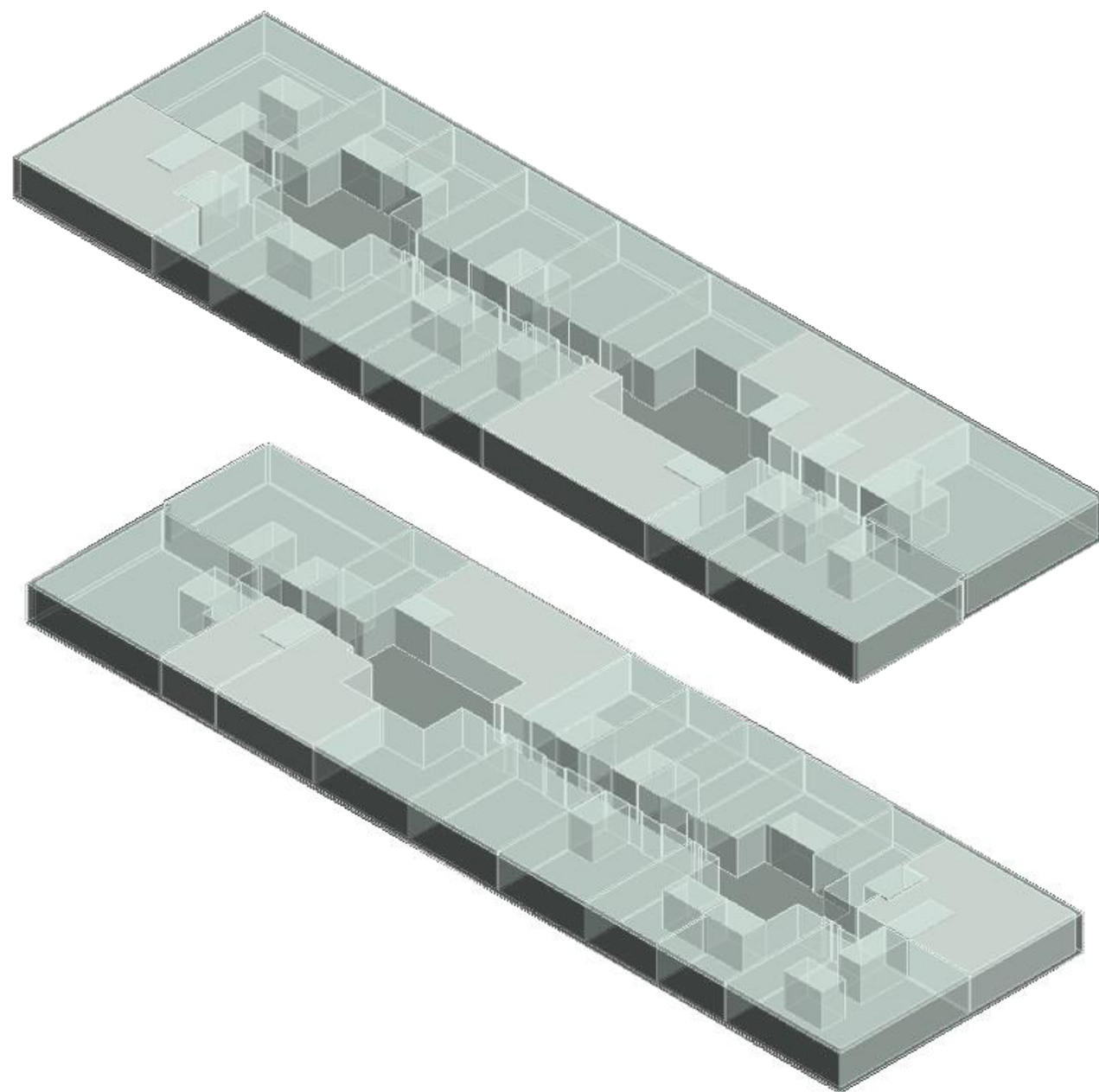
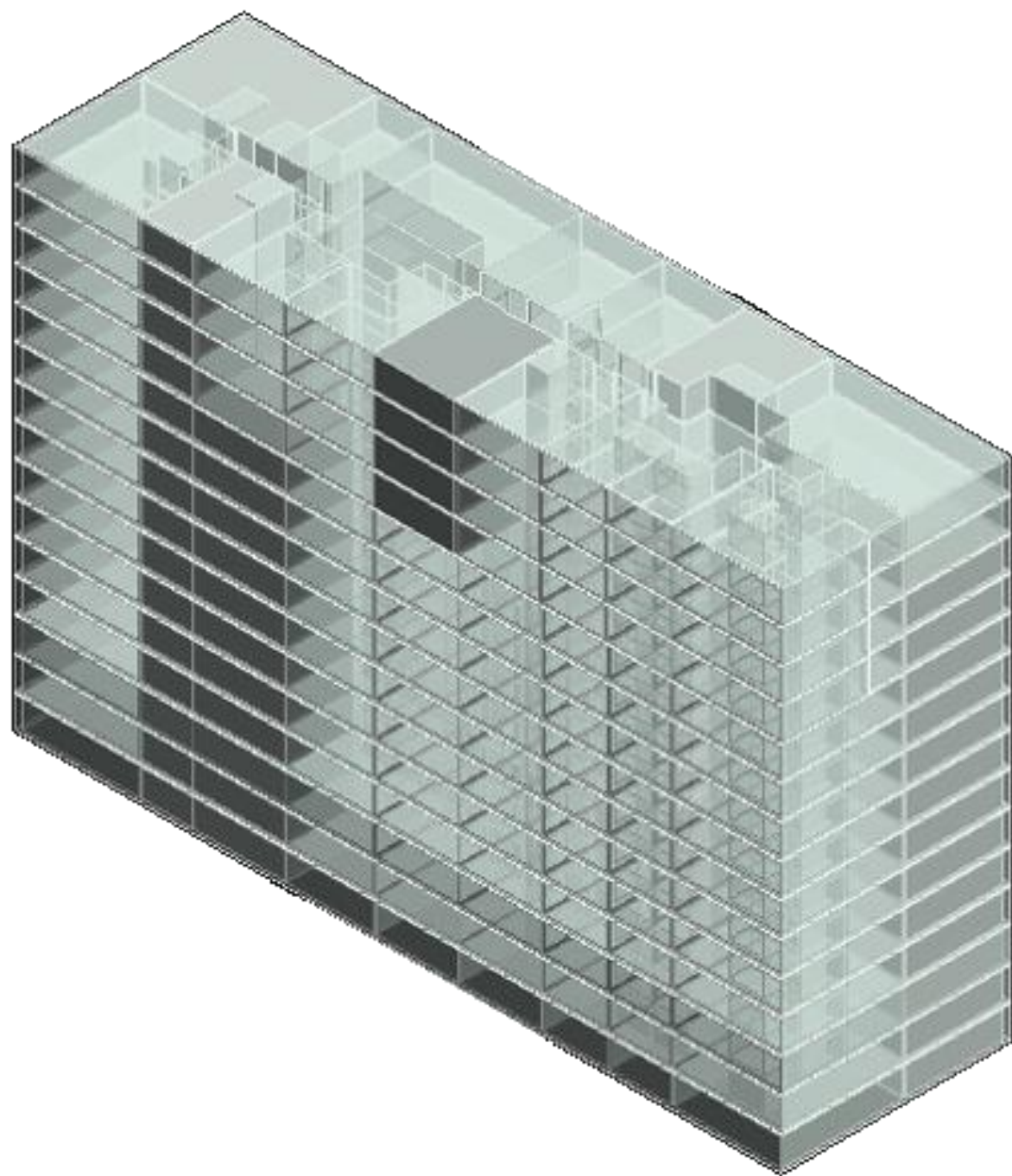
# File Structure – Data Preparation

Strategy and Datum









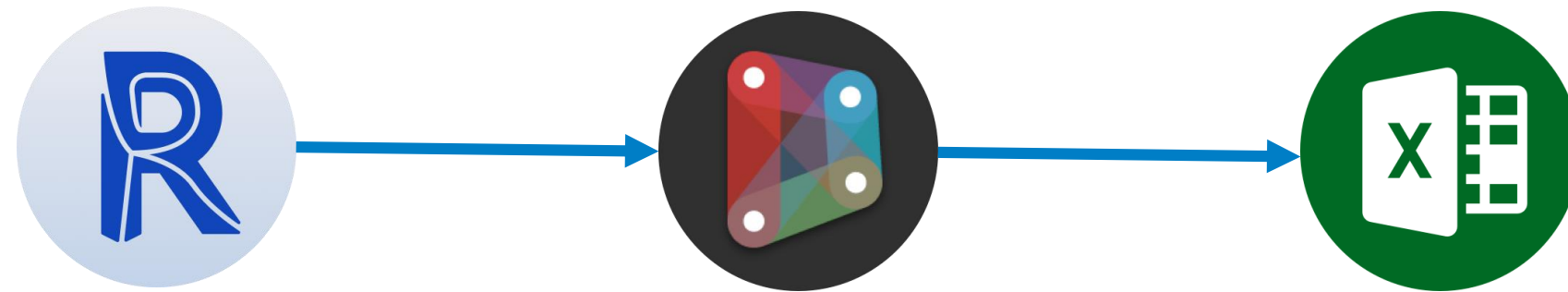






# File Structure – Data Control

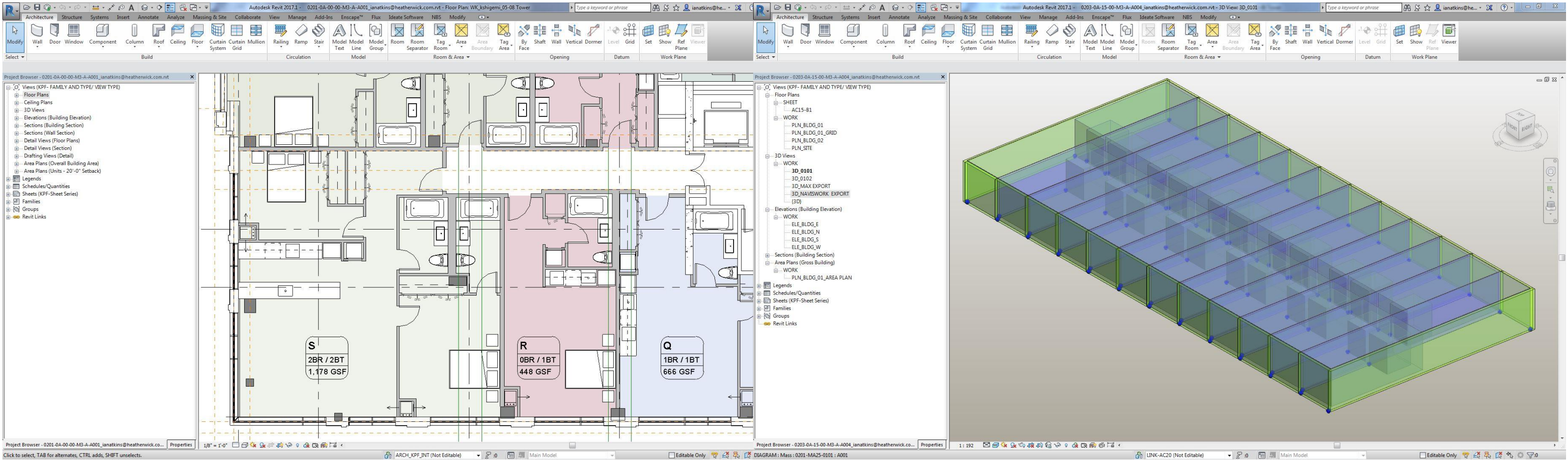
Strategies and Datums



# File Structure – Data Preparation

Strategies and Datums

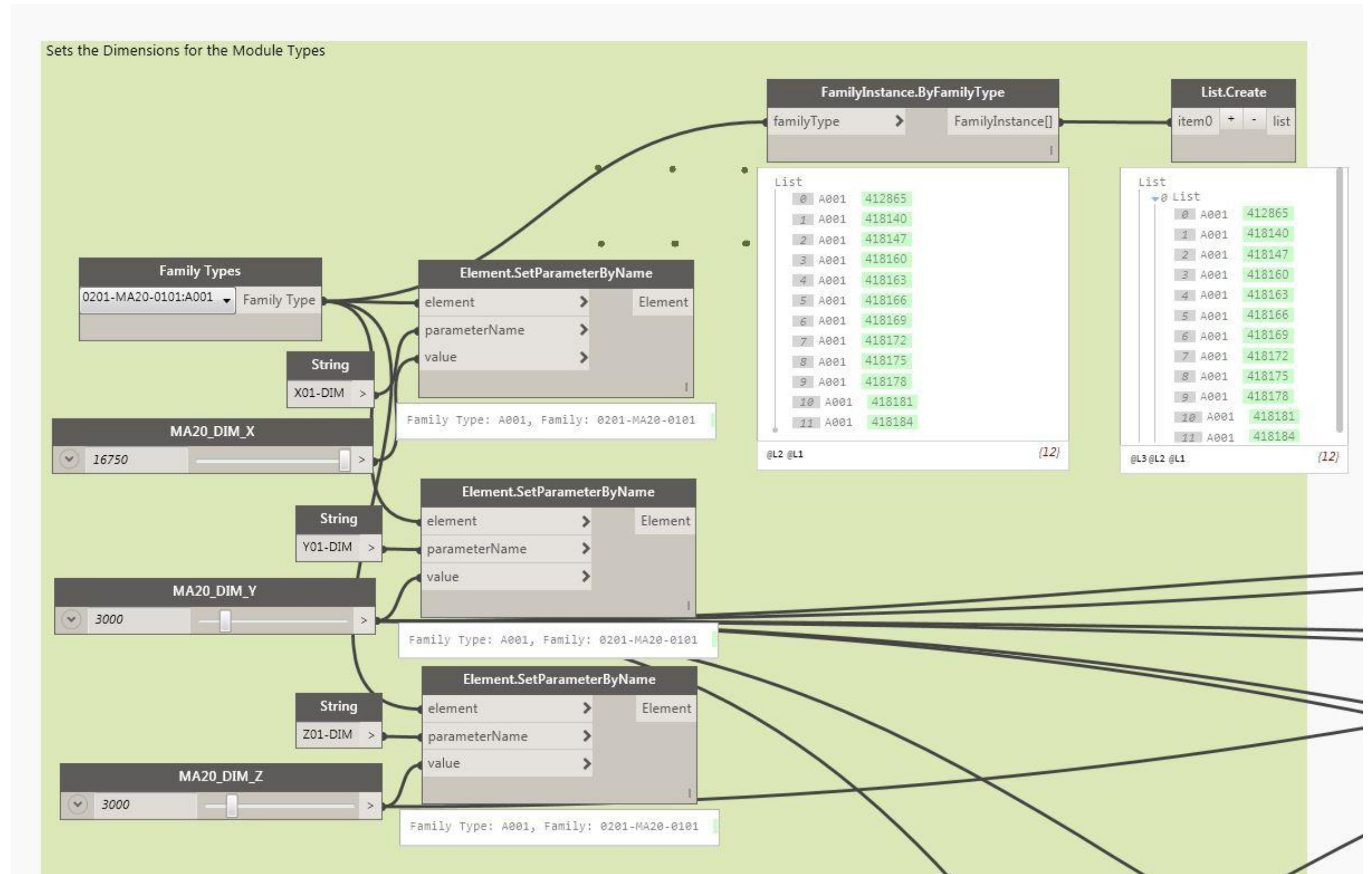




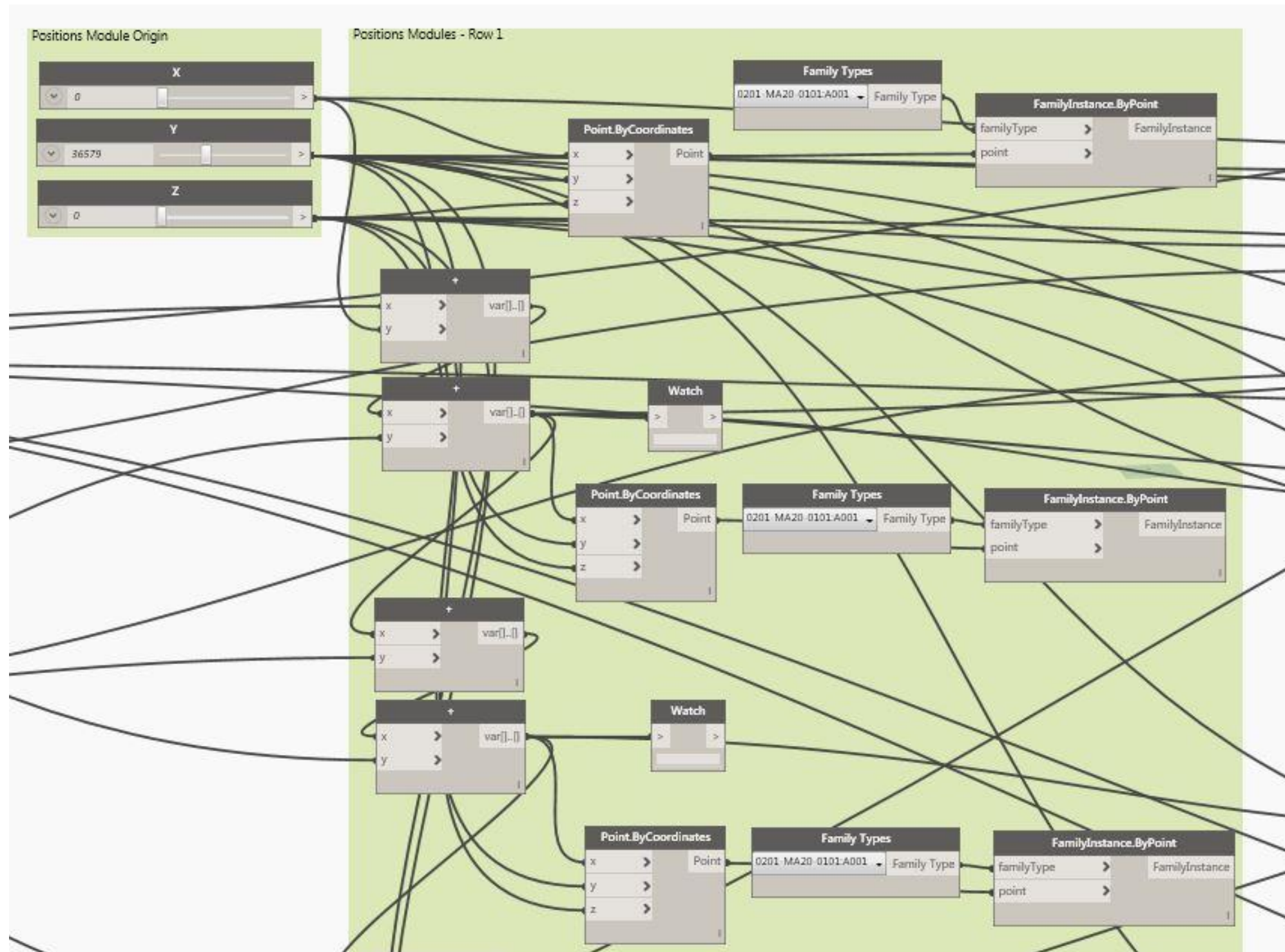


# File Structure – Data Preparation

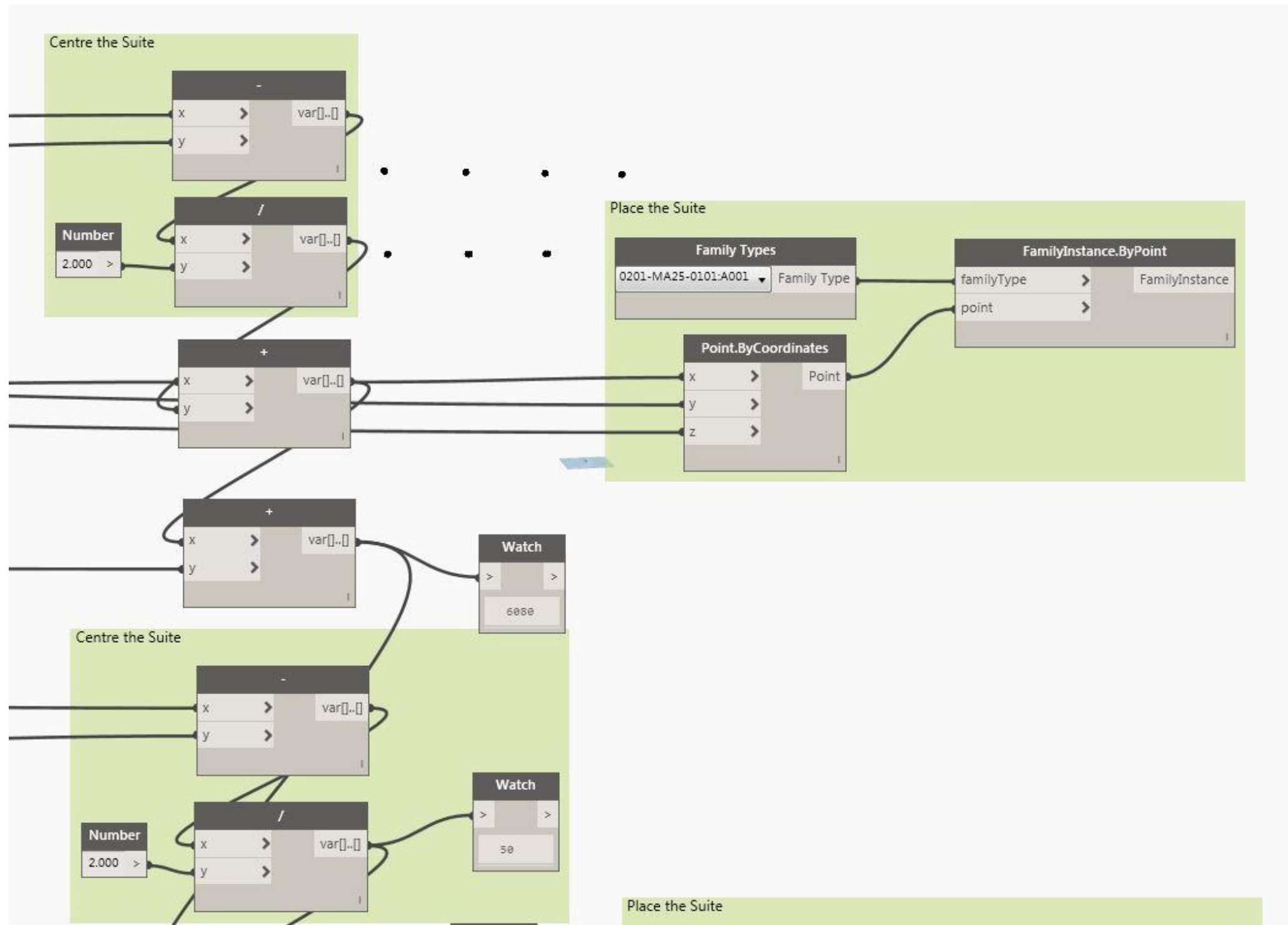
## Setting the Modular Dimension



# File Structure – Data Preparation

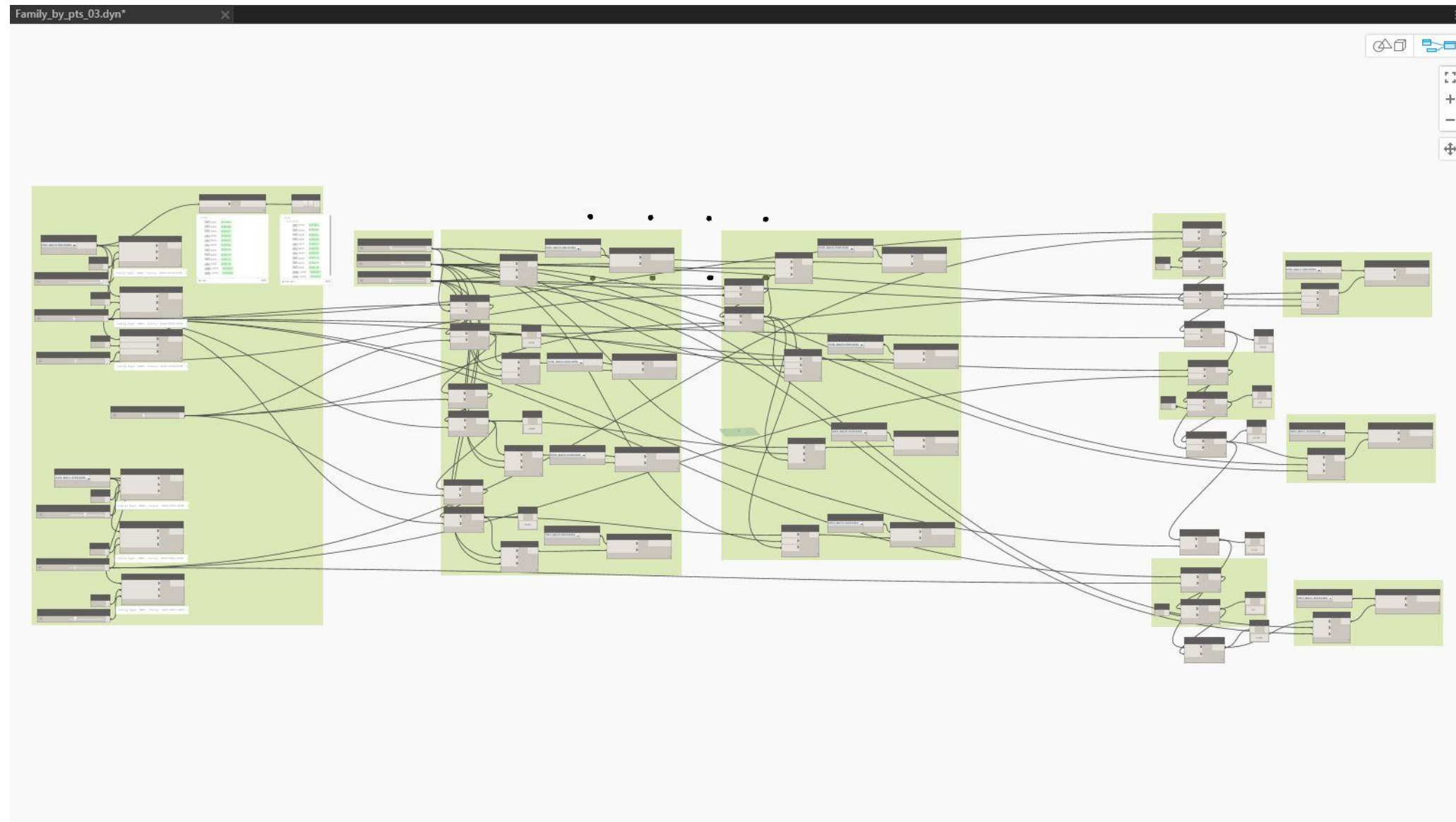


# File Structure – Data Preparation



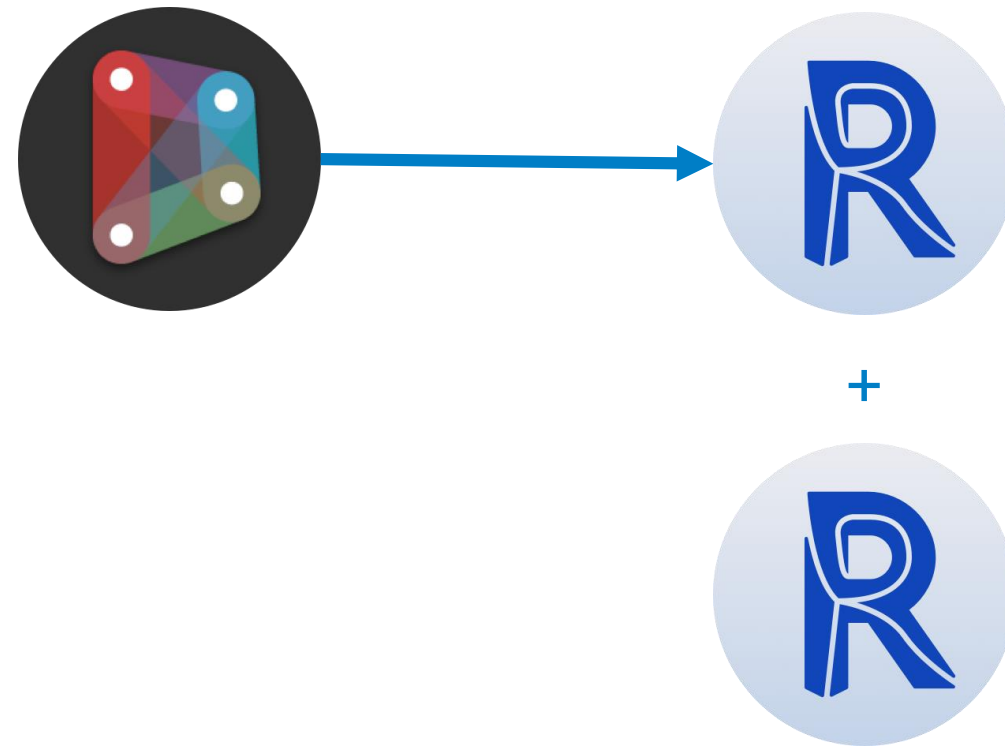


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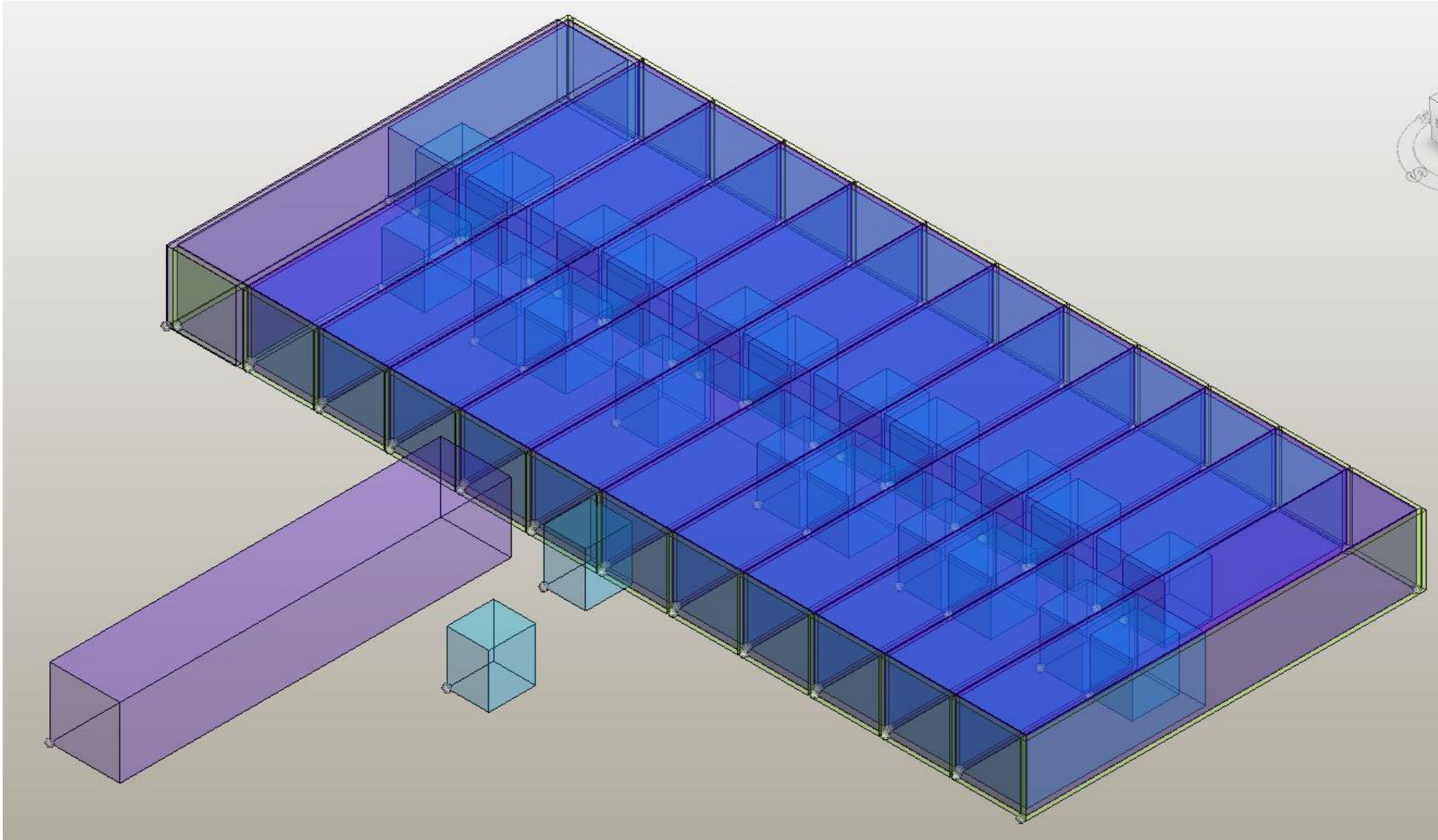


# File Structure – Data Preparation

- Setting Module Dimension
- Setting Module Locations/ Positions



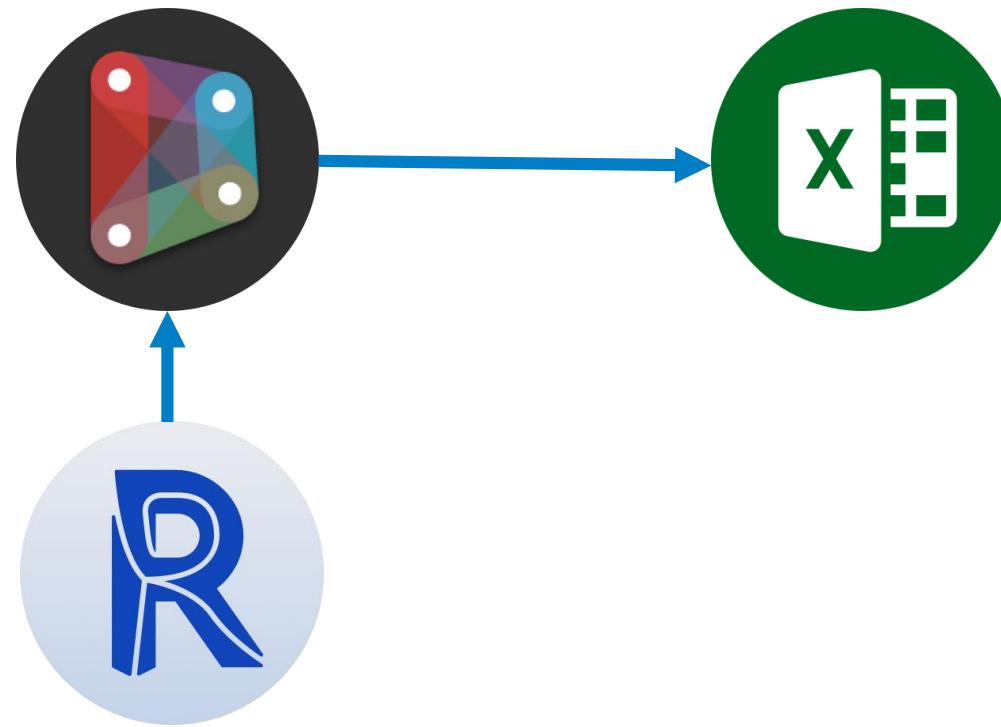
# File Structure – Data Preparation



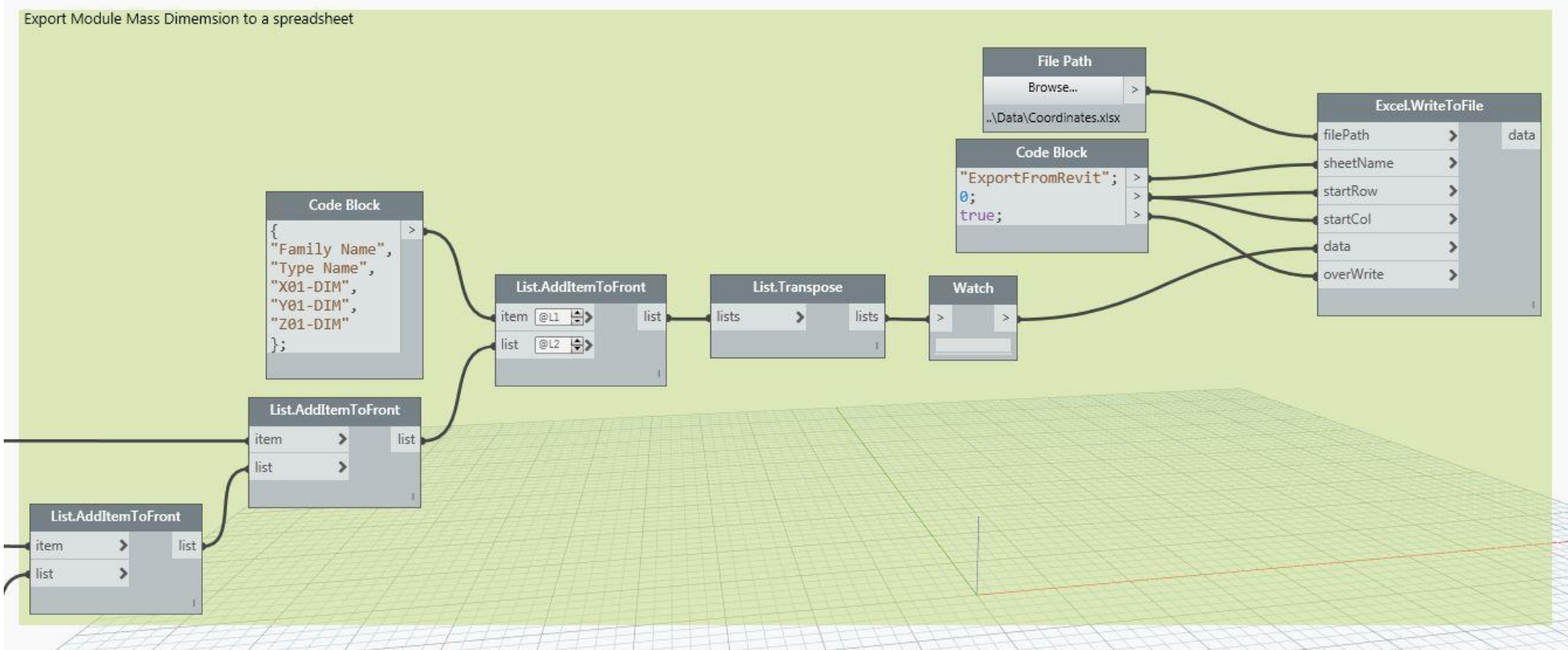
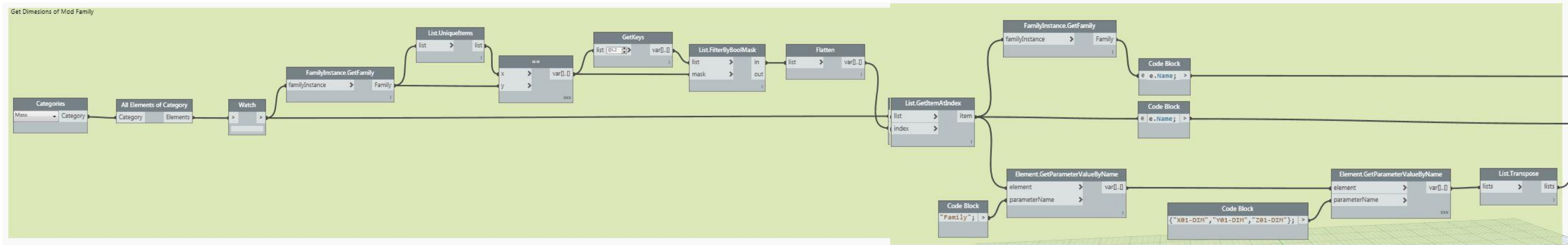


# File Structure – Data Control

Strategy and Datum

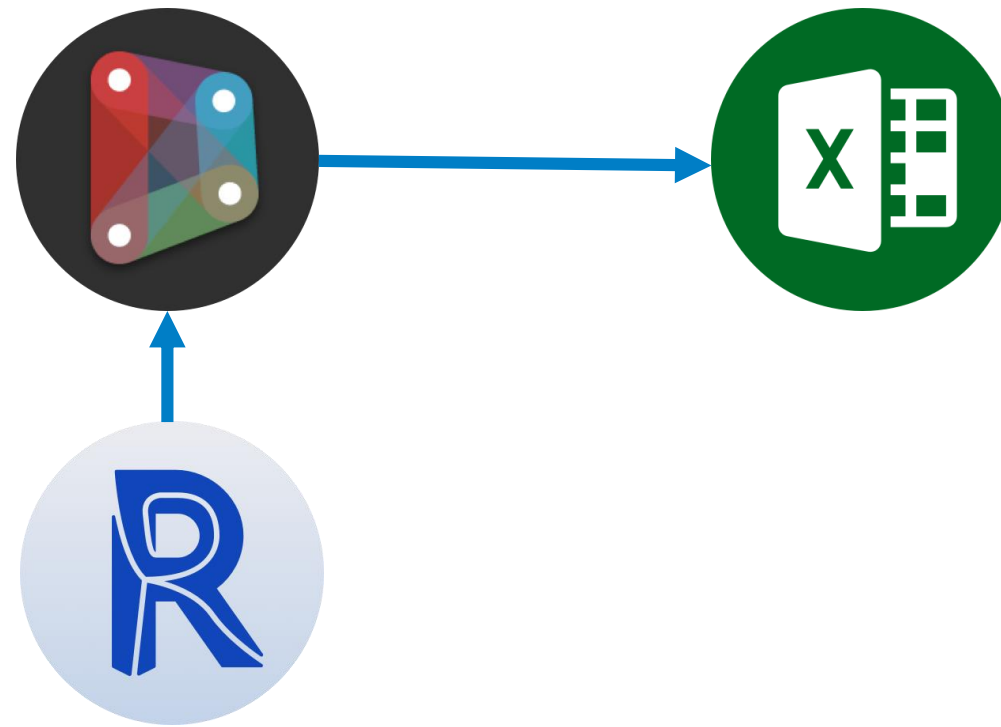


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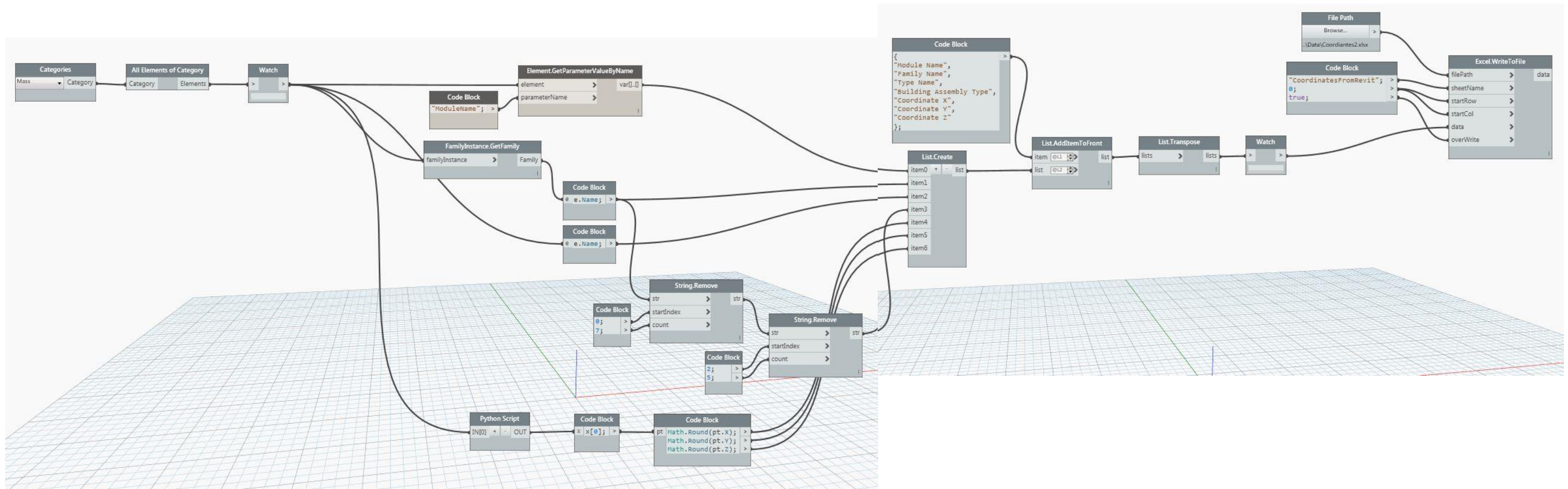
# File Structure – Data Control

Strategy and Datum

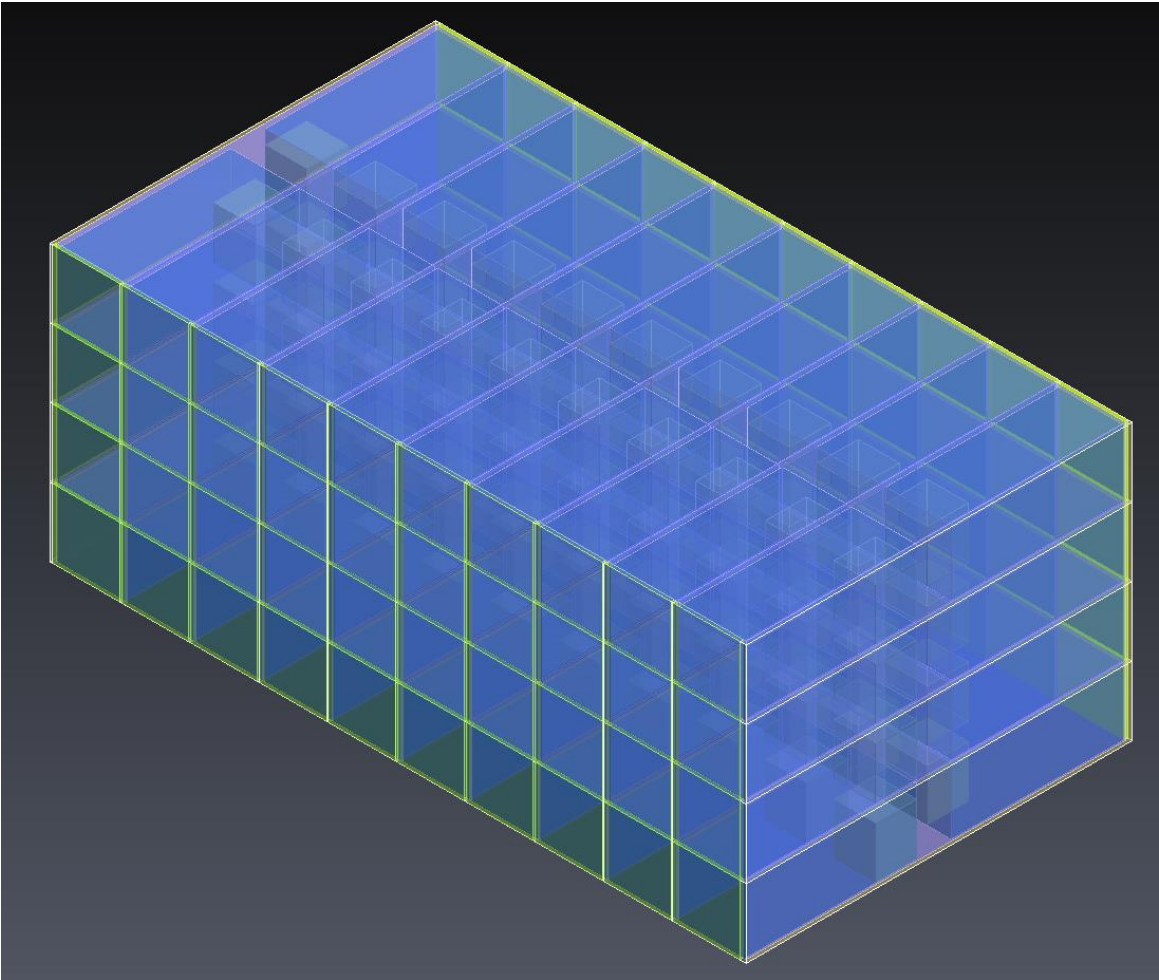




# File Structure – Data Preparation



# File Structure – Data Preparation



00000-MA00-DigitalProduction.xlsx - Excel

FILEHOMEINSERTPAGE LAYOUTFORMULASDATA REVIEWVIEWDEVELOPERFLUXAblebits DataAblebits UtilitiesAblebits Quick ToolsBLUEBEAMACROBAT

CutCopyFormat Painter

Paste

Clipboard

Arial10

**B I U**

Font

Alignment

Number

Styles

Normal

Bad

Good

Neutral

Calculation

Check cell

Explanatory ...

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Format

Cells

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Fill

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Editing

Create PDF

Change Settings

Batch PDF

Bluebeam

Q13Adjust Grid

MA20

Type Contains

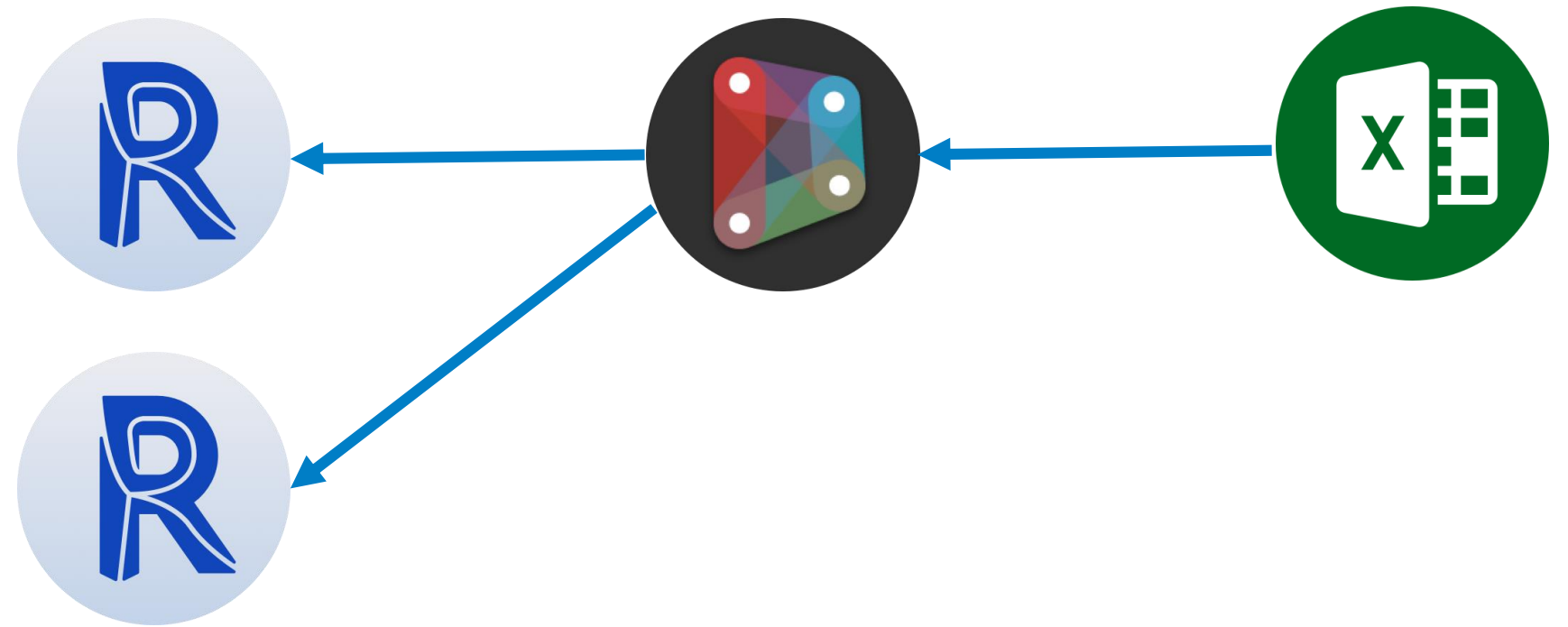
Issues

Building	Mod Name	Template Status	Linked into	Who	Modeling Status	Who	Mod File Name	Length	Width	Height	Structure	Suite - East Side	Suite - West Side	Fapade - West Side	Fapade - East Side	1	2
A	101	1	1	PA	2		NA				0A001-MS10-A000					make this a mod	
A	102	1	1	PA	1		NA				0A001-MS10-A000						
A	103	1	1	PA	1		NA				0A001-MS10-A000						
A	104	1	1	PA	1		NA				0A001-MS10-A000						
A	105	1	1	PA	1		NA				0A001-MS10-A000						
A	106	1	2	PA	1		NA				0A001-MS10-A000	0A001-MA15-0001				make this a mod	Stair Mod therefore Larry to shrink the Structure
A	107	1	1	PA	1		NA				0A001-MS10-A000						
A	108	1	1	PA	1		NA				0A001-MS10-A000						
A	109	1	1	PA	1		NA				0A001-MS10-A000						
A	201	4	1	PA	1		0A001-MA20-A201	C	G	B	0A001-MS10-A000	0A001-MA25-E360	0A001-MA25-E370	0A001-MA40-0436	0A001-MA40-0437	Rotate Mod for Datum	
A	202	3	1	PA	2		0A001-MA20-A202	C	A	B	0A001-MS10-A000	0A001-MA25-E202	0A001-MA25-E302	0A001-MA40-0409	0A001-MA40-0403	Adjust Grid	
A	203	4	1	PA	1		0A001-MA20-A203	C	A	B	0A001-MS10-A000	0A001-MA25-E120	0A001-MA25-E120	0A001-MA40-0409	0A001-MA40-0403		
A	204	4	2	PA	1		0A001-MA20-A204	E	A	B	0A001-MS10-A000			0A001-MA40-0409	0A001-MA40-0403	Site	
A	205	4	2	PA	1		0A001-MA20-A205	E	A	B	0A001-MS10-A000						
A	206	4	2	PA	1		0A001-MA20-A206	D	F	B	0A001-MS10-A000						
A	207	2	2	PA	1		0A001-MA20-A207	D	A	B	0A001-MS10-A000						
A	208	3	2	PA	2		0A001-MA20-A208	D	A	B	0A001-MS10-A000						
A	209	3	2	PA	2		0A001-MA20-A209	D	A	B	0A001-MS10-A000						
A	301	1	1	PA	1		0A001-MA20-A301	C	A	B	0A001-MS10-A000						
A	302	1	1	PA	1		0A001-MA20-A302	B	A	B	0A001-MS10-A000						
A	303	1	1	PA	1		0A001-MA20-A303	B	A	B	0A001-MS10-A000						
A	304	1	1	PA	1		0A001-MA20-A304	B	A	B	0A001-MS10-A000						
A	305	1	1	PA	1		0A001-MA20-A305	B	A	B	0A001-MS10-A000						
A	306	1	1	PA	1		0A001-MA20-A306	B	F	B	0A001-MS10-A000						
A	307	1	1	PA	1		0A001-MA20-A307	B	A	B	0A001-MS10-A000						
A	308	1	1	PA	1		0A001-MA20-A308	A	A	B	0A001-MS10-A000						
A	309	1	1	PA	1		0A001-MA20-A309	C	A	B	0A001-MS10-A000						
B	102	4	4	PA	1	LW	0A001-MA20-B102	A	C	A	0A001-MS10-B000	0A001-MA25-E302	0A001-MA25-E320	to include all sides	0A001-MA40-0430		
B	103	4	4	PA	1		0A001-MA20-B103	A	A	A	0A001-MS10-B000	0A001-MA25-E209	0A001-MA40-0401	0A001-MA40-0401	0A001-MA40-0401		
B	104	4	4	PA	4		0A001-MA20-B104	A	A	A	0A001-MS10-B000	0A001-MA25-E109	0A001-MA40-0401	0A001-MA40-0401	0A001-MA40-0401		
B	105	4	4	PA	4		0A001-MA20-B105	A	A	A	0A001-MS10-B000	0A001-MA25-C509	0A001-MA25-D109	0A001-MA40-0401	0A001-MA40-0401		
B	106	4	4	PA	4		0A001-MA20-B106	A	A	A	0A001-MS10-B000	0A001-MA25-D409	0A001-MA25-D209	0A001-MA40-0401	0A001-MA40-0401		
B	107	4	4	PA	1		0A001-MA20-B107	A	B	A	0A001-MS10-B000	0A001-MA25-D309	0A001-MA25-D309	0A001-MA40-0405	0A001-MA40-0405		
B	108	4	4	PA	1		0A001-MA20-B108	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	109	4	4	PA	1		0A001-MA20-B109	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	110	4	4	PA	1		0A001-MA20-B110	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	111	4	4	PA	1		0A001-MA20-B111	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	112	4	4	PA	3		0A001-MA20-B112	A	E	A	0A001-MS10-B000			0A001-MA40-0406	0A001-MA40-0406		
B	113	4	4	PA	1		0A001-MA20-B113	A	A	A	0A001-MS10-B000			0A001-MA40-0406	0A001-MA40-0406		
B	114	4	4	PA	1		0A001-MA20-B114	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	115	4	4	PA	4		0A001-MA20-B115	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	116	4	4	PA	1		0A001-MA20-B116	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	117	4	4	PA	1		0A001-MA20-B117	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	118	4	4	PA	1		0A001-MA20-B118	A	B	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0405		
B	119	4	4	PA	1		0A001-MA20-B119	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	120	4	4	PA	1		0A001-MA20-B120	A	A	A	0A001-MS10-B000			0A001-MA40-0401	0A001-MA40-0401		
B	121	4	4	PA	1		0A001-MA20-B121	A	A	A	0A001-MS10-B000	0A001-MA25-B121-1	0A001-MA25-B121-2	0A001-MA40-0401	0A001-MA40-0401		
B	122	4	4	PA	1		0A001-MA20-B122	A	A	A	0A001-MS10-B000	0A001-MA25-B122-1	0A001-MA25-B122-2	0A001-MA40-0401	0A001-MA40-0401		
B	123	4	4	PA	1		0A001-MA20-B123	A	D	A	0A001-MS10-B000	0A001-MA25-B123-1	0A001-MA25-B123-2	to include all sides	0A001-MA40-0431		
B	202	4	4	PA	1		0A001-MA20-B202	A	C	B	0A001-MS10-B000	0A001-MA25-E301	0A001-MA25-E321	to include all sides	0A001-MA40-0432		

KA10-Building\_ListKA20-ListKA20-TypeListKA25-WorkKA25-TypeListKM25-Suite\_ListKA30-Bathroom\_ListKA30-Bathroom\_ListKA40-FACDStatusTypesTaskOwnersSheet2

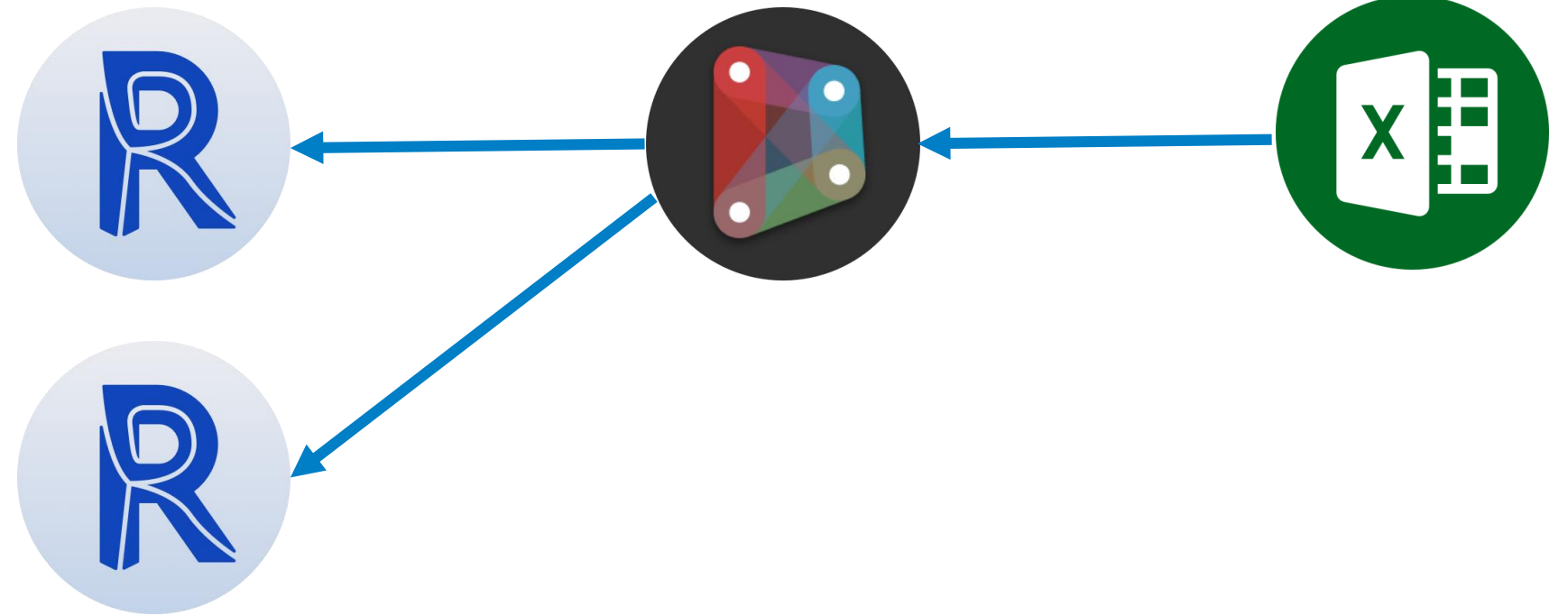
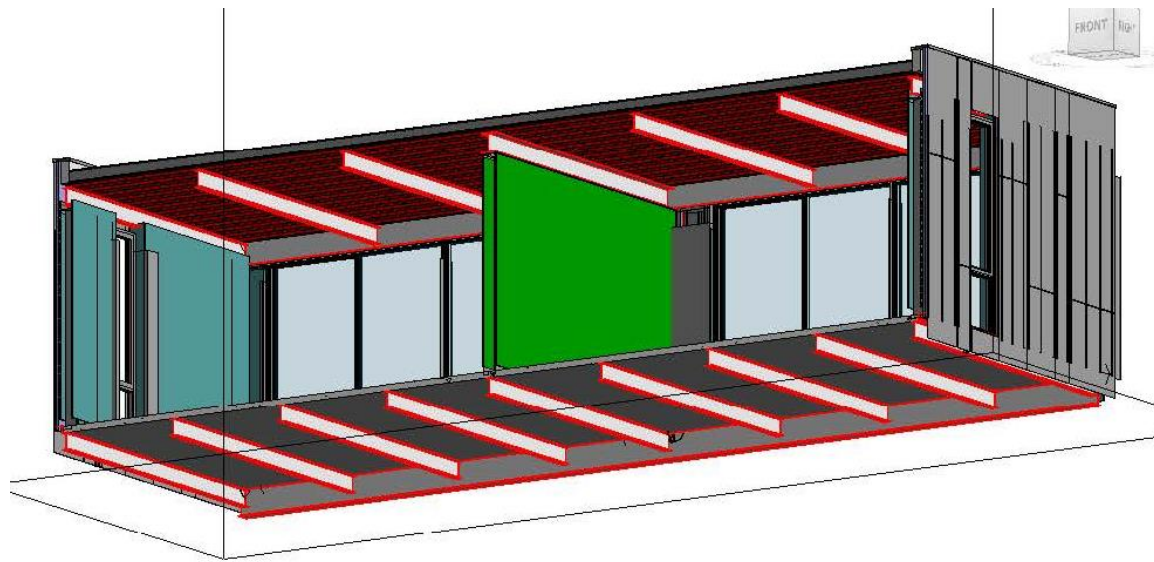
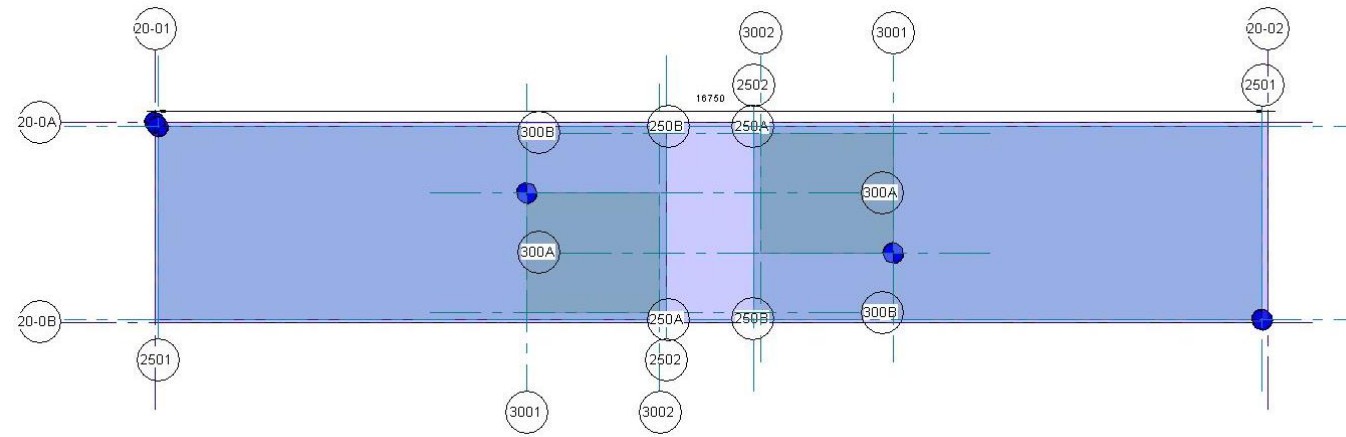
# File Structure – Data Control

Strategy and Datum

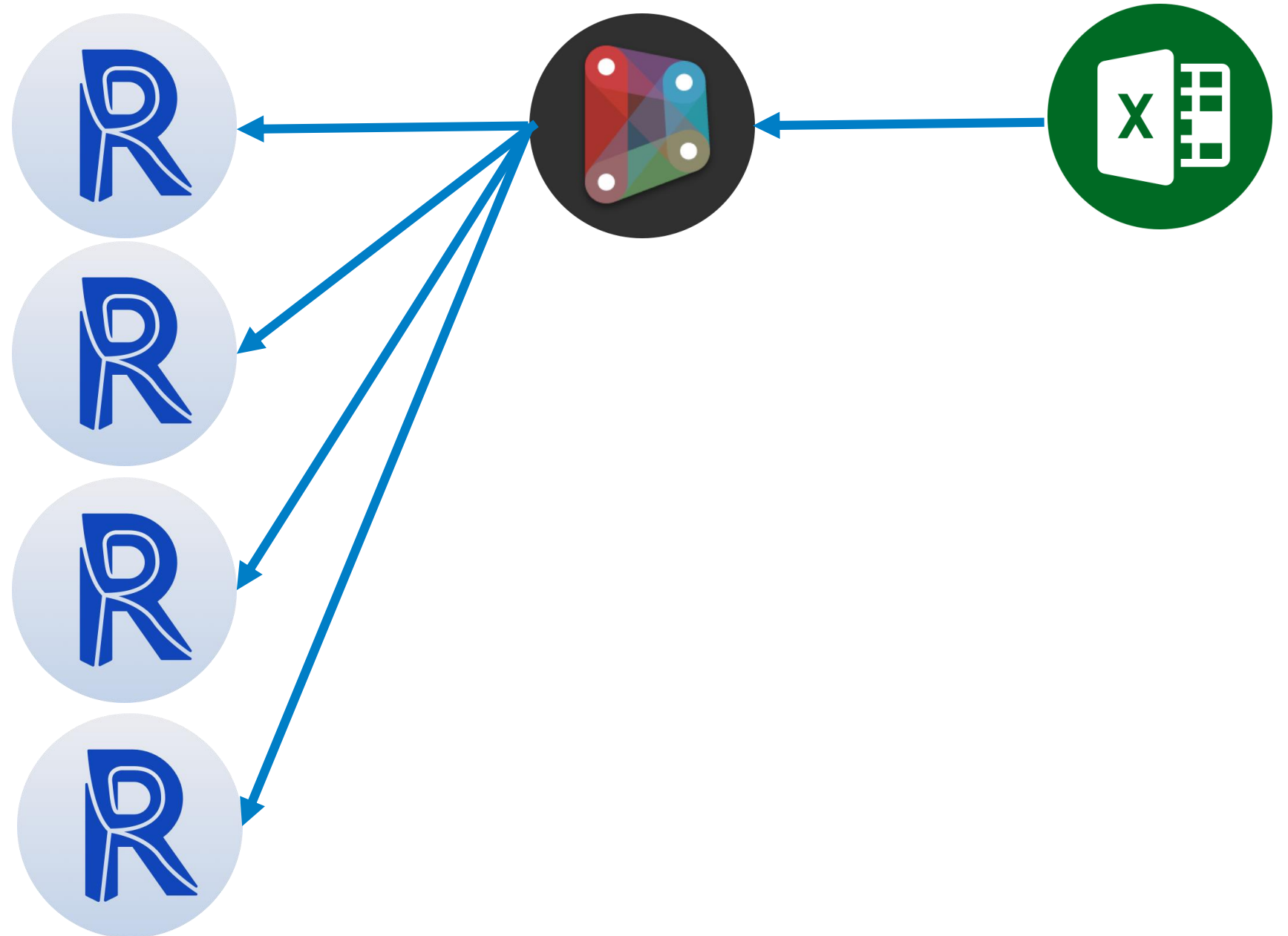
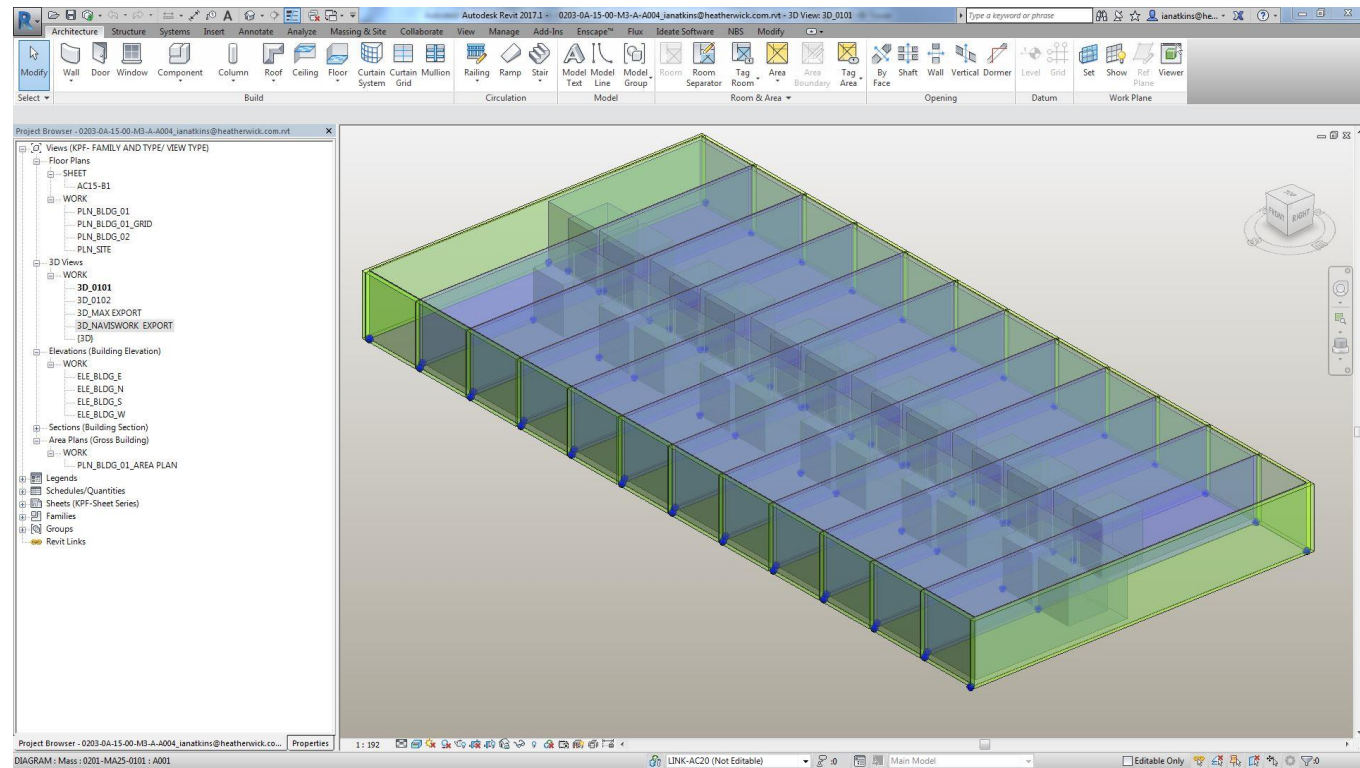




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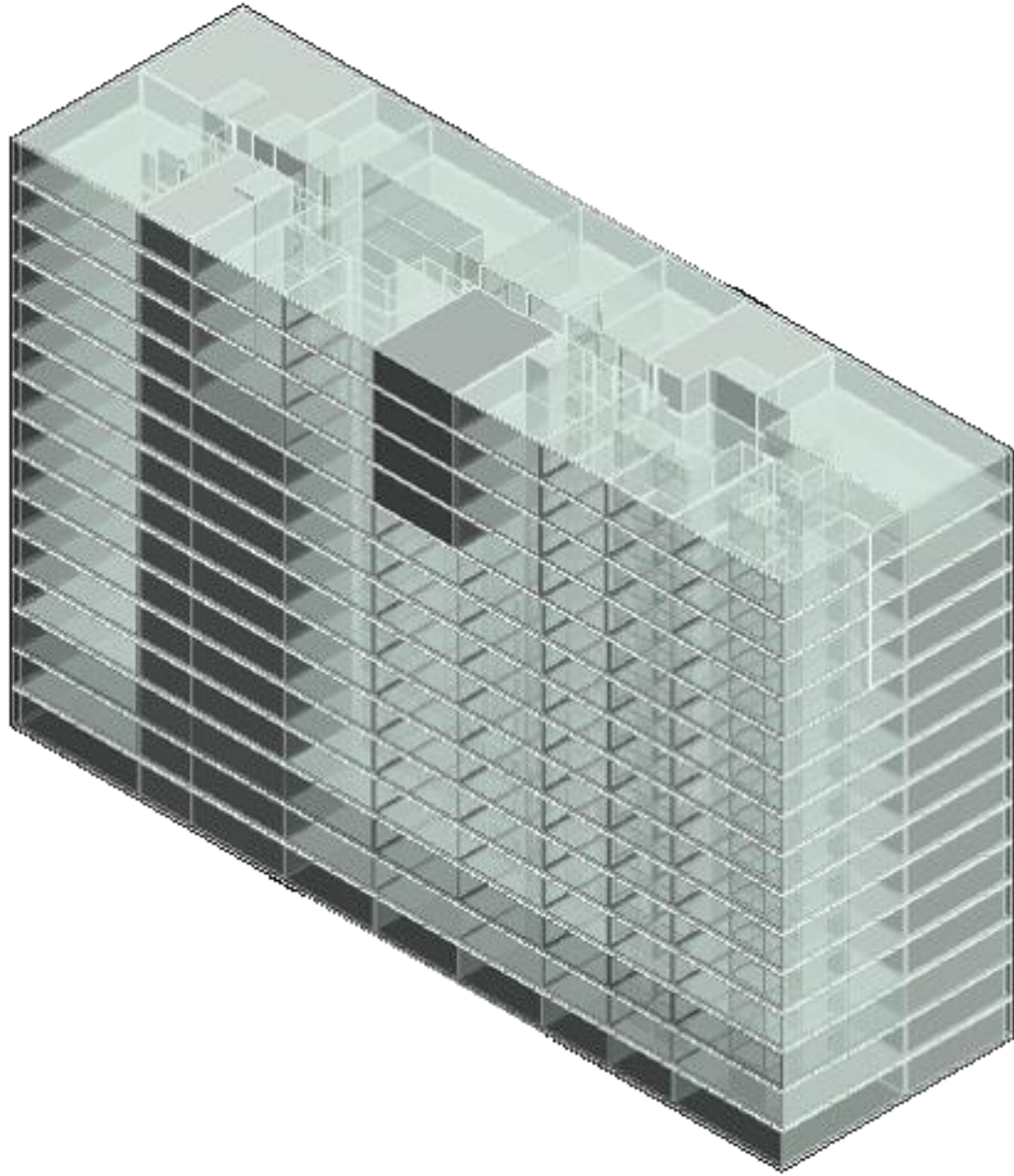


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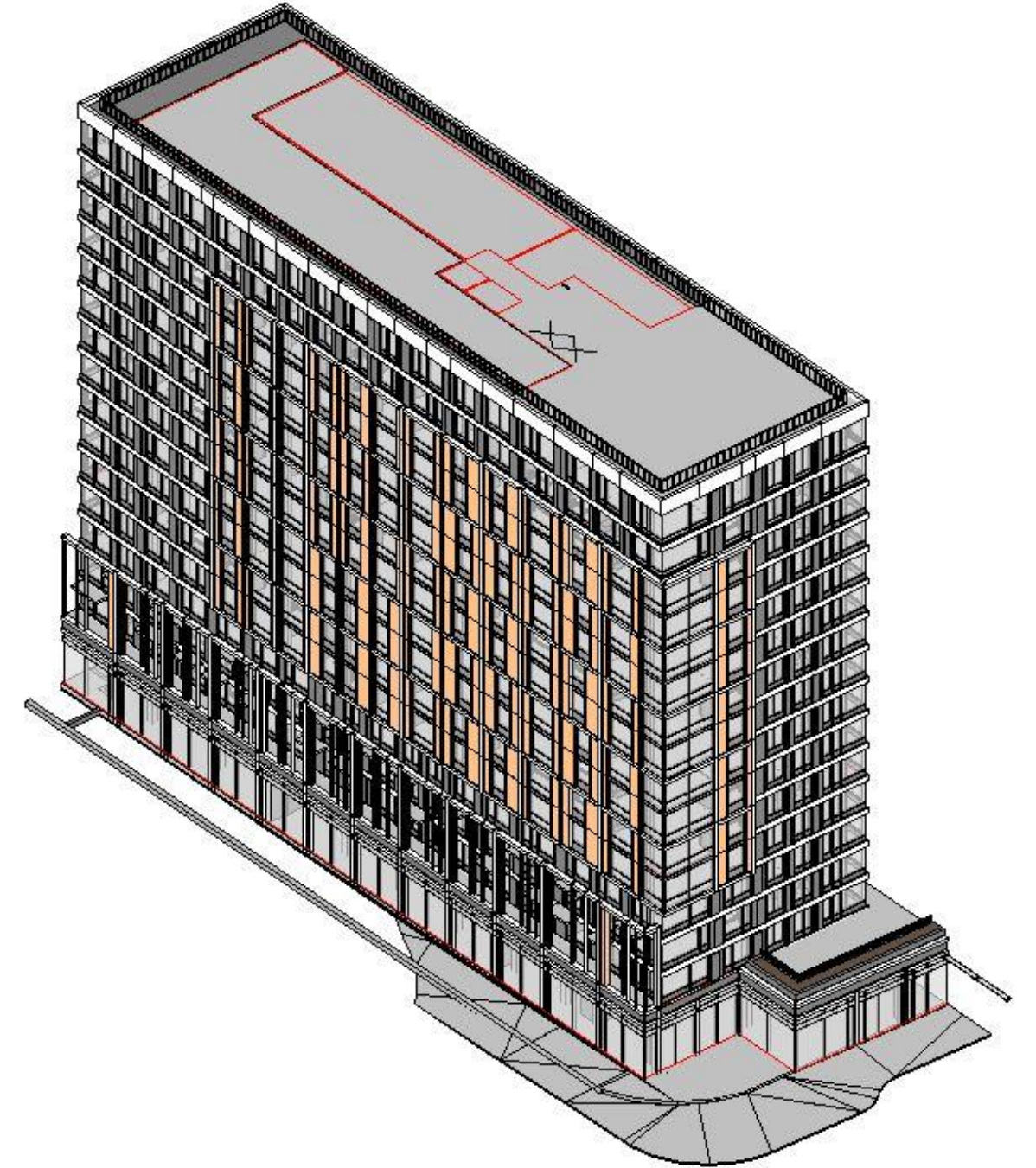




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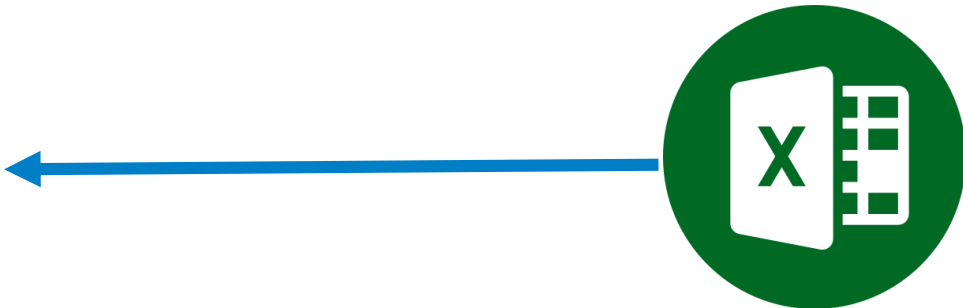
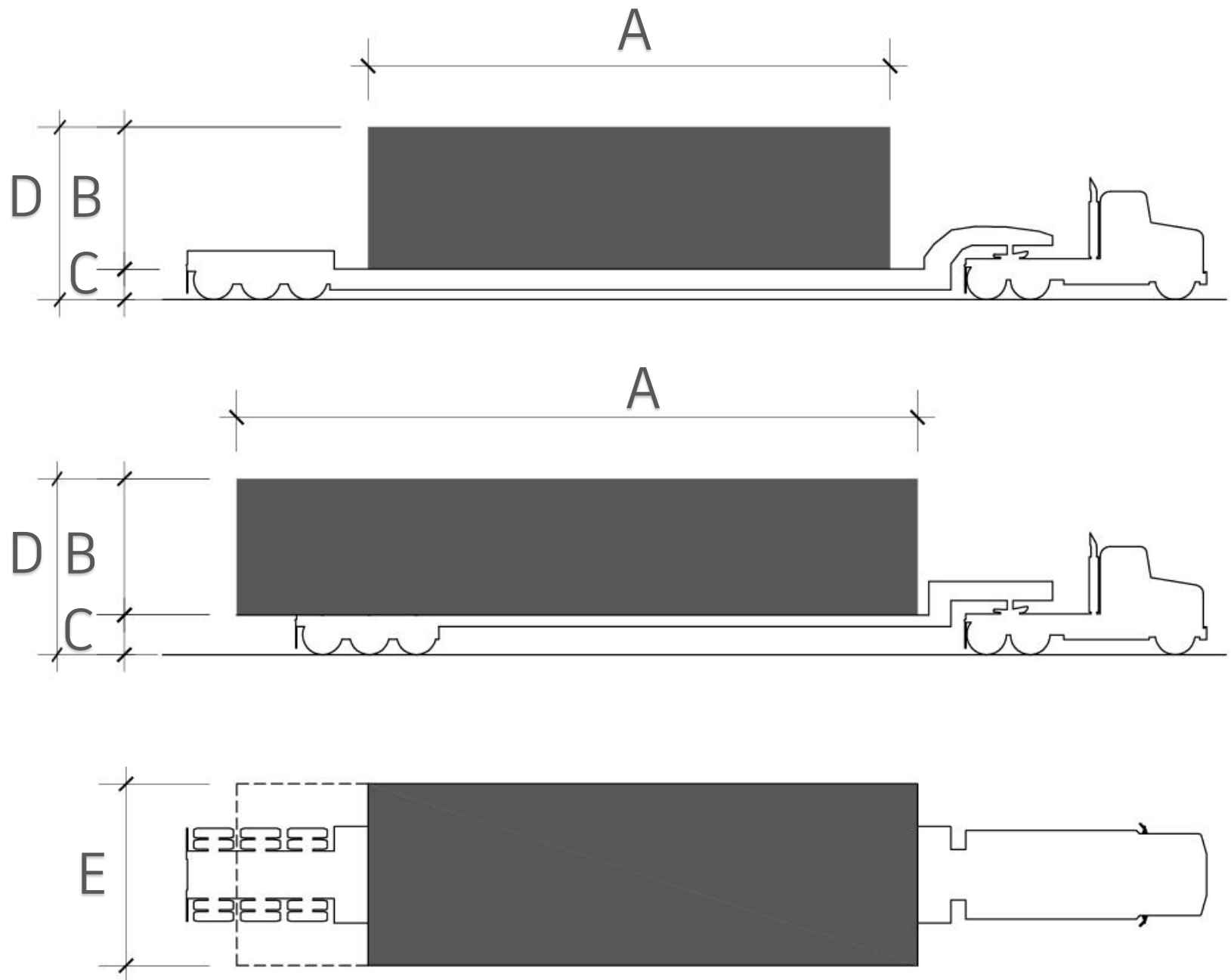
Module Diagram



Architecture Model

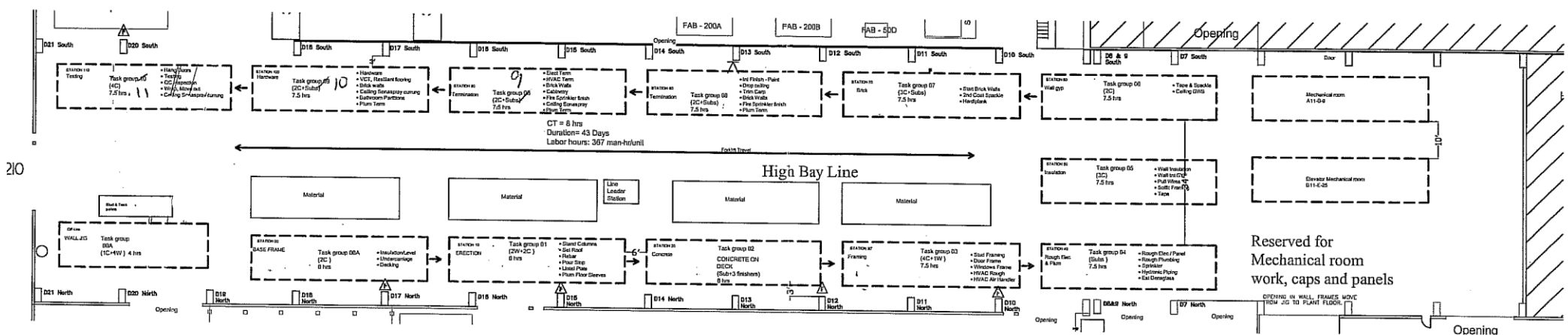


# File Structure – Data Preparation



Dimension	Double Drop	Single Drop
A	40'-0"	50'-0"
B	13'-0"	12'-0"
C	2'-0"	3'-2"
D	15'-0"	15'-2"
E	13'-0"	13'0"

# File Structure – Data Preparation



Tasks	Erection																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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# File Structure – Data Preparation

Data Exchange and Data Extraction

Dimension  
Position  
Quantity  
Workset Name

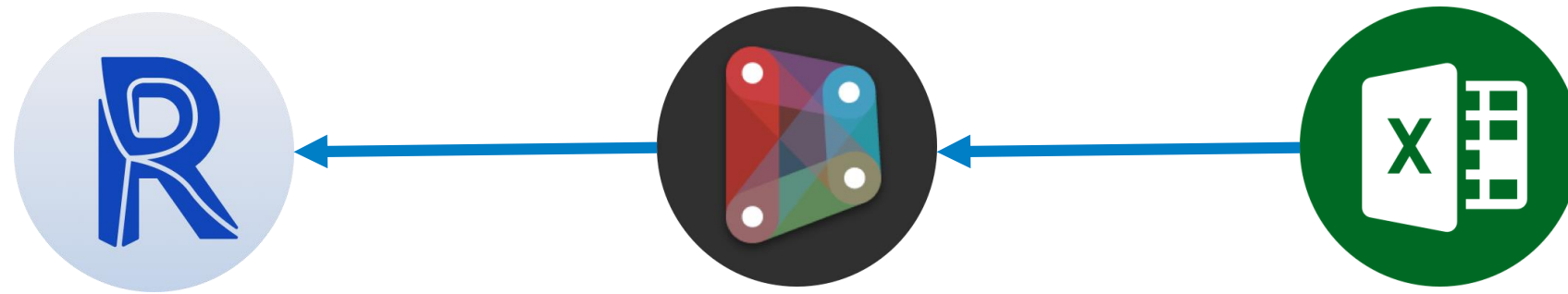


# File Structure – Data Preparation

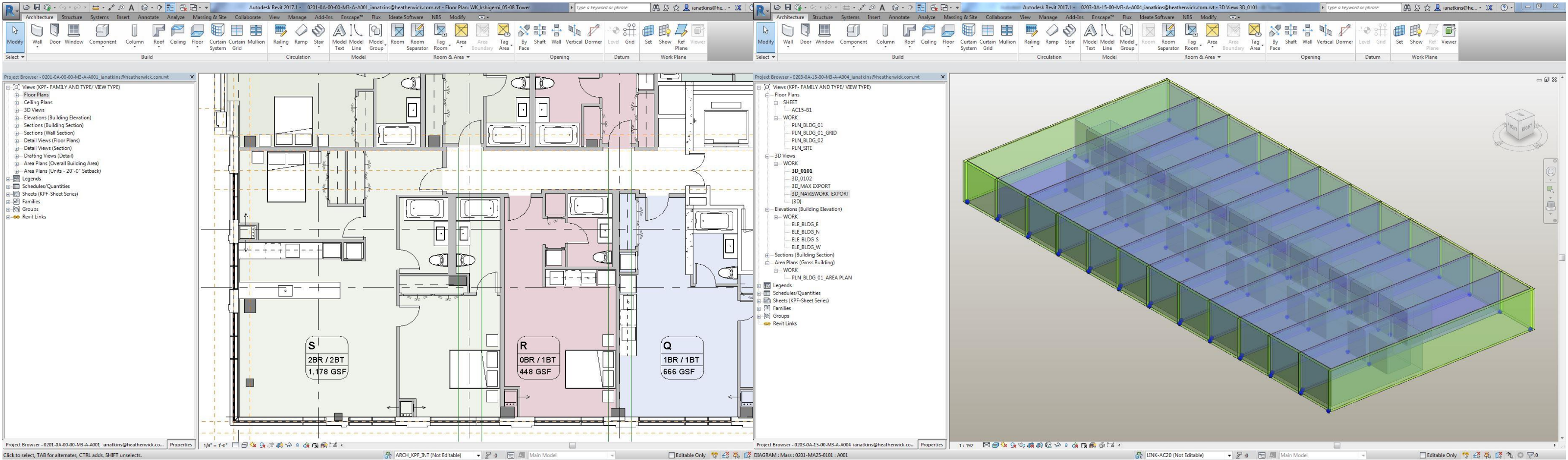
Worksets

# File Structure – Data Control

Worksets







# Data Structure – File Preparation

## Links

Autodesk Revit 2017.1 - 0201-0A-00-00-M3-A-A001\_Smadams16.rvt - Floor Plan: WK\_kshigemi\_05-08 Tower

Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Enscape™ Flux Ideate Software Modify

Modify Materials Object Snaps Project Project Shared Global Transfer Purge Project Structural MEP Panel Schedule Additional Location Coordinates Design Options Add to Set Pick to Edit Manage Images Manage Links Manage Project Phasing Selection Inquiry Macros Visual Programming

Properties

Floor Plan

Floor Plan: WK\_kshigemi\_05-08 Tower Edit Type

Graphics

View Scale: 1/8" = 1'-0"

Scale Value: 1: 96

Display Model: Normal

Detail Level: Coarse

Parts Visibility: Show Original

Visibility/Graphics Overrides: Edit...

Graphic Display Options: Edit...

Orientation: By Scope Box

Wall Join Display: Clean all wall joins

Discipline: Architectural

Show Hidden Lines: By Discipline

Color Scheme Location: Background

Color Scheme: <none>

System Color Schemes: Edit...

Default Analysis Display Style: None

Properties help Apply

Project Browser - 0201-0A-00-00-M3-A-A001\_Smadams16.rvt

- ???
- SHEET
- Studies
- WORK
  - FLOOR 15(1)
  - FLOOR 16(1)
  - T.O. ROOF(1)
  - WK\_01 Building Setout
  - WK\_01\_Setout
  - WK\_01\_Setout Copy 1
  - WK\_02-EXT
  - WK\_B1
  - WK\_B2
  - WK\_kshigemi\_03-04 Tower
  - WK\_kshigemi\_05-08 Tower**
  - WK\_kshigemi\_09-12 Tower
  - WK\_kshigemi\_13-14 Tower
  - WK\_kshigemi\_15-16 Tower
  - WK\_kshigemi\_ANNEX FLOOR 7
  - WK\_Site
- Zoning Diagrams
- Ceiling Plans

Manage Links

Revit IFC CAD Formats DWF Markups Point Clouds

Link Name	Status	Reference Type	Positions Not Saved	Saved Path	Path Type	Local Alias
0201-0A-25-00-M3-A-A001.rvt	Not Loaded	Overlay	<input type="checkbox"/>	0201-0A-25-00-M3-A-A001.rvt	Relative	
0205-0A-20-00-M3-A-A001.rvt	Loaded	Overlay	<input type="checkbox"/>	..\\0205\\0205-0A-20-00-M3-A-A001.rvt	Relative	
0205-0A-30-00-M3-A-A001.rvt	Loaded	Overlay	<input type="checkbox"/>	..\\0205\\0205-0A-30-00-M3-A-A001.rvt	Relative	

Save Positions Manage Worksets Reload From... Reload Add... Remove Unload For all users For me Clear my override OK Cancel Apply Help

1/8" = 1'-0"

Ready LINKED\_INT (Not Editable) :0 Main Model



# Data Structure – File Preparation

## Workset

Autodesk Revit 2017.1 - 0201-0A-00-00-M3-A-A001\_Smadams16.rvt - Floor Plan: WK\_kshigemi\_05-08 Tower

Type a keyword or phrase

Sign In

ArchitectureStructureSystemsInsertAnnotateAnalyzeMassing & SiteCollaborateViewManageAdd-InsEnscape™FluxIdeate SoftwareModify

ModifyCommunicatorEditing RequestsCollaborate On A360WorksetsLINKED\_INT (Not Editable)Gray Inactive Worksets

Synchronize with CentralReload LatestRelinquish All MineShow HistoryRestore BackupA360 ModelsManage Views For A360Copy/MonitorCoordination ReviewCoordination SettingsReconcile HostingInterference Check

SelectCommunicateManage CollaborationSynchronizeManage ModelsCoordinate

Properties

Floor Plan

Floor Plan: WK\_kshigemi\_05-08 Tower

Graphics

View Scale1/8" = 1'-0"

Scale Value1:96

Display ModelNormal

Detail LevelCoarse

Parts VisibilityShow Original

Visibility/Graphics OverridesEdit...

Graphic Display OptionsEdit...

OrientationBy Scope Box

Wall Join DisplayClean all wall joins

DisciplineArchitectural

Show Hidden LinesBy Discipline

Color Scheme LocationBackground

Color Scheme<none>

System Color SchemesEdit...

Default Analysis Display StyleNone

Properties help

Apply

Project Browser - 0201-0A-00-00-M3-A-A001\_Smadams16.rvt

???SHEETStudiesWORKFLOOR 15(1)FLOOR 16(1)T.O. ROOF(1)WK\_01 Building SetoutWK\_01\_SetoutWK\_01\_Setout Copy 1WK\_02-EXTWK\_B1WK\_B2WK\_kshigemi\_03-04 TowerWK\_kshigemi\_05-08 TowerWK\_kshigemi\_09-12 TowerWK\_kshigemi\_13-14 TowerWK\_kshigemi\_15-16 TowerWK\_kshigemi\_ANNEX FLOOR 7WK\_SiteZoning DiagramsCeiling Plans

Worksets

Active workset:LINKED\_INT (Not Editable)Gray Inactive Workset Graphics

Name	Editable	Owner	Borrowers	Opened	Visible in all views
ARCH_CAD_IMPORT	No			Yes	<input type="checkbox"/>
ARCH_CIRC_STAIR	No			Yes	<input checked="" type="checkbox"/>
ARCH_CORE	No			Yes	<input checked="" type="checkbox"/>
ARCH_EXT	No			Yes	<input checked="" type="checkbox"/>
ARCH_EXT_ANNEX	No			Yes	<input checked="" type="checkbox"/>
ARCH_INT	No			Yes	<input checked="" type="checkbox"/>
ARCH_LANDSCAPE/CIVIL	No			Yes	<input checked="" type="checkbox"/>
ARCH_MASS	No			Yes	<input checked="" type="checkbox"/>
ARCH_PARKING	No			Yes	<input checked="" type="checkbox"/>
ARCH_REFERENCE	No			Yes	<input checked="" type="checkbox"/>
ARCH_SITE	No			Yes	<input checked="" type="checkbox"/>
ARCH_SITE_FLAT_SIDEWALK	No			Yes	<input checked="" type="checkbox"/>
ARCH_STRUCTURE	No			Yes	<input checked="" type="checkbox"/>
LINKED_INT	No			Yes	<input checked="" type="checkbox"/>
LINKED_LEM_STR	No			Yes	<input checked="" type="checkbox"/>
SLAG_ANNEX	No			Yes	<input checked="" type="checkbox"/>
SLAG_MAIN	No			Yes	<input checked="" type="checkbox"/>
SLAG_MAIN_STL	No			Yes	<input checked="" type="checkbox"/>
SLAG_PODIUM	No			Yes	<input checked="" type="checkbox"/>
Workset1	No			Yes	<input type="checkbox"/>
Workset2	No			Yes	<input type="checkbox"/>

Show:☒ User-Created☐ Project Standards☐ Families☐ Views

NewDeleteRenameOpenCloseEditableNon Editable

OKCancelHelp

1/8" = 1'-0"

LINKED\_INT (Not Editable)

Main Model



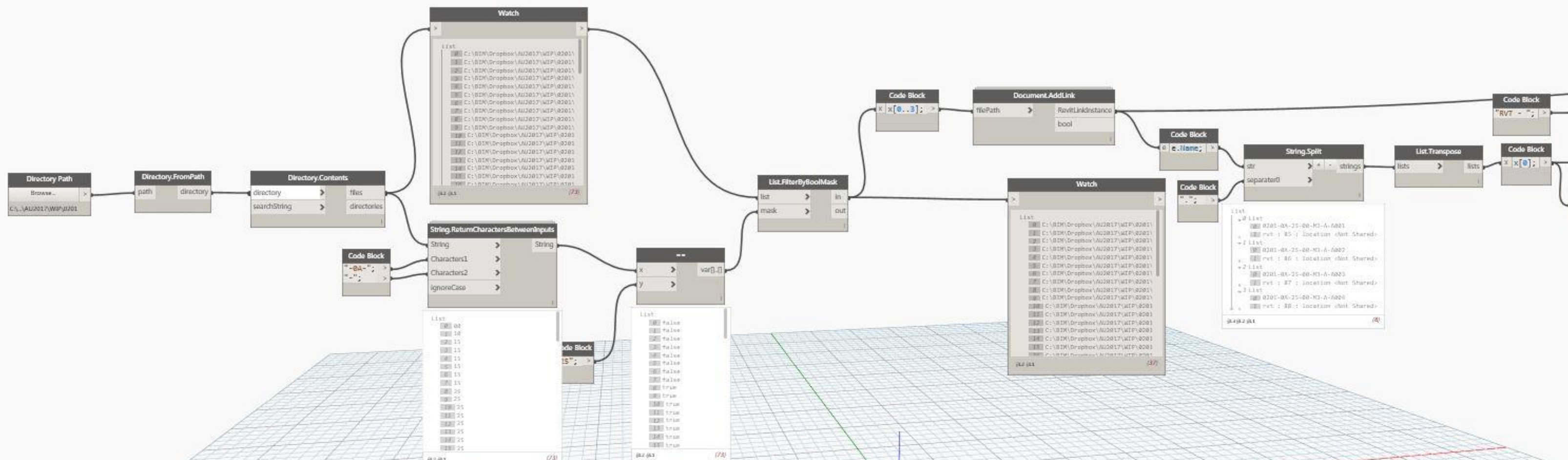
# Data Structure – File Preparation

## Worksets

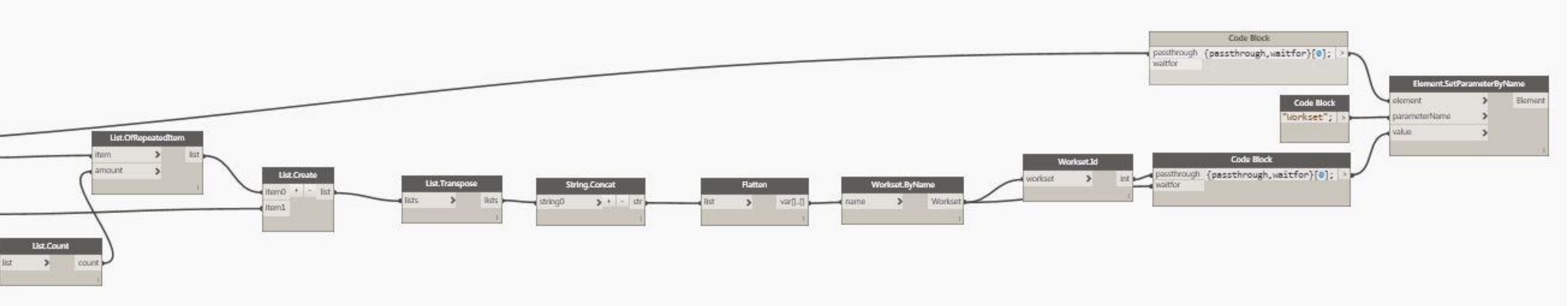
ARCH_CAD_IMPORT
ARCH_CIRC_STAIR
ARCH_CORE
ARCH_EXT
ARCH_EXT_ANNEX
ARCH_INT
ARCH_LANDSCAPE/CIVIL
ARCH_MASS
ARCH_PARKING
ARCH_REFERENCE
ARCH_SITE
ARCH_SITE_FLAT_SIDEWALK
ARCH_STRUCTURE
LINKED_INT
LINKED_LEM_STR
SLAG_ANNEX
SLAG_MAIN
SLAG_MAIN_STL
SLAG_PODIUM
Workset1
Workset2

# Data Structure – File Preparation

Worksets







The background of the slide is a complex, abstract wireframe mesh. It consists of a dense network of thin, grey lines that form a series of interconnected, flowing, and undulating shapes. These shapes resemble organic, cellular structures or perhaps a digital representation of a physical material's internal structure. The mesh is more concentrated in some areas, creating thicker, more defined forms, while in other areas, it is more sparse and delicate. The overall effect is one of dynamic, organic complexity.

## 07 : Model Data + Building Fabrication

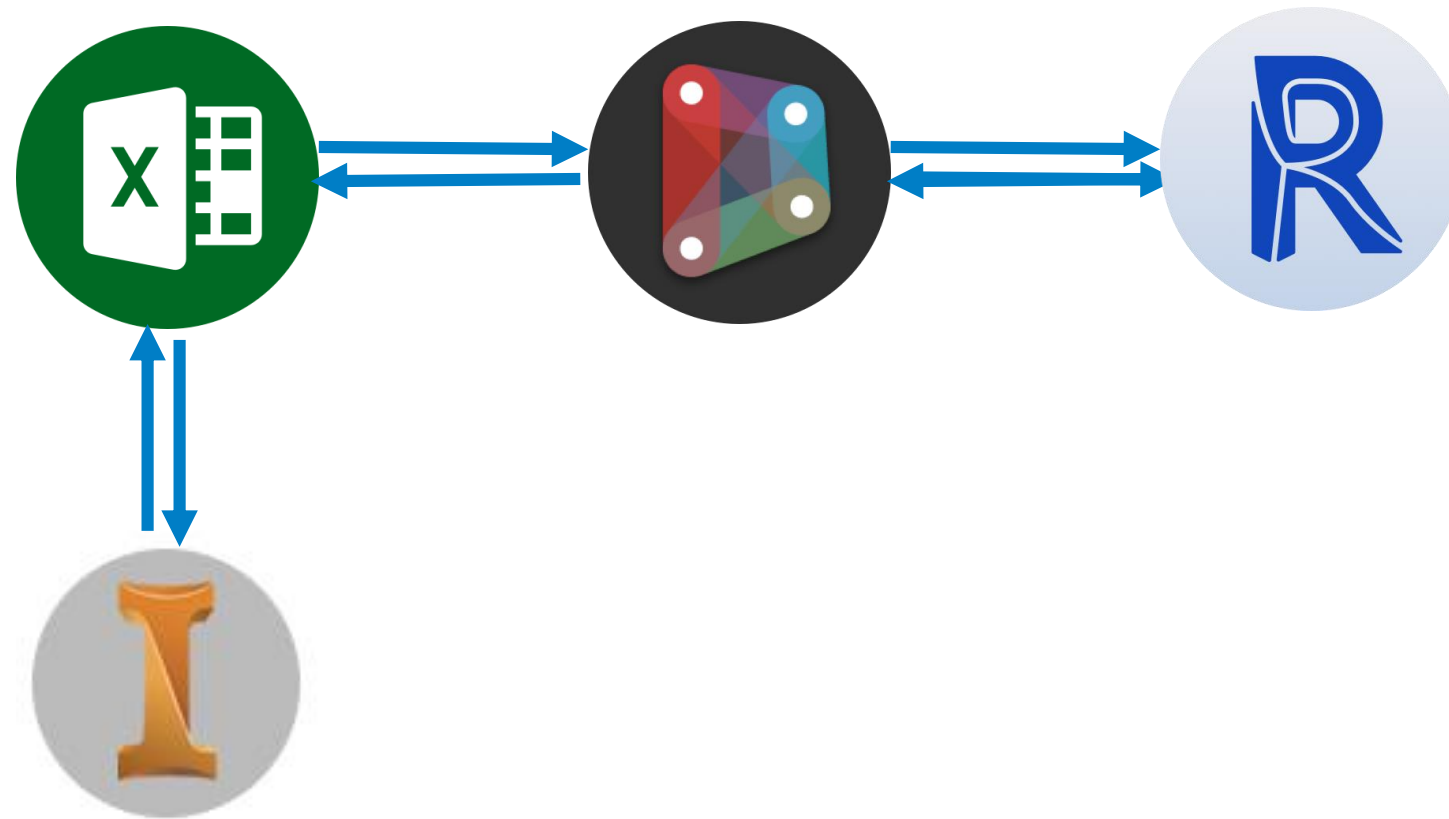
# Data Structure – File Preparation

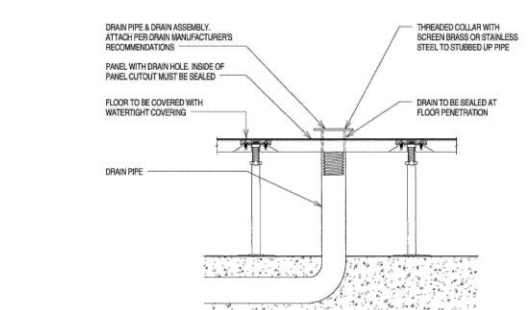
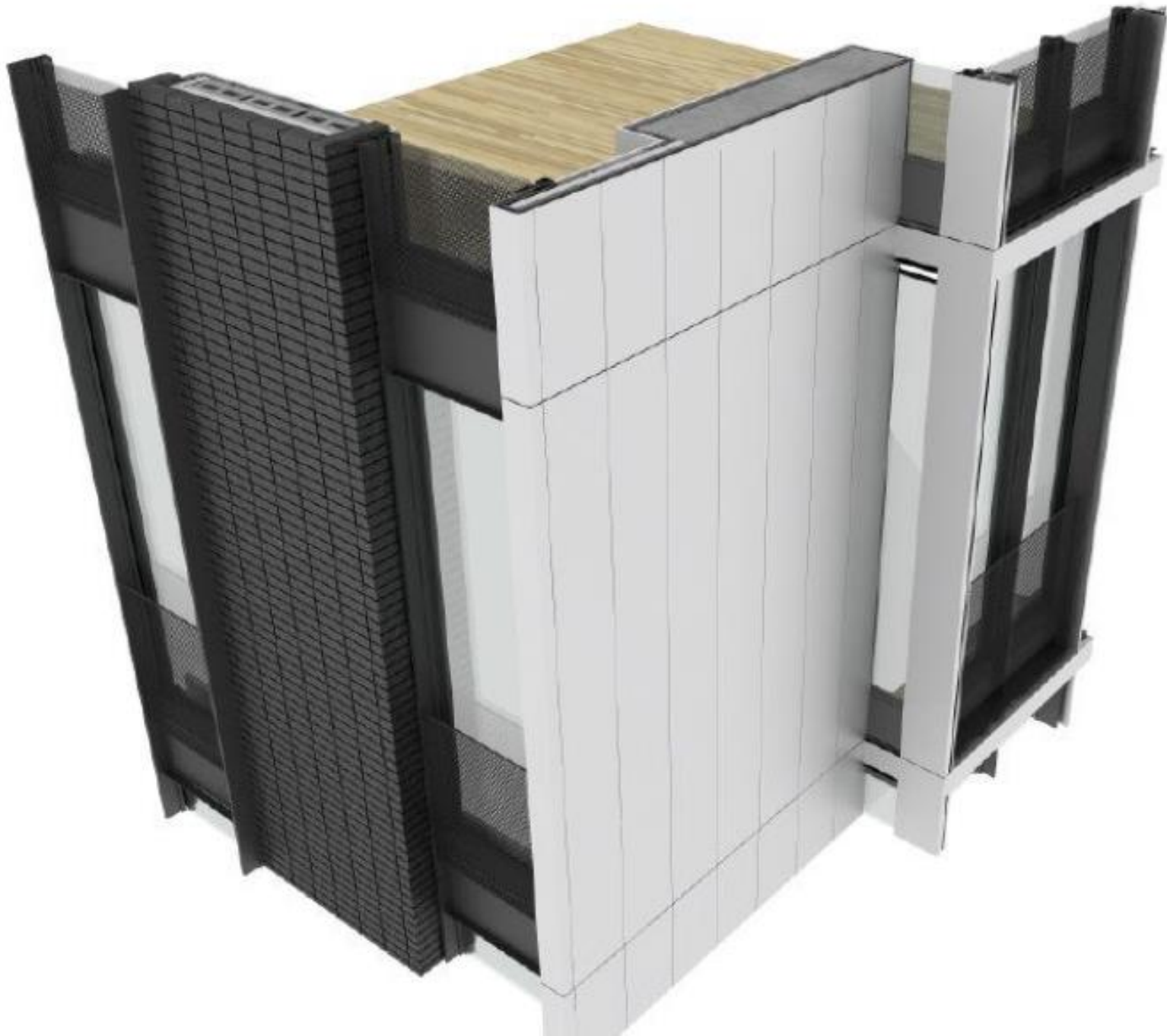
Hyper-Detail



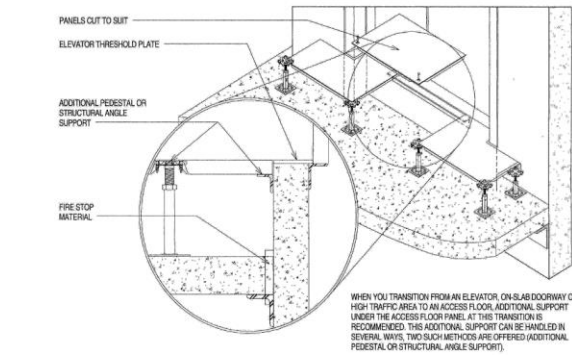
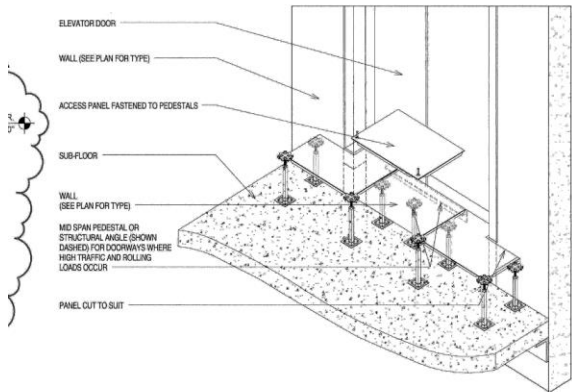
# Data Structure – File Preparation

Hyper-Detail

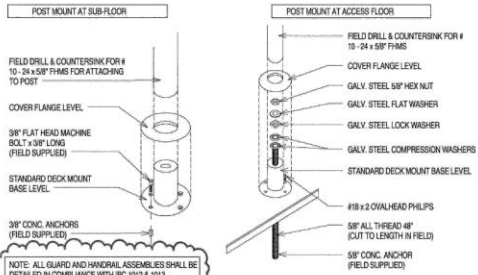
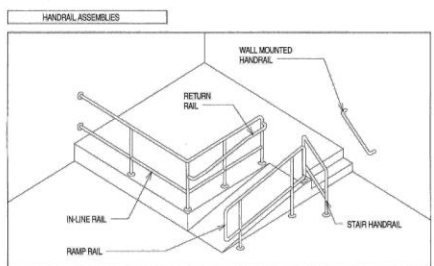




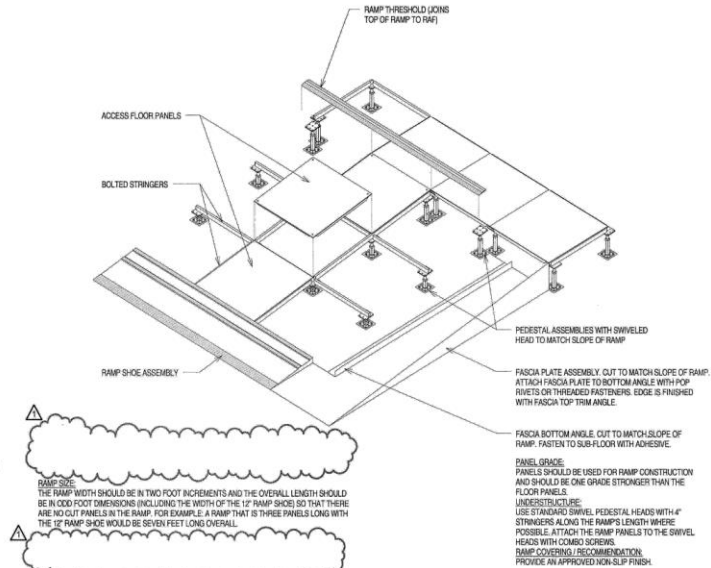
5 RAISED FLOOR DETAIL @ DRAIN PIPE  
SCALE: 1/8" = 1'-0"



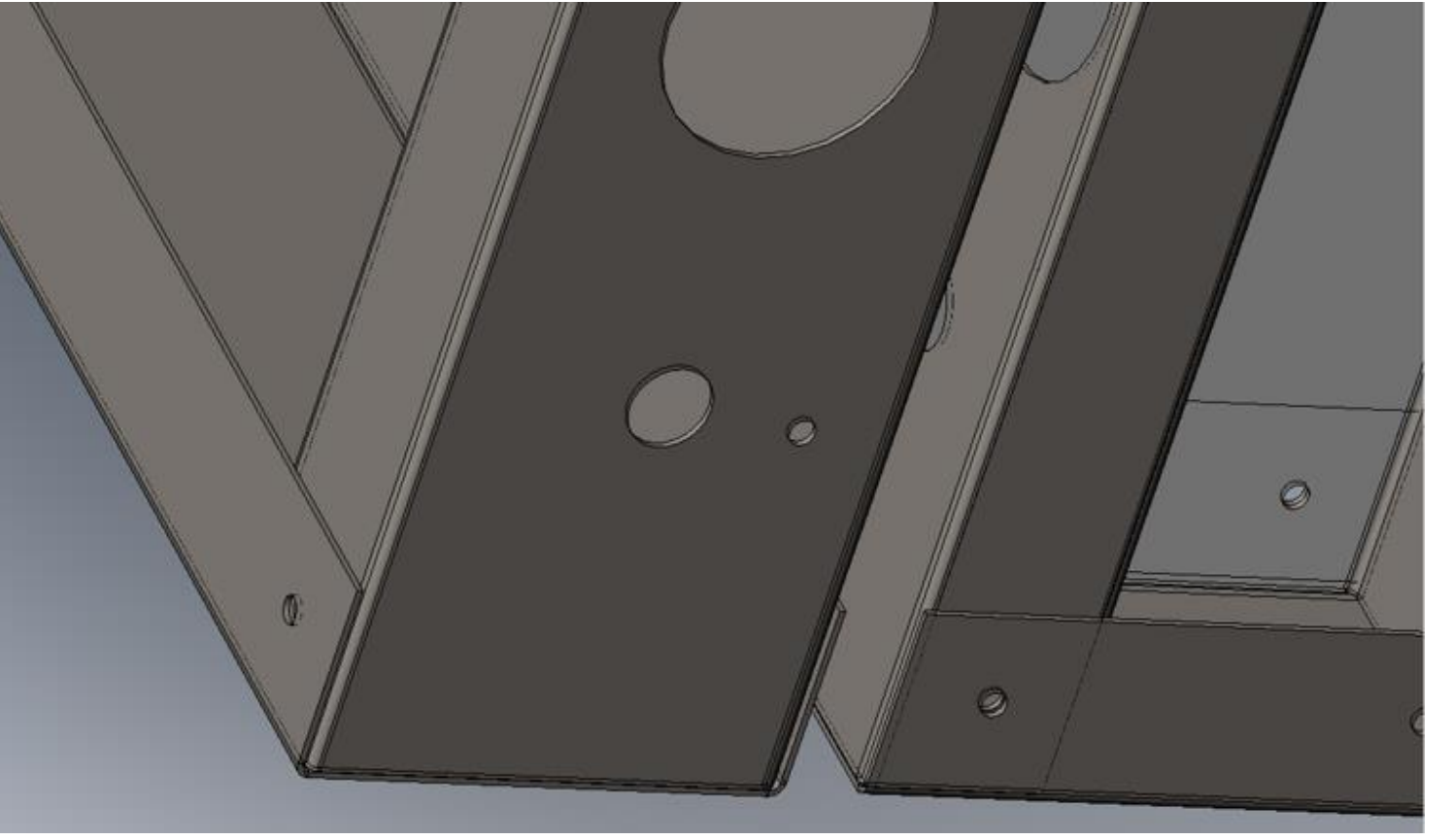
ELEVATOR TRANSITION @ RAISED ACCESS FLOOR  
SCALE: 3/4" = 1'-0"



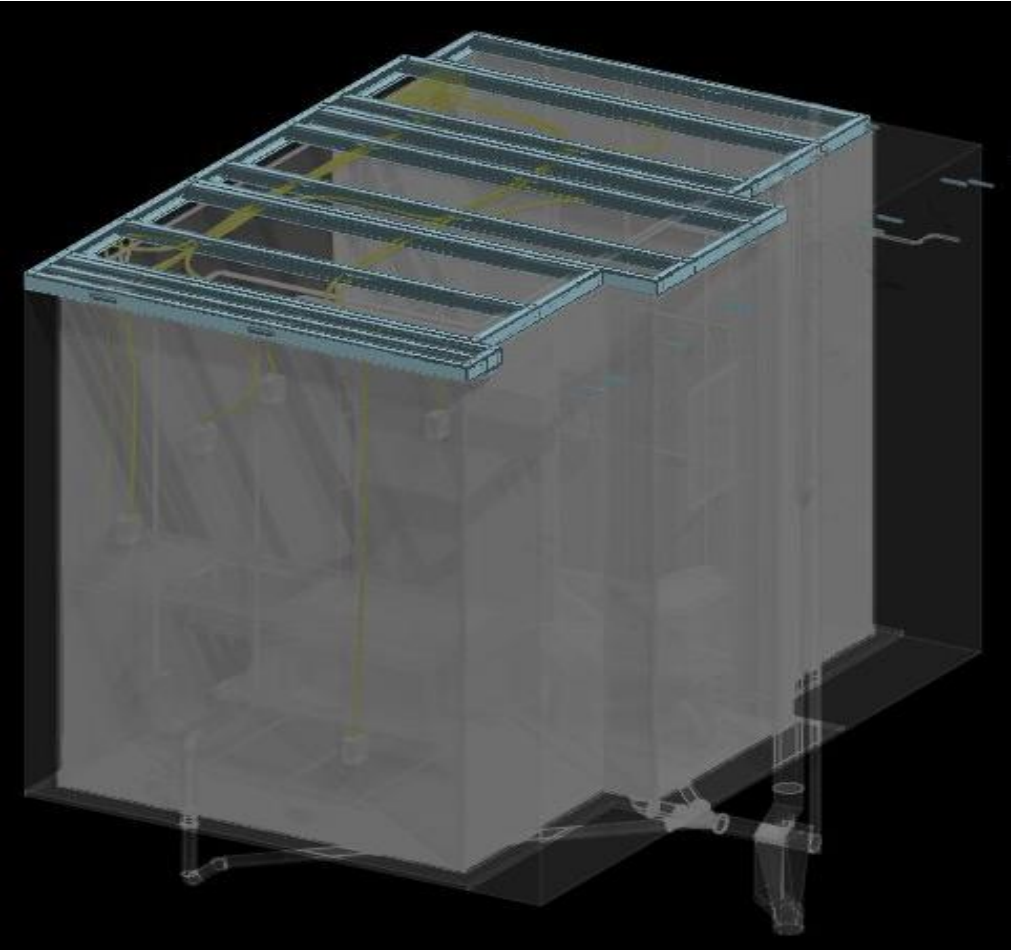
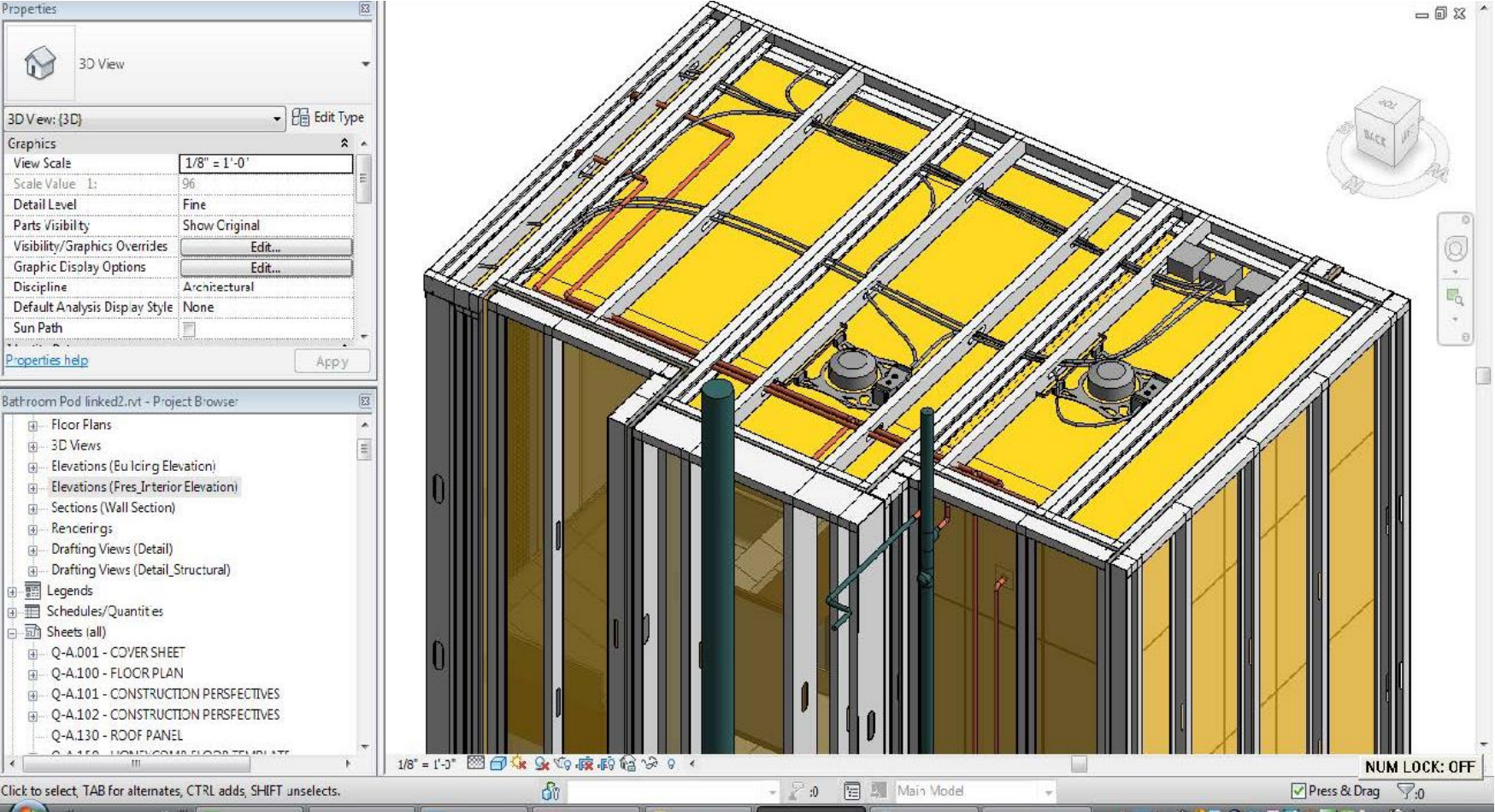
RAISED ACCESS FLOOR HANDRAIL / GUARDRAIL APPLICATIONS  
SCALE: 6" = 1'-0"

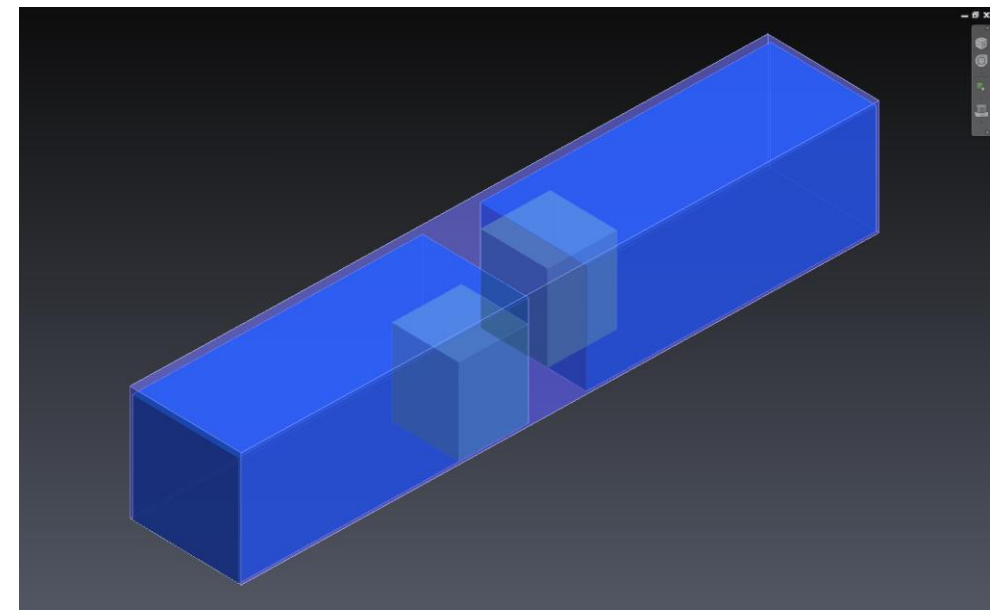
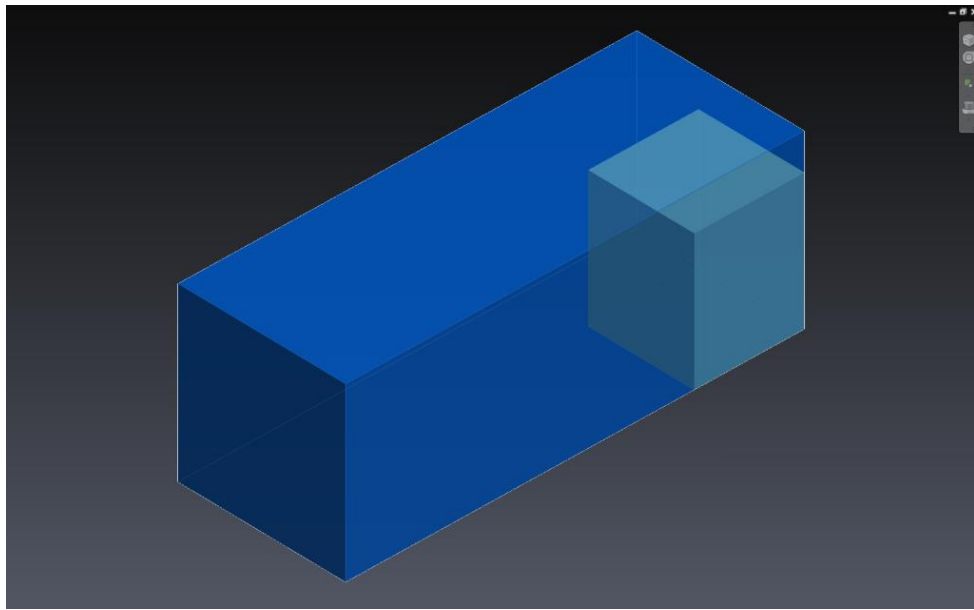
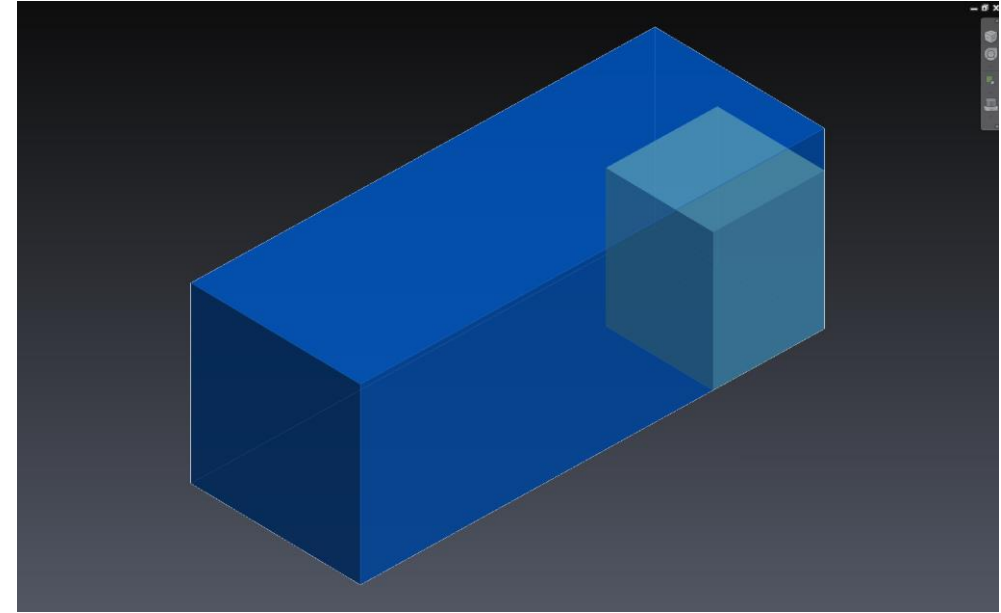
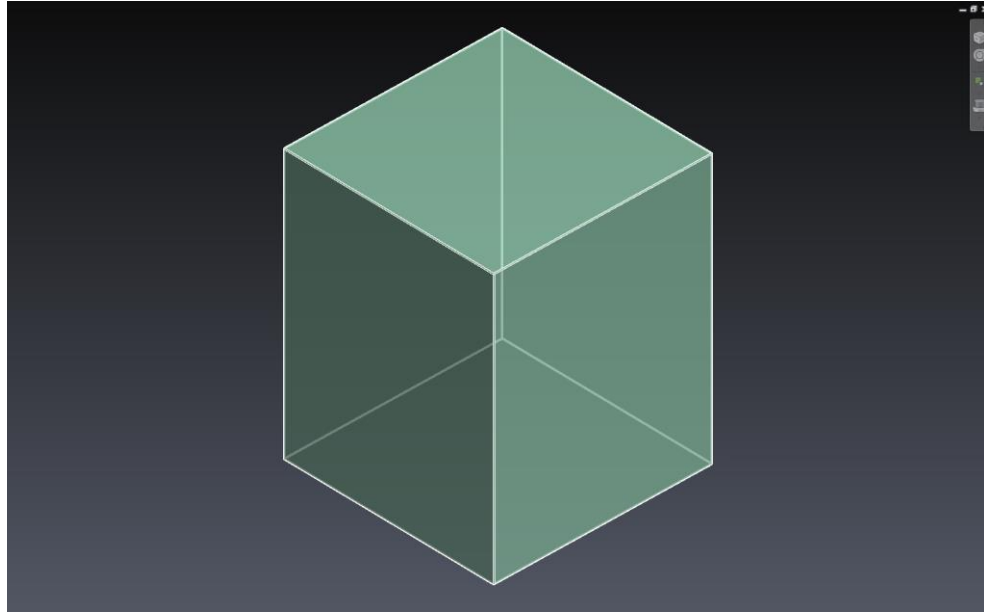


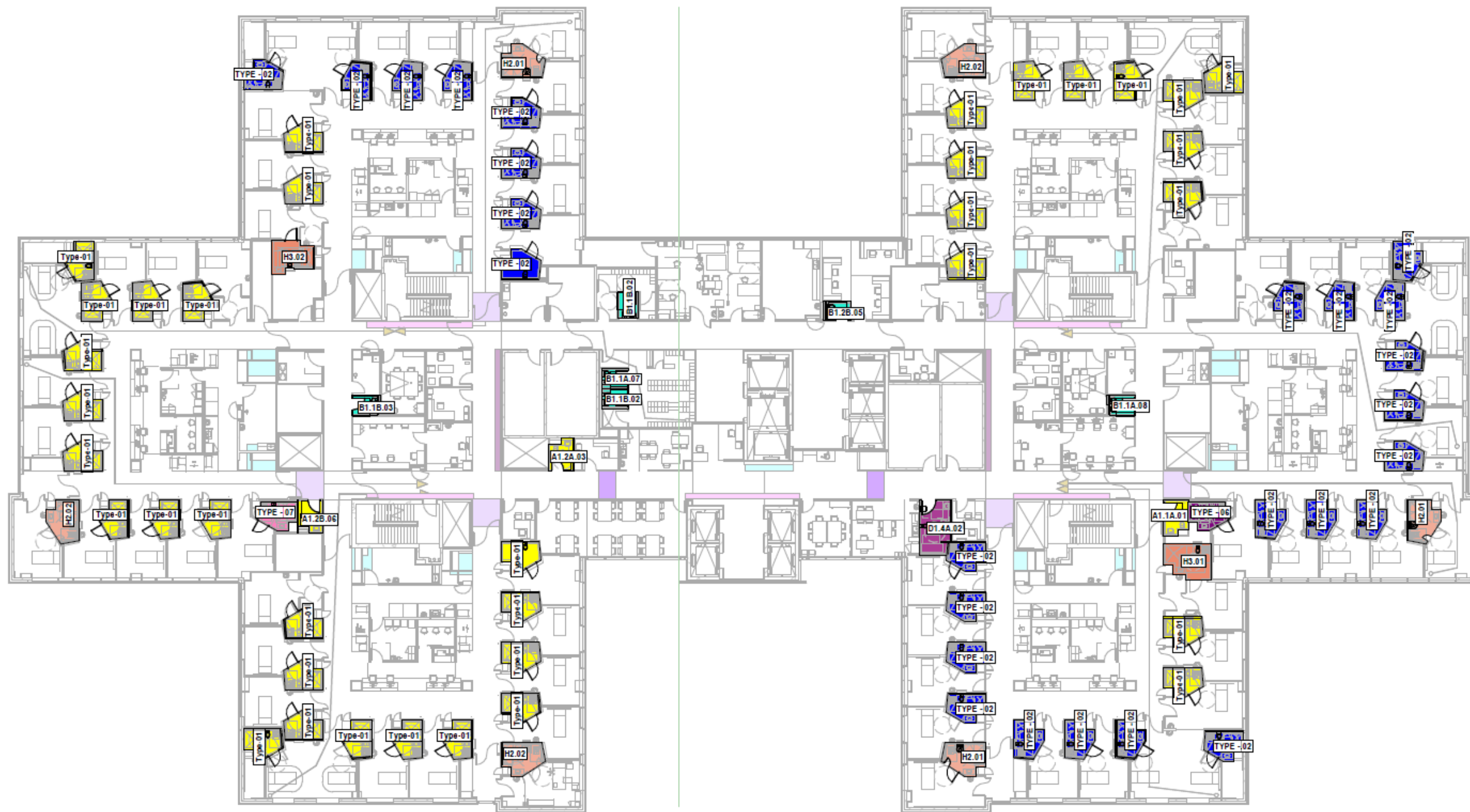
1 RAISED FLOOR RAMP ASSEMBLY  
SCALE: 3/4" = 1'-0"



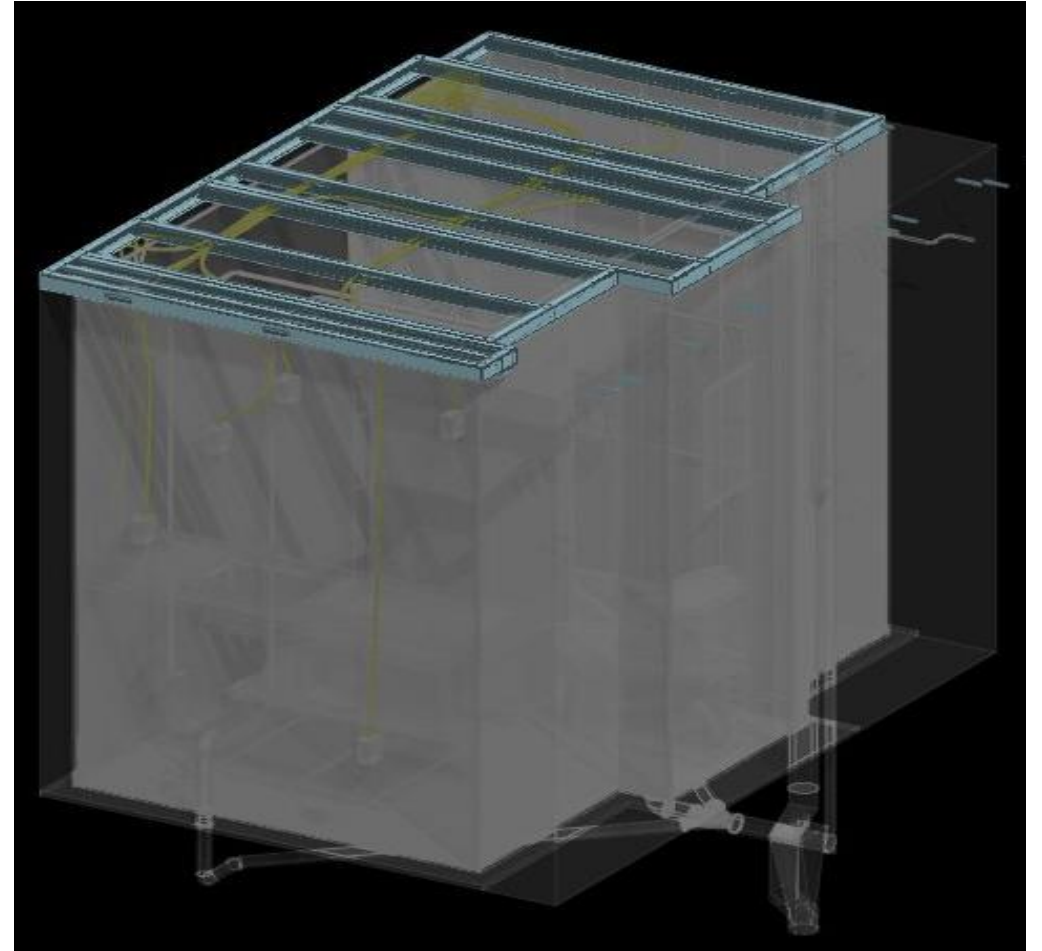
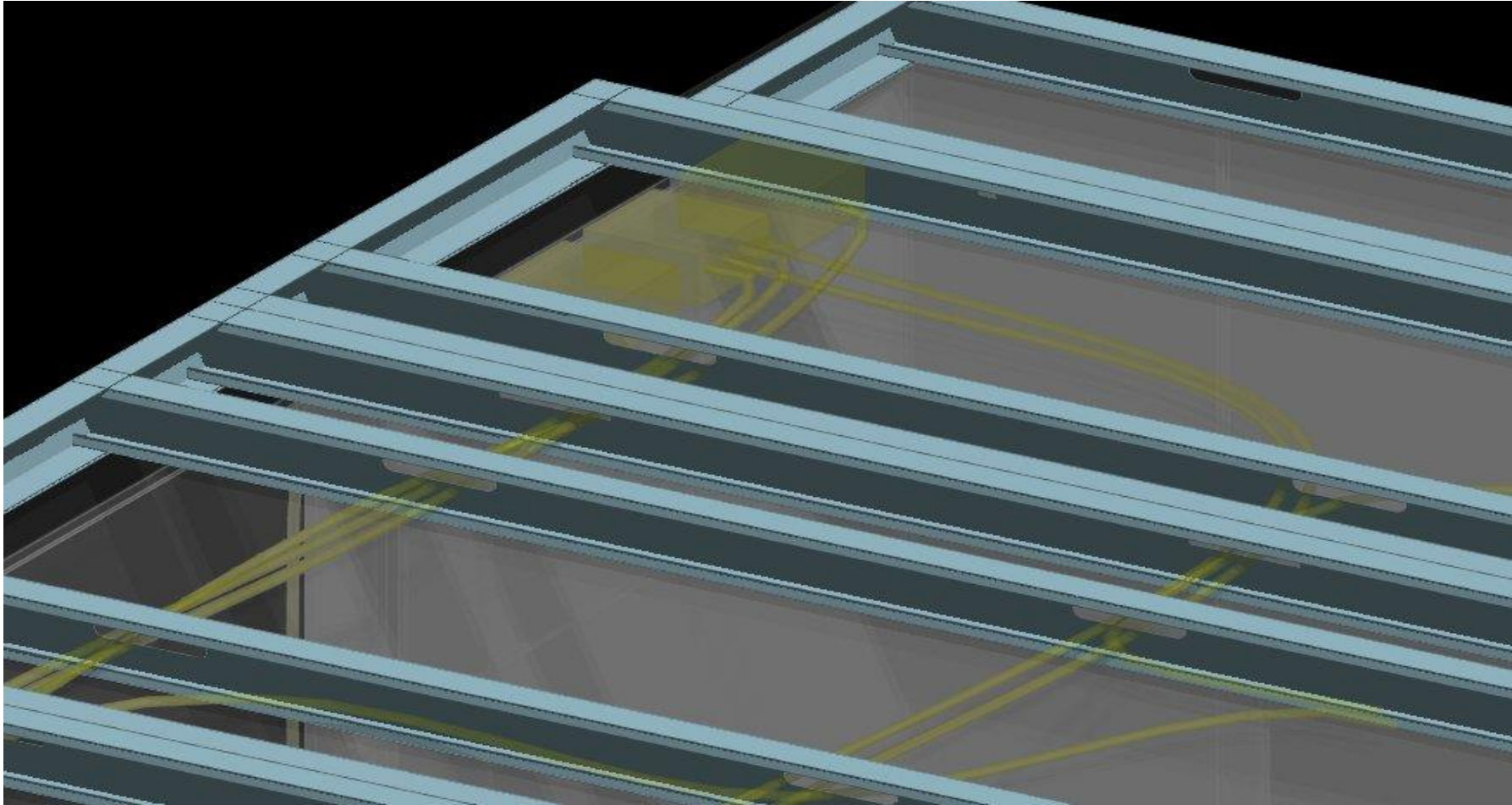




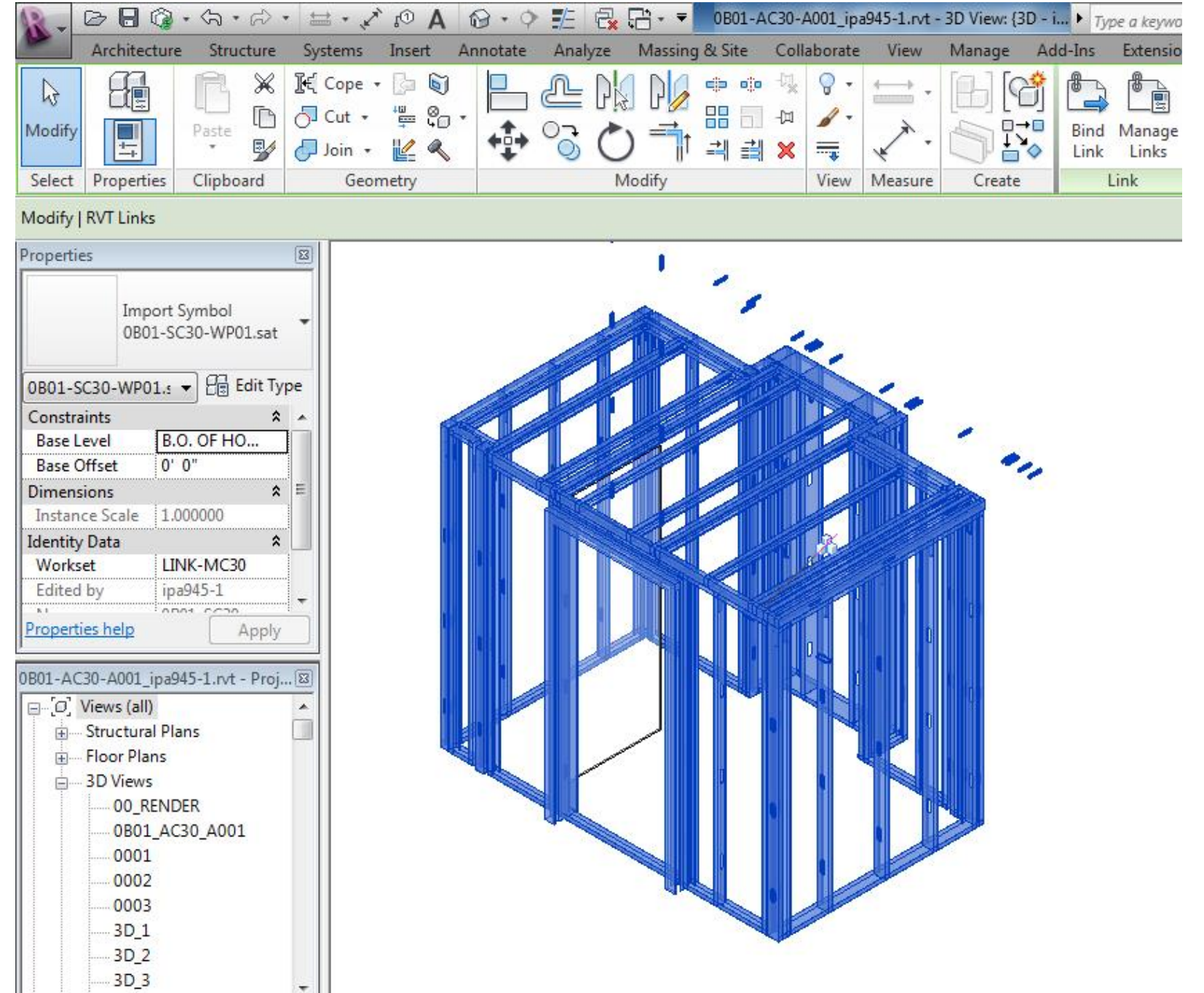
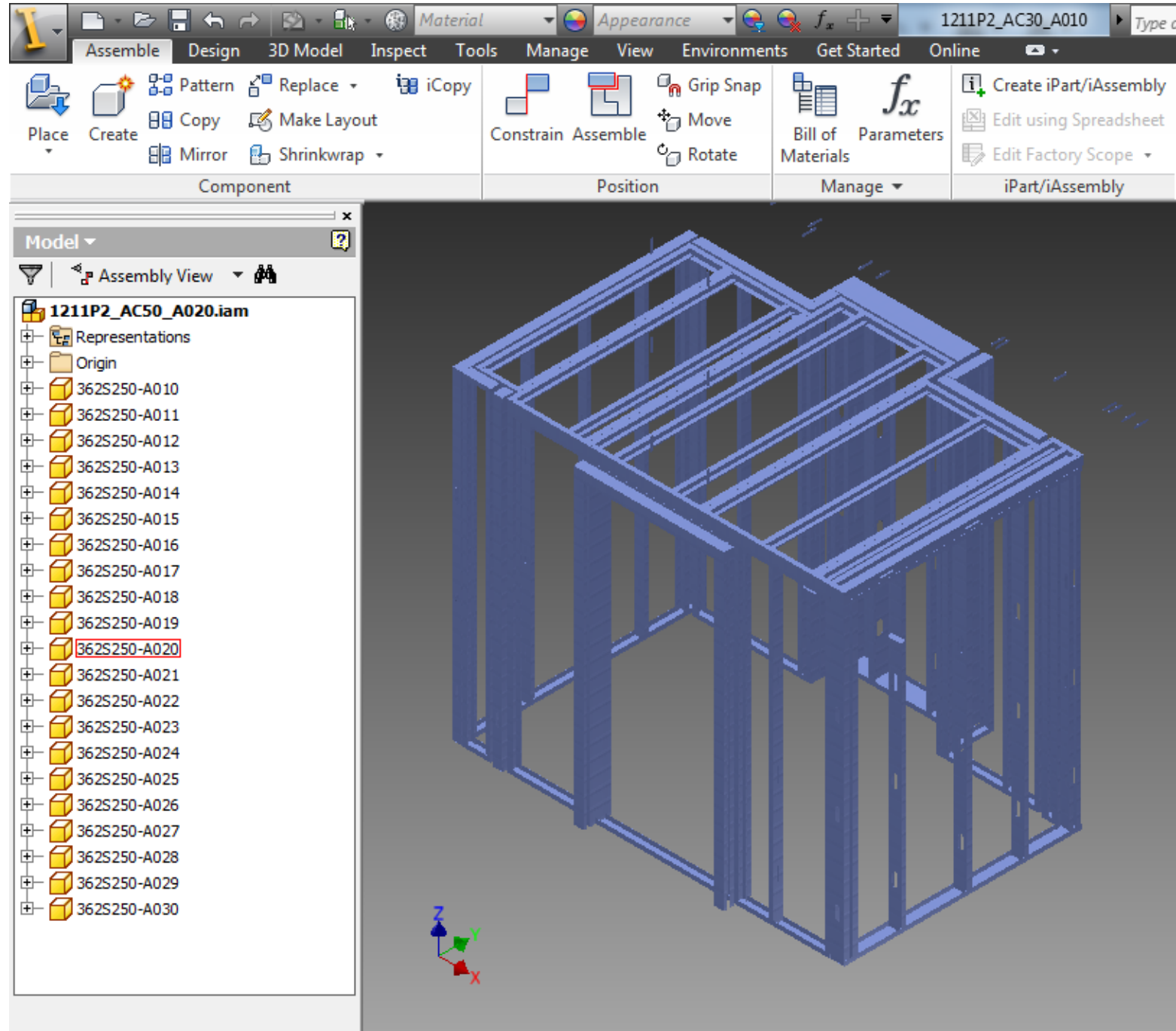


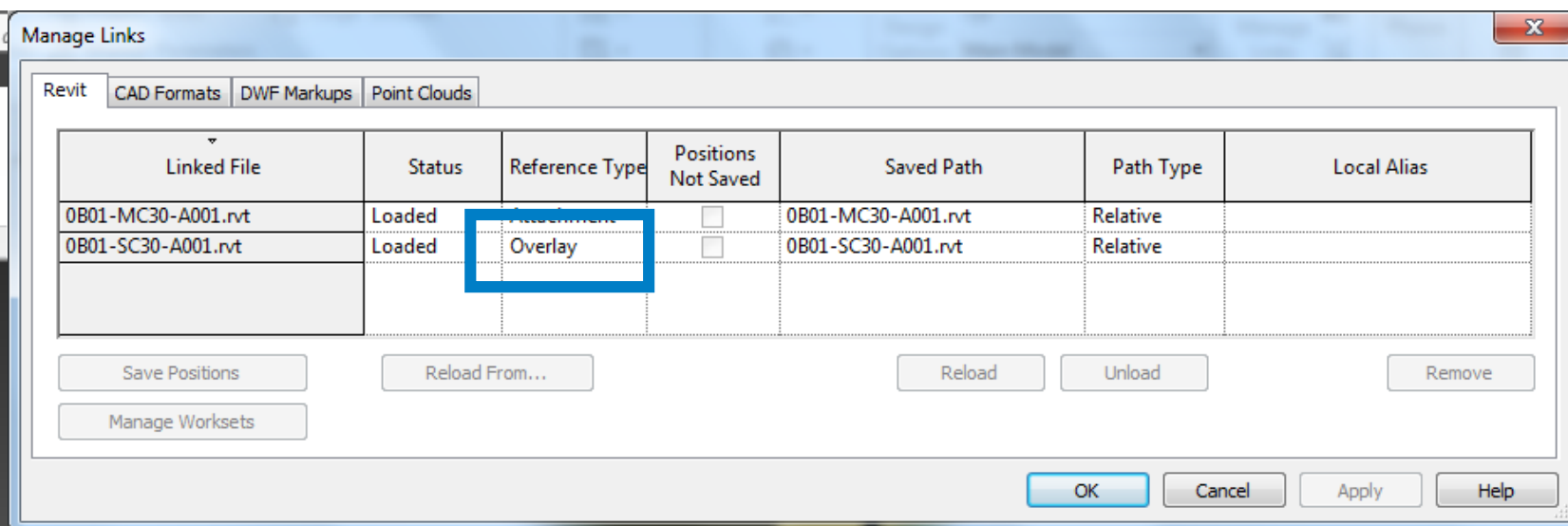
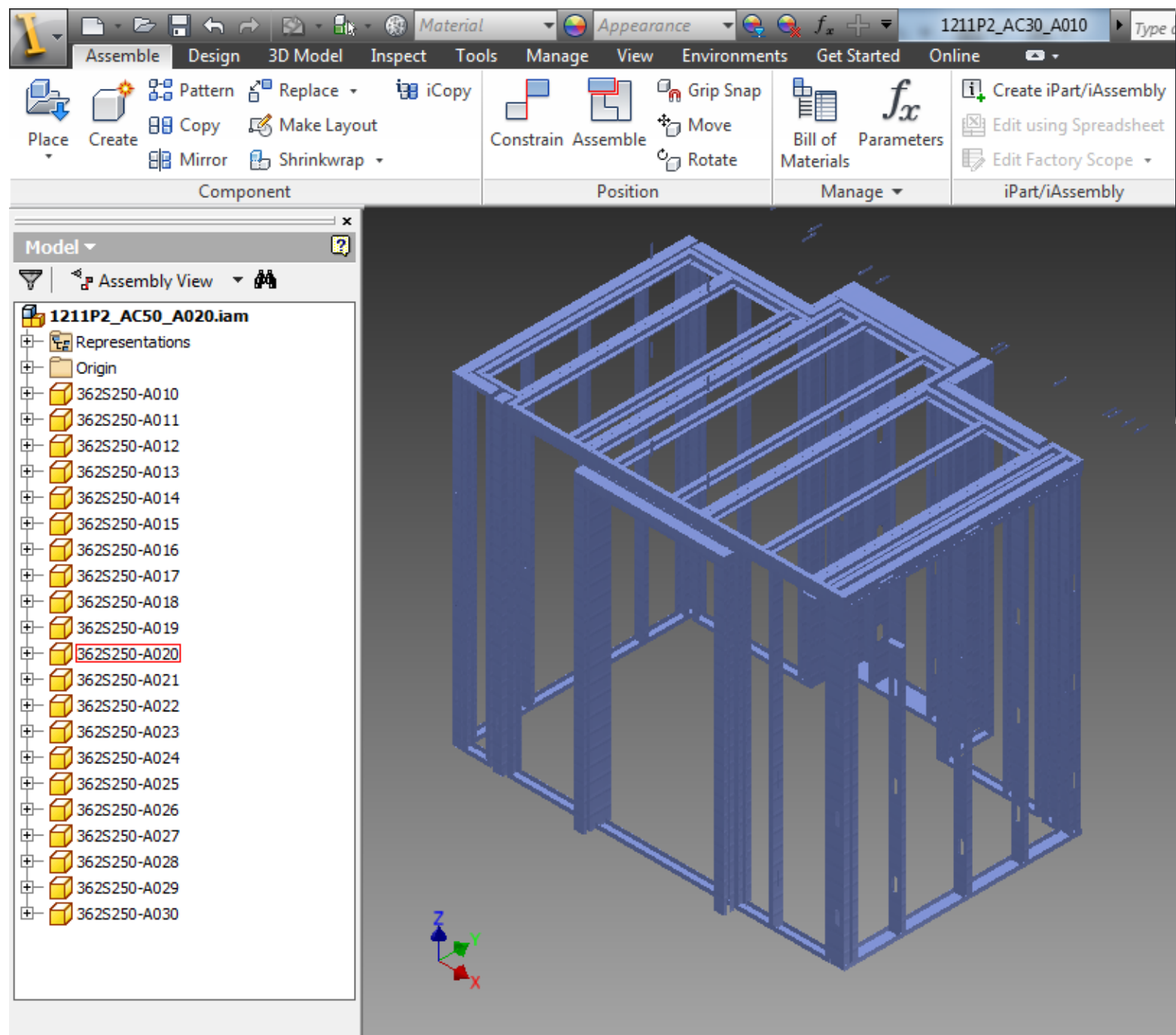




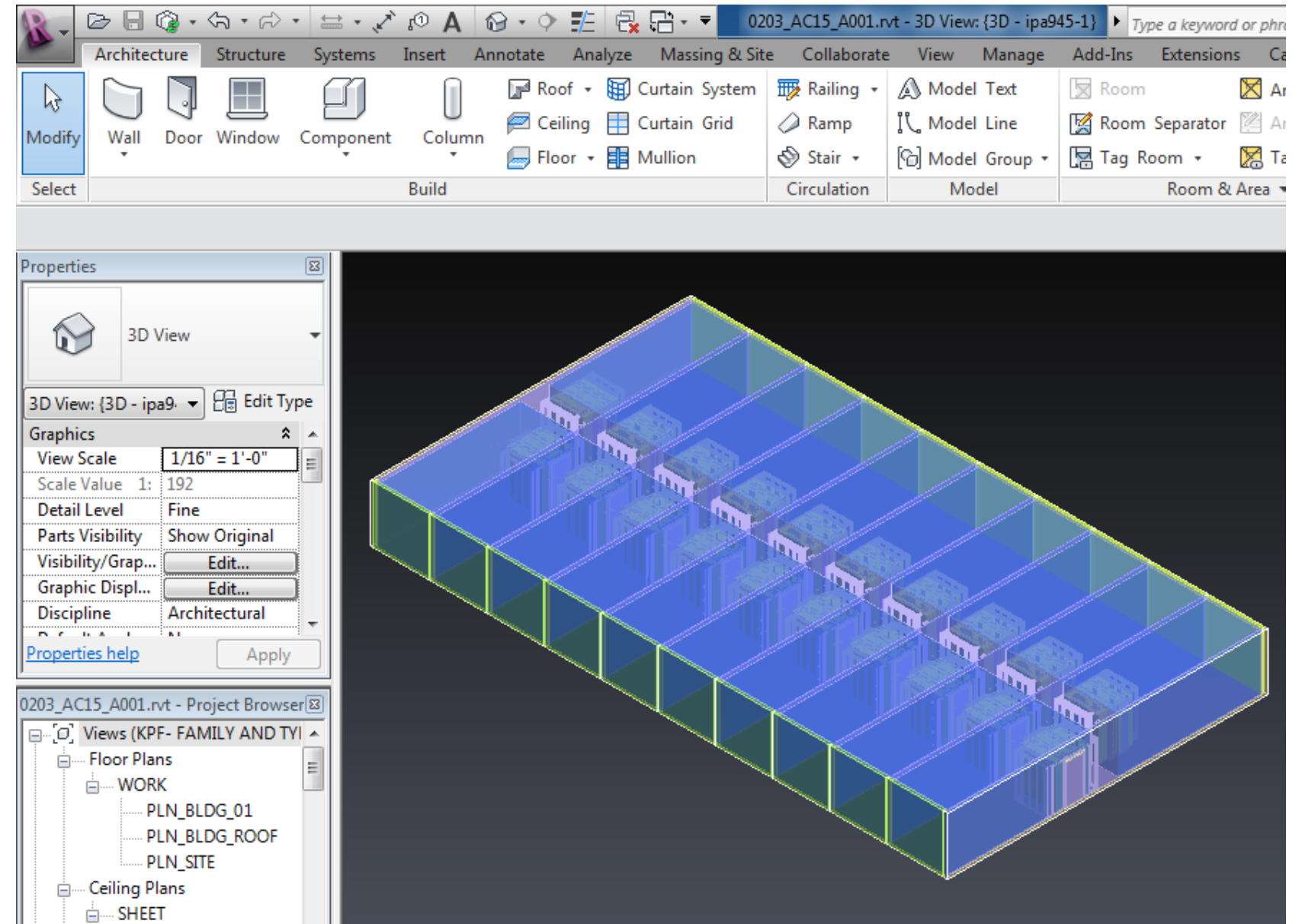
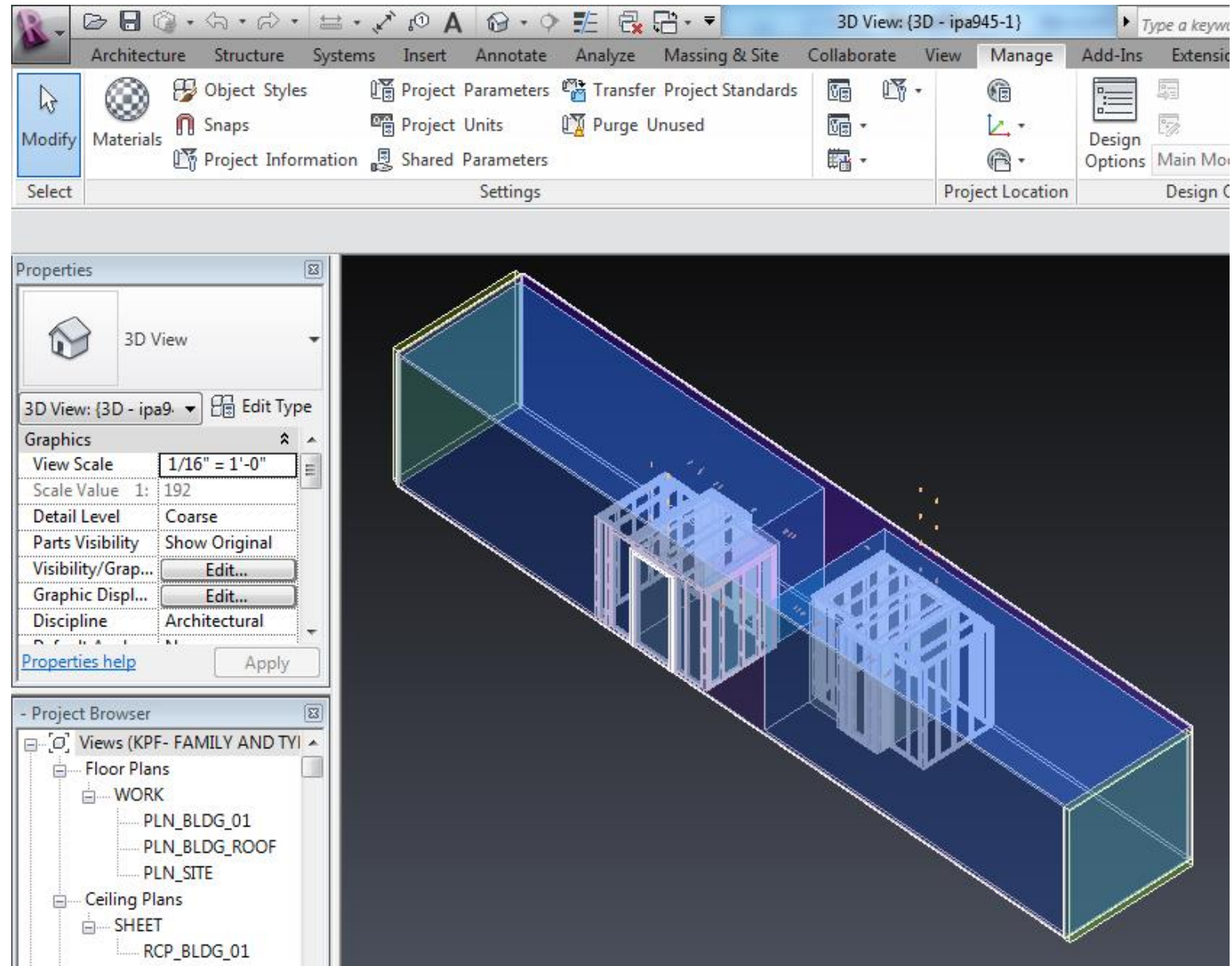


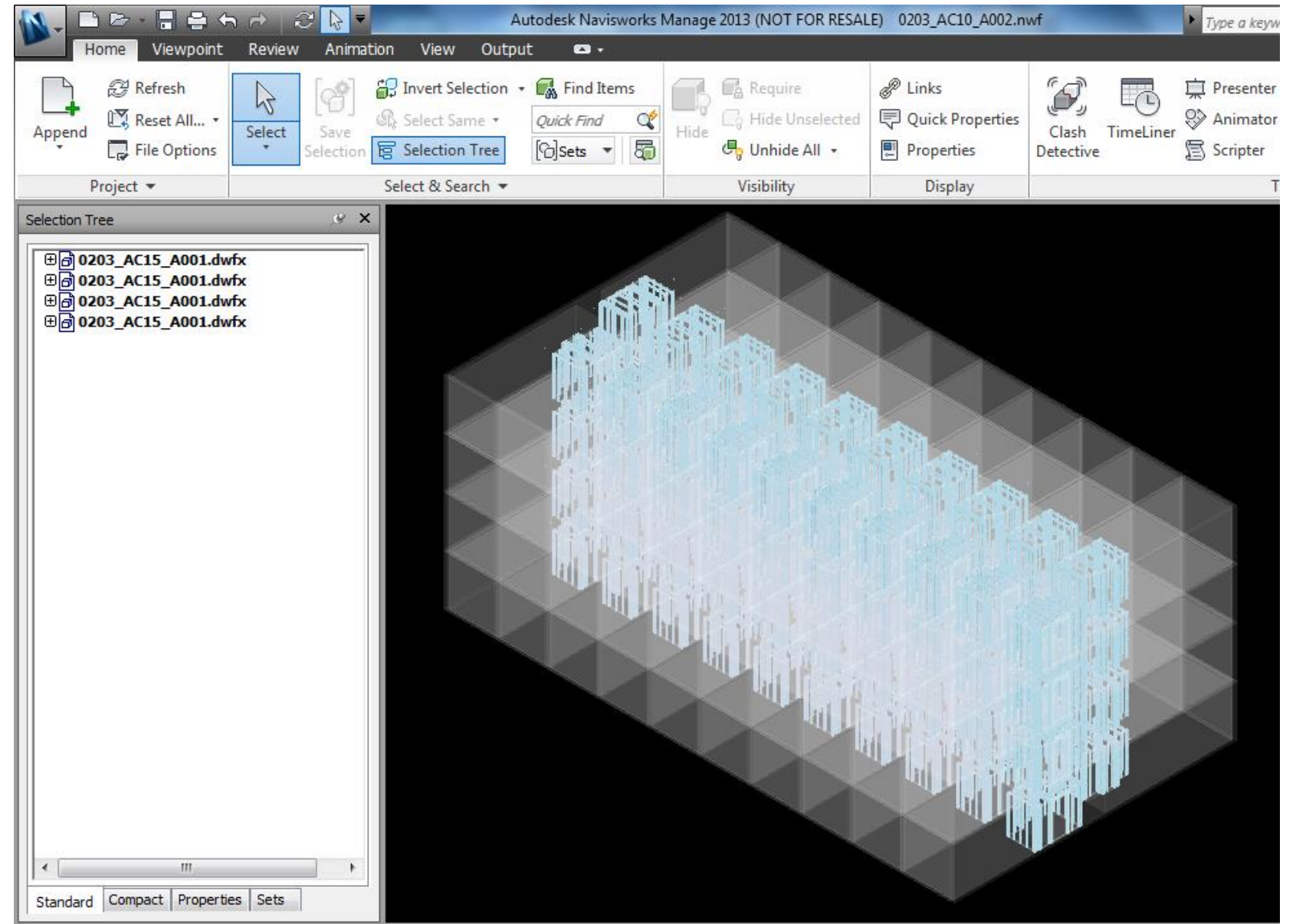
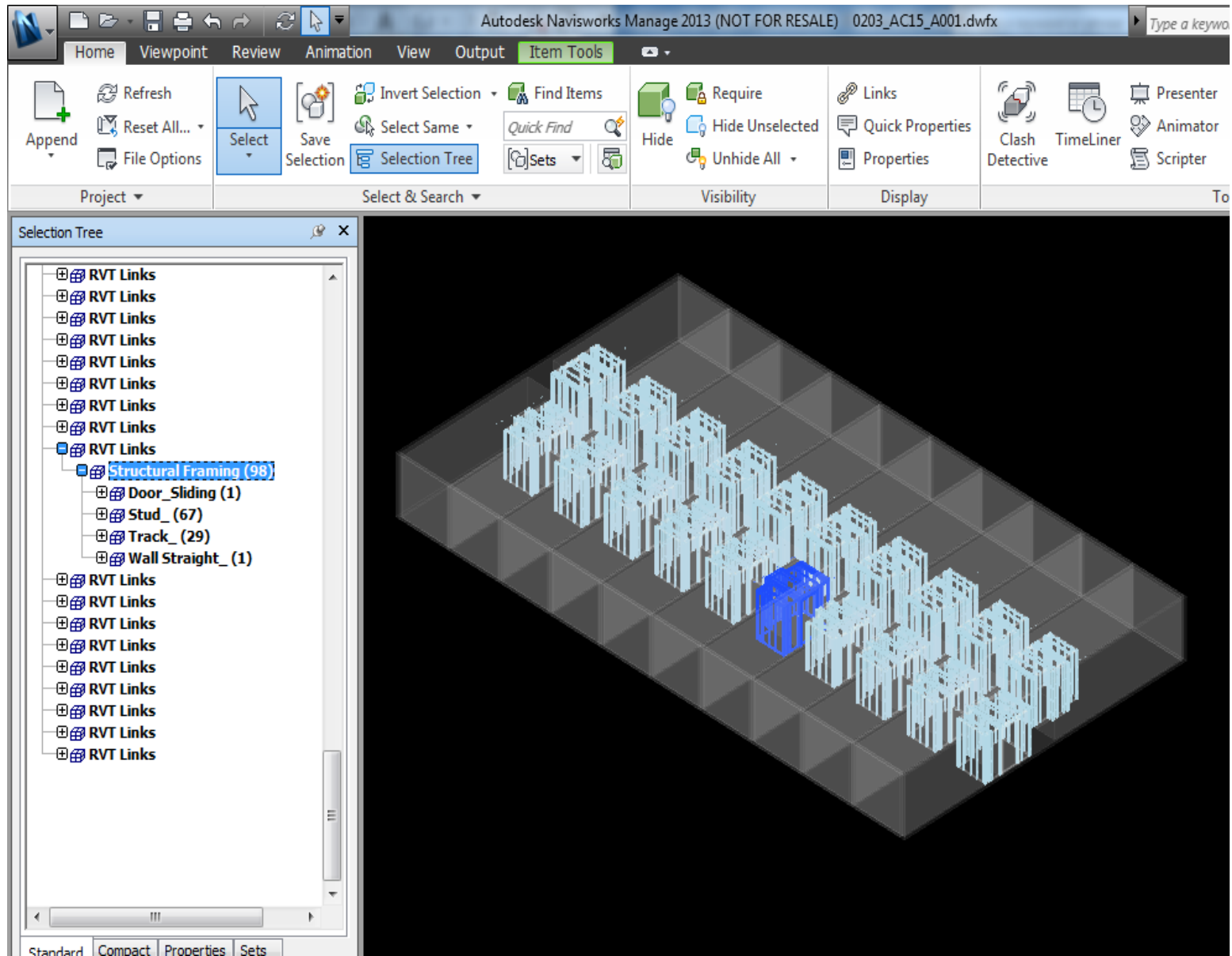


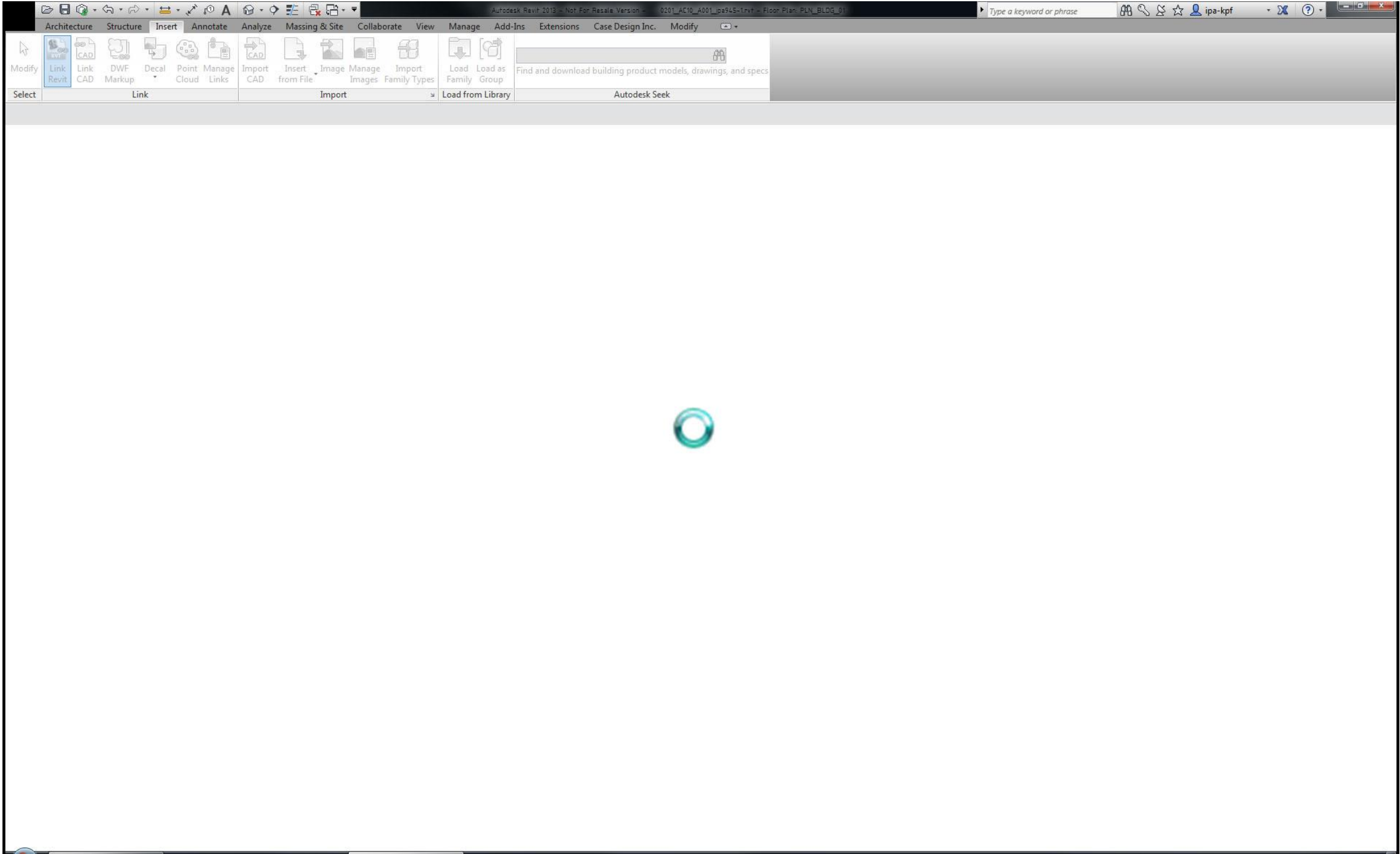




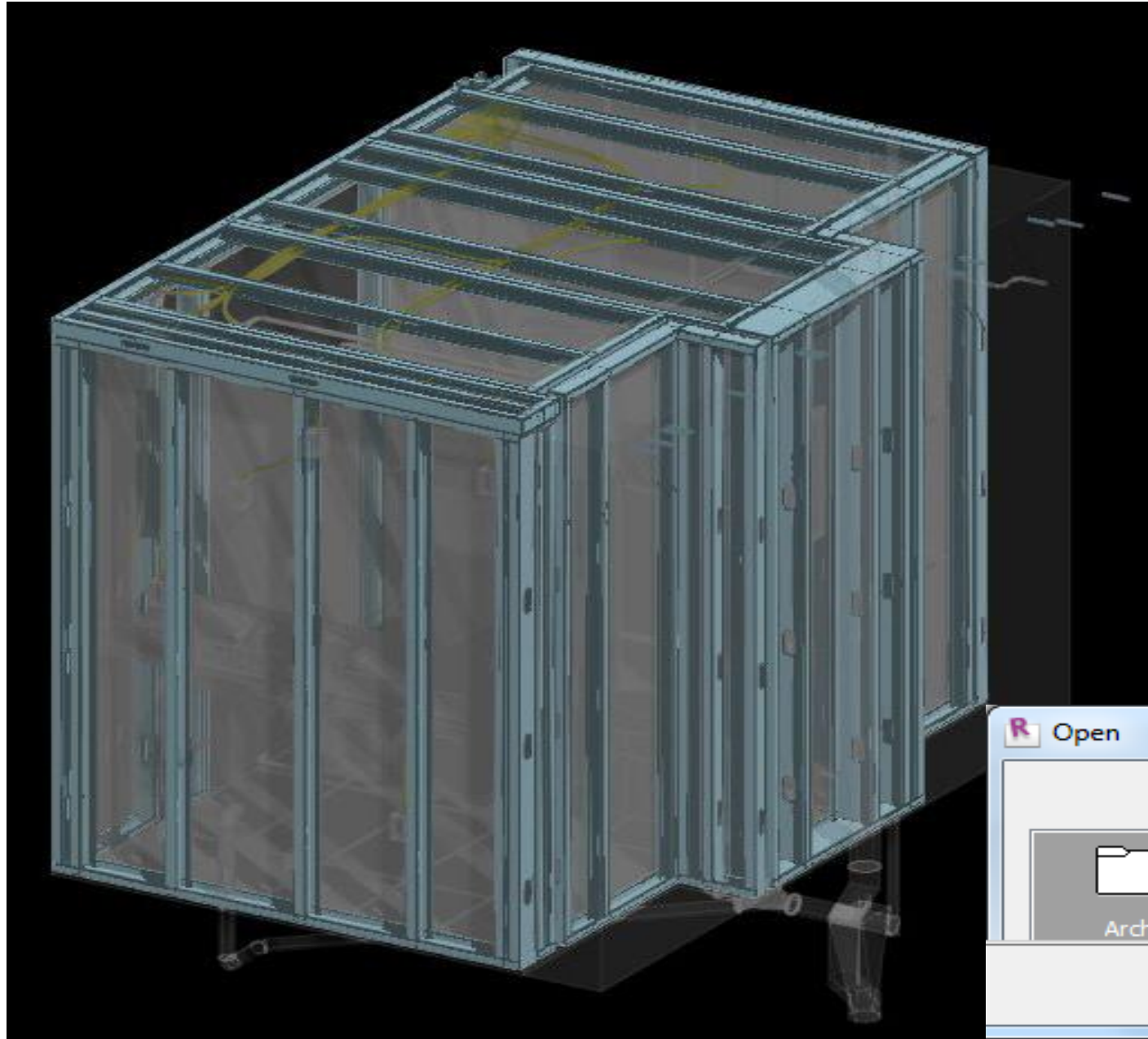












Worksets

Active workset:  
LINK-MC30 (Not Editable) ☐ Gray Inactive Workset Graphics

Name	Editable	Owner	Borrowers	Opened	Visible in all views
AC30	No			Yes	<input checked="" type="checkbox"/>
INTR	Yes	ipa945-1		Yes	<input checked="" type="checkbox"/>
LINK-MC30	No			Yes	<input checked="" type="checkbox"/>
LINK-SC30	No			Yes	
Shared Levels and Grids	No			Yes	
Workset1	No			Yes	

Show:  
☒ User-Created ☐ Project Standards  
☐ Families ☐ Views

New  
Delete  
Rename

Open

Look in: AC30

Arch

Name

- OB01-A
- OB01-M

Workset:  
All  
Editable  
Last Viewed  
Specify...

Open Cancel

Properties

Linked Revit Model  
OB01-SC30-A001.rvt

RVT Links (1) Edit Type

Identity Data

Name SC30-A001

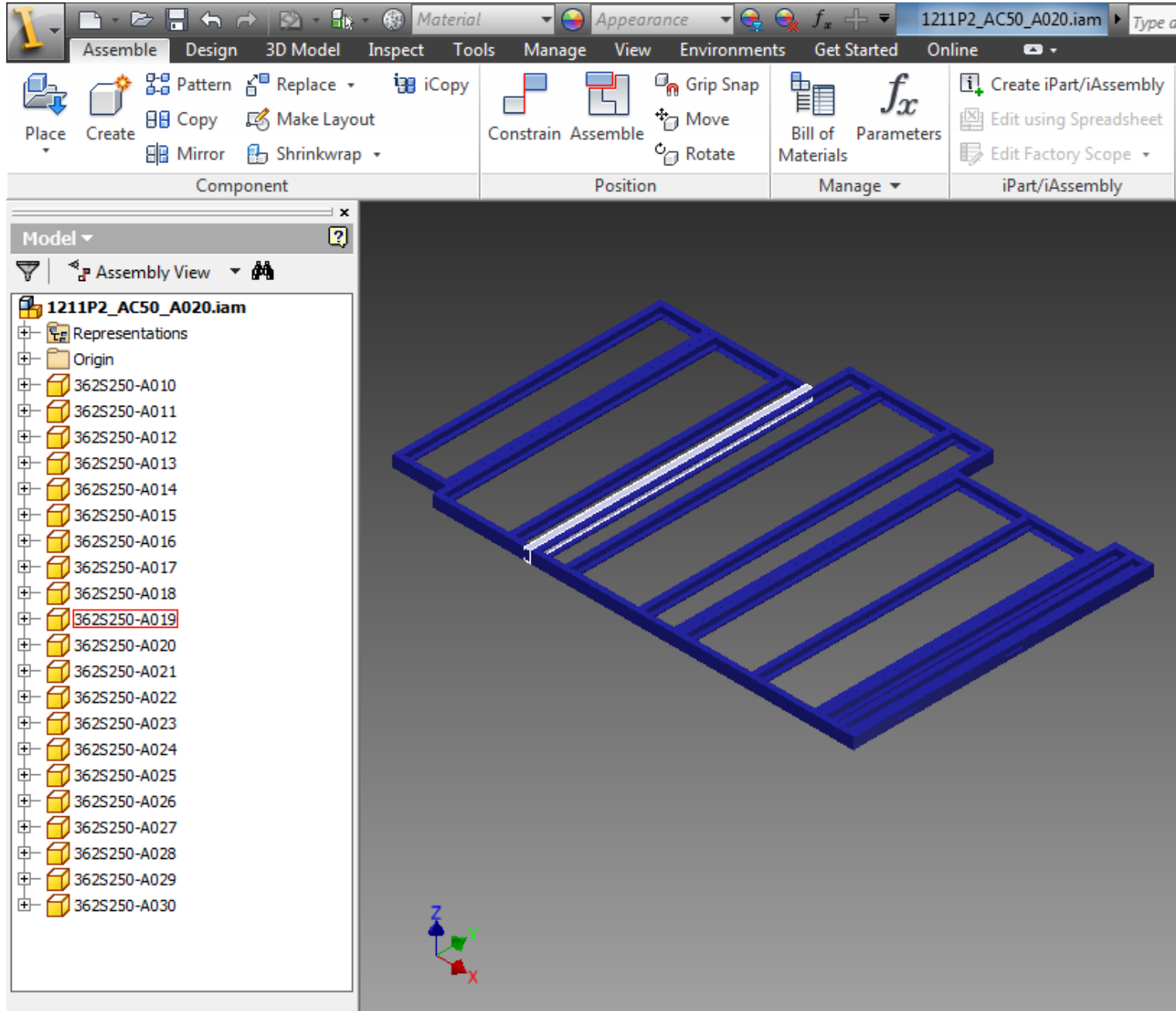
Workset LINK-SC30

Edited by ipa945-1

Other

Shared Site <Not Shared>

Properties help Apply



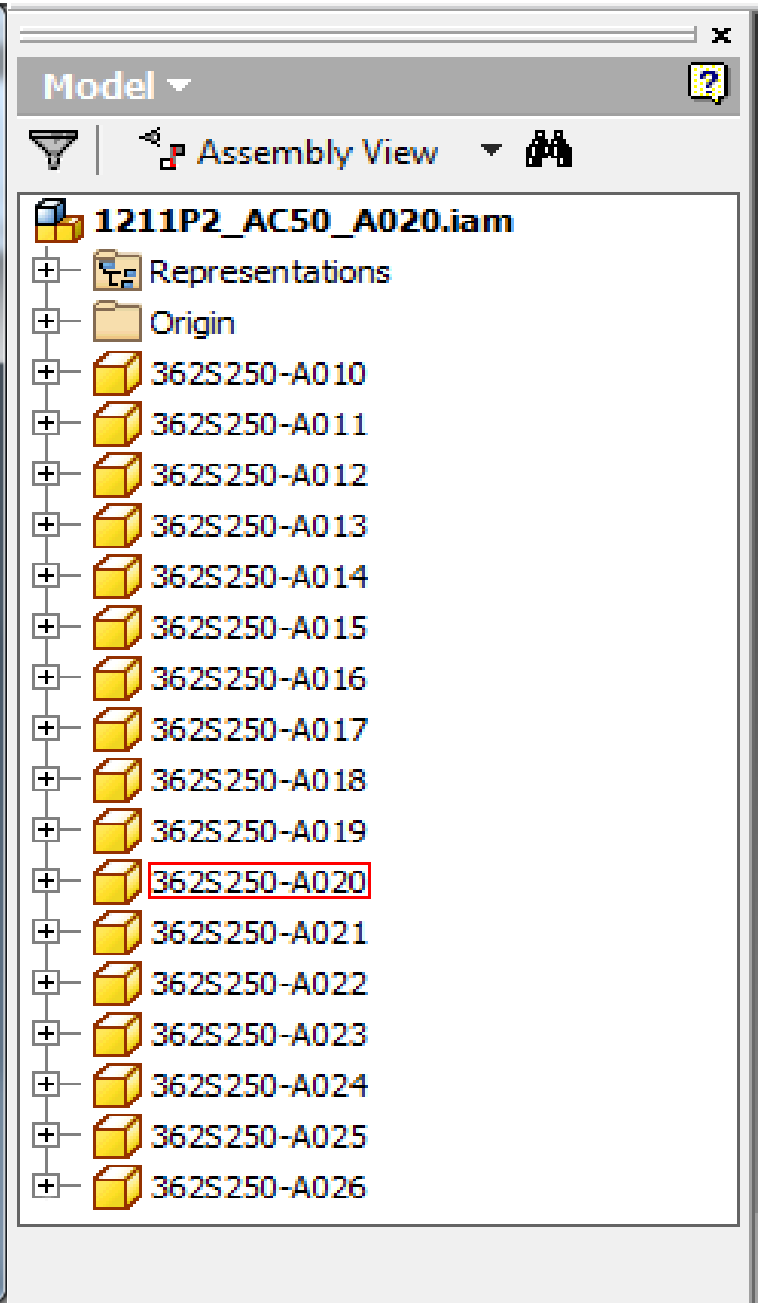
Bill of Materials [1211P2\_AC50\_A010.iam]

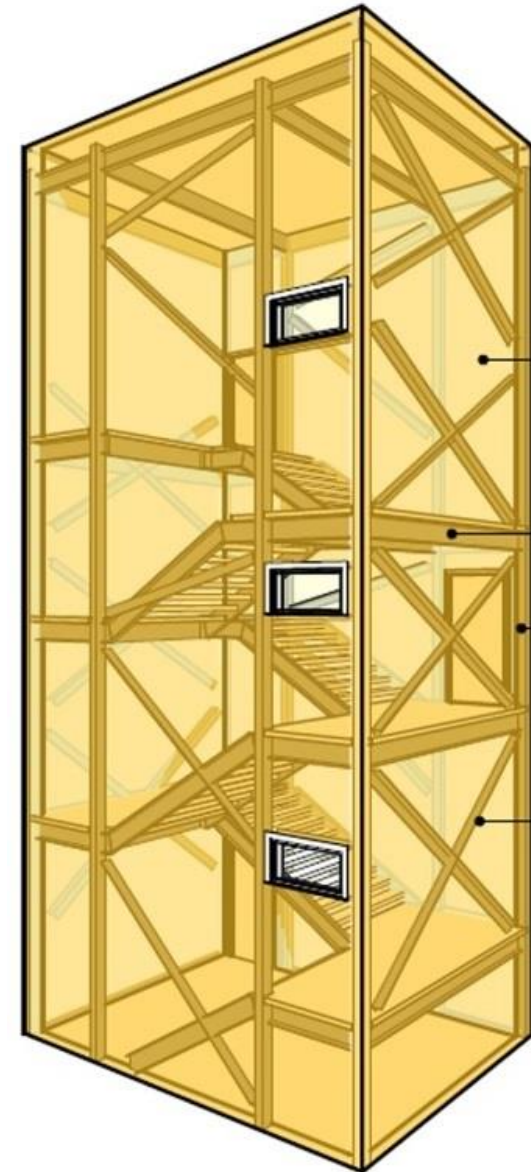
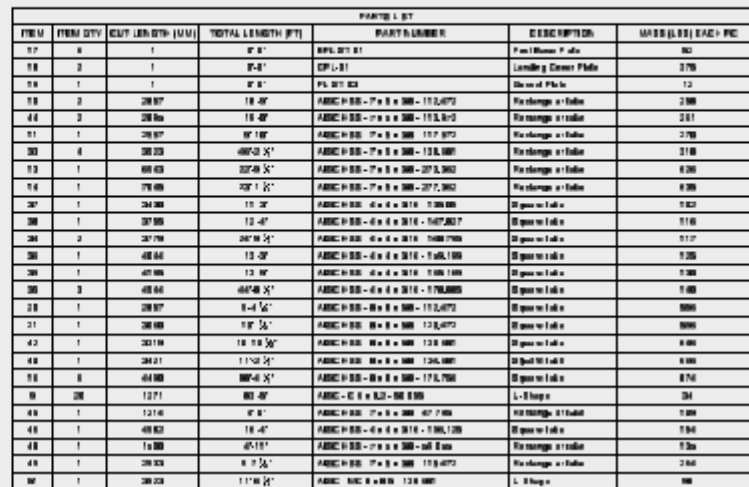
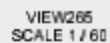
250S125-0101

Model Data | Structured (Disabled) | Parts Only (Disabled)

	Part Number	Thumbnail	BOM Structure	Unit QTY	QTY	Stock Number	Des
▶	250S125-0101		Normal	Each	1	250S125-0101	
	250S125-0102		Normal	Each	1		
	250S125-0103		Normal	Each	1		
	250S125-0104		Normal	Each	1		
	250S125-0105		Normal	Each	1		
	250S125-0106		Normal	Each	1		

Import... Export... Done

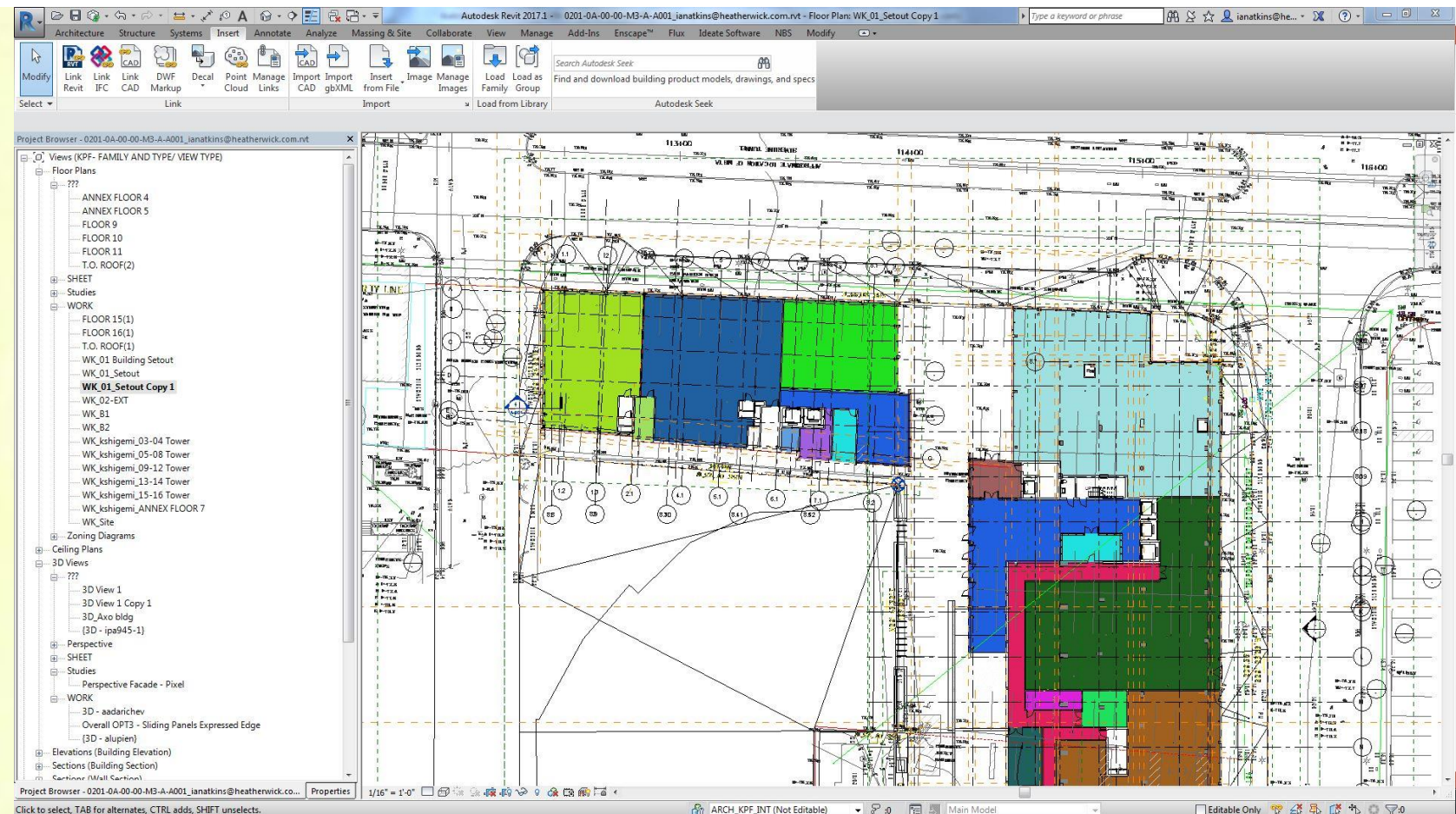
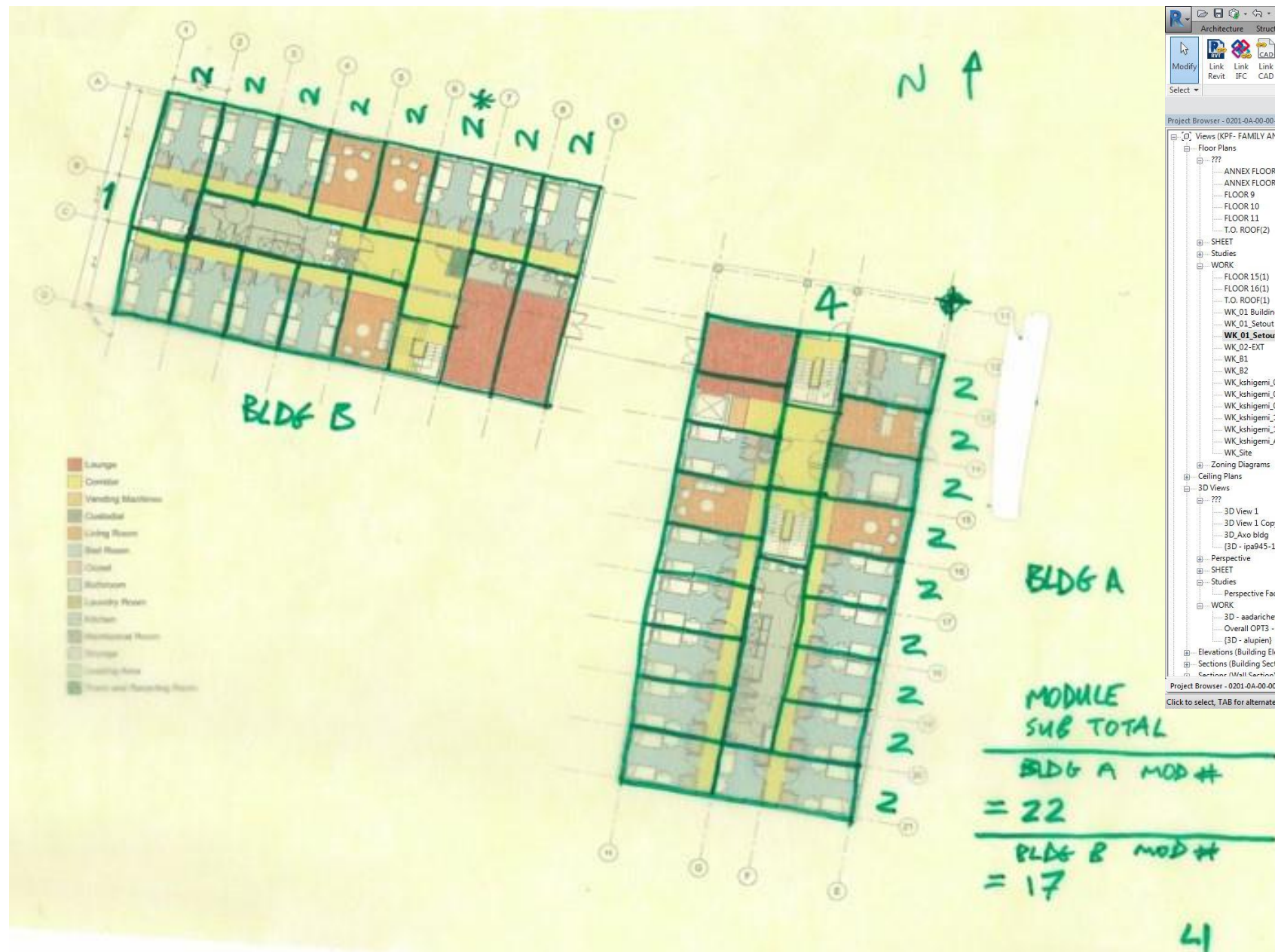






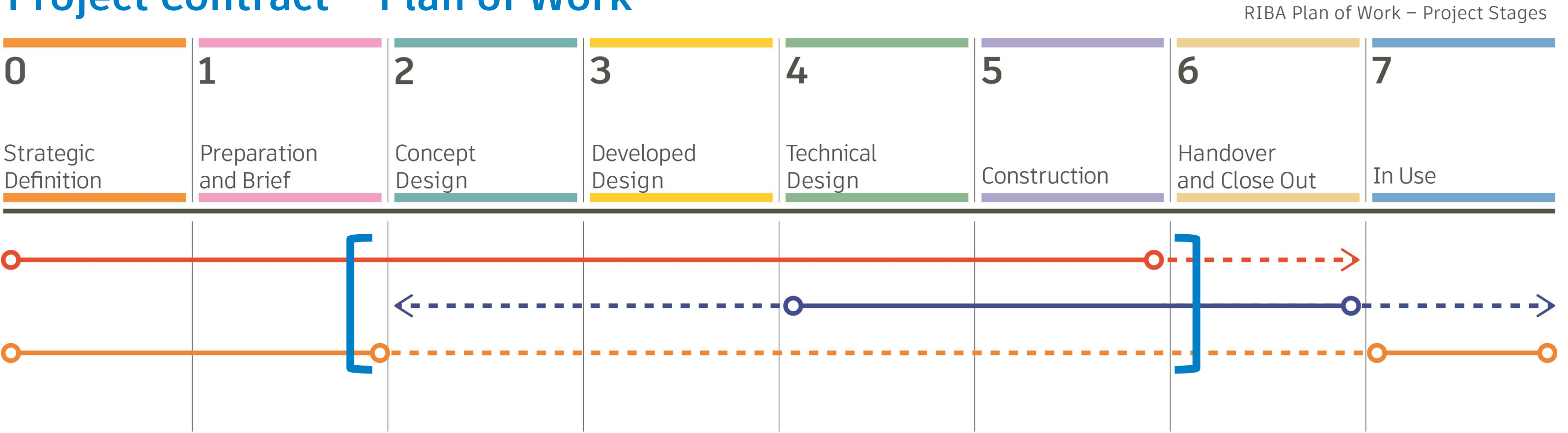






# Design Delivery and BlM Exchange

## Project Contract – Plan of Work



## Effective Process for Offsite Design Delivery

Shared Responsibility, Information Exchange Transparent Data Access

