



ProjectWise Advanced Revit Integration

Faster, Higher-quality Multi-discipline Design Collaboration

Hans Koorneef, Technical Director Platform & Mobility, EMEA



Revit Integration - Classic

Supports Revit 2014, 2015, 2016, 2017 with PWDI update 2.0+

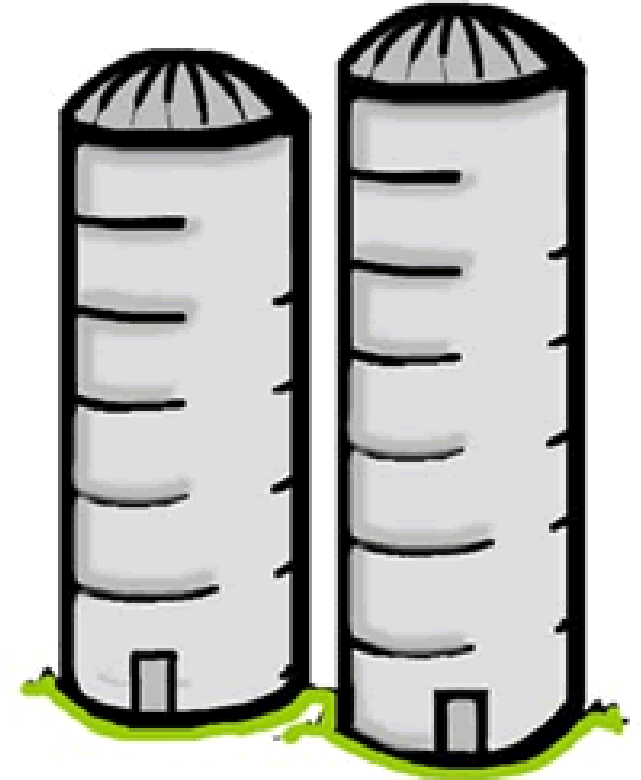
- Revit integration Module

- Revit supported content in PWDI
 - Revit Stand alone models .RVT
 - Revit Central Models .RVT .DAT
 - Families .RFA
 - Templates .RFE
- Element borrowing
 - Worksets borrowing
 - Selection Set borrowing
 - Dynamic element borrowing (Not recommended in WAN)
 - Borrowing Request support

- Links supported for RVT, CAD and Raster
 - Revit Resolve Links tool for imported content
- Decal support
- Background Images stored in PWDI
- Publishing
 - Rendering
 - .DWG
- i-Model Publishing

Problem: Revit users not integrated with ProjectWise

- Prefer to use LAN or specific WAN
 - For optimal Revit performance
- Creates Revit work silos
- Must manually sync files to collaborate with non-Revit users
- Syncs tend to happen too infrequently
 - Sometimes with unmanaged file exchanges



Impact: Increased project cost and risk



Reduced Collaboration
Speed and Quality



Revit Designs Out
of Sync with Project



Clashes, Rework,
and Schedule Delays

Solution: ProjectWise Advanced Revit Integration



- Helps Revit users easily stay in sync with project
- Without changing how they work!
 - Stay inside Revit application
 - No changes to design workflows
 - No reduction in Revit application performance
- Removes obstacles/objections for collaboration



How it works

- One-time project configuration by administrator
 - Work Area and folder locations
 - File name mapping and version control rules
 - Non-Revit design references
- Revit users use simple menu options
 - Publish content to ProjectWise
 - Sync design references from ProjectWise
- Publish and sync as often as needed





Advanced Revit Integration

- Launch ARI
- Create new project
- Assign working file
- Open working file
- Open existing project

Projects

- Open...
- New...
- Construction Template
- Architectural Template
- Structural Template
- Mechanical Template



Architecture_
Robert.DeFeo



Architecture



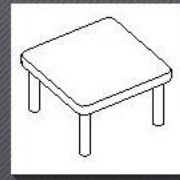
Sample Architecture
Project



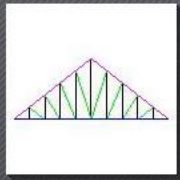
Sample Structure
Project

Families

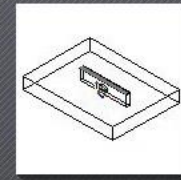
- Open...
- New...
- New Conceptual Mass...



Sample Architecture
Family



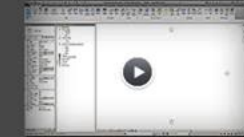
Sample Structure
Family



Sample Systems
Family

Resources

- What's New?
- Help
- What's New? Videos
- Essential Skills Videos
- Additional Videos
- Autodesk App Store
- Revit Community



Getting Started Video

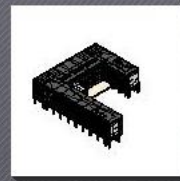
- Publishing a Revit file to ProjectWise via eTransmit



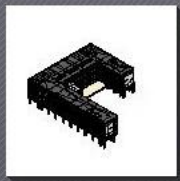
Advanced
Revit Integration

Projects

- Open...
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- Architectural Template
- Structural Template
- Mechanical Template



Architecture_
Robert.Defero



Architecture



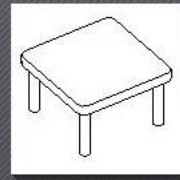
Sample Architecture
Project



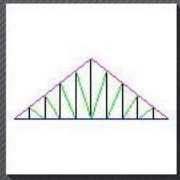
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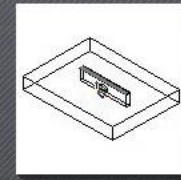
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Sample Architecture
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Sample Structure
Family



Sample Systems
Family

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Getting Started Video

ProjectWise

- Documents
 - ModernArchitecture
 - Work in progress
 - Environment Mappings
 - Project Mappings
- Assets
- Components
- Persons

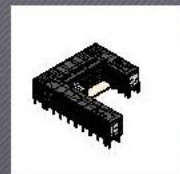
- Publishing a Revit file to ProjectWise via Detach from Central



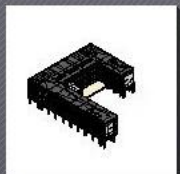
Advanced
Revit Integration

Projects

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- Architectural Template
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- Mechanical Template



Architecture_
Robert.Defeo



Architecture



Sample Architecture
Project



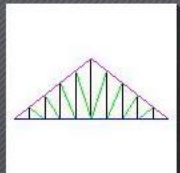
Sample Structure
Project

Families

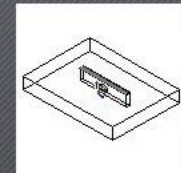
- Open...
- New...
- New Conceptual Mass...



Sample Architecture
Family



Sample Structure
Family



Sample Systems
Family

Resources

- What's New?
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Getting Started Video

ProjectWise

Documents

- ModernArchitecture
 - Work in progress
 - eTransmit
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: Work in progress

Role: Working Folder

- Linking to a Revit file in ProjectWise and published to ProjectWise



Advanced
Revit Integration

Properties

3D View

3D View: {3D - Robert.Defeo} Edit Type

Graphics

View Scale	1 : 100
Scale Value	1: 100
Detail Level	Medium
Parts Visibility	Show Original
Visibility/Graphics ...	Edit...
Graphic Display Op...	Edit...
Discipline	Coordination
Show Hidden Lines	By Discipline
Default Analysis Di...	None
Sun Path	<input type="checkbox"/>

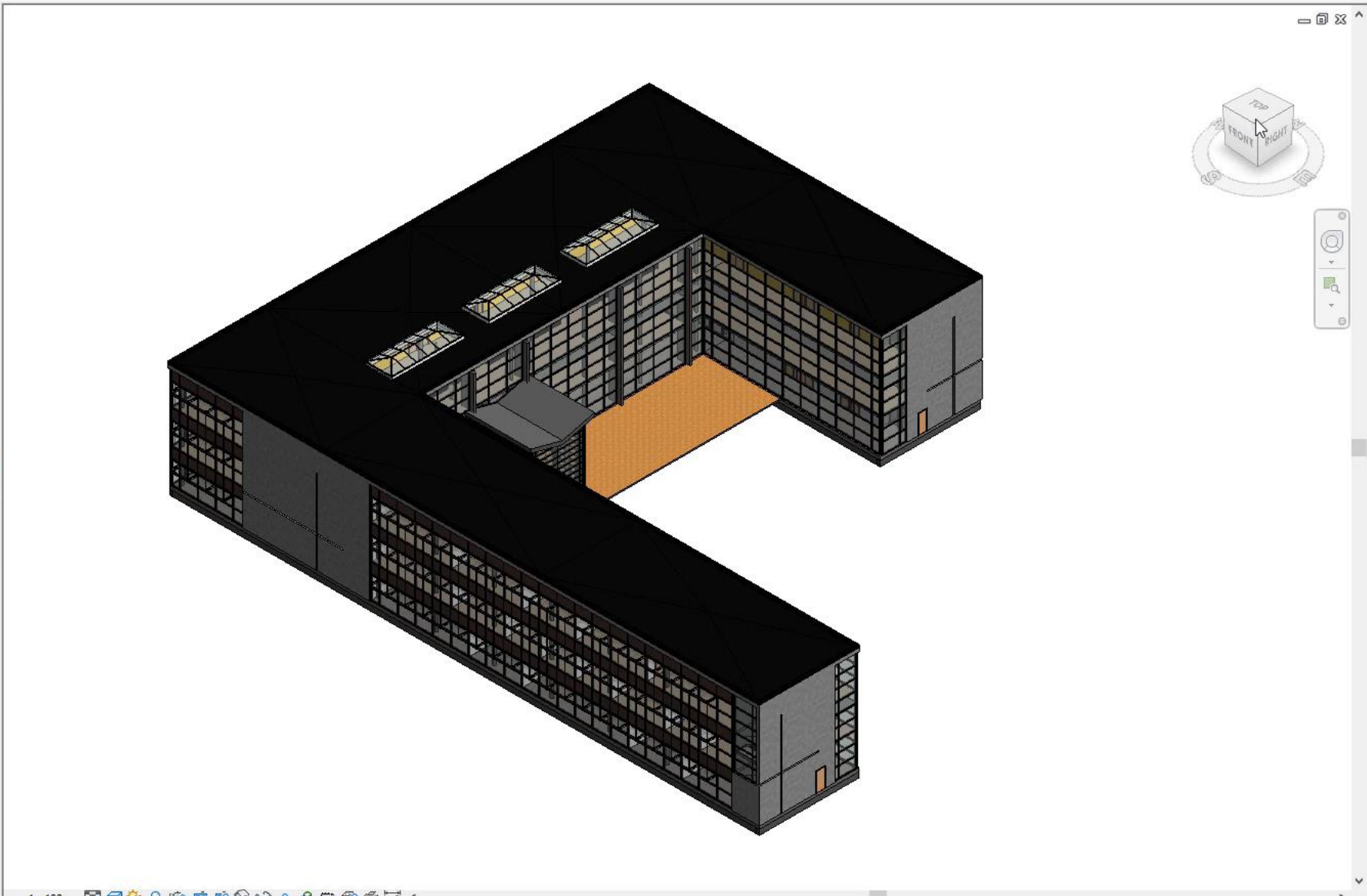
Extents

Crop View	<input type="checkbox"/>
Crop Region Visible	<input type="checkbox"/>
Annotation Crop	<input type="checkbox"/>
Far Clip Active	<input type="checkbox"/>

Apply

Project Browser - Architecture_Robert.Defeo.rvt

- Views (all)
 - Floor Plans
 - 01 - Entry Level
 - 01 - Entry Level - Furniture Layout
 - 02 - Floor
 - 03 - Floor
 - Roof
 - Site
 - Ceiling Plans
 - 01 - Entry Level
 - 02 - Floor
 - 03 - Floor
 - Roof
 - 3D Views
 - 03 - Floor Public - Day Rendering
 - 03 - Floor Public - Night Rendering
 - Balcony View
 - Building Courtyard
 - From Parking Area
 - {3D - Robert.Defeo}**
 - {3D}
 - Elevations (Building Elevation)



ProjectWise

Documents

- ModernArchitecture
 - Work in progress
 - eTransmit
 - Detach From Central
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: Architecture.rvt
 Discipline: Undefined
 Document: C:\ARI\Modern Architecture\Architecture.rvt
 Phase: Undefined
 Suitability: Undefined
 Type: Undefined

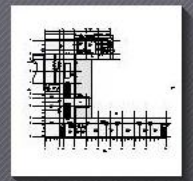
- Linking to a CAD file in ProjectWise



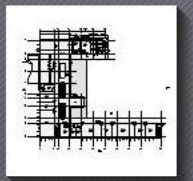
Advanced
Revit Integration

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Architecture



Sample Architecture
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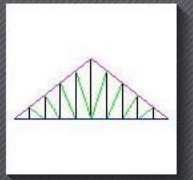
Sample Structure
Project

Families

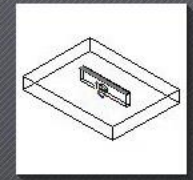
- Open...
- New...
- New Conceptual Mass...



Sample Architecture
Family



Sample Structure
Family



Sample Systems
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ProjectWise

Documents

- ModernArchitecture
 - Work in progress
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 - Detach From Central
 - Mechanical Link
 - Structural Link
 - Environment Mappings
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Assets

Components

Persons

Name: ModernArchitecture
Default PDF Printer: Adobe PDF
Description: ModernArchitecture
Update attributes on Open: Yes
Update attributes on Publish: Yes
Update Project on Open: Yes
Use copy instead of symbolic links: Yes

- Publishing an i-model to ProjectWise



Advanced
Revit Integration

Architecture_Coordination.rvt - 3D View: {3D}

Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Modify Bentley

Modify View Templates Visibility/ Graphics Show Hidden Lines Remove Hidden Lines Cut Profile Render Render in Cloud Render Gallery 3D View Section Callout Plan Views Drafting View Schedules Sheet Title Block Matchline View Revisions View Reference Guide Grid Viewports Switch Windows Close Hidden User Interface

Properties

3D View

3D View: {3D} Edit Type

Graphics

View Scale	1 : 100
Scale Value 1:	100
Detail Level	Fine
Parts Visibility	Show Original
Visibility/Graphics ...	Edit...
Graphic Display O...	Edit...
Discipline	Architectural
Show Hidden Lines	By Discipline
Default Analysis D...	None
Sun Path	<input type="checkbox"/>

Extents

[Properties help](#) Apply

Project Browser - Architecture_Coordination.rvt

Views (all)

- Floor Plans
 - 01 - Entry Level
 - 01 - Entry Level - Furniture Layout
 - 02 - Floor
 - 03 - Floor
 - Roof
 - Site
- Ceiling Plans
 - 01 - Entry Level
 - 02 - Floor
 - 03 - Floor
 - Roof
- 3D Views
 - 02 - Floor Public Day Rendering



ProjectWise

Documents

- Revit 2017
 - Work in progress
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: Revit 2017
 Description: Revit 2017
 Update attributes on Open: No
 Update attributes on Publish: No
 Update Project on Open: Yes

- Publishing DWG files to ProjectWise



Advanced
Revit Integration

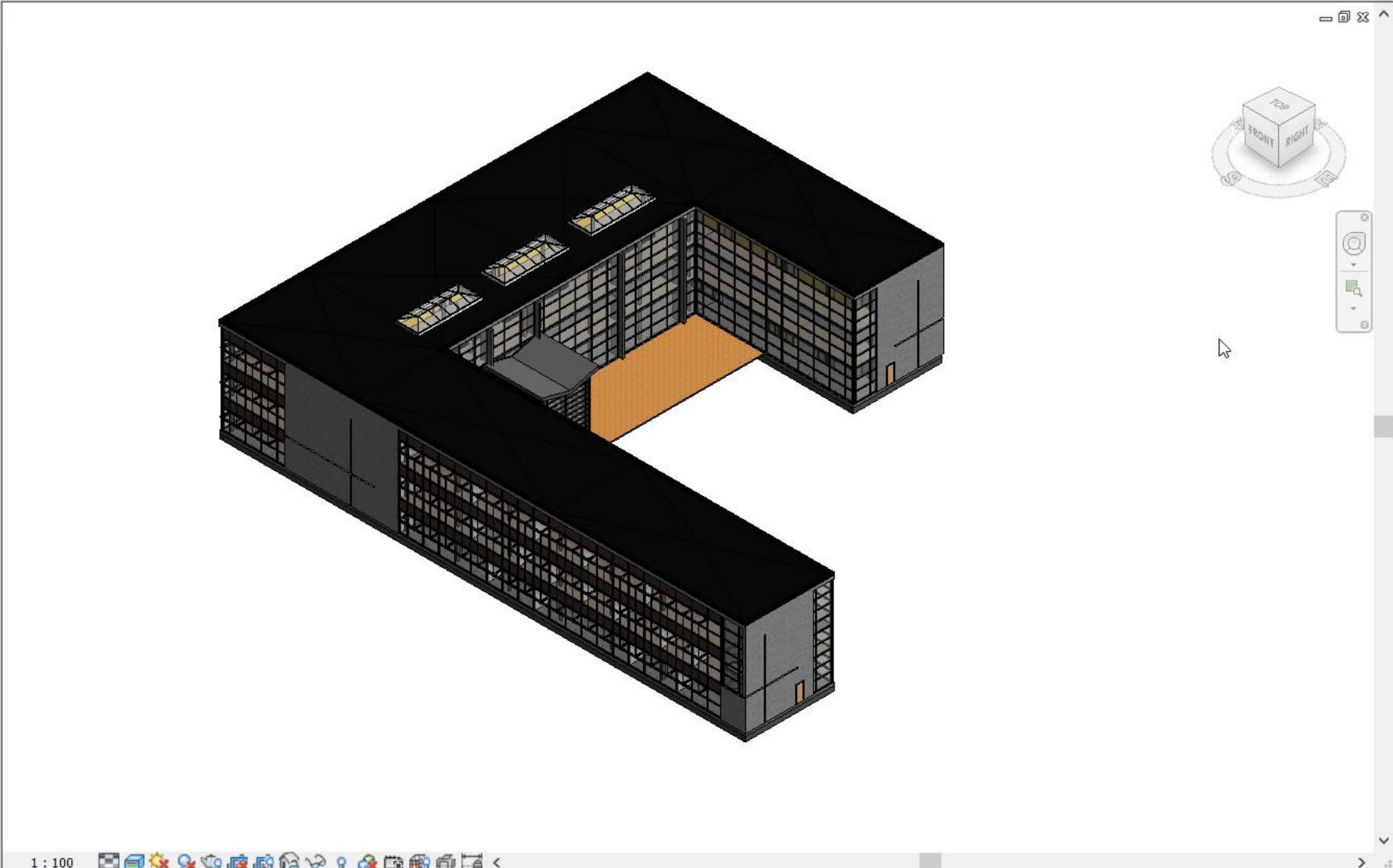
File Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Modify Bentley

Modify View Templates Visibility/ Graphics Show Hidden Lines Render Render in Cloud Render Gallery Filters Remove Hidden Lines Cut Profile

3D View Section Callout Plan Views Drafting View Schedules Sheet Title Block Matchline View Revisions View Reference Guide Grid Viewports

Switch Windows Close Hidden Tile User Interface

- Views (all)
- Floor Plans
 - 01 - Entry Level
 - 01 - Entry Level - Furnitur
 - 02 - Floor
 - 03 - Floor
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 - Site
- Ceiling Plans
 - 01 - Entry Level
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 - 03 - Floor
 - Roof
- 3D Views
 - 03 - Floor Public - Day Re
 - 03 - Floor Public - Night I
 - Balcony View
 - Building Courtyard
 - From Parking Area
 - {3D - Robert.Defeo}**
 - {3D}
- Elevations (Building Elevation)
 - Courtyard Elevation - Sou
 - East
 - North
 - South
 - West
- Detail Views (Detail)
 - Detail 0
- Renderings
 - From Parking Area_3pm
- Drafting Views (Detail)
 - Roofing Termination Det
- Walkthroughs
 - Fly into Building
- Area Plans (Gross Building)



ProjectWise

- Documents
 - ModernArchitecture
 - Work in progress
 - eTransmit
 - Detach From Central
 - Mechanical Link
 - Structural Link
 - CAD Link
 - Environment Mappings
 - Project Mappings
- Assets
- Components
- Persons

Name: Architecture.rvt
Discipline: Undefined
Document: C:\ARI\Modern Architecture\Architecture.rvt
Phase: Undefined
Suitability: Undefined
Type: Undefined

- Publishing PDF files to ProjectWise



Advanced
Revit Integration

File Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Modify Bentley

Modify Wall Door Window Component Column Roof Ceiling Floor Curtain System Grid Railing Ramp Stair Model Text Model Line Model Group Room Separator Tag Room Tag Area Area Boundary By Face Shaft Vertical Wall Level Grid Set Ref Plane Viewer Datum Work Plane

Project Browser - Architecture_Robert...

- Views (all)
 - Floor Plans
 - 01 - Entry Level
 - 01 - Entry Level - Furnitur
 - 02 - Floor
 - 03 - Floor
 - Roof
 - Site
 - Ceiling Plans
 - 01 - Entry Level
 - 02 - Floor
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 - 3D Views
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 - Balcony View
 - Building Courtyard
 - From Parking Area
 - (3D - Robert.Defeo)**
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 - Elevations (Building Elevation)
 - Courtyard Elevation - Sou
 - East
 - North
 - South
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 - Detail Views (Detail)
 - Detail 0
 - Renderings
 - From Parking Area_3pm
 - Drafting Views (Detail)
 - Roofing Termination Det
 - Walkthroughs
 - Fly into Building
 - Area Plans (Gross Building)



ProjectWise

Documents

- ModernArchitecture
 - Work in progress
 - eTransmit
 - Detach From Central
 - Mechanical Link
 - Structural Link
 - CAD Link
 - Published DWG
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: Architecture.rvt
Discipline: Undefined
Document: C:\ARI\Modern Architecture\Architecture.rvt
Phase: Undefined
Suitability: Undefined
Type: Undefined

- Creating Environment Mapping



Advanced
Revit Integration

Properties

Sheet

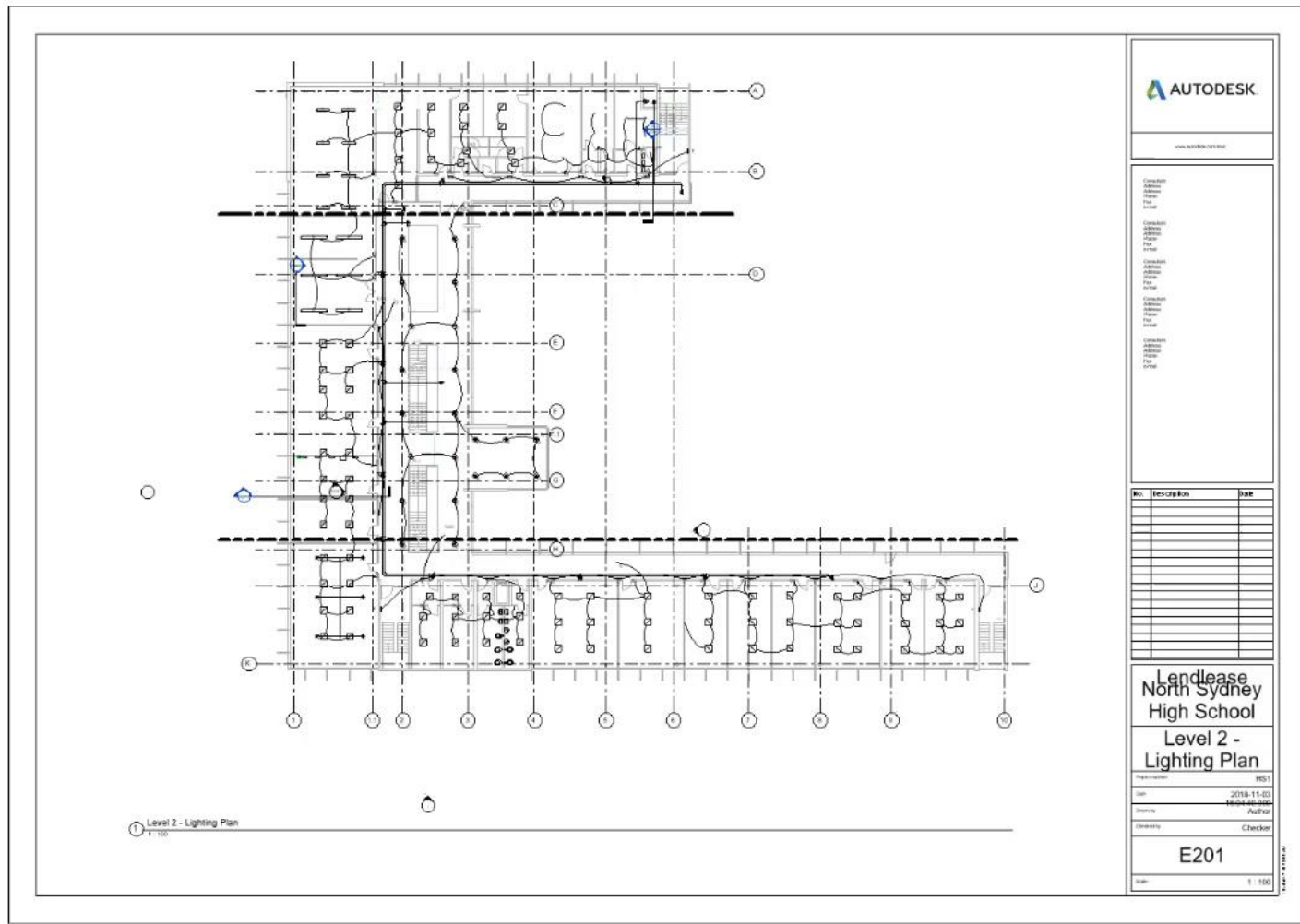
Sheet: Level 2 - Lighting Plan Edit Type

Scale	1:100
Text	
pwAssetCode	HS1
pwOriginatorCode	BEN
pwZoneCode	Z0
pwLevel	L2
pwTypeCode	DR
pwRoleCode	E
pwSerialNo	00201
pwFileNo	HS1-BEN-Z0-L2-DR-E-00201
pwDesignStatus	S0
pwSuitability	Initial Status or WIP
pwAssetDesc	North Sydney High School
pwOriginatorDesc	Bentley Systems Pty Ltd
pwZoneDesc	No Zone Applicable
pwLevelDesc	Level 2
pwTypeDesc	2D Drawing
pwRoleDesc	Electrical Engineer
pwRevVer	P01.1
pwRevNote	First Issue
pwRevDate	10/10/09
pwSheetSize	A0

Project Browser - rme_basic_sample_project1.rvt

Sheets (all)

- E101 - Electrical Power Riser Diagram
 - Elevation: Power Riser - East
 - Elevation: Power Riser - North
- E201 - Level 2 - Lighting Plan**
 - Floor Plan: Level 2 - Lighting Plan
- E301 - North Level 1 - Lighting Plan
 - Floor Plan: North Level 1 Lighting Plan
 - Section: Section 6
 - Section: Section 18
- E601 - Panel Schedules
- M100 - MECHANICAL LEGEND
 - Legend: ABBREVIATIONS
 - Legend: Diffuser Legend
 - Legend: HVAC_SM_DUCT TYPE
 - Legend: HVAC_SM_DUCT_CONDITION
 - Legend: HVAC_SM_DUCT...



ProjectWise

Documents

- HS1-BEN-Z0-XX-M3-M-00001
 - Work in progress
 - Standards
 - Civil XRF - Site
 - Mechanical - 2D Drawing
 - Revit Families - Published
 - Revit Families - Source
 - eTransmit
 - Backup
 - Electrical - Report
 - Electrical - 2D Drawing
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

- Publishing PDF files to ProjectWise with mapped naming



Advanced
Revit Integration

File Architecture Structure Systems Insert Annotate Analyze Massing & Site Collaborate View Manage Add-Ins Modify Bentley

Modify View Templates Visibility/ Graphics Filters Thin Lines Show Hidden Lines Remove Cut Render Render in Cloud Render Gallery 3D View Section Callout Plan Views Elevation Drafting View Duplicate View Legends Schedules Scope Box Sheet View Title Block Revisions Guide Matchline View Reference Viewports Switch Windows Close Hidden Replicate Cascade Tile User Interface

Properties

3D View

3D View: (3D) Edit Type

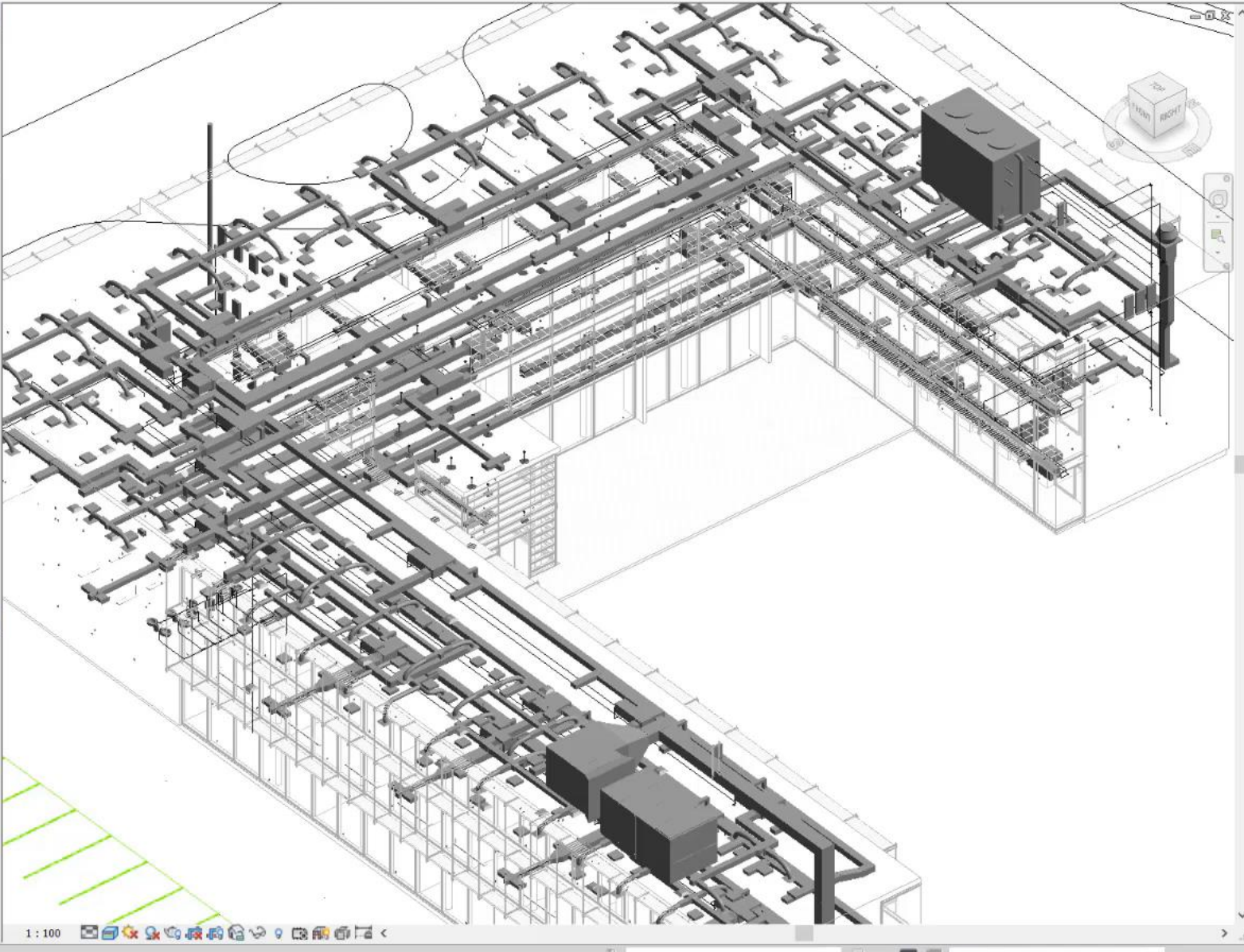
Scale Value	1:	100
Detail Level	Medium	
Parts Visibility	Show Both	
Visibility/Graphics Overrides	Edit...	
Graphic Display Options	Edit...	
Discipline	Mechanical	
Show Hidden Lines	By Discipline	
Default Analysis Display Style	None	
Sub-Discipline		
View Classification		
Sun Path	<input type="checkbox"/>	
Extents		
Crop View	<input type="checkbox"/>	
Crop Region Visible	<input type="checkbox"/>	
Annotation Crop	<input type="checkbox"/>	
Far Clip Active	<input type="checkbox"/>	
Far Clip Offset	304800.0	
Section Box	<input type="checkbox"/>	
Camera		
Rendering Settings	Edit...	
Locked Orientation	<input type="checkbox"/>	
Perspective	<input type="checkbox"/>	

Properties help Apply

Project Browser - rme_basic_sample_project1.rvt

Sheets (all)

- E101 - Electrical Power Riser Diagram
 - Elevation: Power Riser - East
 - Elevation: Power Riser - North
- E201 - Level 2 - Lighting Plan
 - Floor Plan: Level 2 - Lighting Plan
- E301 - North Level 1 - Lighting Plan
 - Floor Plan: North Level 1 Lighting Plan
 - Section: Section 6
 - Section: Section 18
- E601 - Panel Schedules
- M100 - MECHANICAL LEGEND
 - Legend: ABBREVIATIONS
 - Legend: Diffuser Legend
 - Legend: HVAC_SM_DUCT TYPE
 - Legend: HVAC_SM_DUCT_CONDITION
 - Legend: HVAC_SM_DUCT



ProjectWise

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 - Mechanical - 2D Drawing
 - Revit Families - Published
 - Revit Families - Source
 - eTransmit
 - Backup
 - Electrical - Report
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: HS1-BEN-Z0-XX-M3-M-00001

Default PDF Printer: Adobe PDF

Description: HS1-BEN-Z0-XX-M3-M-00001

ProjectWise Project: North Sydney High School

Update attributes on Open: Yes

Update attributes on Publish: Yes

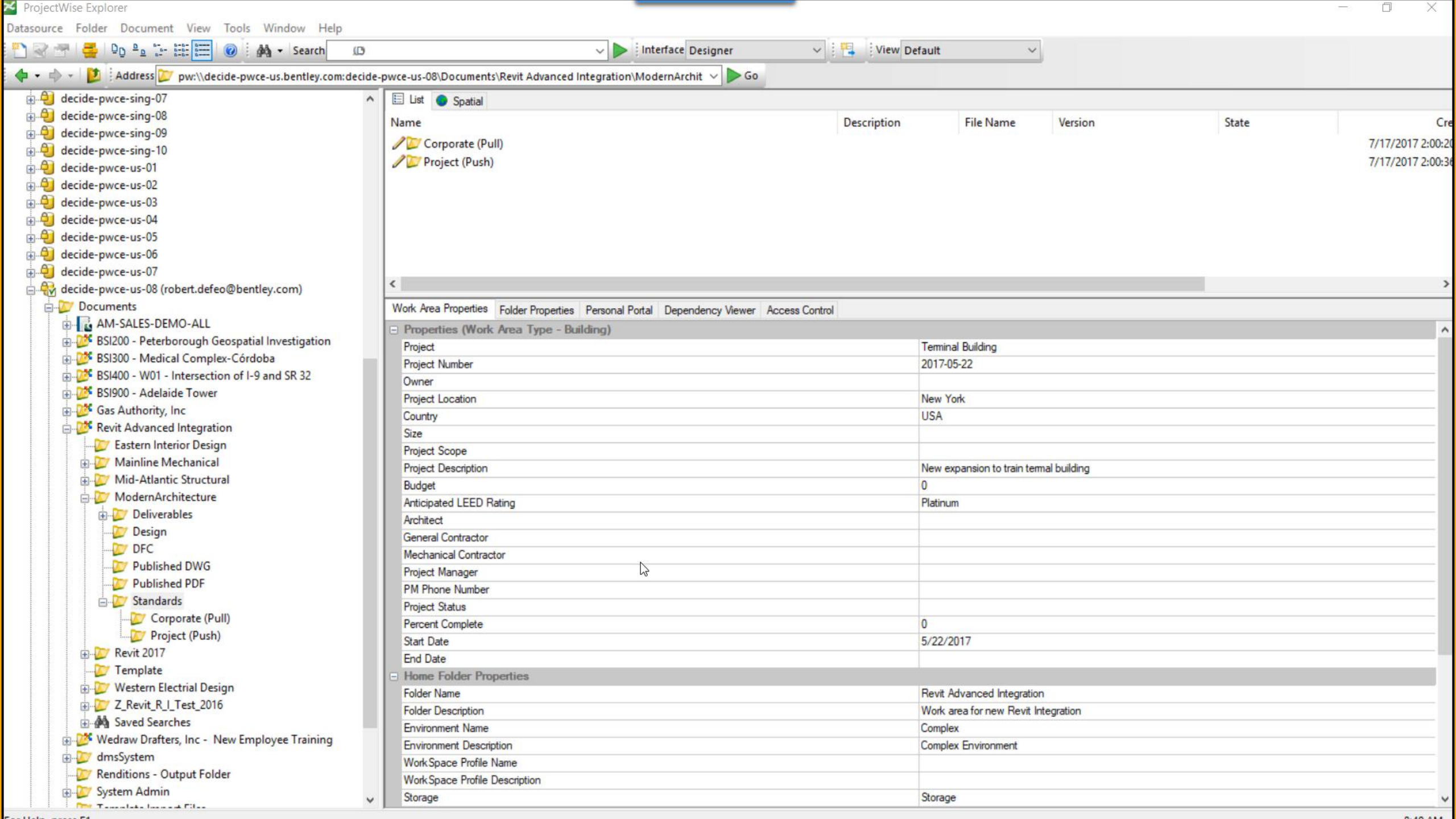
Update Project on Open: Yes

Use copy instead of symbolic links: Yes

- Publishing Revit Families (Project Standards) to ProjectWise



Advanced
Revit Integration



decide-pwce-sing-07
decide-pwce-sing-08
decide-pwce-sing-09
decide-pwce-sing-10
decide-pwce-us-01
decide-pwce-us-02
decide-pwce-us-03
decide-pwce-us-04
decide-pwce-us-05
decide-pwce-us-06
decide-pwce-us-07
decide-pwce-us-08 (robert.defeo@bentley.com)
Documents
AM-SALES-DEMO-ALL
BSI200 - Peterborough Geospatial Investigation
BSI300 - Medical Complex-Córdoba
BSI400 - W01 - Intersection of I-9 and SR 32
BSI900 - Adelaide Tower
Gas Authority, Inc
Revit Advanced Integration
Eastern Interior Design
Mainline Mechanical
Mid-Atlantic Structural
ModernArchitecture
Deliverables
Design
DFC
Published DWG
Published PDF
Standards
Corporate (Pull)
Project (Push)
Revit 2017
Template
Western Electrical Design
Z_Revit_R_I_Test_2016
Saved Searches
Wedraw Drafters, Inc - New Employee Training
dmsSystem
Renditions - Output Folder
System Admin
Template Import Files

Name	Description	File Name	Version	State	Cre
Corporate (Pull)					7/17/2017 2:00:20
Project (Push)					7/17/2017 2:00:36

Work Area Properties	Folder Properties	Personal Portal	Dependency Viewer	Access Control
Properties (Work Area Type - Building)				
Project	Terminal Building			
Project Number	2017-05-22			
Owner				
Project Location	New York			
Country	USA			
Size				
Project Scope				
Project Description	New expansion to train temal building			
Budget	0			
Anticipated LEED Rating	Platinum			
Architect				
General Contractor				
Mechanical Contractor				
Project Manager				
PM Phone Number				
Project Status				
Percent Complete	0			
Start Date	5/22/2017			
End Date				
Home Folder Properties				
Folder Name	Revit Advanced Integration			
Folder Description	Work area for new Revit Integration			
Environment Name	Complex			
Environment Description	Complex Environment			
Work Space Profile Name				
Work Space Profile Description				
Storage	Storage			

- Pulling Revit Families (Corporate Standards) from ProjectWise



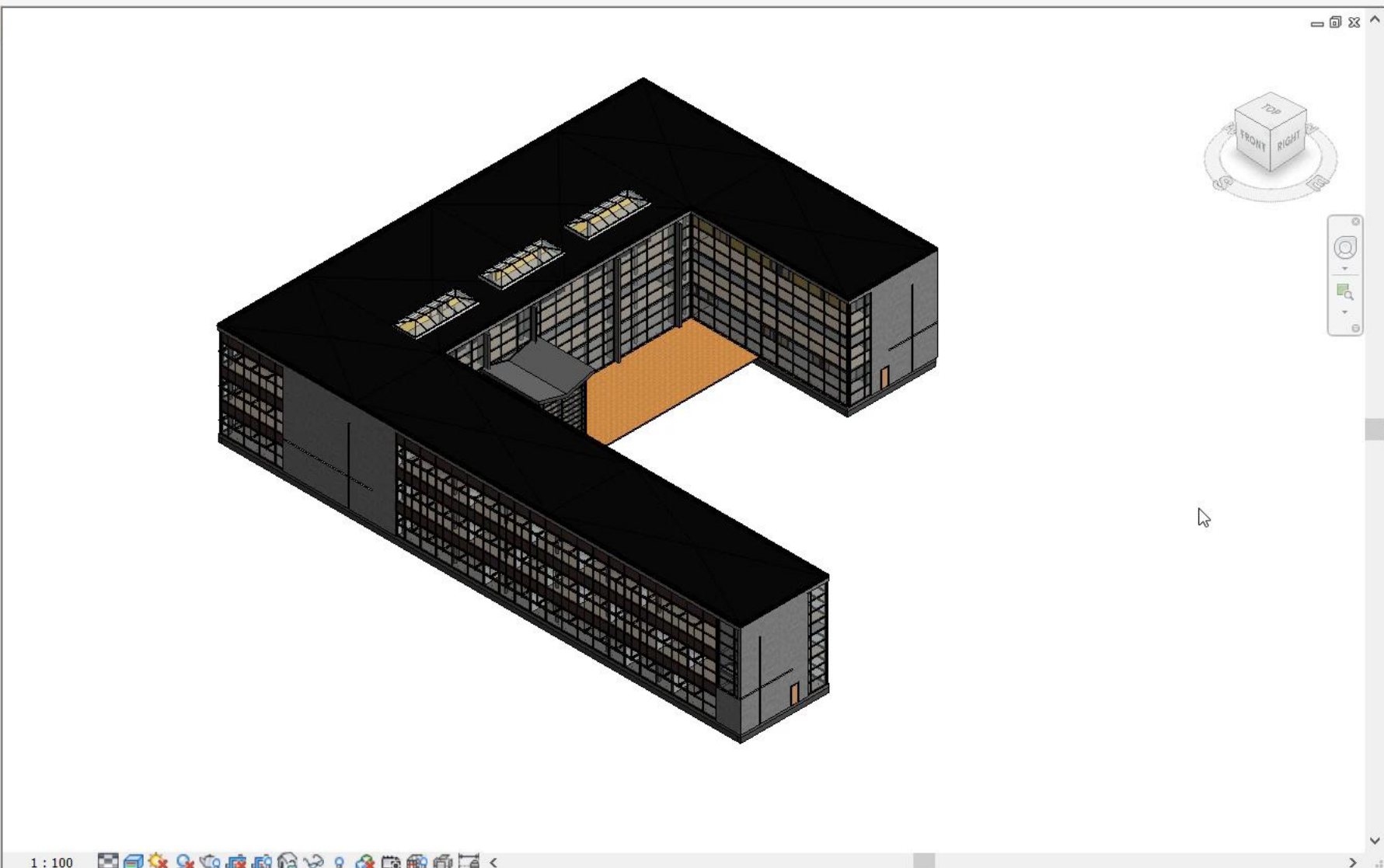
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 - Fly into Building
 - Area Plans (Gross Building)



ProjectWise

Documents

- ModernArchitecture
 - Work in progress
 - eTransmit
 - Detach From Central
 - Mechanical Link
 - Structural Link
 - CAD Link
 - Published DWG
 - Published PDF
 - Environment Mappings
 - Project Mappings

Assets

Components

Persons

Name: ModernArchitecture
Default PDF Printer: Adobe PDF
Description: ModernArchitecture
Update attributes on Open: Yes
Update attributes on Publish: Yes
Update Project on Open: Yes
Use copy instead of symbolic links: Yes

Benefits: ProjectWise Advanced Revit Integration



- Revit users
 - Use preferred LAN/WAN to optimizes Revit performance
 - Stay inside Revit
 - Do not have to copy files manually
- Administrators and BIM managers
 - Enforce project CAD standards more efficiently
 - Manage Revit content more effectively
 - Connect the entire project with ProjectWise Connection Services
- Projects
 - Less rework
 - Fewer construction delays
 - Improved margins

