

# VIRTUAL DESIGN &



Information in this document is subject to change without notice. Companies, names and data used in examples are fictitious.

Copyright ©2023 by InEight. All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express permission of InEight.

Microsoft Windows, Internet Explorer and Microsoft Excel are registered trademarks of Microsoft Corporation.

Although InEight Model has undergone extensive testing, InEight makes no warranty or representation, either express or implied, with respect to this software or documentation, its quality, performance, merchantability, or fitness for purpose. As a result, this software and documentation are licensed "as is", and you, the licensee are assuming the entire risk as to its quality and performance. In no event will InEight be liable for direct, indirect, special, incidental or consequential damages arising out of the use or inability to use the software or documentation.

Release 23.10 Last Updated: 08 December 2023



# CONTENTS

0.1 InEight Model Overview 0.1.1 Easily Share Models and Information	21 21
LESSON 1 – INSTALLATION	23
1.1 Installation	24
1.1.1 Steps	24
Install the InEight Model desktop application	24
1.2 Plugins	24
1.3 Launch Model	25
1.3.1 Model not integrated with InEight Platform	25
1.3.2 Model integrated with InEight Platform	25
1.3.3 Considerations	25
1.4 Model cache	26
1.4.1 Move cache to a new location	27
1.4.2 Considerations	27
1.4.3 Steps	27
Moving your existing InEightModel_Cache folder	27
Lesson 1 Review	28
Lesson 1 Summary	28
LESSON 2 – PROJECTS	29
2.1 Create a project	30
Create a project integrated with InEight Platform	30
Create a project not integrated with InEight Platform	30
2.2 Load a Project	31
2.2 Step by Step 1 – Load a Project	32
2.2.1 Manage sync	33
2.2.2 Remove projects from cache	34

2.3 Create a New Project from Template	35
2.3.1 Considerations	36
2.3.2 Steps	37
Create a New Project from Template	37
Lesson 2 Review	38
LESSON 3 – MODEL STREAMS	41
3.1 Model streams overview	41
3.2 Config Settings	42
3.2.0.1 Overview - Configuring Model Streams Parameters tab	47
3.2 Step by Step 1 – Config Settings - Parameters	48
3.2 Step by Step 2 – Config Settings - Scale / Rotate / XYZ	51
3.2 Step by Step 3 – Config Settings - Rename Model Stream	53
3.2 Step by Step 4 – Config Settings - Link to a different Model Stream	55
3.3 Export Settings	60
3.3.0.1 Export Settings options:	60
3.3.1 Steps	61
Export Settings	61
3.4 Model Revisions	63
3.4.0.1 Model with Same Name	63
3.4.0.2 Model with a Revised Name	64
3.4 Step by Step 1 – Resolve Model Conflict	65
3.5 Analyze Model Changes	67
3.5 Step by Step 1 – Analyze Model Changes	69
LESSON 4 – PROJECT STRUCTURE	73
4.1 Project Structure Overview	74
4.1.1 Project Structure Panel	74
4.2 Organize Model Streams	76
4.2 Step by Step 1 – Create Groups	76
4.2 Step by Step 2 – Delete Groups	80
4.2 Step by Step 3 – Creating a Model Stream Placeholder	82
4.3 Model Stream Management	84
4.3 Step by Step 1 – Change the Active Model Stream Revision	84
4.3 Step by Step 2 – Update Model Stream Revisions	87
4.3 Step by Step 3 – Disable Model Streams	87
4.3 Step by Step 4 – Remove Model Streams	88
4.3 Step by Step 5 – Adding Model Streams from Other Projects	90
4.3 Step by Step 6 – Publish a Model Stream into a Placeholder	92

4.4 Model Stream Permissions	
4.4 Step by Step 1 – Apply Permissions to Groups	
Lesson 4 Review	
Lesson 4 Summary	
LESSON 5 – USER INTERFACE	
5.1 Viewer Interface	
5.1.1 Docking Panels:	
5.2 Show Model Spots	
5.2 Step by Step 1 – Show Model Spots	
5.3 Navigation	
5.3.0.1 First Person Navigation	
5.4 Selection	
5.4.0.1 Right Click Menu	
5.5 Selection Mode	
5.5.1 Selection Mode Indicator	
5.5.2 Selection Mode - Last Object	
5.5.3 Selection Mode - First Object	
5.5.4 Selection Mode - IWP	
5.5.5 Selection Mode - CWP	
5.5.6 Selection Mode - Element	131
5.5.7 Selection Mode - Tag	
5.6 Hot Keys	
5.7 User Settings	
5.7.1 Settings	
5.7.2 Mouse / Keyboard Mapping	144
5.7.3 Choose Default Zoom Behavior	
5.7.4 Coordinate Display Units	
5.7.5 Background Color	147
5.7.5.1 Choose Selection Display Style	
5.7.6 Invert Scroll Wheel in First Person	
5.8 Create New Markup	
5.9 Grids	
5.9 Step by Step 1 – Toggle on or off grids	
Lesson 5 Review	
Lesson 5 Summary	
LESSON 6 – PROJECT UPDATES AND HISTORY	
6.1 Command History	
6.2 Project Updates	

6.3 Project History	
Lesson 6 Review	
Lesson 6 Summary	
LESSON 7 – TAGS AND OBJECTS	
7.1 Tags and Objects Overview	
7.1.1 Tags and Objects Panel	
7.1.1.1 Objects Tab	
7.1 Step by Step 1 – Toggle Model Streams Visibility	
7.1.1.2 Tags Tab	
7.2 Create and Edit Tags	171
7.2.1 Manually Create and Edit Custom Tags	171
7.2 Step by Step 1 – Creating Tags	
7.2.2 Delete a Tag	
7.2 Step by Step 2 – Deleting Tags	177
7.3 Create and Edit Dynamic Tags	177
7.3 Step by Step 1 – Creating Dynamic Tags	
7.3 Step by Step 2 – Editing a Dynamic Tag	
7.4 Assign and Remove Tags	
7.4.1 Assigning Tags	
7.4 Step by Step 1 – Assigning Tags	
7.4.2 Removing Tags	
7.4 Step by Step 2 – Removing Tags	
7.5 Copy Metadata from Model to Excel	
7.5 Step by Step 1 – Copy Metadata from Model to Excel	
7.6 Tag Data Exporter	
7.6 Step by Step 1 – Export Tag Data to CSV file	
/./ Import Tags from Excel	
7.7 Step by Step 1 – Import Lags from Excel	
7.8 Select Model Objects Via Excel	
7.8 Step by Step 1 – Select Model Objects via Excel	
7.9 Create Tables of External Data	
7.9.1 Identify the model Unique ID	
7.9 Step by Step 1 – Identify the model Unique ID	
7.9.2 Add information to Generic Table	208
7.9 Step by Step 2 – Aud Information to Generic Table	200 210
7.9 Step by Step 3 – Import information to Conoria Table	210 21∩
7.9 / Refresh existing table data	21U 211

7.9 Step by Step 4 – Refresh existing table data	
7.9.5 Close Database Tables	
7.9 Step by Step 5 – Close database tables	
Lesson 7 Review	
Lesson 7 Summary	214
LESSON 7 – DATA TRANSFORMATION OPERATIONS	
7.1 Data Transformation Operations (DTO) Overview	
7.1.1 DTO tab	
7.1.2 Selector tab	
7.1.3 Actions tab	
7.2 Create a DTO	
7.2.1 DTO Tab	
7.2.1.1 Add a DTO Group Folder	
7.2.1.2 Add a DTO	
7.2.1.3 Rename a DTO	
7.2.2 Selector Tab	
7.2.3 Actions Tab	
1.1 DTO Examples	
1.2 Clean up and normalize model data	
1.2.1 Group similar models into a tag	
1.2.2 Convert dimensional text data into a number	
1.2.3 Convert inches to feet	
1.2.3.1 Convert text format to number format	
1.2.3.2 Convert piping length from inches to feet	
1.3 Identify and add additional model data	
1.3.1 Identify model data	
1.3.1.1 Identify and use AG/LB Piping	
1.3.1.2 Identify and use AG/SB	
1.3.2 Add weight to steel members using length	
1.3.2.3 Convert weight from pounds to tons	
1.4 Concatenate model data	
1.4.1 Make unique tag values for multiple objects	
1.5 Parse model data	
1.5.1 Parse system information	
1.6 Quantify model data	
1.6.1 Extract quantities from model	
1.6.1.1 Quantities by Count	
1.6.1.2 Quantities by area	
1.6.1.3 Quantities by volume	

1.6.1.4 Quantities by tag	
1.6.1.5 Access quantities via Excel	
1.7 Validate Model Data	
1.7.1 Validate model data is compliant	
1.7.1.1 Validate specific model data exists	
1.7.1.2 Validate model data for specific format	
LESSON 2 – STYLES	
2.1 Styling Overview	
2.1.1 Launch Styling Menu	
2.2 Create and Manage Style Sets	
2.2 Step by Step 1 – Create a Style Set	
2.2 Step by Step 2 – Edit a Style Set	
2.2 Step by Step 3 – Delete a Style Set	
2.3 Create and Edit Styles	
2.3 Step by Step 1 – Create a New Style	
2.3 Step by Step 2 – Edit a Style	
2.3 Step by Step 3 – Set a Style as a Default	
2.3 Step by Step 4 – Delete a Style	
2.4 Apply Styles to Tags	
2.4 Step by Step 1 – Apply a Style to a Tag	
2.5 Assign Styles Using Excel	
2.5 Step by Step 1 – Color Excel Cells	
2.6 Style Legend	
Lesson 2 Review	
Lesson 2 Summary	
LESSON 3 – MASTER PRESETS	
3.1 Master Presets Overview	
3.1.1 Master Preset Editor	
3.1.2 Reset Workspace	303
3.1.3 Right Click Menu Features	304
3.2 Create and Manage Master Presets	
3.2 Step by Step 1 – Creating a Master Preset	
3.2.1 Master preset object visibility maximum dialog box	
3.2 Step by Step 2 – Editing a Master Preset	
3.2 Step by Step 3 – Editing a Master Preset - Model View	
3.2 Step by Step 4 – Deleting a Master Preset	
3.3 Organize Master Presets	

3.3 Step by Step 1 – Grouping Master Presets	
3.3 Step by Step 2 – Set a Master Preset as the Project Default	
3.4 Share and Export Master Presets	316
3.4 Step by Step 1 – Sharing a Master Preset	
3.4 Step by Step 2 – Exporting Master Presets	
Lesson 3 Review	319
Lesson 3 Summary	319
LESSON 4 – COORDINATION - CLASH MANAGER	
4.1 Clash Manager Overview	
4.2 Create and Manage Coordination Rules	
4.2.1 Considerations	
4.2.2 Steps	
Create a coordination rule	
Edit a coordination rule	
Export rules	328
Import rules	
4.3 Tolerance Settings	329
4.3.1 Steps	
Create rules for Expand, Sphere, and Cylinder tolerance settings	
4.4 Create and Interrogate Clash Results	
4.4.1 Considerations	
4.4.2 Steps	
Create clash results	
4.5 Create and Manage Coordination Rule Groups	
4.5.1 Considerations	
4.5.2 Steps	
Create a coordination rule group	
Export rules groups	
4.6 Show Duplicate Objects	
4.6.0.1 Export duplicate objects	
Lesson 4 Review	
Lesson 4 Summary	
LESSON 5 – COORDINATION - ISSUE MANAGER	
5.1 Issue Manager Overview	
5.2 Create and Manage Coordination Issues	345
5.2.1 Considerations	
5.2.2 Steps	
Add folders and sub-folders to organize issues	

Create a non-geometric clash issue	. 345
Create a coordination issue from clash results	.346
Add markup	. 348
Edit an issue	.348
Import issues	.349
Export issues	.350
Update issues	. 352
Delete a coordination issue	352
5.3 Coordination Issue Reporting	352
Access Issues via Excel Plugin for Reporting	.353
Lesson 5 Review	.356
Lesson 5 Summary	.356
LESSON 6 – ARCHIVE	.357
6.1 Archive Overview	.358
6.1.1 Archive Library	.360
6.1.1.1 Library Tab	.360
6.2 Manage Documents	.361
6.2 Step by Step 1 – Import Documents	.361
6.2 Step by Step 2 – Download Documents	.363
6.2 Step by Step 3 – Organize Documents	.365
6.2 Step by Step 4 – Delete Documents or Folders	365
6.2 Step by Step 5 – Accessing Document Information	.367
6.2 Step by Step 6 – Apply Permissions to Folders	
6.2 Step by Step 7 – Search Documents	.371
6.3 Create and Manage Labels	. 371
6.3 Step by Step 1 – Create and Apply a Label to a Document	. 371
6.3 Step by Step 2 – Apply an Existing Label to a Document	.375
6.3 Step by Step 3 – Apply or Remove Labels within the Document Info	
area	.377
6.3 Step by Step 4 – Filter Documents by Labels	.379
6.4 Link and Manage Docs to Tags	.380
6.4 Step by Step 1 – Link Documents to Tags	.381
6.4 Step by Step 2 – Associate a Specific Page within a PDF document	
to a Tag	.382
6.4 Step by Step 3 – View and/or Remove an Object Tag Link via the	
Document Information Window	384
6.4 Step by Step 4 – View and/or Remove a Document Link via the	
Selection Tab	.385

Lesson 6 Review	387
Lesson 6 Summary	387
LESSON 7 – SELECTION INFO	389
7 1 Selection Info Overview	390
7 1 1 Selection Information Panel	390
7.1.2 General Tab	391
7.1.3 Tags Tab	391
7.1.4 Style Tab	.393
7.1.5 Documents Tab	394
7.1.6 Object Properties Tab	. 396
7.1.7 Linked Data	. 397
7.1.7.1 Selection Filter	
Lesson 7 Review	400
Lesson 7 Summary	400
LESSON 8 – SECTIONING	401
8.1 Sectioning Overview	402
8.1.1 Sectioning Panel	402
8.1.2 Sectioning Icon	403
8.2 Create and Apply Sectioning	.404
8.2 Step by Step 1 – Apply Sectioning Using the Set Box	. 404
8.2 Step by Step 2 – Apply Sectioning by Dragging and Dropping a Tag	406
8.2 Step by Step 3 – Apply Sectioning by the Offset	407
8.2 Step by Step 4 – Move Sectioning Panes with Grips	407
8.2 Step by Step 5 – Reset the Sectioning Box to Model Boundary	408
8.2 Step by Step 6 – Use Sectioning with Master Presets	409
Lesson 8 Review	411
Lesson 8 Summary	411
LESSON 9 – MEASUREMENTS	413
9.1 Measurements Overview	414
9.1.1 Measurement window	414
9.2 Apply and Manage Measurements	416
9.2 Step by Step 1 – Enter Measurement Mode	417
9.2 Step by Step 2 – Take a Measurement	417
9.2 Step by Step 3 – Delete a Measurement	421
9.2 Step by Step 4 – Clear Measurements	421
9.2 Step by Step 5 – Organize Measurements	422
Lesson 9 Review	426

Lesson 9 Summary	426
LESSON 9 – MODEL EXPORTS	426
9.1 IFC Export	427
9.1 Step by Step 1 – IFC Export	427
9.2 OBJ Export	428
9.2 Step by Step 1 – OBJ Export	
	130
9 1 Model-based Takeoff Overview	/31
9.1 Model and Estimate integration	431 121
9.1.1 Model and Estimate integration	431 422
9.1.2 Requirements for model and Estimate integration	43Z
9.2 Model to Estimate Integration	4JZ
9.2 Step by Step 1 – Estimate to Model Integration	432
9.2.1 Model Integration configuration	433
9.2 Step by Step 2 - Run Model DTOS	434 //38
9.2.2 Sync Model Quantities III Estimate	430
9.2 Select and frame Model objects	430 ///0
9.2 Step by Step 4 – Select and frame Model objects	440
9 2 4 User Defined Fields	
9 2 Step by Step 5 – Bule setup UDE fields 12 and 13	442
9 2 Step by Step 6 – Rule setup UDF fields 12 through 15	443
LESSON 10 – ELEMENTS	445
10.1 Elements Overview	446
10.1.1 Elements Panel	446
10.2 Create and Manage Elements	448
10.2 Step by Step 1 – Create an element	449
10.2 Step by Step 2 – Create elements from a selection of objects	454
10.2 Step by Step 3 – Create elements from the tags	457
10.2 Step by Step 4 – Edit an element	457
10.2 Step by Step 5 – Unlink objects from an element	458
10.2 Step by Step 6 – Delete an element	
Lesson 10 Review	
Lesson 10 Summary	460
LESSON 10 – ADVANCED WORK PACKAGING & WORKFACE	
PLANNING	461
10.1 Work Packaging Overview	461

10.1.1 AWP Panel	462
10.2 Creating & Managing CWA, CWP & IWP	464
10.2 Step by Step 1 – Create a Construction Work Area (CWA)	465
10.2 Step by Step 2 – Create a Construction Work Package (CWP)	467
10.2 Step by Step 3 – Create a Installatoin Work Package (IWP)	470
10.2 Step by Step 4 – Deleting AWP Structure	472
10.2 Step by Step 5 – Filter AWP Structure	473
10.3 User management	473
10.4 User management	473
LESSON 10 – ADMIN TOOLS	474
10.1 Introduction	474
10.1.1 Browser compatibility	474
10.2 Login	474
10.2.1 Log-in Options	476
10.2.1.1 Username and Password Credentials	476
Reset password	476
10.2.1.2 SSO by Microsoft	477
10.2.1.3 SSO by Google	478
10.2.2 Switch account	478
10.3 Slide-out Panel	479
10.4 Projects	480
10.5 User Access Overview	482
10.6 User Account Management	483
10.6.1 Users & groups tab	484
10.6.1.1 Users	484
10.6.1.2 Create single sign-on or password user	485
Add user	486
10.6 Step by Step 1 – Add user	486
Edit user	487
10.6 Step by Step 2 – Edit user	487
Activate user	487
Deactivate user	487
Reset a user's password (SSO off)	487
Set a user's temporary password (SSO off)	487
Delete a pending user	487
Resend activation email (SSO off)	488
10.6.1.3 Groups	488
Add a group	488
Delete a group	488

Rename a group	
10.6.2 Project permissions tab	
10.6.3 Export	

# **STEP-BY-STEP PROCEDURES**

Install the InEight Model desktop application	24
Moving your existing InEightModel_Cache folder	27
Create a project integrated with InEight Platform	. 30
Create a project not integrated with InEight Platform	30
2.2 Step by Step 1 – Load a Project	32
Create a New Project from Template	37
3.2 Step by Step 1 – Config Settings - Parameters	. 48
3.2 Step by Step 2 – Config Settings - Scale / Rotate / XYZ	51
3.2 Step by Step 3 – Config Settings - Rename Model Stream	53
3.2 Step by Step 4 – Config Settings - Link to a different Model Stream	55
Export Settings	61
3.4 Step by Step 1 – Resolve Model Conflict	. 65
3.5 Step by Step 1 – Analyze Model Changes	69
4.2 Step by Step 1 – Create Groups	. 76
4.2 Step by Step 2 – Delete Groups	80
4.2 Step by Step 3 – Creating a Model Stream Placeholder	. 82
4.3 Step by Step 1 – Change the Active Model Stream Revision	. 84
4.3 Step by Step 2 – Update Model Stream Revisions	. 87
4.3 Step by Step 3 – Disable Model Streams	87
4.3 Step by Step 4 – Remove Model Streams	. 88
4.3 Step by Step 5 – Adding Model Streams from Other Projects	. 90
4.3 Step by Step 6 – Publish a Model Stream into a Placeholder	92
4.4 Step by Step 1 – Apply Permissions to Groups	100
5.2 Step by Step 1 – Show Model Spots	.112
5.9 Step by Step 1 – Toggle on or off grids	152
7.1 Step by Step 1 – Toggle Model Streams Visibility	169
7.2 Step by Step 1 – Creating Tags	.172
7.2 Step by Step 2 – Deleting Tags	177

7.3 Step by Step 1 – Creating Dynamic Tags	178
7.3 Step by Step 2 – Editing a Dynamic Tag	
7.4 Step by Step 1 – Assigning Tags	
7.4 Step by Step 2 – Removing Tags	
7.5 Step by Step 1 – Copy Metadata from Model to Excel	
7.6 Step by Step 1 – Export Tag Data to CSV file	
7.7 Step by Step 1 – Import Tags from Excel	
7.8 Step by Step 1 – Select Model Objects via Excel	
7.9 Step by Step 1 – Identify the model Unique ID	
7.9 Step by Step 2 – Add information to Generic Table	
7.9 Step by Step 3 – Import information to Generic Table	
7.9 Step by Step 4 – Refresh existing table data	
7.9 Step by Step 5 – Close database tables	213
2.2 Step by Step 1 – Create a Style Set	
2.2 Step by Step 2 – Edit a Style Set	
2.2 Step by Step 3 – Delete a Style Set	
2.3 Step by Step 1 – Create a New Style	
2.3 Step by Step 2 – Edit a Style	
2.3 Step by Step 3 – Set a Style as a Default	
2.3 Step by Step 4 – Delete a Style	
2.4 Step by Step 1 – Apply a Style to a Tag	
2.5 Step by Step 1 – Color Excel Cells	
3.2 Step by Step 1 – Creating a Master Preset	
3.2 Step by Step 2 – Editing a Master Preset	
3.2 Step by Step 3 – Editing a Master Preset - Model View	
3.2 Step by Step 4 – Deleting a Master Preset	
3.3 Step by Step 1 – Grouping Master Presets	
3.3 Step by Step 2 – Set a Master Preset as the Project Default	
3.4 Step by Step 1 – Sharing a Master Preset	
3.4 Step by Step 2 – Exporting Master Presets	

Create a coordination rule	324
Edit a coordination rule	326
Export rules	328
Import rules	328
Create rules for Expand, Sphere, and Cylinder tolerance settings	330
Create clash results	. 334
Create a coordination rule group	338
Export rules groups	339
Add folders and sub-folders to organize issues	. 345
Create a non-geometric clash issue	345
Create a coordination issue from clash results	. 346
Add markup	348
Edit an issue	348
Import issues	. 349
Export issues	. 350
Update issues	352
Delete a coordination issue	352
Access Issues via Excel Plugin for Reporting	. 353
6.2 Step by Step 1 – Import Documents	. 361
6.2 Step by Step 2 – Download Documents	363
6.2 Step by Step 3 – Organize Documents	365
6.2 Step by Step 4 – Delete Documents or Folders	365
6.2 Step by Step 5 – Accessing Document Information	367
6.2 Step by Step 6 – Apply Permissions to Folders	368
6.2 Step by Step 7 – Search Documents	371
6.3 Step by Step 1 – Create and Apply a Label to a Document	371
6.3 Step by Step 2 – Apply an Existing Label to a Document	. 375
6.3 Step by Step 3 – Apply or Remove Labels within the Document Info area .	377
6.3 Step by Step 4 – Filter Documents by Labels	. 379
6.4 Step by Step 1 – Link Documents to Tags	381

6.4 Step by Step 2 – Associate a Specific Page within a PDF document to a Tag	382
6.4 Step by Step 3 – View and/or Remove an Object Tag Link via the Document Information Window	384
6.4 Step by Step 4 – View and/or Remove a Document Link via the Selection Tab	385
8.2 Step by Step 1 – Apply Sectioning Using the Set Box	404
8.2 Step by Step 2 – Apply Sectioning by Dragging and Dropping a Tag	406
8.2 Step by Step 3 – Apply Sectioning by the Offset	407
8.2 Step by Step 4 – Move Sectioning Panes with Grips	. 407
8.2 Step by Step 5 – Reset the Sectioning Box to Model Boundary	408
8.2 Step by Step 6 – Use Sectioning with Master Presets	. 409
9.2 Step by Step 1 – Enter Measurement Mode	. 417
9.2 Step by Step 2 – Take a Measurement	417
9.2 Step by Step 3 – Delete a Measurement	421
9.2 Step by Step 4 – Clear Measurements	421
9.2 Step by Step 5 – Organize Measurements	422
9.1 Step by Step 1 – IFC Export	427
9.2 Step by Step 1 – OBJ Export	. 429
9.2 Step by Step 1 – Estimate to Model integration	432
9.2 Step by Step 2 – Run Model DTOs	. 434
9.2 Step by Step 3 – Sync Model quantities	. 438
9.2 Step by Step 4 – Select and frame Model objects	. 440
9.2 Step by Step 5 – Rule setup UDF fields 12 and 13	442
9.2 Step by Step 6 – Rule setup UDF fields 12 through 15	443
10.2 Step by Step 1 – Create an element	449
10.2 Step by Step 2 – Create elements from a selection of objects	454
10.2 Step by Step 3 – Create elements from the tags	457
10.2 Step by Step 4 – Edit an element	. 457
10.2 Step by Step 5 – Unlink objects from an element	458

10.2 Step by Step 6 – Delete an element	459
10.2 Step by Step 1 – Create a Construction Work Area (CWA)	465
10.2 Step by Step 2 – Create a Construction Work Package (CWP)	467
10.2 Step by Step 3 – Create a Installatoin Work Package (IWP)	470
10.2 Step by Step 4 – Deleting AWP Structure	472
10.2 Step by Step 5 – Filter AWP Structure	473
10.6 Step by Step 1 – Add user	486
10.6 Step by Step 2 – Edit user	487

This page intentionally left blank.



# 0.1 INEIGHT MODEL OVERVIEW

InEight Model is a platform for model and information aggregation that hides the complexity of managing versions and sharing information across teams.

Import, contribute, modify, and recall models and information in a variety of ways. InEight Model supports BIM to FM, coordination, field management, design renderings, visual scheduling, sensor monitoring, and more. Collect and reuse data throughout the design, construction, and operations phases without the current limitations of: managing file types, delays in uploading and downloading files, version control, reentering data, and the difficulties of managing numerous point-solution applications.

#### 0.1.1 Easily Share Models and Information

When an internet connection is available, you are able to share models, information, documents, visual styles, and much more with other users. We store your data on our servers and sync it to your local hard drive whenever you're online. Offline, your project data is kept in a central location on your computer. When you're ready share, login and sync online. As teammates sync and share, you can choose to view and interact with the information that only pertains to you

This page intentionally left blank.



# **LESSON 1 – INSTALLATION**

Lesson Duration: 30 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Install InEight Model
- Install plugins
- Launch InEight Model

**Topics in this Lesson** 

# **1.1 INSTALLATION**

InEight Model is cloud-hosted software with a Microsoft Windows-based application focused on 3D model content. Model is not a model-authoring environment; rather, it provides the capability to transform engineering and architectural models into construction and owner models.

The Model Windows application is supported by plug-ins and a locally stored cache folder (InEightModel\_Cache). Before you download and run the Model application on your desktop, review the "*Client System and Mobile Device Requirements Specification*".

NOTE Local admin permissions are required to install InEight Model.

#### 1.1.1 Steps

#### Install the InEight Model desktop application

- 1. Open https://ineight.com/ineight-software-downloads/ in your web browser.
- 2. Under InEight Model, select **Model Installer Download** to begin downloading the **InEightModel-64bit.exe** file to your downloads folder.
- 3. After the download is complete, double-click the file to run the application.

## **1.2 PLUGINS**

Model content is added to InEight Model either from an authoring application using plugins or through IFC import. Each model imported to InEight Model is considered a Model Stream. The plugins listed below are installed as part of Model Application installation and updated with Model application, with the expection of the Excel plugin.

Excel plugin (Windows)	Excel provides a means to add custom data into InEight Model and a means for visual reporting.
Revit plugin (Windows)	The Revit plugin provides a means for exporting models from Revit into InEight Model.
AutoCAD plugin	The AutoCAD plugin provides a means for exporting models from

(Windows)	AutoCAD into InEight Model.
Navisworks plugin (Windows)	The Navisworks plugin provides a means for exporting models from Navisworks into InEight Model.
IFC import (Windows)	The IFC import provides a means for importing IFC (Industry Foundation Class) type files into InEight Model.

## **1.3 LAUNCH MODEL**

#### 1.3.1 Model not integrated with InEight Platform

In Model (not integrated with Platform) you can create projects, user accounts, assign permissions, and assign users to projects. When you create a new user, the user receives an email with login information.

To launch Model, you can click the Model icon on your desktop or select Model from the Windows Start menu. At the login screen, you can enter the login information provided in the email. You can also sign in using single-sign-on (SSO).

After you sign in, the Load Project dialog window shows the projects that you have been assigned to. Select a project to open.

InEight Model has online and offline capabilities which can be toggled at the login screen and within the application. The best practice is to sign in online to ensure your local cache data is up to date with the latest project information, and then use Model offline when needed.

#### **1.3.2 Model integrated with InEight Platform**

In Model (integrated with Platform) you can create projects, user accounts, and assign permissions. When you create a new user, the user receives an email with SSO login information.

To launch Model, you can click the Model icon on your desktop or select Model from the Windows Start menu. At the login dialog box, you can sign in using your SSO information provided in the email.

After you sign in, the Load Project dialog window shows all Model projects created in Platform.

#### **1.3.3 Considerations**

You must have administrative permissions

## **1.4 MODEL CACHE**

Model stores your project's data in a local folder named cache. The cached project data is accessible when you are offline. To use the project offline, it is recommended to sign in online to sync the latest project information.

The default cache location is %localappdata%/InEight/Model/cache directory.

If your existing installation is not in the default location, switching to the default path is highly recommended. To view your current path and update the default location click the ellipsis in your sign in screen > Settings > **Cache Path**. You can then select a new location.



The cache must remain local on the computer and cannot be synced live to external locations.

# NOTE Do not delete your InEight Model cache folder. In rare instances you can delete the folder to fix cache issues.

#### 1.4.1 Move cache to a new location

If you installed Model before 23.10, you can change the location of your InEightModel\_Cache folder in Settings > **Cache Path**. Changing the location of your cache folder without moving your existing cache folder data will force Model to recache the project data. This can be time-consuming depending on the number of projects and their size.

#### **1.4.2 Considerations**

- The registry key located in Computer\HKEY\_CURRENT\_USER\SOFTWARE\InEight\Model\Cache defines the path of where the InEightModel\_Cache folder resides. Updating the path in the registry will not relocate the existing cache folder to a new defined location
- If the cache folder is deleted, Model must re-cache the project data. This can be time-consuming.

#### 1.4.3 Steps

#### Moving your existing InEightModel\_Cache folder

To move your existing Model cache folder, do the following recommended process. The process must be done on the local machine of each user.

- 1. Open Windows File Explorer, and then create a new folder or open the new folder location.
- 2. Open another Windows File Explorer window, and then select your existing InEight Mode\_Cache folder location.
- 3. Move your existing InEightModel\_Cache folder into the new location.
- 4. Launch the InEight Model application.
- 5. Click the **Settings** icon in the login window, and then change the Cache Path to the new location.
- 6. Sign in to InEight Model.

#### Lesson 1 Review

- 1. What should you do prior to downloading and installing InEight Model?
  - a. Delete your authoring tool from your computer
  - b. Check your system's requirements
  - c. Download the correct plugin for your authoring tool
  - d. None of the above
- 2. What does In Eight Model offer to support authoring tools?
  - a. AutoCAD plugin
  - b. Revit plugin
  - c. IFC importer
  - d. Navisworks
  - e. All of the above
- 3. You can create a new model from InEight model.
  - a. True
  - b. False

#### Lesson 1 Summary

As a result of this lesson, you can:

- Install InEight Model
- Install plugins
- Launch InEight Model



# **LESSON 2 – PROJECTS**

Lesson Duration: 20 minutes

**Lesson Objectives** 

After completing this lesson, you will be able to:

• Create and load projects

**Topics in this Lesson** 

# 2.1 CREATE A PROJECT

#### Create a project integrated with InEight Platform

When Model is integrated with InEight Platform, all projects are created in Platform.

#### Create a project not integrated with InEight Platform

1. From the top menu, select File > New Project.

<mark>ile <u>E</u>dit <u>V</u>iew Obje</mark>	ect <u>L</u> ogic <u>/</u>	Archive	Track	<u>H</u> e
<u>N</u> ew Project		Ctrl+N		
New Project From Tem	olate			
<u>L</u> oad Project		Ctrl+L		
<u>S</u> ave Project		Ctrl+S		
Project History		Ctrl+Sł	nift+H	
Project Updates		Ctrl+U		
S <u>y</u> nc Status				
Project Structure		Ctrl+P		
Save Image As				
Export Selected to OBJ				
Export Selected to IFC.				
Import			•	
E <u>x</u> it		Ctrl+Q		

- The New Project dialog box opens.
- 2. Name the new project.
- 3. Click OK.

• The creation in progress dialog opens.



4. Click OK.

NOTE After a project is created it cannot be renamed.

## 2.2 LOAD A PROJECT

Logging into an account provides access to projects in that account. To access a specific project, you first must load it.

NOTE

InEight Model integrated with InEight Platform will show all projects listed in Platform in the Load Project dialog box.

#### 2.2 Step by Step 1 - Load a Project

1. Select File > Load Project....

InEight MODEL		
<u>File E</u> dit <u>V</u> iew Object <u>L</u> ogic	<u>A</u> rchive Track	<u>H</u> elp
I <u>N</u> ew Project	Ctrl+N	
New Project From Template		
Load Project	Ctrl+L	
<u>S</u> ave Project	Ctrl+S	
Project History	Ctrl+Shift+H	
Project Updates	Ctrl+U	
Sync Status		
Project Structure	Ctrl+P	
Save Image As		
Export Selected to OBJ		
Export Selected to IFC		
Import	•	
E <u>x</u> it	Ctrl+Q	

- The Load Project dialog box opens and shows all projects you have access to.
- 2. Select a project.
- 3. Select OK.

Load Model Project			×
Load Project Manage Sync			Last Revision: 2/24/21 9:40:02 am
Project Name	<ul> <li>Load Status</li> </ul>	Sync Status	
DEMO - LOW VALLEY OIL	<ul> <li>Current</li> </ul>	Synced	
DEMO - POWER PLANT	<ul> <li>Current</li> </ul>	Synced	Revision Notes
	Current	Synced	Replace 1 records in Project
	<ul> <li>Current</li> </ul>	Synced	Setting
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	Preview —
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	
	<ul> <li>Current</li> </ul>	Synced	Preview not available
	• Current	Synced	
			V OK 🔀 Cance

Right-click on a project. This provides additional options:

- Set as Highest Priority: This pushes the project to the top of the list when projects are being Synced.
- Stop Syncing
- Hide Project From All Users: Administrators only have this functionality

#### 2.2.1 Manage sync

You can only open models that have been cached to your computer. Manage Sync allows you to select and reorder the projects you want to sync. After projects are synced, they are synced into the InEightModel\_Cache folder.

🖲 Load Mod	lel Project				×
Load Project	Manage Sync				Last Revision:
Download	Project Name	Load Status	Sync	Sync Status	User:
	DEMO - RIDGEGATE CAMPUS	<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
1000		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	Revision Notes
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
▲ Тор	DEMO - LOW VALLEY OIL	<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	Preview —
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
^ Тор	DEMO - POWER PLANT	<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	Preview not available
		<ul> <li>Current</li> </ul>	$\checkmark$	Synced	
_			-		
					V OK X Cancel

- Download column: select on ^ Top to move a project to the top of the list to be synced first
- Sync column: If Sync is checked, then the project will sync. If Sync is un-checked then the project will not sync

#### 2.2.2 Remove projects from cache

You now can free up disk space by using the Remove project from cache option. When you finish working on a project, remove the project from your cache in the Load Model Project > Load Project tab. Right-click on a project from the list, and then select **Remove Project from Cache** to remove the projects cache.

pad Project Manage Sync			Last Revision: 6/ <u>10/2 10:20:25</u> ar
Project Name	<ul> <li>Load Status</li> </ul>	Sync Status	
AACE Conference	<ul> <li>Current</li> </ul>	Synced	User: Dale
APAC Demo - Ridgegate	<ul> <li>Current</li> </ul>	Synced	□ Revision Notes ————————————————————————————————————
DEMO - ALL INDUSTRIES	<ul> <li>Current</li> </ul>	Synced	Add 'What is InFight
DEMO - LOW VALLEY OIL	<ul> <li>Current</li> </ul>	Synced	Model.pdf' to Document
DEMO - OIL & GAS	<ul> <li>Current</li> </ul>	Synced	Archive: Add leaf to /
DEMO - POWER PLANT	<ul> <li>Current</li> </ul>	Synced	Add 'File_1.txt' to Document
DEMO - RIDGEGATE CAMP	PUS • Current	Synced	Archive: Add leaf to /
DEMO - ROAD BRIDGE	<ul> <li>Current</li> </ul>	Synced	Add 'File_2.txt' to Document Library
Low Valley Oil Demo	<ul> <li>Current</li> </ul>	Synced	Archive: Add leaf to /
Model Training	<ul> <li>Current</li> </ul>	Synced	Set as Highest Bright
PD - Sandbox	<ul> <li>Current</li> </ul>	Synced	Stee Service
RidgeGate Campus Demo	<ul> <li>Current</li> </ul>	Synced	Stop Syncing
SE - POWER PLANT	<ul> <li>Current</li> </ul>	Synced	Remove Project From Cache Preview not available
SE - RIDGEGATE CAMPUS	2 • Current	Synced	Hide Project From All Users
			✓ ОК Х Сапо

NOTE

You must exit InEight Model once a project has been removed before accessing and working in another project.

# 2.3 CREATE A NEW PROJECT FROM TEMPLATE

In Model (not integrated with InEight Platform) you can create new projects from existing projects as a template. The following items, if existing in the template project, will be created with the new project:

- Project Structure:
  - The Project Structure folder structure will be present in the new project.
  - · No existing model streams will be present in the new project.
- Master Presets:
  - The Master Preset folder structure will be present in the new project.
  - No existing Master Presets will be present in the new project.
- · Styles:
  - All existing Style Sets with assignments to existing and non-existing tags with be present in the new project.

- All existing customer Styles will be present in the new project.
- Tags:
  - All existing custom tags will be present in the new project.
- Archive Library:
  - The Archive Library folder structure will be present in the new project.
  - No existing documents or labels will be present in the new project.

**NOTE** InEight Model integrated with InEight Platform does not provide a means to create a Model specific project from a template.

#### 2.3.1 Considerations

- You must have admin permissions to create new projects.
- You can use projects as templates when Model is not integrated with InEight Platform.
#### 2.3.2 Steps

#### Create a New Project from Template

1. Select File > New Project from Template.



- The New Project dialog box will open
- 2. Type in the name of the New Project.



• The Template Project dialog box will open.

3. Select the project to use as the desire Template, then click OK.



• A validation dialog box will open



4. Click **Yes**, if the information is correct.



5. Click **OK**, then load your new project

#### Lesson 2 Review

- 1. Before you can import a model, you should first create a project.
  - a. True
  - b. False
- 2. The Manage Sync folder allows you to sync projects to your \_\_\_\_\_
  - a. Model Library
  - b. Cache Folder

- c. Model Stream
- d. Plugin Folder

As a result of this lesson, you can:

• Create and load a project

This page intentionally left blank.



# LESSON 3 – MODEL STREAMS

# 3.1 MODEL STREAMS OVERVIEW

A model that is published (imported) into InEight Model is referred to as a Model stream, whether they are exported from a design application or imported from a design file type using plugin tools.

Each plugin tool has standard tags that are included in every published model as shown in the following tables:

Tag category	Tag value
Model Stream	<model name=""></model>
Tag_Level	<level names=""></level>
Tag_PhysicalType	Window, Floor, Door, etc.
Revit_Family_Type	<family instance="" names=""></family>
Revit_Function	<walls and="" floors=""></walls>
Material Name - CAD	<face material="" names=""></face>

#### Revit

#### AutoCAD

Tag category	Tag value
Model Stream	<model name=""></model>
ACAD Block	<block names=""></block>

#### AutoCAD (continued)

Tag category	Tag value
ACAD Layer	<layer names=""></layer>
ACAD Material	<material names=""></material>

#### IFC

Tag category	Tag value
Model Stream	<model name=""></model>
IFC Class	<ifc class="" names=""></ifc>
IFC Layer	<ifc layer="" names=""></ifc>
IFC Material	<ifc material="" names=""></ifc>
IFC Name	<ifc name="" names=""></ifc>

# **3.2 CONFIG SETTINGS**

Config Options gives you the ability to define the parameters, or metadata, that will export along with the geometry, as well as providing some advanced options for applying various transformations.

The **Config Options** column in the **Model Exporter** will report three different states.

- 1. **Basic** Indicates the Config Options have not been defined by you. This is the default state of an unpublished Model Stream.
- 2. **Previous -** Uses the same Config Options as a previous export. This indicates that you're updating an existing Model Stream and not publishing a new one. The settings are pulled from the previous project and are not dependent on the Model Stream being updated from the same computer, or even by the same user.
- 3. **Custom -** Indicates that the Config Options have been modified during your current session.

TIP Config Options can be configured in bulk by multi-selecting the listed Model Files in the Model Exporter window then clicking within any of the Config Options field that corresponds with your selection.

Architectural at New Dia	
V Architectural.rvt New Dasic PLA	YGROUND - RIDGEGATE/3 Story Building
Mechanical.rvt New Basic PLA	YGROUND - RIDGEGATE/3 Story Building
Change Export Settings / Show Info	

The Parameters tab in the Config Options window allows the user to define what metadata will be exported along with the geometry. The Basic Tags are also displayed along the top of the search bar. Basic Tags will be included in every export regardless of configuration.

InEight Exporter	×
Configuring Model Stream: Mechanical.rvt	
Parameters Advanced	
Basic Tags (included in every export)	
Model Tag Level Tag PhysicalType Revit Family Type R	Revit Function Material Name - CAD
<model name=""> <level names=""> Window, Floor, Door, etc. <family instance="" names=""> &lt;</family></level></model>	
<b>C</b> Search	
Parameter Name 🔺 Export Property Create Tag	Tag Alias Name
Air Terminals	
Ceilings	
Columns	
Conduit Fittings	
Conduits	
Constraints	
Curtain Vall Mullions	
Detail Items	
<ul> <li>Dimensions</li> </ul>	
▹ Doors	
Duct Fittings	
Ducts	
Electrical Equipment	
Electrical Fixtures	
Energy Analysis	
Floors	
Show Unselected	Import Parameters Export Parameters
	V OK X Cancel

Choose your desired tags and/or properties by expanding a category and checking the box next to a value. In the image below, we see that the Voltage and Wattage for the Electrical Equipment will be exported as a tag and that the Length and Volume for Structural Columns will be exported as properties. Additionally, clicking in the **Click to rename...** field in the Tag Alias Name column, the Length of the Structural Columns has been renamed to Cut Length. Renaming these values is a quick and easy way to achieve consistency when pulling geometry and metadata from files authored by various different organizations that may be using different values to represent the same data.

lnEight Exporter						×
Configuring Model Stream: Mechan	ical.rvt					
Darameters Advanced						
Parameters Auvanceu						
Basic Tags (included in every expo	t)					
Model Tag_Level Ta	g_PhysicalType	Rev	it_Family_Typ	e	Revit_Function Material Name	e - CAD
<model name=""> <level names=""> Win</level></model>	ndow, Floor, Door, et	c. <far< th=""><th>mily Instance na</th><th>imes</th><th>s&gt; <walls and="" floors=""> <face i<="" material="" th=""><th>names&gt;</th></face></walls></th></far<>	mily Instance na	imes	s> <walls and="" floors=""> <face i<="" material="" th=""><th>names&gt;</th></face></walls>	names>
Q. Search						
	E 18 1		0.17		<b>T</b> 41 11	
Parameter Name	Export Property		Create lag		lag Allas Name	
Mechanical - Flow						
Mechanical Equipment						
Phasing						
Pipe Fittings						
<ul> <li>Pipes</li> </ul>						
Description	✓				Click to rename	
Length	✓				Click to rename	
System Name			✓		Piping System	
System Type			✓		Click to rename	_ 1.1
Plumbing Fixtures						
Revit						
Specialty Equipment						
Sprinklers						
Stairs						
Structural Columns						
Walls			_			
Show Unselected					Import Parameters Export Para	meters
					🗸 ок	X Cancel

With the **Show Unselected** box checked (in the bottom left corner), all available parameters will be displayed. With the **Show Unselected** box un-checked, only the selected parameters will be displayed, this allows the user to easily view the current configuration.



Use the **Import Parameters** and **Exporter Parameters** buttons to save your configuration to a local file or to import a previously saved configuration.



The **Advanced** tab allows Scale, Rotate, and Translate (move) options upon export. Settings configured in the Advanced Options are retained in future model updates.

C InEight Exporter	×
Configuring Model Stream: Mechanical.rvt	
Designed and the second	
Parameters Advanced	
Scale is applied first, followed by Rotation, then Translate.	
Scale Factor	
µ.000000	
Rotate (degrees)	
z 0.0000000	
Translate / Move (meters)	
X 0.000000000 Y 0.00000000 Z 0.00000000	
Rename Model Stream: Mechanical.rvt	
Link to a different Model Stream? Choose different model	
Include Lines in Export	
Export InEight Object IDs as Tags	
V OK X	Cancel

To change the name of the Model Stream simply click in the **Rename Model Stream** field and enter the desired name.

If desired, check the **Include Lines in Export** box to include 2D and 3D line work.

- Scale, Rotate and Translate / Move provides a way to adjust the model as needed up export
- Rename Model Stream provides a way to rename the model file upon export
  - The new name will appear in the Objects panel and as a value within the Tag Category "Model"
- Include Lines in Export provides a way to include 2D and 3D line work upon export

#### 3.2.0.1 Overview - Configuring Model Streams Parameters tab

	ltem	Description
1	Parameter Name	Displays the Property Set Name and the Property Name of the metadata.
2	Export Property	Will export the Property Name with the existing value for each model object.
3	Create Tag	Will utilize the Property Name to create a Tag name with the existing value for each model object.
4	Tag Alias Name	Provides the capability to control what the Tag name is during the export of the model.
5	Export Parameters	Once the desired "Export Property", "Create Tag," and "Tag Alias Name" columns have been selected and filled out, then select Export Parameters to save these settings to use on similar models.
6	Import Parameters	If previous parameters have been exported, then select Import Parameters to populate Parameters.

#### 3.2 Step by Step 1 — Config Settings - Parameters

1. Within the Model Exporter window, select **Basic**.

Export	Model File	Last Update	Updated By	Config Options	Location
<b>v</b>	Architectural.rvt	New		Basic	PLAYGROUND - RIDGEGATE/3 Story Buildi
<b>v</b>	Mechanical.rvt	New		Basic	PLAYGROUND - RIDGEGATE/3 Story Buildi

- The Config Options window opens with the initial focus on parameters
- **NOTE** The Parameters tab in the Config Options window allows the user to define what metadata will be exported along with the geometry.

The Basic Tags are also displayed along the top of the search bar. Basic Tags will be included in every export regardless of configuration.



2. Select the desired tags and/or properties to export with the Model Stream.

InEight Exporter							×
Configuring Model Stream: Mechan	ical.rvt						
Parameters Advanced							
Taranicers Advanced							
Basic Tags (included in every expo	rt)						
Model Tag_Level Ta	g_PhysicalType	Revit	_Family_Typ	e R	Revit_Function Ma	aterial Name	- CAD
<model name=""> <level names=""> Wi</level></model>	ndow, Floor, Door, et	c. <fami< th=""><th>ily Instance na</th><th>mes&gt; &lt;</th><th>Walls and Floors&gt; <fa< th=""><th>ace material na</th><th>ames&gt;</th></fa<></th></fami<>	ily Instance na	mes> <	Walls and Floors> <fa< th=""><th>ace material na</th><th>ames&gt;</th></fa<>	ace material na	ames>
Q Search							
Deremeter Neme			Create Terr		Teg Alies N		
Parameter Name	Export Property		create lag		Tag Allas Na	ame	
Mechanical - Flow							
Mechanical Equipment							
Phasing							
Pipe Fittings							
<ul> <li>Pipes</li> </ul>							- 11
Description	✓				Click to rena	ame	- 1
Length	✓				Click to rena	ame	- 1
System Name			✓	Pipi	ing System		
System Type			✓		Click to rena	ame	- 11
Plumbing Fixtures				_			- 81
Railings							
Revit							
Speciality Equipment							
Stairs							
Structural Columns							
Walls							
		_		_			
Show Unselected					Import Parameters	Export Param	neters
						🗸 ОК 🔅 🔅	X Cancel

- Create Tag will create a tag category and tag value metadata for the relative model objects
  - Column Location Mark, Length and Volume will be the tag categories within InEight Model
- Export Property will create property category and property value metadata for the relative model objects
  - Fire Rating and Manufacturer will be the Property Categories within InEight Model
- Tag Alias name will rename the Category name
  - Length will be renamed to Cut Length during the export
  - Renaming these values is a quick and easy way to achieve consistency when pulling geometry and metadata from files authorized by different organizations that may be using different values to represent the same data

3. Select or unselect **Show Unselected**.



4. Select Import Parameters or Export Parameters.

Import Parameters	Export	Parameters	
~	ЭK	X Cancel	

5. Select **OK** when you have completed.

#### 3.2 Step by Step 2 — Config Settings - Scale / Rotate / XYZ

- 1. Select the Advanced tab from the Model Exporter.
  - The Advanced tab shows options to manipulate the model.
  - If the Scale Factor, Rotate, and/or the XYZ are needed to adjust the model then they

inEight Exporter	×
Configuring Model Stream: Mechanical.rvt	
Parameters Advanced	
Scale is applied first, followed by Rotation, then Translate.	
Scale Factor	
12.000000	
Potato (degrees)	
Translate / Move (meters)	
X 0.000000000 Y 0.00000000 Z 0.00000000	
Rename Model Stream: Mechanical.rvt	
Link to a different Model Stream? Choose different model	
Include Lines in Export	
Export InEight Object IDs as Tags	
	VOK X Cancel

are applied in the displayed order from top to bottom (Scale Factor > Rotate > XYZ).

- 2. Add a scale factor to adjust the scale of the model as needed.
- 3. Add a Rotation angle by degrees as needed.
- 4. Add X, Y, and Z coordinates as needed.
- 5. Click **OK** when done with Config Options.

#### 3.2 Step by Step 3 — Config Settings - Rename Model Stream

- 1. Select the Advanced tab from the Model Exporter.
  - The model file name might change if the designer or architect puts a revision status or date on the file name with every version.
  - The Rename Model Stream lets you rename the model stream without changing the model file name and provides a consistent model stream name for all end users to access.

InEight Exporter	×
Configuring Model Stream: stn_08-arch_khq-01-office1.rvt	
Parameters Advanced	
Scale is applied first, followed by Rotation, then Translate.	
Scale Factor	
1.000000	
Rotate (degrees)	
Z 0.00000000	
Translate / Move (meters)	
X 0.000000000 Y 0.00000000 Z 0.00000000	
Rename Model Stream: ARCH_OFFICE_1	
Link to a different Model Stream? Choose different model	
Include Lines in Export	
Event InEight Object IDe as Tage	
Export intight object its as rags	
	V OK X Cancel

2. Type a Model Stream Name.

- 3. Click **OK** when done with Config Options
  - The Project Structure shows the Renamed Model Stream and, in the Revision History, shows the Model Stream Source File name.



• The Tags and Objects panel shows the Renamed Model Stream in the Object tab for

the project team to use throughout the project.



#### 3.2 Step by Step 4 — Config Settings - Link to a different Model Stream

 In the Model Exporter, you might see a message of "Resolve Model Conflict...\*\*" in the Location column. This is a result of multiple models loaded with similar names. Click Resolve Model Conflict...\*\*

oject: Di	del Exporter				
Export	Model File	Last Update	Updated By	Config Options	Location*
$\checkmark$	stn_08-arch_khq-01-office1.rvt	Fri Feb 5 16:32:05 2021	Dale	Previous	DEMO - RIDGEGATE CAMPUS/OFFICE_1/ARCH_OFFICE_1 (or export new)
$\checkmark$	kla_07-struct_khq-01-office1_rev2.rvt	N/A	N/A	N/A	Resolve Model Conflict**
hange Exp	port Settings / Show Info				
hange Exp	port Settings / Show Info ) has two or more existing models, o	one of which needs to b	pe chosen to I	revise.	

2. If the model stream is not shown, then click Export as New...

Resolve Conflict				>		
Resolve Model Stream conflict for: kla_07-struct_khq-01-office1_rev2.rvt						
Model Stream Name	Last Modified	Modified By	Project Location			
STRUCT_OFFICE_2	Wed Feb 3 16:14:32 2021	Dale	DEMO - RIDGEGATE CAMPUS/OFFICE_2/STRUCT_OFFICE_2			
STRUCT_OFFICE_1	Tue Feb 16 15:43:48 2021	Dale	DEMO - RIDGEGATE CAMPUS/OFFICE_1/STRUCT_OFFICE_1			
STRUCT_GARAGE	Tue Jun 8 10:13:47 2021	Dale	DEMO - RIDGEGATE CAMPUS/PARKING_GARAGE/STRUCT_GARAGE			
Export as New				OK X Cancel		

- 3. Choose a location.
  - You can only select the parent level or a group level location.



- 4. Click OK to close the Choose Location dialog box.
- 5. Click **OK** to close the Resolve Conflict dialog box.

6. Click **Basic** in the Config Options column.

InEight - Mo	odel Exporter				
Project: DI	EMO - RIDGEGATE CAMPUS				
Export	Model File	Last Update	Updated By	Config Options	Location
$\checkmark$	stn_08-arch_khq-01-office1.rvt	Fri Feb 5 16:32:05 2021	Dale	Previous	DEMO - RIDGEGATE CAMPUS/OFFICE_1/ARCH_OFFICE_1 (or export new
<b>v</b>	kla_07-struct_khq+01-office1_rev2.rvt	New	Dale	Basic	DEMO - RIDGEGATE CAMPUS/OFFICE_
Change Ex	port Settings / Show Info				
					Start View Log Close

- 7. Click the **Advanced** tab.
- 8. Click Choose different model...

-	
InEight Exporter	×
Configuring Model Stream: stn_08-arch_khq-01-office1.rvt	
Parameters Advanced	
Scale is applied first, followed by Rotation, then Translate.	
Scala Factor	
1.000000	
Rotate (degrees)	
Z 0.00000000	
Translate / Move (meters)	
Rename Model Stream: APCH_OFFICE_1	
Link to a different Model Stream? Choose different model	
Include Lines in Export	
Export InEight Object IDs as Tags	
	V OK X Cancel

9. In the Choose Location dialog box, select a Model Stream to link to.

Choose Location	×
Choose different Model Stream	to update with: kla_07-struct_khq-01-office1_rev2.rvt
T DEMO - RIDGEGATE CAMI	PUS
▼ OFFICE_1	
ARCH_OFFICE_1	
ELEC_OFFICE_1	
INT_OFFICE_1	
MECH_OFFICE_1	
PLUMB_OFFICE_1	
STRUCT_OFFICE_1	
OFFICE_2	
ARCH_OFFICE_2	
PLUMB_OFFICE_2	
INT_OFFICE_2	
MECH_OFFICE_2	
	✓ OK X Cancel

10. Click **OK** when done with Config Options.

# **3.3 EXPORT SETTINGS**

When available for plugin, Export Settings lets you configure the model location options and the model visibility options.

#### **3.3.0.1 Export Settings options:**

**Revit Location** refers to the coordinate systems contained within the Revit Project and can be defined three ways

- Ask on Export The Model Exporter will prompt the user to select the appropriate coordinate system during export
- Use Revit Project Location Uses the active project location
- Use None -Resets project location to default values

**Export Selected** will require the user to have an active selection prior to initializing the Model Exporter and will only export selected objects

Visibility tells the Model Exporter which geometry to include in the export

- Export Visible Exports all visible content within the 3D view
- Export Visible + Room Volumes Exports all visible content within the 3D view plus room volumes
- Export All Exports all geometry found within the Revit project, even if it's hidden in the active 3D view

Info displays some basic information about your current session

- InEight Connection Displays the current status of the Model Exporter's communication with InEight Model
  - Connected Online Connection is established to the server
- **Disconnected Offline** Not connected to the server. Check your Internet connection or login to your project within InEight Model
- Logged-in as The currently logged in user
- Cache Location The path of the InEightModel\_Cache folder

#### 3.3.1 Steps

#### **Export Settings**

1. In the Model Exporter window, select **Change Export Settings / Show Info** ... to open the Export Settings window.

InEight - M	odel Exporter				×
Project: T	raining				
Export	Model File	Last Update	Updated By	Config Options	Location
	Structural.rev1.rvt	Mon Aug 9 16:29:01 2021	Dale	Previous	;/Structural.rev0.rvt (or export new)
Change Ex	xport Settings / Show	Info			
					Start View Log Close

The Export Settings window opens

Export Settings	×
Revit Location	
Ask on Export	
O Use Revit Project Location	
Use None	
Export Selected	
Visibility	
O Export Visible	
Export Visible + Room Volumes	
Export All (includes hidden geometry + room volumes)	
Info	
InEight Connection: Connected - Online	
Logged-in as: Dale -	
Cache Location: D:/!_FIRMs/Stantec/InEightModel_Cache/	
	OK X Cancel

2. Complete your changes, and then click OK.

# 3.4 MODEL REVISIONS

Model revisions might occur during project execution.

#### 3.4.0.1 Model with Same Name

Follow the same process of the initial exporting from AutoCAD or Revit or importing an IFC file.

InEight - Mo	del Exporter				×
Project: Tr	aining				
Export	Model File	Last Update	Updated By	Config Options	Location
V	Structural.rev0.rvt	Mon Aug 9 16:29:01 2021		Previous	Training/Design Models/Structural.rev0.rvt (or export new)
hange Ex	port Settings / Show 1	Info			
					Start View Log Close

Notice the following parameters while updating the model.

- The Model file is the same file name that you have opened to update.
- The Location is populated from the previous selection and lets you export as a new model.
- The Config Options use the previous settings.

#### 3.4.0.2 Model with a Revised Name

Follow the same procedure of the initial exporting from AutoCAD or Revit or importing an IFC file.

🔘 InEight - Me	odel Exporter				Х
Project: T	raining				
Export	Model File	Last Update	Updated By	Config Options	Location
	Structural.rev1.rvt	Mon Aug 9 16:29:01 2021		Previous	Training/Design Models/Structural.rev0.rvt (or export new)
Change Ex	port Settings / Show	Info			
					Start View Log Close

Notice the Model file has .rev2 added to it, different from the initial file name.

NOTE The system puts the revised model stream in the previously selected location.

#### 3.4 Step by Step 1 — Resolve Model Conflict

1. Select Resolve Model Conflict...

	odel Exporter				)
Project: D	EMO - RIDGEGATE CAMPUS				
Export	Model File	Last Update	Updated By	Config Options	Location*
✓	stn_08-arch_khq-01-office1.rvt	Fri Feb 5 16:32:05 2021		Previous	DEMO - RIDGEGATE CAMPUS/OFFICE_1/ARCH_OFFICE_1 (or export new)
✓	kla_07-struct_khq-01-office1_rev2.rvt	N/A	N/A	N/A	Resolve Model Conflict***
Change Ex	port Settings / Show Info				
Change Ex	port Settings / Show Info	one of which needs to b	be chosen to r	evise.	
Change Ex ** Mode	port Settings / Show Info I has two or more existing models, o	one of which needs to b	be chosen to r	evise,	

- The Resolve Conflict window opens
- 2. Select the applicable model stream to be revised.

Resolve Conflict				×	
Resolve Model Stream conflict for: kla_07-struct_khq-01-office1_rev2.rvt					
Model Stream Name	Last Modified	Modified By	Project Location		
STRUCT_OFFICE_2	Wed Feb 3 16:14:32 2021		DEMO - RIDGEGATE CAMPUS/OFFICE_2/STRUCT_OFFICE_2		
STRUCT_OFFICE_1	Tue Feb 16 15:43:48 2021		DEMO - RIDGEGATE CAMPUS/OFFICE_1/STRUCT_OFFICE_1		
STRUCT_GARAGE	Tue Jun 8 10:13:47 2021		DEMO - RIDGEGATE CAMPUS/PARKING_GARAGE/STRUCT_GARAGE		
Export as New				V OK X Cancel	

3. Select Export as New... if this is a new Model Stream.

Resolve Conflict					
Resolve Model Stream conflict for: kla_07-struct_khq-01-office1_rev2.rvt					
Model Stream Name	Last Modified	Modified By	Project Location		
STRUCT_OFFICE_2	Wed Feb 3 16:14:32 2021		DEMO - RIDGEGATE CAMPUS/OFFICE_2/STRUCT_OFFICE_2		
STRUCT_OFFICE_1	Tue Feb 16 15:43:48 2021		DEMO - RIDGEGATE CAMPUS/OFFICE_1/STRUCT_OFFICE_1		
STRUCT_GARAGE	Tue Jun 8 10:13:47 2021		DEMO - RIDGEGATE CAMPUS/PARKING_GARAGE/STRUCT_GARAGE		
Export as New				OK X Cancel	

• The Choose Location window opens.

4. Select the preferred location in the Project Structure.

Choose Location	×
Choose different Model Stream to update with: kla_07-struct_khq-01-office1_rev2	.rvt
▼ DEMO - RIDGEGATE CAMPUS	
▼ OFFICE_1	11
ARCH_OFFICE_1	11
ELEC_OFFICE_1	11
INT_OFFICE_1	11
MECH_OFFICE_1	11
PLUMB_OFFICE_1	
STRUCT_OFFICE_1	
▼ OFFICE_2	
ARCH_OFFICE_2	
PLUMB_OFFICE_2	
INT_OFFICE_2	
MECH_OFFICE_2	
OK X Can	cel

#### 5. Select **OK** to complete.

**NOTE** When exporting a model with a similar name to more than one model, the system shows **Resolve Model Conflict...** in the location column.

# **3.5 ANALYZE MODEL CHANGES**

Analyze Model Changes provides the ability to compare models over time. The comparison is not limited to two models, the comparison is triggered off two calendar dates, which could include 2 or more model stream revisions.

The comparison will provide which model stream was compared, how many objects were added, how many objects we updated, and how many objects were removed.

Analysis of Model Changes Completed						
Results calculated for						
Model Stream	Objects Added	Objects Updated	Objects Removed			
1 Structure 05.ifc	32	25	6			

The comparison will also create a new Tag Category named Tag\_User with two tag values: (*date range*) (*Model Stream Name*)\_added and (*date range*) (*Model Stream Name*)\_updated.



Also, a Style Set is created within the Styling Panel with the name (date range) (Model Stream Name)



#### 3.5 Step by Step 1 — Analyze Model Changes

- 1. Have two versions of the model stream published.
- 2. Within the Project Structure dialog box, select on a model stream to identify the date range to use for the comparison.



- 3. Close Project Structure dialog box.
- 4. Close Project Structure dialog box.

<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Object	<u>L</u> ux	∐ime	<u>L</u> ogic	<u>A</u> rchive	Pulse	Track	<u>H</u> elp
Model	Compa	rison - S	iteel*		'	Coord	dination			Ctrl+8
			Analy	ze Model	Changes	5				
						Logic	View			

5. Select the Model Stream, set the date time frames, then click OK.

Show Model Changes ×							
Create a Style Set that h	Create a Style Set that highlights changes in the following Model Stream(s):						
Group/Stream Name	Туре						
Structure 05.ifc	Jnknown						
between: 7/25/20	9 🎽 and 8/28/2020 🎽						
Create Style Set: Jul25	Aug28 Structure 05						

• The Analysis of Model Changes Completed dialog box will open

Analysis of Model Changes Completed $\times$						
Results calculated for						
Model Stream	Objects Added	Objects Updated	Objects Removed			
1 Structure 05.ifc	32	25	6			
			V OK			

• Tag\_User category was created with two values "\_added" and "\_updated"



• A Style Set was created coloring the "Added" objects Lime Green and the "Updated" objects Orange

Sty	ling	×
: Sets	<b>Q</b> <i>Search</i>	
Style	▶ Basic	
s, o	<ul> <li>Model Changes Analysis</li> </ul>	
Style	Jul25-Aug28 Structure 05	
07	Jul25-Jul25 Structure 01	
	+ /	ŵ
	Add Edit	Delete


# **LESSON 4 – PROJECT STRUCTURE**

Lesson Duration: 50 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Navigate the project structure panel
- Create and delete model stream groups
- Change active model stream revision and revise model stream revision
- Disable and remove model streams
- Add model streams from other projects

**Topics in this Lesson** 

## 4.1 PROJECT STRUCTURE OVERVIEW

**Project Structure** is where model streams are housed after the export from authoring tools or the import of IFC type files. It provides the ability to interact with model streams by grouping and organizing, removing, temporarily disabling, accessing the revision history, importing other models streams from other projects in the environment, and more.

#### 4.1.1 Project Structure Panel

To access the **Project Structure panel**, Select **File** from the menu bar at the top of the screen. Then, select **Project Structure**.

lnEight MODEL - Training	
<u>File E</u> dit <u>V</u> iew Object <u>L</u> ux	<u>T</u> ime <u>L</u> ogic <u>A</u> rc
<u>N</u> ew Project	Ctrl+N
New Project From Template	
<u>L</u> oad Project	Ctrl+L
<u>S</u> ave Project	Ctrl+S
Project History	Ctrl+Shift+H
Project Updates	Ctrl+U
Sync Status	
Project Structure	Ctrl+P
Save Image As	
Export Selected to OBJ	
Import	•
E <u>x</u> it	Ctrl+Q

This will open the Project Structure panel.

Project Structure	×
Q <sub>Search</sub>	Revision History
<ul> <li>Model Training [Project]</li> <li>ABC Office Building [ModelGroup]</li> <li>Doctor Building [ModelGroup]</li> <li>Light Rail [ModelGroup]</li> <li>Power Plant [ModelGroup]</li> <li>RidgeGate Campus [ModelGroup]</li> <li>XYZ Accounting Building [ModelGroup]</li> </ul>	Source Filename   Date User
	<b>ج</b> Update All
	 OK × Cancel

By selecting the project name within the tree structure, all the project **Revision History** will be displayed. Select on a revision to review the **Revision Notes**.

Project Structure			×
Q <sub>Search</sub>	Revision History		
<ul> <li>Model Training [Project]</li> </ul>	Project Revision Name	Date 👻	User
ABC Office Building [ModelGroup]	Model Training	5/3/2022 5:2	m6admin
<ul> <li>Doctor Building [ModelGroup]</li> </ul>	Model Training	5/3/2022 4:0	Dale
<ul> <li>Light Rail [ModelGroup]</li> </ul>	Model Training	5/3/2022 3:5	Dale
<ul> <li>Power Plant [ModelGroup]</li> </ul>	Model Training	5/2/2022 5:2	Dale
<ul> <li>RidgeGate Campus [ModelGroup]</li> </ul>	Model Training	5/2/2022 2:3	Dale
<ul> <li>XYZ Accounting Building [ModelGroup]</li> </ul>	Devision Nature	1/21/2022 2	
	Update Model Stream 'Structural.rvt' - Update Model Stream 'Structural.rvt' - Update Model Stream 'Structural.rvt' - Update Model Stream 'Structural.rvt' - Add ModelGroup 'OFFICE_1' Add ModelGroup 'OFFICE_2' Add ModelGroup 'PARKING_GARAGE' Add Model 'Architectural.rvt' to Doctor Add Model 'Arg Plot Plan Equipment.r Add Model 'Mec AG Yard Piping.nwd'	version changed version changed Disabled r Building wd' to Power Plant	
			Fy.
Model Streams Group			
			VOK X Cancel

## **4.2 ORGANIZE MODEL STREAMS**

Create groups within the Project Structure tree to organize the model streams for the project. Groups can be created before and or after model streams have been imported into the project. Model Stream Placeholders can also be created identifying anticipated or planned project model streams.

#### 4.2 Step by Step 1 — Create Groups

- 1. Select the project name.
- 2. Select the Group icon.



3. Type in a group name, then click **OK**.

Group Name	$\times$
Enter a name for the new Group(s)	:
New group name	
V OK X Ca	ncel

4. Drag and drop model streams into group folders.

Project Structure			×
<ul> <li>Training [Project]</li> </ul>	Revision History Tags		
✓ Architectural.rvt [Model]	Stream Source Filename	Date 👻	User
Design Models [ModelGroup]	.rev0.rvt [Model]	., <mark>24/2020 11:25 AM</mark>	Dale
Fabrication Models [ModelGroup]         ✓ Mechanical.rvt [Model]         ✓ Structural.rev0.rvt [Model]         ✓ Structural_FAB.rvt [Model]	<sup>23</sup> Structural.rvt	1/23/2020 12:52 PM	Dale
	Revision Note:		
	) nove		€ Update All
			✓ OK × Cancel

#### • Possible results of organized models

Project Structure	Revision History Tags			×
<ul> <li>Design Models [ModelGroup]</li> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> <li>Fabrication Models [ModelGroup]</li> <li>Structural_FAB.rvt [Model]</li> </ul>	Project Revision Name	Date	~	User
	Revision Note:			
				حج Update All
	 		~	OK X Cancel

# NOTE Once a group name has been created it cannot be renamed. A new group name will need to be created, then you can drag and drop the model streams from one group to the other.

#### 4.2 Step by Step 2 — Delete Groups

1. Select the group name to be deleted.

Project Structure				×
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]</li> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> <li>Fabrication Models [ModelGroup]</li> <li>Structural_FAB.rvt [Model]</li> </ul>		Revision History Tags Project Revision Name	Date	✓ User
		Revision Note:		
	O Remove			Update All

2. Select the Remove icon.



- The Remove Model Group confirmation dialog box will open
  - NOTE Any model streams within the group that is being removed will be removed as well. The model streams will remain in the database, but not visible within the current project.
  - TIP The Project Structure will be replicated within the Objects tab within the Tags and Objects Panel.

<ul> <li>Project Structure</li> <li>Training [Project]</li> <li>Design Models [ModelGroup]         <ul> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> </ul> </li> <li>Fabrication Models [ModelGroup]         <ul> <li>Structural_FAB.rvt [Model]</li> </ul> </li> </ul>	
m <sup>+</sup> ि ⊡	⊖
Model Streams Group	Remove



#### 4.2 Step by Step 3 — Creating a Model Stream Placeholder

- 1. Select on the **Project** or the **Group** for the desired Model Stream placeholder.
- 2. Select the Model Streams icon.



3. Select the Add Placeholder icon.



- The Remove Model Group confirmation dialog box will open
- 4. Type in the anticipated or planned Model Stream name.



• The Model Stream Placeholder will appear in red until a model stream is uploaded in its place



### 4.3 MODEL STREAM MANAGEMENT

When a model stream is updated from a plugin, a new revision is created in the Project Structure. The **Project Structure** lets the administrator switch the revision of any given model stream in the project.

#### 4.3 Step by Step 1 — Change the Active Model Stream Revision

- 1. Within the Project Structure tree, select a model stream.
- 2. Double click on an older revision.

Project Structure				$\times$
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]         <ul> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> </ul> </li> <li>Fabrication Models [ModelGroup]         <ul> <li>Structural_FAB.rvt [Model]</li> </ul> </li> </ul>		Revision History Tags Stream Source Filename Structural.rev0.rvt Structural.rvt	Date ▼ 4/24/2020 11:25 AM 1/23/2020 12:52 PM	User Dale Dale
ar <sup>*</sup> ि∓	Θ			4
	Remove		_	Update All
				V OK X Cancel

# **NOTE** The current active revision is highlighted in green and the most recent prior revision is highlighted in yellow.

If an administrator changes the revision of any model stream and proceeds to save the project, any user loading the project or accepting updates will also be viewing the historical revision chosen by the administrator. This allows the administrator to roll back to a previous revision, if the latest revision is incorrect or non-compliant.

TIP A model stream will be highlighted in yellow if there is a new model stream revision, but not set as the active revision.

Project Structure	×
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]         <ul> <li>✓ Architectural.rvt [Model]</li> <li>✓ Mechanical.rvt [Model]</li> <li>✓ Structural.rev0.rvt [Model]</li> </ul> </li> <li>Fabrication Models [ModelGroup]         <ul> <li>✓ Structural_FAB.rvt [Model]</li> </ul> </li> </ul>	Revision History       Tags         Stream Source Filename       Date       ✓       User         Revision Note:       Image: I
m <sup>+</sup> ⊡ ⊖ Model Streams Group Remov	Update All

#### 4.3 Step by Step 2 – Update Model Stream Revisions

1. Within the Project Structure panel, click the Update All icon.

Project Structure					×
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]         <ul> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> </ul> </li> <li>Fabrication Models [ModelGroup]         <ul> <li>Structural_FAB.rvt [Model]</li> </ul> </li> </ul>		Revision History       Tags         Stream Source Filename       Image: Compare the second seco	Date	• (	Jser
m <sup>+</sup> ∓ Model Streams Group	⊖ Remove			l	ج Jpdate All
				🗸 ок	× Cancel



#### 4.3 Step by Step 3 – Disable Model Streams

- 1. Uncheck the box next to the model stream.
- 2. Click OK.
- 3. Save the project.

Project Structure		_		>
<ul> <li>Training [Project]</li> </ul>		Revision History Tags		
<ul> <li>Design Models [ModelGroup]</li> </ul>		Stream Source Filename	Date 👻	User
✓ Architectural.rvt [Model]		Structural_FAB.rvt	1/24/2020 7:55 AM	Dale
✓ Mechanical.rvt [Model]				
Structural.rev0.rvt [Model]				
Fabrication Models [ModelGroup]				
		Revision Note:		
<b>■</b> <sup>+</sup>	Θ			$\mathcal{L}_{+}$
	Remove			

• Once the project is saved, then the model stream is hidden from the project users

#### 4.3 Step by Step 4 — Remove Model Streams

- 1. Select a model stream.
- 2. Select the **Remove** icon.

Project Structure			$\times$
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]</li> <li>Architectural.rvt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rev0.rvt [Model]</li> <li>Fabrication Models [ModelGroup]</li> </ul>	Revision History Tags Stream Source Filename Structural_FAB.rvt	Date	User Dale
Structural_FAB.rvt [Model]	Revision Note:		
			6
Model Streams Group Re	ove		Update All OK Cancel

• The Remove and Discard dialog box will open



- **Remove Only** -will remove the selected model stream from the current project but it will not remove it from the database
- Remove and Discard will remove the selected model stream from the database.

#### 4.3 Step by Step 5 — Adding Model Streams from Other Projects

Model streams that have been removed with the **Remove Only** command can be reloaded through the **Add Model Stream** icon.

Model streams within the same environment, but in a different project, are accessible to be included in any project within the same environment.

- 1. Select the root project name or a group folder.
- 2. Select the Model Stream icon.

Project Structure						$\times$
<ul> <li>Training [Project]</li> </ul>		Revision History Tags				
<ul> <li>Design Models [ModelGroup]</li> </ul>		Project Revision Name	Date	~	User	
Architectural.rvt [Model]						
Mechanical.rvt [Model]						
✓ Structural.rev0.rvt [Model]						
<ul> <li>Fabrication Models [ModelGroup]</li> </ul>						
✓ Structural_FAB.rvt [Model]						
Models from another Project [ModelGroup]		Revision Note:				
_+ ~~					£.	
Model Streams Group Ri	emove				Undate	
				$\checkmark$	ок 🗙 с	ancel

• The Model Stream dialog box will open

Add Model Stream(s)										
Choose the Models you would like to add and click OK or add a placeholder.										
Name         Access         Revision Date         User Name         Project										
Architectural.rvt	888 shared	11/26/19 8:25:05 am	Dale	3 Story Building						
Architectural.rvt	888 shared	11/26/19 8:23:49 am	Dale	3 Story Building						
Architectural.rvt	888 shared	11/05/19 9:56:38 am	Dale	3 Story Building						
Mechanical.rvt	888 shared	11/26/19 8:29:43 am	Dale	3 Story Building						
Mechanical.rvt	888 shared	7/31/19 2:35:16 pm	Dale	3 Story Building						
Mechanical.rvt	888 shared	11/26/19 8:32:42 am	Dale	3 Story Building						
Mechanical.rvt	898 shared	11/26/19 8:30:39 am	Dale	3 Story Building						
Show Models from other p	rojects									
Add Placeholder	Hide S				X Cancel					

3. Select the desired models to be added to the current project, then click OK.

Choose the Models you would like to add and click OK or add a placeholder.										
Name Access Revision Date User Name Project										
Architectural.rvt	888 shared	11/26/19 8:25:05 am	Dale	3 Story Building						
Architectural.rvt	888 shared	11/26/19 8:23:49 am	Dale	3 Story Building						
Architectural.rvt	888 shared	11/05/19 9:56:38 am	Dale	3 Story Building						
Mechanical.rvt	8 <b>8</b> 8 shared	11/26/19 8:29:43 am	Dale	3 Story Building						
Mechanical.rvt	8 <b>8</b> 8 shared	7/31/19 2:35:16 pm	Dale	3 Story Building						
Mechanical.rvt	888 shared	11/26/19 8:32:42 am	Dale	3 Story Building						
Mechanical.rvt	898 shared	11/26/19 8:30:39 am	Dale	3 Story Building						
Show Models from other projects										

#### NOTE

The select model stream of the particular revision date will be added to the current project along with all older revisions of the model stream.



#### 4.3 Step by Step 6 — Publish a Model Stream into a Placeholder

Model Stream Placeholders show as red until a model has been published to replace it.

1. With Model open and the Design Authoring tool (that is,Revit) open, select the **Export Model Stream** icon.



- The Model Exporter dialog box opens.
- 2. Select Choose Location.
  - Even though there is a placeholder that nearly matches the name of the design file, the design file has not been published yet, so it is recognized as a new model

🖲 InEight - Mo	del Exporter							×
Project: ! [	OTO Testing							
Export	Model File	Last Update	Updated By	Config Options	Location*			
V	Mechanical.rvt	New	Dale	Basic	Choose Location*		_	
Change Exp	port Settings / Sh	ow Info						
* New mo	odel requires a	location within	the project.					
						Start	View Log	Close

- The Choose Location dialog opens.
- 3. Select the folder where the Model Stream placeholder is identified.
  - In this example, Mechanical is the placeholder.

#### 4. Click OK.

Choose location for new Model Stream: Mechanical.rvt
Training
💌 Design Models
Architectural.rvt
Structural.rev0.rvt
Architectural.ifc
Mechanical
Fabrication Models
Structural_FAB.rvt
<ul> <li>Models from other Projects</li> </ul>
Architectural.rvt
Structural.ifc
V OK X Cancel

#### NOTE The new model stream does not replace the placeholder until it is linked to it.

5. Select Basic config options.

🔘 InEight - Mo	InEight - Model Exporter								
Project: Tr	aining								
Evrort	Madal File	Loct Lindata	Undated By	Config Options	Location				
	houer rice		opuated by	Coning Options	Location				
	Mechanical.rvt	New	Dale	Basic	Tra	ining/Design Models			
_		_							
Change Ex	port Settings / Sh	ow Info							
					Start Viev	Log Close			

#### 6. Select the Advanced tab.

InEight Exporter
Configuring Model Stream: Mechanical.rvt
Parameters Advanced
Basic Tags (included in every export)
Model Tag Level Tag PhysicalType Revit Family Type Revit Function Material Name - CAD
<model name=""> <level names=""> Window, Floor, Door, etc. <family instance="" names=""> <walls and="" floors=""> <face material="" names=""></face></walls></family></level></model>
Q Search
Parameter Name 🔺 Export Property Create Tag Tag Alias Name
Air Terminals
Ceilings
Conduit Fittings
<ul> <li>Conduits</li> </ul>
▶ Constraints
Curtain Panels
Curtain Wall Mullions
Detail Items
Dimensions
Duct Fittings
<ul> <li>Ducts</li> </ul>
Electrical Equipment
Electrical Fixtures
Energy Analysis
Flex Ducts
Show Unselected Import Parameters Export Parameters
V OK X Cancel

7. Select Choose different model...

InEight Exporter	<
Configuring Model Stream: Mechanical.rvt	
Parameters Advanced	
Scale is applied first, followed by Rotation, then Translate.	
_ Scale Factor	
1.000000	
Rotate (degrees)	
z 0.0000000	
Translate / Move (meters)	
x 0.00000000 Y 0.00000000 Z 0.0000000	
Pename Model Stream: Machanical art	
Link to a different Model Stream? Choose different model	
Include Lines in Export	
Export InEight Object IDs as Tags	
OK X Cancel	

8. Select the model stream placeholder, and then click OK.

Choose Location	$\times$
Choose different Model Stream to update with: Mechanical.rvt	
Training	
Design Models	
Architectural.rvt	
Structural.rev0.rvt	
Architectural.ifc	
Mechanical	
<ul> <li>Fabrication Models</li> </ul>	
Structural_FAB.rvt	
<ul> <li>Models from other Projects</li> </ul>	
Architectural.rvt	
Structural.ifc	
V OK X Cancel	

#### 9. Click Start.

InEight - Mo	del Exporter				>		
Project: Tr	aining						
Export	Model File	Last Update	Updated By	Config Options	Location		
<b>v</b>	Mechanical.rvt			Custom	Training/Design Models/Mechanical (or export new)		
Change Exp	port Settings / Sh	ow Info					
					Start View Log Close		

- 10. Save the model stream to the project.
  - In the Project Structure, the new Model Stream has replaced the Model Stream placeholder.

Project Structure					×
<ul> <li>Training [Project]</li> <li>Design Models [ModelGroup]</li> <li>Architectural nt [Model]</li> <li>Mechanical.rvt [Model]</li> <li>Structural.rvt [Model]</li> <li>Fabrication Models [ModelGroup]</li> </ul>	Revision History Source Revision Note:	Tags Filename	~	Date	User
Model Streams Group					Cy Update All
					V OK X Cancel

### **4.4 MODEL STREAM PERMISSIONS**

Permissions can be set at the Group level within the Project Structure. Nested groups inherit parent group permissions.



By default, group permissions inherit project permission for users and user groups.

For best practice, only apply User Groups to projects instead of individual users. This minimizes the management of applying permissions to Model Streams.

#### **4.4 Step by Step 1** — Apply Permissions to Groups

- 1. Open the Project Structure dialog box.
- 2. Right-click on a group and select Edit Group Permissions.

Project Structure		$\times$
▼ PLAYGROUND - [Project]	Revision History	
<ul> <li>Building 1 [ModelGroup]</li> <li>CONC [ModelGroup]</li> </ul>	Source Filename	User
ELEC [ModelGroup] Expand All HVAC [ModelGroup] Collapse All		
STRUCT [ModelGroup]		
	Revision Note:	
∰ ⊡ ⊖ Model Streams Group Remove		
	·✓ OK	X Cancel

- The Edit Model Group Permissions dialog box opens.
- By default, the User Parents Group Permissions is already checked.
- 3. Uncheck the Use Parent Group Permissions check box to apply specific User Group permissions.

Edit Model Group Permissions ? $\times$			
Group / User	Permissions		
sub STRUCT group	Can Read 👻		
sub HVAC group	Can Read 👻		
sub ELEC group	Can Read & Write		
Sub_HVAC	Can Read 👻		
Dale	Can Read & Write		
Sub_Concrete	Can Read 👻		
Sub_Steel	Can Read 💙		
Use Parent Group Permissions			
	V OK X Cancel		

- All users and User Groups show if they have been assigned to the project.
- 4. Users and User Groups can only have one of the following permissions:
  - Can Read read-only permissions.
  - Can Read and Write read, write, and edit permissions.

- 5. Users that have been assigned to the project within a Group have the **Can Read** permission in the Edit Model Group Permissions dialog box.
  - User Groups that display the project permissions are currently only set at the project level.
- 6. Use the Account Manager dialog box to reference the users assigned to Groups in specific projects.



- For more information on the Account Manager dialog box, reference the Managers Users and Manage User Groups topics.
- 7. Set the permissions for the selected group or user.
- 8. Log in as the specific user or group to publish a model.

#### Lesson 4 Review

- 1. In the Project Structure tree, groups can only be created before model streams are added.
  - a. True
  - b. False
- 2. Once a group name has been created, it cannot be edited or renamed.
  - a. True
  - b. False

#### **Lesson 4 Summary**

As a result of this lesson, you can:

- Navigate the project structure panel
- Create and delete model stream groups
- Change active model stream revision and revise model stream revision
- Disable and remove model streams
- Add model streams from other projects

This page intentionally left blank.



# **LESSON 5 – USER INTERFACE**

Lesson Duration: 30 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Navigate InEight Model
- Select model objects
- Use common hot keys

**Topics in this Lesson** 

# 5.1 VIEWER INTERFACE

The Viewer interface (Workspace) is highly configurable. Tools and panels are accessed through a series of menus located across the top of the application and a notification panel located across the bottom of the application.



Panels can be opened, closed, rearranged, and docked into various configurations. Move, dock and undock panels by dragging the panel title bar.

#### TIP Hold Ctrl before dragging a panel to prevent it from docking automatically.

- Some Panels have multiple areas, differentiated with tabs:
- When panels are docked on top of one another, each panel is represented as a tab
- Tabs can be on top, side of, and bottom of a panel
- Select the tab to activate a specific panel or area of a panel
- The active panel tab is highlighted in orange
- Re-size undocked panels by clicking and dragging the panel edge

• Resize a docked panel by clicking and dragging the edge of the panel



#### 5.1.1 Docking Panels:

• While moving a panel to dock at the Top, Bottom, Left or Right, the Viewer will respond by indicating a space for the panel to be docked



• Panels can be docked at the Top, Bottom, Right, and Left of the viewer

En Eight Notos: Ein Ein Vinne Object Lun Sinne Logic Andrive Pulse Taut is Command Labuy Community (Company) Community (Community (Company) Community (Community (Company) Community (Community (Company) Community (Community (Company) Community (Community		- 0 ×
Regar and Colports		Halan Ananti 20 Roosa Aana (beolydan
ting and the last to be the last to	Son Information Doublin (dits to Name an algost Nationg windsitg Salet an algost wine 36 programme,	

• Panels can be docked on top of one another


• Panels can be docked at the top or bottom of another panel

- AD-MA MODEL	- 0 X
Ble Edit View Object Lux Time Logic Ardvive Puble Tack Help	0
Veen	Styling 81
	Stearch
	2 * Basic
	Default
	Default - No Lines
	Invible
	Pevit-sh Structural
	Weeframe BlackThin
	A 4
	AN OR DURING
	Shing Hair Prests
	Tags and Objects
	5 Gant
	1
	8
** L * C & A & # A & A	
₩↓  > \$ \$ 7 % A \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	+ / () 14 Mg/dt 1335
	and the second second

• Panels can be docked beside another panel



• Panels can be docked in between two panels



• Panels can be stand alone on the same or different monitor



## **5.2 SHOW MODEL SPOTS**

Model Spots provide the ability to easy find those model streams that are not aligned on the same coordinate.

#### 5.2 Step by Step 1 — Show Model Spots

1. Select View > Show Model Spots.



2. Zoom out until red dots are visible or click the Home key on the keyboard.



3. Hover over a dot to see the model stream name(s).



4. Double-click on a model spot to zoom into the model stream(s).

## **5.3 NAVIGATION**

InEight Model allows you to move through, zoom, pan, and change perspectives within the 3D space surrounding your model. To begin, load or open a model. The navigation widget will appear in the top, right corner of your window and will rotate as you navigate to indicate your camera's position and direction in space.



# NOTE If the navigation widget is not present in the top, right corner of your screen, there is nothing to navigate; load a model.

In InEight Model, the viewer interaction is focused on the center of the view and not the model objects. This allows you to see all objects from your camera perspective as you navigate and interact with objects. To quickly return to the designated "home" view of a model, you can navigate up to the menu, click View, and select **Home Position** from the drop-down menu.



#### **Navigation Controls**

Function	Action	Description
Orbit		Left click and hold to revolve around, or orbit, the object or model
Pan		Right click and hold to maintain the object's position while moving, or panning, your view of the object or model

Function	Action	Description
Zoom (to Center of view)		Scroll the wheel away from you to zoom in and toward you to zoom out
Zoom to Cursor	Ctrl +	Hold the CTRL key and use the scroll wheel to zoom to, and away from, the cursor. Your cursor must be over a model element
Zoom to Object / Set Center		Double left click an object to zoom the camera to an object. This will set the center of orbit to the object
Zoom to Selected Objects	F5	Select an object and press the F5 key to zoom the camera to frame the selection
Zoom to Home Position	Home OR	Use the Home key or double click the mouse wheel to zoom the camera to frame the extents and home position of the 3D environment

## Navigation Controls (continued)

Function	Action	Description
Orthographic & Perspective Views	(∞) ↓ ↑ ၄ ୠ ⊘ ଥ ♥ ⊠ ፬ ⊇	Toggle between the Orthographic and Perspective view modes
Camera Settings (Perspective View)	Crners Settings Panel	Camera Settings enable you to change the focal length of the lens through which you are viewing the model . Right click on the camera icon and click Camera Settings Panel to adjust your setting. This setting is only available in Perspective View

## Navigation Controls (continued)

#### 5.3.0.1 First Person Navigation

First person navigation positions the camera view where it assumes your eyes would be and what they would see in relationship to the model environment.





### Navigation Controls (continued)

## **5.4 SELECTION**

InEight Model allows you to manipulate the way you view, manage, and interact with the objects that make up your model(s). Many of these features are available as hot keys and within a drop-down menu.

#### **Selection Controls**





## Selection Controls (continued)

Function	Action	Description
	Retore Province Selection  Retor Objects Contained in Selection  Select Objects Contained in Selection Cepy Selection to Clipboard	
Crossing Selection	Alt +	Selects objects that are both completely in the window and those that cross into the window
	DRAW A WINDOW TO THE LEFT	
	OR	
	Select Object Contained in Selection Select Objects Interacting Selection Copy Selection to Cliploard	
Select All	Ctrl + A	Initiates the select all action. A dialog box will appear to confirm this action

Function	Action	Description
Invert Selection	Ctrl + Shift + I	Inverts the selection set of objects
Restore Previous Selection	Ctrl + Shift + Z	Restores the selection set to the previous selected objects
Selection Filter	Ctrl + {	Opens the Selection Filter dialog box and allows you to filter down the selection set
Clear Selection	Esc <sub>OR</sub> F6	Clears the current selection
Select Related Tag	Select Beisted Tag > Select Object Select Style Select Parent Add Object to Selection	Provides a means to select like objects with the same tag

## Selection Controls (continued)

## Selection Controls (continued)

Function	Action	Description
Copy Selection to Clipboard	Sect Objects Contained in Selection Sect Objects Extension Copy Section to Cipload Section Filter.	Provides a means to copy the select object's metadata to the clipboard

Function	Action		Description
RCM - Select Object	Selection > Show/Hide >	Select Related Tag Select Object	Right click on top of an object, then click Select Object
RCM – Select Related Tag	Selection > Show/Hide >	Select Related Tag Select Object	Provides a means to select like objects with the same tag.
RCM – Select Style	Selection Show/Hide	Select Related Tag Select Object Select Style	Provides a means to select like objects with the same style. (Note: enabled only if one object is selected)
RCM – Add Object to Selection	Selection > Show/Hide >	Select Related Tag Select Object Select Style Select Parent Add Object to Selection	Right click on top of an object, then click Add Object to Selection
RCM – Select Objects Contained in Selection	Selection >	Select Objects Contained in Selection Select Objects Intersecting Selection Copy Selection to Clipboard	Provides a means to select all objects contained within the object
RCM – Select Objects Intersecting Selection	Selection >	Select Objects Contained in Selection Select Objects Intersecting Selection Copy Selection to Clipboard	Provides a means to select all objects inside and intersecting with an object
RCM – Copy Selection to Clipboard	Selection > Show/Hide >	Select Objects Contained in Selection Select Objects Intersecting Selection Copy Selection to Clipboard	Provides a means to copy the selected object's metadata to the clipboard

#### **Right Click Menu Selection Controls**

#### 5.4.0.1 Right Click Menu

• The Selection Menu offers all the selection commands listed in the table above, except **Delete Selected Objects** and **Copy Selection to Clipboard** (see the table above for

Selection >	Select Related Tag	+
Show/Hide 🕨 🕨	Select Object	
	Select Style	
	Select Parent	Ctrl+]
	Add Object to Selection	
	Tag Selected Objects	Ctrl+T
	Remove Tag from Selected Objects	►
	Invert Selection	Ctrl+Shift+I
	Deselect All	F6
	Select All	Ctrl+A
	Restore Previous Selection	Ctrl+Shift+Z
	Select Objects Contained in Selection	
	Select Objects Intersecting Selection	
	Copy Selection to Clipboard	
	Selection Filter	Ctrl+[
	Frame Selected Objects	F5
	Move Selected Objects	Ctrl+Shift+M
	Delete Selected Objects	
	Selection Information	Ctrl+l

#### descriptions)

• The Show/Hide Menu offers even more options – many of which are also accessible as hot keys. See the table below for descriptions

Selection	•	1	
Show/Hide	•	Toggle Quick Isolate	Tab
		Show Selected	F7
		Hide Selected	F8
		Hide Unselected	Shift+F8
		Hide Models from Selected	
		Hide Models from Unselected	
		Show All	F9

Function	Action	Description
Isolate Mode	Tab	Toggles between the entire model and an isolated view of the selected objects
Show Selected	<b>F7</b>	Shows all selected objects
Hide Selected	<b>F</b> 8	Hides all selected objects
Hide Unselected	Shift + F8	Hides all unselected objects
Hide Models from Selected	Topic Cark balance To Topic Cark balance Topic Cark	Hides all models from the selected objects

## Model Object View Controls

## Model Object View Controls (continued)

Function	Action	Description
Hide Models from Unselected	Togli Ociri Iotza     Tab       Mos Sected     F7       Mos Sected     F8       Hick Undersed     Staf+18       Hick Undersed     St	Hides all models from the unselected objects
Show All	<b>F9</b>	Shows all objects and models in a project
Undo View State Changes	Alt + Z	Undo up to the last 10 view state changes
Redo View State Changes	Shift + Alt + Z	Redo up to the last 10 view state changes
Toggle Full Screen	F11	Toggles the window size and position between a customizable (F11) and full screen window

#### Model Object View Controls (continued)

Function	Action	Description
Show Model Spots	Ctrl + Shift + .	Marks the model's spot within the space so that the model is identifiable no matter how far out you zoom

## 5.5 SELECTION MODE

Selection Mode provides the ability to select objects related to the active mode.

- Last Object will select the lowest level of an object (a child)
- First Object will select all objects that belong to the highest level (a parent)
- IWP will select all objects that belong to the IWP associated to the object being selected
- CWP will select all objects that belong to the CWP associated to the object being selected
- Elements will select objects that belong to the Element associated to the object being selected
- Tag Name will select objects that belong to the Tag associated to the object being selected

NOTE Any object can be selected no matter what mode is active. If the object selected does not have data associated to it for the active mode, then the Last Object mode will be the default.

<u>F</u> ile	<u>E</u> dit	⊻iew	Object Logic Archive Track	Debug <u>H</u>	elp	
			Selection	•		
			Selection Mode	•	✓ Last Object	
			Show/Hide	+	First Object	
			Selection Information	Ctrl+I	IWP	
			Annotation Active		CWP	
			Annotate Selected		Elements	•
			Remove Selected Annotation		Tag Name	

## 5.5.1 Selection Mode Indicator

Selection Mode is always active and will be displayed at the bottom right within the viewer.



## 5.5.2 Selection Mode - Last Object

Last Object selection mode will select the lowest level of the object.



### 5.5.3 Selection Mode - First Object

First Object selection mode will select the highest level of the object and select all objects associated to the parent level.



### 5.5.4 Selection Mode - IWP

IWP selection mode will select all objects that belong to the IWP associated to the object being selected.



### 5.5.5 Selection Mode - CWP

CWP selection mode will select all objects that belong to the CWP associated to the object being selected.



### 5.5.6 Selection Mode - Element

Element selection mode will select all objects that belong to the Element associated to the object being selected.



## 5.5.7 Selection Mode - Tag

Tag selection mode will select all objects that belong to the Tag associated to the object being selected.



## 5.6 HOT KEYS

#### Click to open a one page PDF copy of the InEight Model Hot Keys.

#### **Viewer Navigation**

Function	Action	Description
Orbit		Left click and hold to revolve around, or orbit, the object or model

Viewer Navigation (continued)			
Function	Action	Description	
Pan		Right click and hold to maintain the object's position while moving, or panning, your view of the object or model	
Zoom (to center of view)		Scroll the wheel away from you to zoom in and toward you to zoom out	
Zoom to Cursor	Ctrl +	Hold the CTRL key and use the scroll wheel to zoom to, and away from, the cursor. Your cursor must be over a model element	
Zoom to Object / Set Center		Double left click an object to zoom the camera to an object. This will set the center of orbit to the object	
Zoom to Selected Object	F5	Select an object and press the F5 key to zoom the camera to frame the selection	



#### **Model Object Selection**





#### Model Object Selection (continued)



Model Object Selection (continued)			
Function	Action	Description	
Restore Previous Selection	Ctrl + Shift + Z	Restores the selection set to the previous selected objects	
Selection Filter	Ctrl + {	Opens the Selection Filter dialog box and allows you to filter down the selection set	
Clear Selection	Esc OR F6	Clears the current selection	

## Model Object View

Function	Action	Description
Isolate Mode	Tab	Toggles between the entire model and an isolated view of the selected objects

## Model Object View (continued) Description Function Action F7 Shows all selected objects Show Selected **Hide Selected** Hides all selected objects F8 Shift F8 + Hides all unselected objects **Hide Unselected** Show All Shows all objects and models in a project F9 Ctrl Shift + Marks the model's spot within Show Model Spots the space so that the model is identifiable no matter how far out you zoom

#### Model Object View (continued)

Function	Action	Description
Toggle Full Screen	<b>F11</b>	Toggles the window size and position between a customizable (F11) and full screen window

#### Panels



#### Panels (continued)



#### Actions



#### Other



Other (continued)			
Function	Action	Description	
Command History	Ctrl + H	Opens the Command History Panel where you can view any and all saved changes	

## **5.7 USER SETTINGS**

Within the Settings icon in the top left of the menu bar, a user can modify their user settings. Toggle to:

- Work Online/Offline
- Adjust User Settings
- Change Password
- Edit Contact Information
- Save Workspaces
- Reset Workspace
- administrators can access User Management through Admin



## 5.7.1 Settings...

Provides the ability to change:

- Mouse/Keyboard Mapping changes
- Choose Default Zoom Behavior
- Set the Coordinate Display Units
- Change the Background Color
- Choose Selection Display Style
- Invert Scroll Wheel in First Person



## 5.7.2 Mouse / Keyboard Mapping

Allows for the user to change any of the shortcuts to their working experience desire
۲	Settings ×						
Mo	Mouse/Keyboard Mappings General						
	<ul> <li>Type in your desired mouse or keyboard combos</li> <li>Left mouse = 'LMB' or 'MB1', middle mouse is 'MB2', etc.</li> <li>Mouse wheel = 'MW' and may only be assigned to Zoom</li> <li>Note: Conflicts between assignments are not detected</li> </ul>						
	Action / Description Shortcut						
	1	Frame Selected Objects	F5				
i	2	Deselect All	F6				
	3	Show Selected	F7				
4	4	Hide Selected	F8				
	5	Hide Unselected	Shift+F8				
(	6	Show All	F9				
	7	Home Position	Home				
\$	8	Tag Selected Objects	Ctrl+T				
F	Rese	et Mappings					
			Cancel				

## 5.7.3 Choose Default Zoom Behavior

Allows for the user to set Zoom to Center or Zoom to Cursor.



## 5.7.4 Coordinate Display Units

Allows for the user to set the coordinate display units. This does not change the scale of the model.



### 5.7.5 Background Color

Allows for the user to change the background color of the 3D viewer.



#### 5.7.5.1 Choose Selection Display Style

Allows for the user to manage display of selected objects. Manage the ability to show lines (edges) of the objects in a desired color and the ability to color selected objects with a fill color.

Linor	Fille
✓ Enabled	
Chaosa Lina Calar	Chaosa Fill Color
🗸 ОК	× Cancel

NOTE Choose Fill Color... also has transparent settings.

### 5.7.6 Invert Scroll Wheel in First Person

Allows for the user to manage the "head tilt" within the First Person.

Settings	$\times$				
Mouse/Keyboard Mappings General					
Choose Default Zoom Behavior					
Zoom to cursor 👻					
Choose coordinate display units:					
Inches 👻					
Choose Background Color					
Click to change					
Reset to default					
Choose Selection Display Style					
Click to change					
Reset to default					
Invert scroll wheel in First Person					
✓ Show fading notifications					
✓ ОК Х Са	ncel				

# **5.8 CREATE NEW MARKUP**

A new markup can be created within the viewer and saved to a PDF file. Access it through **View -> Create New Markup**. Once Create New Markup is selected, a snapshot of the current 3D Viewer is captured and ready for a markup.

InEight M	ODEL					
<u>F</u> ile <u>E</u> dit	<u>V</u> iew Object <u>L</u> ux <u>T</u>	ime <u>L</u> ogic	<u>A</u> rchive	Pulse	Track	<u>H</u> elp
Viewer	Master Presets		Ctrl+M			
	<ul> <li>Styling</li> </ul>					
	<ul> <li>Tags and Objects</li> </ul>					
	<u>C</u> amera Settings					
	Eirst Person Settings			_		
	Sectioning					
	Measurement					
	Create New Markup		Ctrl+Shift	+N		
	Camera Auto Orbit		Ctrl+Shift	+0		
	First Person Navigation	n	Ctrl+F			
	Show Model Spots		Ctrl+Shift	+.		
	Toggle Fullscreen		F11	- 1		
	Home Position		Home			
	Optional Modules			-		

The markup capabilities allow the user to place Arrows, Scribble, Ellipse, Rectangles, and Text.

NOTE	The text size can be adjusted with the Thickness bar.					
InEight MODEL File Edit View	Obiect Lux Time Logic Archive Pulse Track Help					
Viewer New Markup						
Save to Arrow	Scribble Ellipse Rectangle Text Edit Color Clear Markups Back to Model					

- Set the Color, Thickness and line type to a Solid or Dashed before placing an object
- Once objects are placed, they cannot be edited. They can, however, be deleted by selecting the object, then select the DEL key on the keyboard.
- Text color and size can be edited after placement. Select and highlight the text, then select edit color and/or move the thickness bar to change the text size.

Select **Save to...** to save the markup as a PDF file.





Once the new PDF file is saved, the existing markup is still active.

Select Clear Markups to clear all markups.

InEight MODEL							
Eile Edit <u>V</u> iew Object Lux Iime Logic <u>A</u> rchive Pulse Track <u>H</u> elp Viewer <mark>New Markup</mark>							
Save to Arrow Scribble Ellipse Rectangle Text Edit Color Thickness: Solid Clear Mark	ups Back to Model X						

Select Back to Model to toggle from the New Markup to the 3D Viewer

InEight MODEL	
Eile Edit View Object Lux Time Logic Archive Pulse	? Track Help
Save to Arrow Scribble Ellipse Rectangle Text Edit Color	hickness: Solid Clear Markups Back to Model X

Select the **red X** to close the Markup tool.



# 5.9 GRIDS

If grids are part of the Revit project, then they are included in the export process.

Grids can be toggled on and off through the main menu. Use the following step by step to toggle the grids on or off.

### 5.9 Step by Step 1 - Toggle on or off grids

- 1. From the main menu, click View.
- 2. Select Show Grids.

InEight M	ODEL - DEMO - RIDGEGATE CAMP	US		
<u>F</u> ile <u>E</u> dit	<u>View</u> Object <u>L</u> ogic <u>A</u> rchive	Track Debug <u>H</u> elp		
DEMO - RIDG	<ul> <li>Master Presets</li> </ul>	Ctrl+M		
	Styling			
	✓ Tags and Objects			
	Elements			
	<u>C</u> amera Settings			
	Eirst Person Settings			
	<u>S</u> ectioning			
	<ul> <li><u>Show Grids</u></li> </ul>			
	Measurement			
	Create New Markup	Ctrl+Shift+N		
	Camera Auto Orbit	Ctrl+Shift+O		
	First Person Navigation	Ctrl+F		
	Show Model Spots	Ctrl+Shift+.		
	Toggle Fullscreen	F11		
	Texture Preview Resolution			
	Home Position	Home		
	Optional Modules			

Grids can also be toggled on and off from the notification panel at the bottom left in the application.



#### **Lesson 5 Review**

- 1. How can you navigate in InEight Model?
  - a. Using your mouse
  - b. Using the Navigation Widget
  - c. Using hot keys
  - d. All of the above
- 2. If you right click on your mouse, what two menus appear?
  - a. Trash, Model settings
  - b. Plugin History, Show/Hide
  - c. Show/Hide, Selection
  - d. Selection, Trash
- 3. You can navigate a model from a First Person View.
  - a. True
  - b. False

#### Lesson 5 Summary

As a result of this lesson, you can:

- Navigate InEight Model
- Select model objects
- Use common hot keys

This page intentionally left blank.



# LESSON 6 – PROJECT UPDATES AND HISTORY

Lesson Duration: 30 minutes

Lesson Objectives

After completing this lesson, you will be able to:

- Access and review your model's history
- Understand how to update your project from the Project Update window
- Access the history of the commands taken on your project prior to saving Access and review

**Topics in this Lesson** 

# 6.1 COMMAND HISTORY

As content is added to the model environment, a complete history is tracked, saved, and accessible anytime through the lifetime of the project. The Command History panel provides the insight as to what actions have been taken before they have been saved to the project.

The Command History panel is located from the main menu, Edit -> Command History or with the Ctrl+H hotkey.

Inl	Eight MODEL								
<u>F</u> ile	<u>E</u> dit <u>V</u> iew	Object	<u>L</u> ux	<u>T</u> ime	<u>L</u> ogic	<u>A</u> rchive	Pulse	Track	<u>H</u> elp
Viewer	Undo			C	trl+Z				
	Redo			C	trl+Y				
	Command	<u>H</u> istory		C	trl+H				

As changes are created within the model environment, they are listed in the Command History until the user saves the changes to the project. Also, there will be an \* following the project name to indicate that there are changes.

nand History	
rempty> Ipdate Master Preset 'Main Monitor' sssign tag [z_IWP_Status_Piping   02_Staged - Pre_Fabrication] to I	FCBUILDINGELEMENTPROXY Shape 1306 and 133 other objects

You can undo any changes by selecting a previous change or selecting <empty>. Notice that the project name no longer has an \* following the name.

WT Plant	
Command Histor	y ×
Cempty> Update Mast Assign tag (2	ter Preset 'Main Monitor' z_IWP_Status_Piping   02_Staged - Pre_Fabrication] to IFCBUILDINGELEMENTPROXY Shape 1306 and 133 other objects

To reactivate the changes, simply select on the last change that you want applied to the project. Then Save the changes to the project with Ctrl+S or select File -> Save Project...

The Save Changes dialog box will open with a description of the project changes.

Save Changes	X
Revision Notes:	Items in bold have pending changes:
WT Plant <ul> <li>Common Assets</li> <li>Style Sets</li> <li>Documents</li> <li>Coordination</li> <li>Tags</li> <li>Pulse</li> </ul>	Update Master Preset 'Main Monitor' Assign tag [z_IWP_Status_Piping   02_Staged - Pre_Fabrication] to IFCBUILDINGELEMENTPROXY Shape 1306 and 133 other objects
₽	
	🔨 Save 🗙 Cancel

## 6.2 PROJECT UPDATES

When a user has saved updates to the project each user currently within the project will get a notice: You have project updates.



Right click on the green sync icon and select Update Now to retrieve the latest project updates.



Or select Project Updates Panel to review the Update Details and by who. Once reviewed, then click Update Now to update your current session with the latest project updates.



If there are and a user tries to save their project changes, then a Project Not Current dialog box will appear, requiring the user to perform a project update before a project save can take place.



# 6.3 PROJECT HISTORY

Project History allows users to view a project at any stage, from the beginning all the way to the end of a project.

The Project History panel is located from the main menu, File -> Project History or with the Ctrl+Shift+H hotkey.

<u>ile E</u> dit <u>V</u> iew Object <u>L</u> ux <u></u>	<u>T</u> ime <u>L</u> ogic	Archive	Pulse	Track	<u>H</u> el
<u>N</u> ew Project	Ctrl+N				
New Project From Template					
Load Project	Ctrl+L				
<u>S</u> ave Project	Ctrl+S				
Project History	Ctrl+Shift	+H			
Project Updates	Ctrl+U				
Sync Status					
Project Structure	Ctrl+P				
Save Image As					
Export Selected to OBJ					
Import		- <b>-</b>			
Exit	Ctrl+Q				

The Project History panel provides the ability to look at the project in a historical view. This can be achieved by:

- Jump to date and then click Go
- Project Revisions search revisions made by a particular user or search for keywords from the Revision Notes history.

• Revision Date - double click on a revision date



When an older revision is activated, a red box will appear around the 3D Viewer and the project will be rolled back to that particular time in the project's history.



NOTE In order to get back to the current version of the project, double-click on the first date listed at the top of the Revision Date list. Once the model is back to the current version, the red box will disappear.

#### Lesson 6 Review

- 1. Once you've made a change in model, the previous state can never be recovered.
  - a. True
  - b. False
- 2. Users cannot save changes to their project if a project update is available.
  - a. True
  - b. False

#### Lesson 6 Summary

As a result of this lesson, you can:

- Access and review your model's history
- Understand how to update your project from the Project Update window
- Access the history of the commands taken on your project prior to saving Access and review

This page intentionally left blank.



# LESSON 7 – TAGS AND OBJECTS

Lesson Duration: 30 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Create custom tags and edit tags
- Create and edit dynamic tags
- Assign and remove tags

**Topics in this Lesson** 

# 7.1 TAGS AND OBJECTS OVERVIEW

Tags are the organizational structure of model objects and define a set of identifiers (category and value). When you export a model through Revit or AutoCAD, or import an IFC file, you are creating tags and objects metadata.

Interact with tags to manipulate your model in a variety of ways, including:

- Selecting a group of model objects
- Visualizing your model with styles associated to tags
- Creating custom tags to enhance a model's value
- Linking documents and photos to tags
- Creating coordination rules to detect clashes

### 7.1.1 Tags and Objects Panel

To access your project's tags and objects, select **View** from the menu bar at the top of the screen. Then, select **Tags and Objects**.



• This will launch the Tags and Objects panel

#### 7.1.1.1 Objects Tab

The **Objects tab** within the Tags and Objects panel displays all the model streams that are available within your project.

Tags	and Ob	jects ×
Tags	Q <sub>Sea</sub>	arch
ects	•	Object 🔨
0	V	<ul> <li>Design Models [ModelGroup]</li> </ul>
	Auto	o-Scroll to Selected

Search for objects in the search bar or use auto-scroll to expand the list of tags that relate to your selected model object(s).

Tags and Objects ×
Search
왕 Object
Posign Models [ModelGroup]
Auto Small to Salected
Auto-scroll to Selected

Tags and Objects     Image: Search       Image: Search       Image: Object       Image: Object
3dSolid: 10021 2dSolid: 10022 ✓ Auto-Scroll to Selected

#### 7.1 Step by Step 1 — Toggle Model Streams Visibility

- 1. From the Tags and Objects panel, select the **Objects tab**.
- 2. Toggle the View check box to turn the visibility of Model Streams on or off.

	ĥ	
Objects	Dbject > Design Models [ModelGroup]	^

#### 7.1.1.2 Tags Tab

The **Tags tab** displays all the tags imported with the model streams and any dynamic or custom tags created.



Select a tag category to expand its list of tag values or use the search bar to find a tag.



# 7.2 CREATE AND EDIT TAGS

Tags are fixed, or static, values within a defined category that help describe the objects to which they are assigned. You can only associate a model object to one **Tag Value** within a **Tag Category**. Create tags through the Model Exporter/Importer, manually in InEight Model or import tags from Excel. Use tags to help define and view your model through different lenses.

### 7.2.1 Manually Create and Edit Custom Tags

Use custom tags to transform design models into construction models or owner models.

Add custom tags to:

- · Normalize data to your specific nomenclature
- Unique Identifications
- Status
- Endless possibilities...

### 7.2 Step by Step 1 — Creating Tags

- 1. From the Tags and Objects panel, select the **Tags** tab.
- 2. Next, select the Add icon.



#### TIP If there are model objects selected, **Ctrl+T** will open the Tag dialog box.

3. The Tag dialog box will open. Enter a tag category name and select Add New.



• Once you select Add New, the new Tag Category is created and selected

**NOTE** If you select **OK** without first selecting **Add New**, you will close the Tag dialog box without saving your tag category name.

4. Enter a tag value and select Add New.

VEO		×
Static Dynamic		
Tag Category	Tag Value	
ACAD Block	In Progress	
ACAD Layer	Incomplete	
Asset_ID		
Example Status		
Installation Status		
Model Neo Compliant		
Project Status		
Project Status		
	Complete	Add New
	<b>✓ OK</b> X Cance	

5. Now, select **OK** to save your new tag(s).

VEO				×
	<u>.</u>			~
Static Dynamic				
Tag Category		Tag Value		
ACAD Block		Complete		
ACAD Layer		In Progress		
Asset_ID Example Status		Incomplete		
Installation Status				
Model				
Non-Compliant				
Project Status				
		✓ OK	Cancel	Preview

# **NOTE** If any model objects are actively selected, a note will appear in the Tag dialog box asking you to confirm that you want to apply your tag to those selected objects.

6. Your new tag will appear in the Tag panel.

Tags	and Objects
lags	<b>Q</b> Search
Objects 7	<ul> <li>ACAD Block</li> <li>ACAD Layer</li> <li>Asset ID</li> <li>Example Status         <ul> <li>Complete</li> <li>In Progress</li> <li>Incomplete</li> </ul> </li> <li>Installation Status</li> </ul>
	<ul> <li>Model</li> <li>Non-Compliant</li> <li>Project Status</li> </ul>
	+//AddEditDelete

### 7.2.2 Delete a Tag

Any tags from the Model Exporter / Importer process deleted are not really deleted. They are still in the database but hidden from the Tag panel. The next Model Exporter / Importer process will not import any tag that has been deleted.

#### 7.2 Step by Step 2 — Deleting Tags

- 1. From the Tags and Objects panel, select the Tags tab.
- 2. Select the tag category or tag value(s) you want to delete, then click on the Delete icon.



# 7.3 CREATE AND EDIT DYNAMIC TAGS

Unlike static tags, dynamic tags are controlled by rule sets. They are powerful tools in creating custom groups of objects for various interactions. Use Dynamic tags to configure coordination rules and normalize data.

### 7.3 Step by Step 1 — Creating Dynamic Tags

- 1. Open the Tags and Objects panel.
- 2. Check that no model objects are actively selected.
- 3. Select the Add icon to open the Tags dialog box.
- 4. Select the **Dynamic** tab.



5. Enter a name and select a category from the drop-down menu or select New....

I VEO			×
Static Dynamic			
Existing Tags	_ Dynamic Tag _		
<b>Q</b> Search	Name:	Status - Complete	
ACAD Block	Category:	Project Status	~
AcAb Layer	ANY		~
Example Status     Installation Status	Include objects	from ANY of these tags:	
► Model			
Project Status			
			Θ
	Excluding object	rs from these tace.	Remove
			⊖ Pemove
			Kenove
		🗸 ок 🗙 са	ncel 🔎 Preview

6. Select either ANY or ALL from the drop-down menu.

TIP ANY includes any object from ANY of the tags selected. ALL includes objects that have ALL of the tags selected.

- 7. From the existing tags list on the left, select the tag(s) you want to include.
  - Use the top arrow to direct that tag from the existing options to your dynamic tag inclusion list on the right. Repeat until you have moved all desirable tags to the included list on the right

atic Dynamic			2
Existing Tags	Dynamic Tag		
<b>Q</b> Search	Name:	Status - Complete	
ACAD Block	Category:	Project Status	¥
▶ ACAD Layer			
Asset_ID	ANY		~
<ul> <li>Example Status</li> </ul>	Include object	s from ANY of these tags:	
Complete			
In Progress			
Incomplete			
Installation Status			
Model			
INOn-Compliant     Designt Status			
Project Status			
	Excluding obje	ects from these tags:	
		🗸 ок 🛛 🗙	Cancel 🔎 Preview

NOTE Existing Tags can be multi-selected by holding CTRL or SHIFT keys on the keyboard.

- 8. From the existing tags list on the left, select the tag(s) you want to exclude.
  - Use the bottom arrow to direct that tag from the existing options to your dynamic tag exclusion list on the right. Repeat until you have moved all undesirable tags to the
#### excluded list on the right

VEO			$\times$
Static Dynamic			
Existing Tags	Dynamic Tag _		
Q Search	Name:	Status - Complete	
ACAD Block	Category:	Project Status	<b>*</b>
ACAD Layer	ANY	inoject status	×
Asset_ID     Example Status	Include objects	from ANY of these tags:	
Complete	ACAD Layer	A-DOOR	
In Progress Incomplete	Example State	us   Complete	
Installation Status			
Model     Non-Compliant			
Project Status			
			Remove
	Excluding object	ts from these tags:	
			Θ
			Remove
			(III) paraulau
		OK X Cancel	> Preview

**NOTE** The same tag cannot exist in both the included and excluded fields.

- 9. Preview the results of your dynamic tag by selecting the **Preview** icon.
  - This will select all model objects that meet the Dynamic Tag criteria

10. To save this dynamic tag, select **OK**.



# **NOTE** Dyanmic tags will not appear in the Existing Tags Column, and therefore cannot be used in another dynamic tag.

Within the Tags and Objects panel, under the Tags tab, Dynamic tags appear in italics.

Þ	Non-Compliant	
	Project Status	
	Power Panel - Complete	
	Status - Complete	

### 7.3 Step by Step 2 — Editing a Dynamic Tag

- 1. Open the Tags and Objects panel.
- 2. Select the dynamic tag you want to edit. Select the **Edit** icon or right click and select **Edit Dynamic Tag** from the drop-down menu.



# 7.4 ASSIGN AND REMOVE TAGS

### 7.4.1 Assigning Tags

Assign custom created tags to model objects to enrich the model with actionable metadata.

### 7.4 Step by Step 1 — Assigning Tags

- 1. Select desired model objects.
- 2. Use the Tags hot key Ctrl + T, or right click to view the Selection Menu.

Selection > Show/Hide >	Select Related Tag Select Object Select Style Select Parent Add Object to Selection Tag Selected Objects Remove Tag from Selected Ob Invert Selection Deselect All Select All	Ctrl+] Ctrl+] Ctrl+T Tag selected objects. Objects may only have one tag in each category. Ctrl+A
	Select All Restore Previous Selection Select Objects Contained in Se Select Objects Intersecting Sele Copy Selection to Clipboard	Ctrl+A Ctrl+Shift+Z lection
	Selection Filter Frame Selected Objects Move Selected Objects Delete Selected Objects	Ctrl+[ F5 Ctrl+Shift+M
	Selection Information	Ctrl+I

3. From the Selection Menu, click on Tag Selected Objects.

4. From the Tags dialog box, select a tag category and value(s) you wish to apply to your selection.

#### 5. Click OK.

Model	3	? ×
Tag CategoryACAD BlockACAD LayerAreaConstruction StatusDisciplineDiscipline_Area	Tag Value 0_NoProgress 1_On Site 2_Installed 3_QA/QC Complete	
Add New Clicking OK will apply the selected tag	to 974 objects	Add New

### NOTE Clicking OK will apply the selected tag to the actively selected objects.

TIP If the desired tag category or value is not available, then simply create it, then select **OK**.

### 7.4.2 Removing Tags

Quickly remove tags from model objects.

### 7.4 Step by Step 2 — Removing Tags

- 1. Select desired model objects.
- 2. Right click to view the Selection Menu.
- 3. From the Selection Menu, select the tags you want to remove from your selected objects.

Selection	Select Related Tag	+	
Show/Hide	Select Object		
	Select Style		
	Select Parent	Ctrl+]	
	Add Object to Selection		
	Tag Selected Objects	Ctrl+T	
	Remove Tag from Selected Objects	÷	ACAD Block
	Invert Selection	Ctrl+Shift+I	ACAD Layer
	Deselect All	F6	Asset_ID
	Select All	Ctrl+A	Model
	Restore Previous Selection	Ctrl+Shift+Z	Non-Compliant
	Select Objects Contained in Selection		
	Select Objects Intersecting Selection		
	Copy Selection to Clipboard		
	Selection Filter	Ctrl+[	
	Frame Selected Objects	F5	
	Move Selected Objects	Ctrl+Shift+M	
	Delete Selected Objects		
	Selection Information	Ctrl+l	

# 7.5 COPY METADATA FROM MODEL TO EXCEL

Metadata can be copied from your model into Excel by selecting the whole model or specific parts of the model, copying that data to the clipboard, and then pasting that data into excel.

The following step-by-step walks you through how to copy metadata from Model to Excel.

### 7.5 Step by Step 1 — Copy Metadata from Model to Excel

- 1. Select model objects.
- 2. Right-click anywhere in the viewer and select Selection > Copy Selection to Clipboard.



3. Open Excel, and then paste the copied items.

File Home Insert Page Layout I Paste O Calibri 11 - A A B I U - Calibri A Clipboard 5 Fort	Formulas Data Review 文 王 王 王 永 《 终 W - 王 王 王 王 王 王 M M - Alignment	View Help BLUE rap Text erge & Center v Sensitiv Sensitiv	EBEAM InEight <sup>m</sup> General ity \$ ~ % <b>9</b> Number	Condition Formatting	al Format as Cell y Table Y Styles Styles	↓ Insert ↓ E Delete ↓ Format ↓ Cells	∑ × ÂŢŢ Sort & Find & Filter × Select × Editing	Analyze Analyze Data Analysis	Share DF Create PDF Change Settings Batch PDF Bluebeam	mments
B10 → 🗄 🔀 🗸 🖌 Cast Ir	on - Bronze Fitted - Red									
АВ	с									
1 Object Id Name	00 - Asset	01 - Construction Area	03- RFIs	Area Element Id		Height Material	Name - CAD	Model	Model Group	Revit Fa
2 {effe4c57-5 Cast Iron - Bronze Fitted - Red	O1 Hot Water Pump-04	O1-Area C		19 SF O1 Hot W	ater_Pump-04	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office 1	Mechan
3 {05f9da42-(Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C		19 SF O1_Hot_W	ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
4 {48996eda- Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-04	O1-Area C		19 SF O1_Hot_W	ater_Pump-04	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
5 {bb8510e7- Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C		19 SF O1_Hot_W	ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
6 {2a91c876- Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C		23 SF O1_Cold_W	/ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
7 {85f38a23-f Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C		23 SF O1_Cold_W	/ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
8 {63a02974- Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-01	O1-Area C		23 SF O1_Cold_W	/ater_Pump-01	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
9 {0f15d8e5-{Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C		19 SF O1_Hot_W	ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
10 {451da98f-: Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-03	O1-Area C		19 SF O1_Hot_W	ater_Pump-03	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
11 {d7f5a8e6-{Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C		19 SF O1_Hot_W	ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
12 {1387be6a- Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C		23 SF O1_Cold_W	/ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
13 {6cdbfe73-: Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-03	O1-Area C		19 SF O1_Hot_W	ater_Pump-03	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
14 {3490c433- Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C		23 SF O1_Cold_W	/ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
15 {3ece241c-(Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-01	O1-Area C	RFI-O1-HWP-01	19 SF O1_Hot_W	ater_Pump-01	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
16 {4e3b9bce- Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-01	O1-Area C	RFI-O1-HWP-01	19 SF O1_Hot_W	ater_Pump-01	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
17 {b4c46216- Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-01	O1-Area C	RFI-O1-HWP-01	19 SF O1_Hot_W	ater_Pump-01	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
18 {1c1f2d5a-4Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C		19 SF O1_Hot_W	ater_Pump-02	Cast Iron	- Bronze Fitted - Red	MECH_OFFICE_1	Office_1	Mechan
19 {6f53aaec-a Steel - AERCO - Grey - Dark	O1 Boiler 04	O1-Area C		84 SF O1 Boiler	04	6.5 Steel - AE	RCO - Grey - Dark	MECH OFFICE 1	Office 1	Mechan
· → Sheet1 ①					1					
Ready						La c	Display Settings	· · · · · ·		- + 100%

All metadata associated with the selected objects is now pasted into Excel.

# 7.6 TAG DATA EXPORTER

The Tag Data Exporter provides the ability to identify a Tag to pivot off of. It also lets you identify your desired related tags to include in an export of model metadata into a CSV file. The configurations can be saved for repeatable use. These configurations can also be imported and exported as needed for other projects.

### 7.6 Step by Step 1 — Export Tag Data to CSV file

- 1. Right-click the **Tags** tab in the Tags and Objects panel.
- 2. Select Tag Data Exporter....



3. Select a Tag, and then move it to the Identifier/Pivot Tag field.



4. You can be specific with the Tag values by removing any values that you do not want to be a part of the export. Select the tag values, and then click **Remove**.



5. You can also be specific with the Tag values by selecting your values, and then moving them into the Identifier/Pivot Tag area.

ags	Saved Configurations	
Search		. J. 🏢 🕯
▼ 00 - Asset	Configuration Name	
O1 Boiler 01		
O1 Boiler_02	T-tND/Dtt-T	
O1_Boiler_03	Identifier/Prvot Tag	
O1_Boiler_04	00 - Asset	
O1_Chiller_01	O1_Boiler_01	
O1_Chiller_02	O1_Boiler_02	
O1_Cold_Water_Pump_01	O1_Boiler_03	
O1_Cold_Water_Pump_02	O1_Boiler_04	
01 - Construction Area		
02 - Construction Levels		
10 - Construction Status		
20 - Coordination Tags		
Area		
<ul> <li>Bottom Elevation</li> </ul>		$\sim$
<ul> <li>Damper Width</li> </ul>		
<ul> <li>Duct Width</li> </ul>	Taos to be exported	
<ul> <li>Elec Conduit Size</li> </ul>		
Elevation		
Elevation at Bottom		
<ul> <li>Elevation at Top</li> </ul>		
Height		
Invert Elevation		
▶ Length		
Material Name - CAD		
Model		
Nominal Weight		
Revit_Family_Type		

6. Select additional **Tags**, and move them to the **Tags to be exported** field.



7. Enter a **Configuration Name** and click **Save** to access this configuration again.

Tags	Saved Configurations	
Search	· · · · · · · · · · · · · · · · · · ·	<b>III</b>
▶ 00 - Asset	Configuration Name	
01 - Construction Area	Asset Information	
02 - Construction Levels	Identifier/Pivot Tao	
10 - Construction Status		
20 - Coordination Tags	00 - Asset	
▶ Area	O1_Boiler_01	
<ul> <li>Bottom Elevation</li> </ul>	O1_Boiler_02	
Damper Width	O1_Boiler_03	
<ul> <li>Duct Width</li> </ul>	O1_Boiler_04	
<ul> <li>Elec Conduit Size</li> </ul>	O1_Chiller_01	
<ul> <li>Elevation</li> </ul>		
<ul> <li>Elevation at Bottom</li> </ul>		
<ul> <li>Elevation at Top</li> </ul>	Tags to be exported	
<ul> <li>Height</li> </ul>	01 - Construction Area	
Invert Elevation	Material Name - CAD	
Length	Revit_Family_Type	
Material Name - CAD		
Model		
Nominal Weight		
Revit_Family_Type		
Revit_Function		

8. The saved configurations can be imported, exported, and deleted.



9. Toggle the **Include Objects Column** if you want the data exported to be combined into like rows according to the data with a leading column providing a count of objects meeting that row of data.



- 10. Click **Export All...** to export all data related to the configuration into a CVS file.
- 11. Click **Export...** to only export data related to the configuration and the model objects currently selected.
  - CVS file with the Object Column

AutoSave C	me Insert Pane Lavout	2022-03-24	13_41_53 Tag Data-3 St	ory Building 3.csv 👻		Search (Alt	+Q)		Dale I	Dutton 🌹		nments	C :
Paste	Calibri 11 A B I U V E V C V		Image: Sensitivity           Image: Sensitivity           Image: Sensitivity           Image: Sensitivity	General ~ \$ ~ % 9 *.00 -00 Number 5	Conditio	nal Format 15 Table * 15 *	ting Y	Elisert v Delete v Format v	∑ v 2v v ⊡ v , o v ¢ v	Analyze Data	Crev Cha	ate PDF inge Setting ch PDF	5
M23	• : × ✓ fr				_		_						
			l c	l D		F	E E		н Г	1.1	1.1	к I.	
1 Objects 2 18 3 201 4 110 5 11 6 22 7 8 9 10	BEAM sizes M_Concrete-Rectangular Beam M_Concrete-Rectangular Beam M_Concrete-Rectangular Beam M_Concrete-Rectangular Beam M_Concrete-Rectangular Beam	n:300 x 600mm n:400 x 800mm n:400 x 800mm n:600 x 900:1 n:600 x 900:1	30-Estimating Tags Beam:300 x 600 Beam:400 x 800 Beam:600 x 800 Beam:600 x 900	IFC Material Concrete - Precas Concrete - Precas Default Floor Default Floor Concrete - Precas	t Concrete it Concrete it Concrete								
< >	2022-03-24 13_41_53 Tag Dat	a-3 (+)				:	4	Disalau Satti		m m			+ 100

• CVS file without the Object Column

File H	ome Insert	Page Lay	vout Fo	rmulas	Data I	Review View	Help E	LUEBEAN	ng s.csv • 1 InEig	jht™	у Da	e Dutton	, ,	Comments	් Sh	are
Paste 🗸	Calibri BIU Calibri			** ₩ *	Sensitivity	General ~ \$ ~ % <b>9</b> 58 -88	Condition Format a	nal Format s Table * s *	ting ~	Insert ~ Delete ~ Format ~	∑ * 27 ⊌ * ,0 ♦ *	Analyz Data	°	Create PDF Change Setting Batch PDF	IS	
Clipboard	For Fort	5	Alignme	nt 🗔	Sensitivity	Number 🕞		ityles		Cells	Editing	Analysi	s	Bluebeam	_	_
019	• = ×	√ fx														
4																
BEAM siz	zes			30-Estim	ating Tags	IFC Material										
M_Conc	rete-Rectangula	r Beam:300	x 600mm	Beam:30	0 x 600	Concrete - Precas	st Concrete									
M_Conc	rete-Rectangula	r Beam:400	x 800mm	Beam:40	0 x 800	Concrete - Precas	t Concrete									
M_Conc	rete-Rectangula	r Beam:400	x 800mm	Beam:40	0 x 800	Default Floor										
M Conc	rete-Rectangula	r Beam:600	x 900:1	Beam:60	0 x 900	Default Floor										
M Conc	rete-Rectangula	Beam:600	x 900:1	Beam:60	0 x 900	Concrete - Precas	t Concrete									
	0															
0																
1																
	2022-03-24 1	3 46 43 Ta	n Data-3	0			_				_	_	_	-		i.
	2022-03-24 1	240 43 18	y Data-5													Ľ.

## 7.7 IMPORT TAGS FROM EXCEL

Custom Tags can be imported from Excel into the model.

Within Excel, one column needs to contain a unique tag for the Category Tag / Category Values that exist within the model.

Assign custom created tags to model objects to enrich the model with actionable metadata.

### 7.7 Step by Step 1 — Import Tags from Excel

1. Establish Unique ID information within excel. (i.e., Asset\_ID in column A.)

File Hon	ne Insert P	age Layout I	Formulas	Data	Review	View	Help	BLUEBEAM	InEight"	u E	
Log in Project	t: <none> ~</none>	Table Import	Set ID Tag S Bulk A & Select	g <none> Assign Tags Tag</none>	Auto	Select e Selected	Audit Tags	Visual Reporting Y	Settings		
P	roject	Data	Act	tions		Modifiers					^
M16	• : × 🗸	fx									¥
A	В	c	D			G	Н			K	
1 Asset_ID	Installation Sta	tus									
2 Panel-001	Complete										
3 Panel-002	Complete										
4 Panel-003	Has Issues										
5 Panel-004	In Progress										
6 Panel-005	Not Started										
7											
Solution 1	Sheet1 +					: •					
Ready					🙀 Display	Settings		I — —		+	100%

NOTE Asset\_ID has to be an existing Tag Category along with the information in cells A2 thru A20 must be existing Tag Values within the model.

Asset\_ID cannot have any duplicates.

Model Objects must be assigned to the Unique ID.

2. Establish metadata to import into the model. (i.e. Installation Status in column B)

File Hom Log in Project:	e Insert Pa	age Layout Table Import	Formulas Set ID Tag S Bulk A Select	Data g <none> Assign Tags t Tag</none>	Review Auto	View o Select ne Selected	Help LEF Audit Tags	BLUEBEAM	InEight <sup>*</sup>	M LÉ	3 🖵
Pro	oject	Data	Ac	tions		Modifiers					^
M16	• : × 🗸	fx									*
A	В	с	D			G	н			К	
1 Asset_ID	Installation Stat	tus									
2 Panel-001	Complete										
3 Panel-002	Complete										
4 Panel-003	Has Issues										
5 Panel-004	In Progress										
6 Panel-005	Not Started										
7											
€ → Sl	heet1 +					: 📢					
Ready					्रम् Displa	y Settings				+	100%

3. Select the InEight tab within the Excel ribbon.



4. Select a cell within the Unique ID column.

File File Log in Pr	Home I ser: cct: roject: <none< th=""><th>nsert Page</th><th>e Layout I Table Import</th><th>Formulas Set ID Tag &amp; Bulk A &amp; Select</th><th>Data g <none> Assign Tags : Tag</none></th><th>Review Auto</th><th>View o Select ne Selected</th><th>Help LEF Audit Tags</th><th>BLUEBEAM</th><th>InEight™ © Settings ✓</th><th>ß</th><th></th></none<>	nsert Page	e Layout I Table Import	Formulas Set ID Tag & Bulk A & Select	Data g <none> Assign Tags : Tag</none>	Review Auto	View o Select ne Selected	Help LEF Audit Tags	BLUEBEAM	InEight™ © Settings ✓	ß	
	Project		Data	Ac	tions		Modifiers					^
M16	• :	× 🗸	f <sub>x</sub>									~
A	A	В	c	D			G	н			к	
1 Asset	ID Insta	allation Status	5									
2 Panel-	001 Com	plete										
3 Panel-	002 Com	plete										
4 Panel-	003 Has	lssues										
5 Panel-	004 In Pr	ogress										
6 Panel-	005 Not	Started										
7												
• •	Sheet1	÷					: 🔳	_				
Ready						😽 Display	y Settings		3 🗉 –		+	100%

5. Within the Actions menu, select Set ID Tag.

File Home Compared Home Log in Project:	e Insert Page Ta	Layout Formulas	Data F Fag Asset_ID Assign Tags ect Tag	Review View Auto Select Frame Selected	Help LEE Audit Tags	BLUEBEAM Visual Reporting ~	InEight™ © Settings ×	
Pro	ject	Data	Actions	Modifiers				^
A3 •	: × ✓ ƒ	🗴 Panel-002						¥
Α	В	C D		F G	н			к 🛛 🔺
1 Asset_ID	Installation Status							
2 Panel-001	Complete							
3 Panel-002	Complete							
4 Panel-003	Has Issues							
5 Panel-004	In Progress							
6 Panel-005	Not Started							
7								
Sh	eet1 +			: 🔳				
Ready				🙀 Display Settings		3		

NOTE The Set ID Tag will change from <none> to the column header. (i.e. Asset\_ID)

6. Select a range of cell(s) within the column of data to import.

File Home Insert P User: Log in Project: <none></none>	age Layout Fo	ormulas Data Set ID Tag Asset_ID ③ Bulk Assign Tags & Select Tag	Review View Auto Select Frame Selected	Help Audit Tags	BLUEBEAM	InEight™ © Settings ✓	
Project	Data	Actions	Modifiers				^
B2 • : × •	<i>f</i> x Comple	ete					¥
A B	с	DE	F G	н		J	к 🗖
1Asset_IDInstallation Sta2Panel-001Complete3Panel-002Complete4Panel-003Has Issues5Panel-004In Progress6Panel-005Not Started700	tus						
← → Sheet1 ↔			: 🔳				
Ready		Count: 5	🕞 Display Settings		I — —		+ 100%

7. Within the Actions menu, select **Bulk Assign Tags**.

File Home Insert	Page Layout F	ormulas Data	Review View	Help	BLUEBEAM	InEight™	ß P
Log in Project: <a href="https://www.selfacture.com">Output: User: Acct:</a>	Table Import	Set ID Tag Asset_ID     Set ID Tag Asset_ID     Bulk Assign Tags     F Select Tag	Auto Select	Audit Tags	Visual Reporting Y	Settings	
Project	Data	Actions	Modifiers				^
B2 • : × •	✓ <i>f</i> x Comp	lete					*
A B	С	DE	F G	н	I	J	к 📃 🗖
1 Asset_ID Installation S	tatus						
2 Panel-001 Complete							
3 Panel-002 Complete							
4 Panel-003 Has Issues							
5 Panel-004 In Progress							
6 Panel-005 Not Started							
7							
Sheet1 +			: 1				
Ready		Count: 5	🙀 Display Settings		▣ ─ -		+ 100%

8. Import multiple columns of metadata, by selecting a range of cells that span columns.

File Home Log in Project:	e Insert Pa <none> &lt;</none>	age Layout Fo	ormulas Data Set ID Tag Asset_ID ♥ Bulk Assign Tags ₽ Select Tag	Review Aut	View o Select me Selected	Help Audit Tags	BLUEBEAM Visual Reporting ~	InEight™ © Settings	E	2
Proj	iect	Data	Actions		Modifiers					^
B2 -	: × 🗸	<i>f</i> x Comple	ete	_	_		_	_		¥
A	В	С	D			G	н			
1 Asset_ID	Installation Stat	tus Manufactur	er Material Status							
2 Panel-001	Complete	Siemens	Installed							
3 Panel-002	Complete	Siemens	Installed							
4 Panel-003	Has Issues	Square D	On Site							
5 Panel-004	In Progress	Square D	On Site							
6 Panel-005	Not Started	Square D	Not Ordered							
7										-
∢ → Sh	eet1 (+				: 🔳					
Ready			Count: 15	a Displa	y Settings	III	E <u> </u>		+	100%

9. Within the Actions menu, select **Bulk Assign Tags**.

File	Home	Insert	Page Layo	ut Fori	mulas Data	Review	View	Help	BLUEBEAM	InEight™	ß F	1
Log	User: Acct: Project:	<none></none>	Table	Import	Set ID Tag Asset_ID ≫ Bulk Assign Tags ☞ Select Tag	Aut	o Select ne Selected	Audit	Visual Reporting X	Settings		
	Proie	ect	Da	ta	Actions		Modifiers	lags	Reporting			
<b>P</b> 2		: × .	fr	Complete		_		_		_	_	
			Jx	complete	-	_	1	1				
	A	B		C	D	E	F	G	H		J	
1 Asse	et_ID	Installation St	atus Ma	nufacturer	Material Status							
2 Pan	el-001	Complete	Sier	mens	Installed							
3 Pan	el-002	Complete	Sier	mens	Installed							
4 Pan	el-003	Has Issues	Squ	are D	On Site							
5 Pan	el-004	In Progress	Squ	are D	On Site							
6 Pan	el-005	Not Started	Sau	are D	Not Ordered							
7												
0	_											-
►	She	eet1 🕀										
Ready					Count: 15	🙀 Displa	y Settings					ļ

**NOTE** There will be NO indication notice that the data has been imported.

#### 10. Results:



### 7.8 SELECT MODEL OBJECTS VIA EXCEL

Model objects can be auto-selected and framed in the model viewer by selecting tag values in Excel. In Excel, the top row represents the Tag Category. Any row below the top row represents the Tag Value. The Tag Category and Tag Value must be exactly the same in Model in order for Excel to interact with Model.

The following step-by-step walks you through how to auto-select Model objects in Excel.

**NOTE** The following steps require the Excel Plugin to be installed.

### 7.8 Step by Step 1 — Select Model Objects via Excel

- 1. From Excel, select the **InEight** tab from the top menu.
- Under the Project section, Click Login.
   The Login to InEight dialog box opens.
- 3. Login using the same credentials for InEight Model.

🕲 Login to	InEight			$\times$
Username:				
Password:				
Forgot Pass	word?	OK	Cancel	

- 4. Select the project you are currently in, and then click **OK**.
- 5. In Excel under the InEight tab in the Modifiers section, select the check marks for both **Auto Select** and **Frame Selected**.



- 6. Select a tag value from the metadata copied from the Model into Excel.
- 7. In the Actions section, click **Select Tag**.

© User: III.↓	ormulas Data Review Set ID Tag <none></none>	View Help BL	UEBEAM InEight <sup>™</sup>	C Share	Comments
Log Acct Project: DEMO - RID v Table Imp2	Bulk Assign Tags Fran	me Selected Audit Tags	Set Color <none> Show in Model</none>	Settings Questi Template	ion Tool ~
Project Data	Actions	Modifiers	Visual Reporting	-	
s · : · · · Jx OI_HO	ot_water_Pump-02				, in the second s
A B Object Id Name	C C	D 01 - Construction Ar	E Ar	F G	
(effe4c57-5 Cast Iron - Bronze Fitted - Red	01 Hot Water Pump-04	01-Area C	19	SF 01 Hot Water	Pump-04
(05f9da42-(Cast Iron - Bronze Fitted - R.1	O1_Hot_Water_Pump-02	C1-Area C	19	SF 01_Hot_Water	Pump-02
{48996eda- Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-04	01-Area C	19	SF O1_Hot_Water	Pump-04
{bb8510e7-Cast Iron - Bronze Fitted - Red	O1_Hot_Water_Pump-02	O1-Area C	19	SF 01_Hot_Water	Pump-02
{2a91c876-+Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C	23	SF O1_Cold_Water	r_Pump-02
(85f38a23-1 Cast Iron - Bronze Fitted - Red	O1_Cold_Water_Pump-02	O1-Area C	23	SF O1_Cold_Water	r_Pump-02
(63a02974-Cast Iron - Bronze Fitted - Ked	OI_Cold_Water_Pump-01	U1-Area C	23	SF UI_Cold_Water	r_Pump-01
→ Sheet1 ⊕			•		<u> </u>
		Lab	splay Settings 🔛 🗈		+ 100%
					+ 10%

# 7.9 CREATE TABLES OF EXTERNAL DATA

NOTE

Only a Project Admin can create Generic Tables to import external data and link to a Unique ID Tag in Model.

External information can be accessed in Model but is managed externally using Excel.

### 7.9.1 Identify the model Unique ID

The following step-by-step walks you through how to identify the model Unique ID in Excel.

NOTE The following steps require the Excel Plugin to be installed and for a Project Admin to be logged into the InEight Excel Plugin.

### 7.9 Step by Step 1 -Identify the model Unique ID

1. After you log into Excel, use the first column (cell A1) to match a Tag Category in Model.

File D Log in	Home User: Acct: Project: Pro	e Inser <none> ject</none>	t Pag	e Layout For Table Import	mulas Data F Set ID Tag <none> Bulk Assign Tags &amp; Select Tag Actions</none>	leview View H Auto Select Frame Selected Modifiers	ielp Audit Tags	BLUEBEAM InEight** Set ID Tag <none> Set Color <none> Show in Model Visual Reporting</none></none>	Q Pending Changes	Advanced Settings Settings	lark Editable Fields s			년 Share	Comments
A1		i i x	<ul> <li>✓</li> </ul>	<b>f</b> x 00 - Asse	et.										
	A														
00 -	Asset	Serial #	Model #	Manufacture	er Manufacturer E	quipment Description	n Man	ufacturer Equipment Type	Expected	Service Life	Date Installed	Mantenance	- Last Date	Maintenance	- Next Date
4															
6															
7															
8															
10															
4	м	ajor Equij	oment	Material Status	•				:	4					D D
leady											Display Se	ettings			+ 100%

Columns B and beyond can contain additional columns of data as needed.

2. Rename the Tab to the preferred Table Name.

Although this is not a required step, it can provide clarity as you develop the extra data.

- 3. Under the InEight tab in the Data section, select **Table**.
- 4. From the drop-down menu, in the New Table section, select Create new Table.

AutoSave 💽 🗄 🏷 ~ 🖓	✓ → Custom Table and M
File Home Insert Pag	ge Layout Formulas Data
User: Log out Project: DEMO - RID v	Table Import Set ID Tag <none>     Set ID Ta</none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none></none>
Project	Query Multiple Tables
A1 • : 🗙 🗸	Existing Table
	admin >
1 00 - Asset Serial # Model #	Elements >
15	Notifications >
17	Tracked Issues
18	Work Packages
20	MAJOR_EQP_MAINT >
Major Equipment	Major_Equipment >
Opened project 'DEMO - RIDGEGATE CAMP	Notification Blacklist >
	Project Setting >
	Workflow Input State Config $$ >
	Workflow State
	Workflow State Validator >
	Workflow Step
	New Table
	Create new Table

- 5. From the Create new Table data box:
  - a. Select the check mark for Use headers from current Excel worksheet.
  - b. Confirm the Schema Name is labeled with the preferred name with no spaces.

c. Select Generic Table for the Table Type.

Create new table definition	Α	_	
Schema Name: Major_Equipment	Use headers from cur	rent Excel w	vorksheet
Column Name 🛛 🔒	Data Type	Identifier	
00 - Asset	Short String (32 chars.) *	0	Remove
Serial #	Short String (32 chars.) ×	0	Remove
Model #	Short String (32 chars.) ×	0	Remove
Manufacturer	Short String (32 chars.) ×	0	Remove
Equipment Description	Short String (32 chars.) ×	0	Remove
Equipment Type	Short String (32 chars.) ×	0	Remove
Expected Service Life	Short String (32 chars.) ×	0	Remove
Date Installed	Short String (32 chars.) ~	0	Remove
Maintenance - Last Date	Short String (32 chars.) ×	0	Remove
Maintenance - Next Date	Short String (32 chars.) ×	0	Remove
Add Field Table Type: Generic Table V	Please selects an Ider	tifier field fo	or a generic table.

6. Select one item to be the **Identifier** (i.e. 00 – Asset).

**NOTE** This must be a pre-existing Tag Category in Model.

🛃 Pending Chang	es —		$\times$
Created 1 Major_E Created 1 Major_E	quipment records. quipment records.	5.	
Publish	Discard	Clos	e

7. In the Data Type column, choose the correct Data Type for each Column Name.

NOTE All data types are defaulted to Short String.

- String: can contain any sequence of characters
- Integer: a whole number (not a fractional number) that can be positive, negative, or zero (-5, 1, 5, 8, 97, 3243)
- Location: GPS latitude and longitude coordinates
- Short String: can contain any sequence of characters limited to 32 characters
  - If this is chosen, make sure that your data will not extend beyond 32 characters or you will encounter an error when uploading data.
- **TimeStamp**: a seven part value representing a date and time by year, month, day, hour, minute, second

- GUID: Global Unique ID
- Unsigned Integer: often called units which are zero or positive numbers
- Long Integer: longer than an integer
- Float: a number that is not an integer, because it includes a fraction in decimal format
- **Double**: can represent a fractional and whole values and can use exponential notation (1.0e6 to represent one million)

NOTE You can add or remove any of the column name fields.

8. After all Column Name fields have the preferred Data Type, select **OK** to create the Generic Table.

The new tab is then shaded in red to showthat it is now a table available in the Model database.

Three new fields also show: Created By, Created On and Property ID.

File Home Insert Page Layout F User: Log Project: DEMO - RID v Table Import	ormulas Data Review View Set ID Tag <none> Auto Select &amp; Bulk Assign Tags Frame Selecter &amp; Select Tag</none>	Help BLUEBEAM	InEight <sup>™</sup> (none> ↓ ↓ ↓ Show in Model	Pending Changes Settings Mark Editable Fields	ය Share Generate Question Template Worksheet Import Question Templates	Comments
Project Data	Actions Modifier	visual	Reporting	Settings	Question Template Tool	
A1 • : × √ ƒx 00-As	set					~
						MIE
00 - Asset Serial # Model # Manufacturer E	quipment Description Equipment Type	Expected Service Life	Date Installed	Maintenance - Last Date Maintenance	Next Date Created By Created On	Property ID
2						
5						
6						
7						
						E
Alightary Major_Equipment-1 Major_Equip	oment 🛛 🕁					

### 7.9.2 Add information to Generic Table

The following step-by-step walks you through how to add information to the generic table.

#### 7.9 Step by Step 2 — Add information to Generic Table

- 1. Open Excel and log in.
- 2. Under the InEight tab in the Data section, select **Table**.

- 3. Under Existing Table, select the name of your newly created Generic Table, and then select **Query All**.
- 4. In the Identifier column or the Unique ID, fill in the data from the model.

User: Acct: Project: DEMO - RID. • Table Import	Set ID Ta D Bulk / P Selec	ig <none> Assign Tags ct Tag</none>	s Frami	Select A	ludit lags	Set ID Tag <none> Set Color <none> Shor Mo</none></none>	v in Pending del Changes	Advanced Settings	Generate Que Import Ques Fields	stion Template Work ion Templates	sheet						
Project Data	Ac	ctions	_	Modifiers		Visual Reporting	1	Settings	Que	stion Template Tool				_	_		_
I × ✓ fr O1_Boile	r_01																
A																	
0 - Asset S	ierial #	Model # M	Manufacture	r Equipment	t Descri	iption Equipment Typ	e Expected Servi	ice Life Date Installe	d Maintenance - Las	Date Maintenar	ce - Next Date	Created By	Created On	Property IC	)		
1_Boiler_01													9/27/2021 2:20 PM	12892920-#	821-4ab0-	8e99-eb50c8f	76e1
01_Boiler_02													9/27/2021 2:20 PM	d21ca79e-f	0c3-4ca5-8	b6a-585c9ab9	Ja6e3
1_Boiler_03													9/27/2021 2:20 PM	435d2ccb-f	db6-43a1-9	bee-27fe948	c07e3
1_Boiler_04													9/27/2021 2:20 PM	8f76eed8-9	ddd-44b4-	af5d-b2b06ba	acb52
1_Cold_Water_Pump-01													9/27/2021 2:20 PM	297f1c34-8	92e-4001-a	0fe-3dc16911	17d83
1 Cold Water Pump-02													9/27/2021 2:20 PM	1c169bda-a	aca5-495d-	92ab-ea8d797	/deaf
1 Expansion Tank													9/27/2021 2:20 PM	46f68812-5	302-47c1-a	dfb-1571b80	1b8c
1 Hot Water Pump-01													9/27/2021 2:20 PM	6754aede-8	84db-4bac-	8378-6926444	45964
1 Hot Water Pump-02													9/27/2021 2:20 PM	e1dac155-c	:830-421f-b	1da-98dea07	83ec
1 Hot Water Pump-03													9/27/2021 2:20 PM	617a2201-f	97ac-40e5-	afdc-f081e97d	da 1f4
													9/27/2021 2:20 PM	def545ff-0a	5f-4d44-a	a3a-4c0ef85b4	44a4
1 Hot Water Pump-04																	
1_Hot_Water_Pump-04 1_HVAC_Chemical_Treatment_Equipment													9/27/2021 2:20 PM	5ac89df4-9	841-4870-8	3a8a-66d1799	7748

The new information is then highlighted in yellow. This shows that the information has been added or modified but not yet saved to the database table.

5. Under the InEight tab in the Settings section, click **Pending Changes**.



6. Click **Publish**.

🛃 Pending Changes	_		$\times$
Created 1 Major_Equipmen Created 1 Major_Equipmen	t records. t records.		
Publish Discar	d	Clos	Se l

The database table is now updated.

7. Fill in any additional data throughout the project as needed.

### 7.9.3 Import information to Generic Table

The following step-by-step walks you through how to import information into the generic table.

### 7.9 Step by Step 3 — Import information to Generic Table

- 1. Open Excel and log in.
- 2. In Excel, select the spreadsheet tab containing the preferred data that needs to be uploaded into a table.

3. Under the InEight tab in the Data section, select Import.



- 4. In the Import Records dialog box, select the Table schema that you want to upload data into.
- 5. When a warning dialog box appears, select **OK**.

Vorksheet											
olumn Headers chema Fields											
	00 - Asset	Serial #	Model #	Manufacturer	Manufacturer Equipment De	escription	Manufacturer Equipment Type	Expected Service Life	Date Installed	Mantenance - Last Date	Maintenance - Next D
	•					•		•	•		
		-iano	riano	diapora	diamoro	Info	B			×	daparas
	signo	<igno< td=""><td>signo</td><td>Signoles</td><td>-dholes</td><td>Note data v</td><td>that a database table already e vill be added to the existing da</td><td>xists with this schema. tabase table.</td><td>Any imported</td><td>JIE-</td><td>signole?</td></igno<>	signo	Signoles	-dholes	Note data v	that a database table already e vill be added to the existing da	xists with this schema. tabase table.	Any imported	JIE-	signole?
								4			

The Generic table opens with the new data added.

6. Under the InEight tab in the Settings section, select Pending Changes.



7. Click Publish.

The database table is now updated.

### 7.9.4 Refresh existing table data

Throughout the project, data might be updated by another user without notification that an update is happening. You need to refresh your table to see new information.

The following step-by-step walks you through how to refresh existing table data.

### 7.9 Step by Step 4 — Refresh existing table data

- 1. Open Excel and log in.
- 2. Under the InEight tab in the Data section, select Table.
- 3. Under Existing Table, select the name of your newly created Generic Table, and then select **Query All**.

File Home Insert Pa	ge Layout f	Formulas	Data	Review	View	Help
User: Log out Project: DEMO - RID v	Table	Set ID Tag S Bulk Ass Select Ta	<none> sign Tags ag</none>	Auto	Select e Selected	Aud Tage
Project	Query M	ultiple Tables			Modifiers	_
A1 • : 🗙 🗸	Existing Tabl	le				
A	admin		>	с		D
1 00 - Asset	<u>Elemente</u>		、 、	Model #	Manufa	cturer
2 O1_Boiler_01	Elements			AR 2000		
3 O1_Boiler_02	Notificati	ons	>	AR 2000		
4 O1_Boiler_03				AR 3000		
5 O1_Boiler_04	Iracked I	ssues	,	AR 3000		
6 O1_Cold_Water_Pump_01	Work Pag	ckages	>	_F 30127		
7 O1_Cold_Water_Pump_02	_	5		E 20127	-	
8 O1_Expansion_Tank	Major_Eq	uipment	>	Quer	y All	2
9 O1_Hot_Water_Pump_01	Notificati	on Blacklist	>	Remove	Table	U
10 O1_Hot_Water_Pump_02				Keniove	lable	
11 O1_Hot_Water_Pump_03	Project Se	etting	>	Remo	ove Table	
12 O1_Hot_Water_Pump_04	Workfloy	v Input State C	onfig >	.F-25123		
13 O1_HVAC_Chemical_Treatme		input state c	oning ,	EC-5TC		
14	Workflov	v State	>			
▲ Major_Equipment	Workflow	v State Validate	or >	Status	÷	

### 7.9.5 Close Database Tables

The following step-by-step walks you through how to close database tables.

### 7.9 Step by Step 5 — Close database tables

- 1. Open Excel and log in.
- 2. Right-click the Excel spreadsheet table tab.
- 3. Select Delete.

Deleting the table tab only removes the local worksheet from Excel, but it does not remove database tables from your project.

You can also click the x in the top right of Excel. The InEight Excel Plugin dialog box opens showing available options.

InEight E	xcel Plugin	$\times$
?	You have open database tables. Would you like to delete the associated worksheets? Clicking "Yes" will delete the local worksheets but will not remove database tables from your project. Clicking "No" will keep local copies of the database tables open in Excel.	
	Yes No	

#### Lesson 7 Review

- 1. How can you create Tags in InEight Model?
  - a. Manually create from Tags and Objects panel
  - b. Automatically create tags from the metadata of the Export / Import process
  - c. Manually import tags from an Excel file
  - d. All of the above
- 2. Tags are made up of what two components?
  - a. Category, Size
  - b. Size, Value
  - c. Value, Location
  - d. Category, Value
- 3. Deleting a tag that was created through the export / import process does not delete the tag until the **nexttime** you export / import to revise or update your model.
  - a. True
  - b. False

#### Lesson 7 Summary

As a result of this lesson, you can:

- Create and edit static tags
- Create and edit dynamic tags
- Assign to and remove tags from objects

# LESSON 7 – DATA TRANSFORMATION OPERATIONS

## 7.1 DATA TRANSFORMATION OPERATIONS (DTO) OVERVIEW

DTOs provide flexible and repeatable processes to maintain, normalize, add, validate, parse, and concatenate data. DTOs can be exported and imported from project to project to eliminate duplicate effort.

You can access DTOs from the main InEight Model window. Click Logic > **DTO**.

InE	ight M	ODEL						
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Object	Logic <u>A</u> rchive	Track	<u>H</u> elp		
Model				Coordination		Ctrl+8		
				DTO		Ctrl+9		
				Analyze Model Changes				
				Logic View				

The Data Transformation Operations window has three tabs:

- **DTO** Lets you create a tree structure of DTOs.
- Selector You can select model objects from tags and object properties using specific criteria.
- Action Lets you create, parse, concatenate, and quantify model data, and more through various functions.

### 7.1.1 DTO tab

Data Transfo	rmation Operati	ions				×
ſ	οτο	Se	lector		Actions	
			Q Sea	rch		
1 🕀		₿	[]	Œ	$\otimes$	
Enabled	Name		Notes			
	✓ C□ DTO C □ DTO -	Group - 1 1				
			2			
DTO Log						ř
6			3			
000		4 Run s	elected	Run enabled	Test	Save

- 1 Action icons provide one-click actions for the most common DTO functions. You can add, add group, export, import, duplicate, and delete.
- 2 The list view lets you enable or disable DTOs, create DTOs, and view the list grouped by folders.
- 3 The log view shows the interaction information of DTOs when they are used. The Maximize/Minimize icon opens or closes the DTO Log panel. You can use the delete icon to clear the log.
- 4 Bottom action buttons let you run the selected DTOs or selected DTO groups, run all enabled DTOs. Test your included model objects in the Selector tab criteria.
- 5 You can use the Expand Panels icon to view all three tabs at the same time or view one tab at a time.
## 7.1.2 Selector tab

Data Transformation Operations				×
DTO	Selector		Actions	;
DTO - 1			(	• or +
or				×
Rule Type Tag / OP Name		Operator	Value	Exclude
Tag $\checkmark$ Tag_PhysicalType	~	= ~	Foundation $\checkmark$	none 🗸
$(\neq)$				
DTO Log	41014			⊿ 🖬
000	R	Run selected	Run enabled	Test Save

Rule Type	Select Tag or Object Property.
Tag/OP Name	Select a Tag or OP Name
Operator	Select the operator rule.
Value	Select a value from the tag or object property identified in Tag / OP Name field.
Exclude	Exclude the children or parent model objects, or you can ignore using the none value.

After you click the Test button, you can review and validate your selection criteria in the Selection Information panel.



## 7.1.3 Actions tab

Data Transformation	Operations					×
	DTO	Selector		Actions		
DTO - 1						( + )
Action Tag						$\times$
Tag Name		Tag Value				
DTO Log						⊿ 🖬
000			Run selected	Run enabled	Test	Save

# Action Select between multiple action types that include Tag, Temp Property, Calculated, Quantity, Elements, and Sequential Tags.

		Tag Temp Property Calculated Quantity Elements Sequential Tags
	Tag Name	Enter a new unique tag name or select an existing tag name.
	Tag Value	Enter the new value that you want to associate to the Selector tab criteria.
NO	TE The a	vailable fields change depending on the action you select.

## 7.2 CREATE A DTO

In the DTO tab, you can add DTOs manually. First you must create a DTO group, and then add DTOs to the group. DTOs can also be imported and exported between projects to save you time.

## 7.2.1 DTO Tab

#### 7.2.1.1 Add a DTO Group Folder

- 1. In the DTO tab, to Add a DTO group, click the **Add Group** icon.
- 2. You can add notes for the DTO group. Double-click the **Notes** section to add your notes.

Data Transformation Operations ×						
DTO		Selector			Actions	
			Q Search			
	Ð			Ē	$\otimes$	
Enabled Na	me		Notes			
	DTO Grou	up - 1				

#### 7.2.1.2 Add a DTO

- 1. Select a DTO group, and then click the **Add DTO** icon. You can also right-click in the DTO group to add a DTO.
- 2. You can add notes for the DTO. Double-click in the **Notes** section to add your notes.

Data Transformation Operations							
DTO			Selector			Actions	
				Q Searc	h		
(+	•	Ē.	<b>₽</b>	Ţ	Ē	$\otimes$	
Enabled	Name			Notes			
		DTO Grou DTO - 1	ıp - 1				

#### 7.2.1.3 Rename a DTO

You can rename DTO groups and DTOs to better communicate their purpose.

- 1. Click the DTO tab
- 2. Double-click the DTO Group or DTO, and then enter the new name. You can also rightclick the Name column and use the menu.
- 3. Click Save.

Data Transfe	ormation Operations						×
	DTO		Sele	ctor		Actions	
				Q Search			
	$( \div )$	(±	Ţ,	Ţ	Ē	$\otimes$	
Enabled	Name	Notes					
	Constructio	on Levels oundations					
DTO Log							2 🖬
000					Run selected Ru	In enabled Test	Save

### 7.2.2 Selector Tab

After you create a DTO, you can create rules in the Selector tab to build your own criteria to find specific model objects using their tags or object properties.

- 1. In the DTO tab, click your DTO to select it.
- 2. Click the **Selector** tab. You can see your DTO name as a reference. By default, a blank Rule row is created.

Data Transformation Operations		×
DTO	Selector	Actions
DTO - 1		• or •
• or		X
Rule Type Tag / OP Name	Ορε	erator Value Exclude
Tag 🗡	✓ =	✓ ✓ none ✓
$(\pm)$		

- $\label{eq:2.1} \textbf{3.} \ \ \textbf{Fill in the rule information to identify all foundations in the model}.$ 
  - a. Rule Type
  - b. Tag / OP Name
  - C. Operation
  - d. Value
  - e. Exclude

4. Click **Test** to select all objects that meet the criteria.

Data Transformation Operations		×
DTO	Selector	Actions
DTO - 1		◯ or +
or		×
Rule Type Tag / OP Name	Ор	erator Value Exclude
Tag $\checkmark$ Tag_PhysicalType	× =	$\sim$ Foundation $\sim$ none $\sim$
+		
DTO Log		∠ ₪
000	Run	selected Run enabled Test Save

• After you click Test, you can review and validate your selection criteria in the Selection Information panel.

Ni	ime	Count
•	Area	
Þ	Default Style {1a9bea3f-9151-46f9-85	
•	Default Style {7cc82d66-758a-474e-8	
•	Default Style (8a8e3f47-9abc-4f6b-8a	
•	Default Style {db849c5d-0e1f-4699-a	
•	Default Style (de79ea56-6627-4208-8	
•	Length	
•	Material Name - CAD	
٣	Model	
	STRUCT OFFICE 1	271
	STRUCT_GARAGE	210
	Structural.rvt	2126
•	Revit_Family_Type	
•	Tag_Level	
٣	Tag_PhysicalType	
	Foundation	2607
•	Tag_User	
•	Volume	
•	Width	

5. You can add additional rules to filter for other metadata.

- a. Click the **Add** icon below the current rule.
- b. Use the **and/or** toggle to switch between the two options. The ribbon changes color depending on the option.
- C. Fill in your rule criteria.
- 6. Click **Test** to select all objects that meet the criteria.

Data Transforma	tion Operations						×
	DTO	Sele	ctor			Actions	
DTO - 1							or 🕂
• and							×
Rule Type	Tag / OP Name		Operator	Value		Exclude	
Tag 🗡	Tag_PhysicalType			Foundation		∼ none	$\sim$
Tag 🗡	Model			STRUCT OFFIC	E 1	✓ none	$\sim$
+							
DTO Log							2 🖬
000				Run	selected Run	enabled Tes	tSave

• You can review and validate that you have selected the objects as expected in the

Selection Information panel.

Sele	ction Information	Ø
ieneral	Name	Count
	▶ Area	
Tags	Default Style {1a9bea3f-9151-46f9-85	
ប្ត	Material Name - CAD	
Styl€	<ul> <li>Model</li> </ul>	
<u>ب</u>	STRUCT OFFICE 1	215
nen	Revit_Family_Type	
locui	Tag_Level	
	<ul> <li>Tag_PhysicalType</li> </ul>	
ients	Foundation	215
Elem	▶ Volume	

## 7.2.3 Actions Tab

On the Actions tab, you can create a new tag.

1. Click the **Actions** tab. The action window shows the DTO name and by default, creates a blank row for you to fill in.

Data Transformation	Operations				×
	DTO	Selector	Ac	tions	
DTO - 1					+
Action Tag					$\times$
Tag Name		Tag Value			
DTO Log				Ż	↗ 🕁
000			Run selected Run en	abled Test	Save

- 2. Fill in the criteria.
- 3. Enter the tag name and tab value.
  - Click Run selected to execute the DTO and create your tag.
- 4. You can expand the DTO Log panel to view information about the executed DTO.

Data Transformation Operations		×
DTO	Selector	Actions
DTO - 1		$( \div )$
Action Tag		×
Tag Name	Tag Value	
01 - Construction Levels	✓ Office 1 - Foundations	~
DTO Log		* 団
Executing 1 selected DTOs Executing DTO #1 of 1: name: 'DTO - 1' DTO execution complete in 0.771 seconds		
000		Run selected Run enabled Test Save

5. Click Save.



## **1.1 DTO EXAMPLES**

## 1.2 CLEAN UP AND NORMALIZE MODEL DATA

DTOs provide flexible and repeatable processes to clean up and normalize model data. Clean up and normalizing data includes grouping the data from multiple models into a tag, grouping similar models into a single tag, converting dimensional text data into a number, and converting lengths such as inches to feet using tags and object properties.

For additional information on tags go to Tags and Objects.

The following are examples that will show you how you can use tags and object properties to clean up and normalize data.

## 1.2.1 Group similar models into a tag

When you have multiple models in your project that have many differences, you can create tags that combine similar models for easier and faster accessibility.

You can group models that contain Garage into a tag named Garage. Tags such as Office 1, Office 2, and Garage can be used.

Tag	s and Objects		×
Tags	Q <sub>Search</sub>		
	<ul> <li>Model</li> <li>ARCH_GARAA ARCH_OFFIC</li> <li>ARCH_OFFIC</li> <li>ARCH_OFFIC</li> <li>Architectural.</li> <li>Area C</li> <li>Arg Plot Plan</li> <li>Ele Cable Tray</li> <li>Ele Duct Bank</li> <li>Ele Equipmer</li> <li>Ele Tubing Tra</li> <li>ELEC_OFFICE</li> <li>INST Equipm</li> <li>INT_OFFICE_2</li> <li>INT_OFFICE_4</li> <li>KP Supports.</li> <li>Light Rail and</li> <li>LIGHTING_OF</li> <li>Mec AG Yard</li> <li>MECH_OFFIC</li> <li>MECH_OFFIC</li> <li>MECH_OFFIC</li> <li>MECH_OFFIC</li> <li>SITE</li> <li>STRUCT_GAR</li> <li>STRUCT_OFF</li> <li>STRUCT_OFF</li> <li>Structural.rvt</li> <li>Model Group</li> </ul>	GE E_1 E_2 rvt Equipment.nwd /.nwd c.nwd ot.nwd ay.nwd _1 _2 ent.nwd 1 _2 ent.nwd 1 _2 ent.nwd 1 _2 fill 2 _2 ent.nwd 1 _2 ent.nwd 2 _2 ent.nwd E_1 _2 _2 ent.ent.ent.ent.ent.ent.ent.ent.ent.ent.	
	+ ♪ Add Edit		Delete

Add a DTO group and name it **Normalize**. In the group, add a DTO and name it **Model Group – Garage**.



In the **Selector** tab create the following rule criteria:

Rule Type	Тад
Tag / OP Name	Model
Operator	contains
Value	Garage

Data Transformation Operations		×
DTO	Selector	Actions
Model Group - Garage		$\bullet$ and $+$
• or		X
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Model	$\checkmark$ contains $\checkmark$ Garage	none 🗡
(+)		
DTO Log		∠ ₪
000		Run selected Run enabled Test Save

Click the **Test** button to review and validate your selection criteria in the Selection Information panel.

<ul> <li>Model</li> </ul>	
ARCH_GARAGE	7121
STRUCT_GARAGE	2181

In the Actions tab use the following criteria:

Action	Tag	
Tag Name	Model Group	
Tag Value	Garage	

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria. The results

will include Tags associated with your selection as shown in the screenshot below.

Tag	s and Objects	×
<b>lags</b>	<b>Q</b> Search	
2	Material Name - CAD	
)ject	Model	
8	<ul> <li>Model Group</li> </ul>	
	Garage	
	Office_1	
	Office_2	
	Name	
	+ /	ŵ
	Add Edit	Delete

### 1.2.2 Convert dimensional text data into a number

If many of the models have dimensional data in text format, as opposed to a number format, you can normalize this into something more standard.

The model has NPD (Nominal Pipe Diameter), whereas other design applications use size. This can be normalized into something standard.

Nar	ne	Count
₿ ,	Model	
8 –	NPD	
<u>л</u>	0.5in x 0.5in	839
athe	0.75in x 0.75in	442
2	1.25in x 1.25in	243
	1.5in x 1.5in	166
8	10in x 10in	89
2	12in x 12in	113
2	14in x 14in	6
	16in x 16in	23
s N	1in x 1in	597
Ě	2.5in x 2.5in	110
adk	20in x 20in	53
	24in x 24in	92
	2in x 2in	2221
ð.	30in x 30in	14
1	32in x 32in	3
	36in x 36in	28
3	3in x 3in	421
2	42in x 42in	5
Y C	48in x 48in	15
-	4in x 4in	398
	54in x 54in	4
	60in x 60in	4
	6in x 6in	121
Тас	∼] Selected	

Add a new DTO group in a new group or an existing group such as Normalize, and then name it **Piping**. Add a new DTO in the group named **NPD to Size\_Pipe**. You can add a note in the Notes column to communicate the purpose of the DTO.

In the **Selector** tab use the following criteria:

Rule Type	Tag
Tag / OP Name	NPD
Operator	not null

Click the **Add row** icon below the row to add another row. Add an additional rule that will filter for Piping:

Tag / OP Name	NPD
Operator	=
Value	Piping

Click the **and/or** toggle above the first rule on the top left to select **and**. Selecting **and** means that both rules must apply to

the model object data.

Data Transformation Operations		×
οτο	Selector	Actions
NPD to Pipe_Size		• or (+)
• and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 NPD	∼ not null ~	none 🐣 😣
Tag 🎽 ShortCode	✓ = ✓ Piping	✓ none ✓ ⊗
(  e )		
DTO Log	<u>~</u>	∠ ₪
000		Run selected Run enabled Test Save

You can click the **Test** button to review and validate your selection criteria in the Selection Information panel.



In the Actions tab select Calculated for Action.

Click the Add row icon next to Action to add a new function, and then use the following criteria:

Function number()

	Tag	NPD	
	Position	0	
NO	TE The nur	<i>mber()</i> function wil	convert the text data to number data.
	Add another	function, and then	use the following criteria:
	Function	tag()	
	Tag	IN8_Size_Pipe	

IN8\_Size\_Pipe is a custom tag name. You can create and give your tag a specific name that will help you organize your data.

In the DTO Log window, the Tag Name and Value shows the expected results after the DTO is executed.

Data Transformation O	perations				×
	DTO	Selector		Actions	
NPD to Pipe_Size					+
Action Calculated	~ +				×
					$\otimes$
					Position
Tag 💙	NPD				~ <u> </u>
🗘 tag()					$\otimes$
Tag name					
IN8_Size_Pipe					
DTO Log					× 🖬
object: Pipe will apply tag: object: Pipe	IN8_Size_Pipe / 1				
will apply tag: object: Geometry will apply tag:	IN8_Size_Pipe / 4				
000			Run selected	Run enabled	Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

## 1.2.3 Convert inches to feet

You can use DTOs to convert units. If you have models that have piping length in inches, and you need to convert the length to feet for take-off, you can create a DTO to convert the units.

#### 1.2.3.1 Convert text format to number format

Add a new DTO to convert the length of piping from text format to number format. Name the new DTO **Pipe Length (in)**.

In the Selector tab use the following criteria:

Rule Type	Tag or Object Property
Tag / OP Name	Length
Operator	not null

Use the **and/or** group toggle at the top right to select **and**.

Click the **Add group** icon at the top right and include the following group criteria:

Rule Type	Тад
Tag / OP Name	Model
Operator	=
Value	Mec AG Yard Piping.nwd

Click the **Add row** icon on the bottom left, and then then use the following criteria:

Rule Type	Tag
Tag / OP Name	Model
Operator	=
Value	Mec UG Yard Piping_rev1.nwd

Use the **and/or** row toggle on the top left above the group rows to select **or**.

The criteria selected will find all objects with a Length value. The **and** group toggle at the top right means that both

Data Transformation Operations		×
DTO	Selector	Actions
Pipe Lenath (in)		$\bigcirc$ and $(+)$
• or		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Length	✓ not null ✓	none 🗡
$( \div )$		
	and	
• or		×
Contraction or Rule Type Tag / OP Name	Operator Value	Exclude
or     Rule Type Tag / OP Name Tag $\checkmark$ Model	Operator Value $\sim$ = $\sim$ Mec AG Yard Piping	Exclude nwd V none V (X)
Or     Rule Type Tag / OP Name     Tag      Model     Tag      Model	Operator     Value        =     >       Mec AG Yard Piping        =     >       Mec UG Yard Piping	rev1.nwd $\sim$ None $\sim$ $\otimes$
Or     Rule Type Tag / OP Name Tag $\checkmark$ Model Tag $\checkmark$ Model  +	Operator     Value           Mec AG Yard Piping              Mec UG Yard Piping	Exclude nwd v none v (x) _rev1.nwd v none v (x)
or     Rule Type Tag / OP Name Tag $\checkmark$ Model Tag $\checkmark$ Model	Operator     Value <ul> <li>=</li> <li>Mec AG Yard Piping</li> </ul> <ul> <li>=</li> <li>Mec UG Yard Piping</li> <li></li> </ul> <ul> <li></li> </ul>	Exclude nwd Vonone VON
Correction or Rule Type Tag / OP Name Tag → Model Tag → Model C+ DTO Log	Operator     Value           Mec AG Yard Piping              Mec UG Yard Piping	Exclude nwd · none · & rev1.nwd · none · &

listed model tag groups will be included.

In the Actions tab select Calculated for Action.

Click the Add icon next to Action to add a function, and then use the following criteria:

Function	number()
Tag	Length

Add another function with the following criteria:

Functiontag()TagLength\_Pipe (in)

Data Transformation (	Operations		
	DTO	Selector	Actions
Pipe Length (in)			Œ
Action Calculated	⊎ ~ +		×
🗘 number()			⊗
			Positio
Tag 🗸 🗸	Length		✓ 0 < 3
<pre>   tag() </pre>			8
Tag name			
Length_Pipe	(in)		
DTO Log			ا محم
bject: Pipe will apply tag: bject: Pipe	Length_Pipe (in) / 173.23		
will apply tag: bject: Pipe	Length_Pipe (in) / 17.13		
will apply tag:	Length_Pipe (in) / 5.19		
000			Run selected Run enabled Test Sav

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### **1.2.3.2** Convert piping length from inches to feet

Add a new DTO, and then name it **Pipe Length (ft)**.

In the **Selector** tab create the following criteria:

Rule Type	Тад
Tag / OP Name	Length_Pipe (in)
Operator	not null

Data Transformation Operations		×
DTO	Selector	Actions
Pipe Length (ft)		• or (+)
• or		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🐣 Length_Pipe (in)	$\checkmark$ not null $\checkmark$	none 🗡
$( \div )$		
DTO Log		∠ ₪
000		Run selected Run enabled Test Save

In the Actions tab select Calculated for Action.

Click the **Add** icon next to Action to add a function, and then use the following criteria:

Function	math()
Tag	Length_Pipe (in)
Operator	1
Constant	12

**NOTE** The *math()* function can be used with Tags, Object Properties, and Constants. Constant will equal type in a number as opposed to using a tag.

Add another function with the following criteria:

Function	tag()
Tag	Length_Pipe (ft)

Data Transformation Opera	tions			
	DTO	Selector	Actions	
Pipe Length (ft)				÷
Action Calculated	<ul><li>✓ +</li></ul>			×
$\hat{\bigcirc}$ math()				$\otimes$
Tag 🗡 Ler	ngth_Pipe (in)			~ / ~
Constant $\checkmark$ 12				
<pre>   tag() </pre>				$\otimes$
Tag name				
Length_Pipe (ft)				
DTO Log				× 1
object: Geometry will apply tag: Le	ngth_Pipe (ft) / 1.500			
will apply tag: Le	ngth_Pipe (ft) / 24.127			
will apply tag: Le	ngth_Pipe (ft) / 60.000			
000			Run selected Run enabled	Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

## 1.3 IDENTIFY AND ADD ADDITIONAL MODEL DATA

DTOs provide flexible and repeatable processes to add additional model data. The following are examples to show you processes to identify specific model data and add model data using DTOs.

## 1.3.1 Identify model data

You can differentiate between above ground large bore piping (AG/LB), above ground small bore piping (AG/SB), underground large bore piping (UG/LB) and underground small bore piping (UG/SB).

#### 1.3.1.1 Identify and use AG/LB Piping

You can add a DTO to find all large bore piping according to your standards (>2.5"). Also, create a new tag named AG LB to

find all above ground piping.

#### Add a new DTO, and then name it **Pipe – AG LB**.

In the **Selector** tab create the following criteria:

Rule Type	Тад
Tag / OP Name	Model
Operator	=
Value	Mec AG Yard Piping

Use the **and/or** row toggle on the top left to **and**.

Click the **Add row** icon below the row, and then use the following rule criteria:

Rule Type	Тад
Tag / OP Name	IN8_Size_Piping
Operator	>
Value	2

Data Transformation Operations					>
ото	Selector		Actions		
Pipe - AG LB					or 🕂
and					×
Rule Type Tag / OP Name	Operator \	/alue		Exclude	
Tag 🎽 Model	✓ = ✓	Mec AG Yard Piping.r	wd Ý	none	$\sim$ $\otimes$
Tag $\checkmark$ IN8_Size_Piping - PowerPlant	~ <b>、</b> ~	2		none	$\sim$ $\otimes$
(  e )					
DTO Log					2 🗊
000			Run selected Run enabl	ed Test	Save

In the Actions tab use the following criteria:

Action	Tag
--------	-----

Tag Name IN8\_PipeAG/UG\_LB/SB - PowerPlant

Tag Value AG LB

Data Transformation Operations		
στο	Selector	Actions
Pipe - AG LB		(
Action Tag		×
Tag Name	Tag Value	
IN8_Pipe_AG/UG_LB/SB - PowerPlant	✓ AG LB	
DTO Log		2 日
000		Run selected Run enabled Test Save

Click on the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

#### 1.3.1.2 Identify and use AG/SB

Add a new DTO to find all small bore piping according to your standards (<2"). Also, create a new tag named AG SB to find

all above ground piping.

Duplicate the previous DTO, and then rename the new DTO Pipe – AG SB.

In the **Selector** tab update the following criteria:

Operator	<
Value	2.5

Leave the rest of the criteria the same.

Data Transformation Operations						>
DTO	Sel	ector				
Pipe - AG SB					•	+ +
and						×
Rule Type Tag / OP Name	Operato	or Value		E	Exclude	
Tag 🎽 Model	~ =	✓ Mec AG	Yard Piping.nwd	~	none	$\sim$
Tag 🎽 IN8_Size_Piping - PowerPlant	× <	× 2.5			none	$\sim$
$(\div)$						
DTO Log						2
000			Run selecte	ed Run enabled	d Test	Save

In the Actions tab update the Tag Value to AG SB. Leave the rest of the criteria the same.

DTO	Selector	Actions
Pipe - AG SB		(
Action Tag		×
Tag Name	Tag Value	
IN8_Pipe_AG/UG_LB/SB - PowerPlant	✓ AG SB	
DTO Log		2
000		Run selected Run enabled Test Sav

Action	Тад
Tag Name	Model Group
Tag Value	Office_1

Click on the **Run selected** button to execute the DTO, and then create the new tag according to your selection

criteria.

## **1.3.2 Add weight to steel members using length**

If your model includes the steel members length but does not have the weight, you can calculate the length into weight for take-off.

Add a new DTO, and then name it W Shapes in LBs.

In the **Selector** tab create the following new rule criteria:

Rule Type	Тад
Tag / OP Name	Revit_Family_Type
Operator	contains
Value	W Shape

Use the **and/or** row toggle on the top left to select **and**.

Click the Add row icon on the bottom left, and then use the following criteria:

Rule Type	Тад
Tag / OP Name	Length
Operator	not null
Value	W Shape

Data Transformation Operations		
	Selector	
W Shapes in LBs		$\bigcirc$ and $\bigcirc$
and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🐣 Revit_Family_Type	└ contains └ W Shape	none 🗡 🚫
Tag 🎽 Length	∽ not null →	none 🗠 🛞
$\oplus$		
DTO Log		~ ₪
000		Run selected Run enabled Test Save

In the Actions tab select Calculated for Action.

Click the **Add** icon next to Action to add a function with the following criteria, assuming 90 lbs. per foot:

Function	math()
Constant	90
Operator	*
Tag	Length

### NOTE

The *math()* function can be used with Tags, Object Properties, and Constants. Constant will equal *type* in a number as opposed to using a tag.

Add another function with the following criteria:

Function	Tag()
----------	-------

Tag name Calculated Nominal Weight (lbs)

Data Transformation O	perations		×
	DTO	Selector	Actions
W Shapes in LBs			÷
Action Calculated	✓ +		×
			$\otimes$
Constant $\checkmark$	90		
Tag 🗸 🗸	Length		
Ç tag()			$\otimes$
Tag name			
Calculated No	ominal Weight (lbs)		
DTO Log			メ 団
object: Structural Fra will apply tag: object: Structural Fra will apply tag: object: Structural Fra will apply tag:	ming W12x19#2111506 Calculated Nominal Weight (lbs) / 540 ming W12x19#2544970 Calculated Nominal Weight (lbs) / 270 ming W24x55#2107818 Calculated Nominal Weight (lbs) / 2700		
000			Run selected Run enabled Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

#### **1.3.2.3 Convert weight from pounds to tons**

Now that the previous DTO calculates the length of your steel members into weight in pounds, you need to calculate the

weight into tons for take-off.

Duplicate the previous DTO, and then name the new DTO Weight (ton).

In the Selector tab create the following new rule criteria:

Rule Type	Tag
Tag / OP Name	Calculated Nominal Weight (lbs)
Operator	not null

Data Transformation Operations		
DTO	Selector	Actions
W Shapes in TONs		• or (+)
• or		×
Rule Type Tag / OP Name Tag $\checkmark$ Calculated Nominal Weight (lbs)  +	Operator Value	Exclude none 🌱
DTO Log		2 f
000		Run selected Run enabled Test Save

In the Actions tab select Calculated for Action.

Click the **Add** icon next to Action to add a function with the following criteria:

Function	math()
Tag	Calculated Nominal Weight (lbs)
Operator	1
Constant	2000

Add another function with the following criteria:

Function	Tag()		
Tag name	Weight (ton)		
Data Transformation Opera	ations		
	DTO	Selector	
W Shapes in TONs			
Action Calculated	~ +		
🗘 math()			
Tag 🗡 Ca	lculated Nominal Weight (lbs)		

	DIO	Selector	Actions	
W Shapes in TONs	5			÷
Action Calculated				×
♀ math()				$\otimes$
Tag 🗡 (	Calculated Nominal Weight (lbs)			~ , ~
Constant 🗡	2000			
$\hat{\mathbf{v}}^{\text{tag()}}$				$\otimes$
Tag name				_
Weight (ton)				~
DTO Log				,⊀ 🗇
object: Structural Frami will apply tag: object: Structural Frami will apply tag: object: Structural Frami will apply tag:	ng W18x35#2611105 Weight (ton) / 0.450 ing W24x55#2616980 Weight (ton) / col A null ing W16x26#2589932 Weight (ton) / col A null			l
000			Run selected Run enabled	Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

## **1.4 CONCATENATE MODEL DATA**

Data Transformation Operations (DTOs) provide flexible and repeatable processes to concatenate model data. In the following examples you will see how you can concatenate model data using DTOs.

Data structured in models that you receive do not always provide data in a way that you can use. You need to concatenate data to create unique tags.

## 1.4.1 Make unique tag values for multiple objects

Add a new DTO, and then name it **Spool Number**.

In the Selector tab use the following criteria:

Rule Type	Тад
Tag / OP Name	Pipeline
Operator	contains
Value	RWS

Use the **and/or** row toggle on the top left to select **and**.

Click on the **Add row** icon on the bottom left to create a new row, and then use the following criteria:

Rule Type	Tag
Tag / OP Name	00-CWA
Operator	not null

Data Transformation Operations		×
DTO	Selector	
SPOOL NUMBER		○ or (+)
• and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Pipeline	✓ contains ✓ RWS	none 🐣 😣
Tag 🎽 00-CWA	∽ not null ∽	none 🐣 🚫
$\oplus$		
DTO Log		
000		Run selected Run enabled Test Save

In the Actions tab select Calculated for Action.

Click the **Add** icon next to Action to add a function, and then use the following criteria:

Function	text()
Tag Name	00-CWA

Add additional rows, and then create a series of functions using dash as a constant as shown:

Function	text()	
Tag Name	-	
Function	text()	
Tag Name	IN8_System - PowerPlant	
Function	text()	
Tag Name	-	
Function	text()	
Tag Name	IN8_LineNumber - PowerPlar	nt
Tag Name	IN8_LineNumber - PowerPlar	nt
Tag Name Function	IN8_LineNumber - PowerPlar text()	nt
Tag Name Function Tag Name	IN8_LineNumber - PowerPlan text()	nt
Tag Name Function Tag Name	IN8_LineNumber - PowerPlar text() -	nt
Tag Name Function Tag Name Function	IN8_LineNumber - PowerPlan text() text()	nt
Tag Name Function Tag Name Function Tag Name	IN8_LineNumber - PowerPlan text() - text() -01	nt
Tag Name Function Tag Name Function Tag Name	IN8_LineNumber - PowerPlar text() -01	nt
Tag Name Function Tag Name Function Tag Name	IN8_LineNumber - PowerPlan text() - text() -01 tag()	nt

Data Transformation Operations		
	Colortor	Actions
	Selector	
SPOOL NUMBER		(  i )
Action Calculated 💛 🕂		×
text0     text0	A-Z Only	8
Tag 🗸 00-CWA		
	A-Z Only	 
Constant ~ -		
 ^ text0	A-7 Only	
Tag NN8 System - PowerPlant	- 1 2 0 11 9	
	A 70-1-	
<pre>v text0 Constant × </pre>	A-2 Only	
Constant -		
Ç text()	A-Z Only	8
Tag INS_LineNumber - PowerPlant		
	A-Z Only	
Constant 🗡01		
Tag name		
IN8_SpoolNumber		
DTO Log		* 自
object: Nipple-20023 will apoly tag: IN8 SpoolNumber / WT-RWS-00067229-01		
object: Geometry will apply tag: IN8 SpoolNumber / WT-RWS-00067202-01		
object: Geometry will apply tag: IN8_SpoolNumber / WT-RWS-00067002-01		
object: Geometry will apply tag: IN8_SpoolNumber / WT-RWS-00067320_01		
		Run selected Run enabled Test Save
000		Han selected Run enabled Fiest Save

Click on the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

## 1.5 PARSE MODEL DATA

Data Transformation Operations (DTOs) provide flexible and repeatable processes to parse model data. An example is if your project systems are concatenated into other metadata, you can parse it to its own tag. In the following example you will see how you can parse model data using DTOs.

## 1.5.1 Parse system information

If your project systems are concatenated into other metadata, you should parse it to its own tag to easily access the model by systems.

Add a DTO, and then name it **Systems – Piping**.

In the Selector tab use the following criteria:

Rule Type	Tag
Tag / OP Name	Pipeline
Operator	not null

Use the **and/or** group toggle at the top right to select **and**.

Click the **Add group** icon at the top right, and then include the following group criteria:

Rule Type	Tag
Tag / OP Name	Model
Operator	=
Value	Mec AG Yard Piping.nwd

Click the Add row icon below the row to add another row, and then use the following criteria:

Rule Type	Tag
Tag / OP Name	Model
Operator	=
Value	Mec UG Yard Piping_rev1.nwd

Use the **and/or** row toggle above the grouped rows on the top left and select **or**.

Data Transformation Operations		×
DTO	Selector	
System - Piping		
and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Pipeline	✓ not null ✓	none 💙
$\oplus$		
	and	
• or		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag $\checkmark$ Model	🗡 = 🛛 Yard Piping.nwd	🗠 none 🗠 🚫
Tag 🎽 Model	=	∽ none ∽ 🚫
÷		
		2 🕀
DTO Log		<u> </u>
DTO Log	Run sel	ected Run enabled Test Save

The selected criteria will find all objects with a Pipeline value. When you use the **and** group toggle, it will select the objects

from the listed model tag values.

Click the **Test** button to review and validate your selection criteria in the Selection Information panel. Results should

include AQ-00074001and CWR-00064101.

In the Actions tab select Calculated for Action.

Click the Add icon next to Action to add a new function, and then use the following criteria:

Function	substr()	
Tag	Pipeline	
Index of	-	
Offset	1	
Length	-3	

**NOTE** The *substr()* function lets you parse out your selected characters within a string of characters.

**NOTE** The *Index of* field can be blank, or you can enter any character from where you want to start indexing. This example starts at the dash value in this string of characters for AQ-00074001.

Add another function with the following criteria:

Function	tag()
Tag	IN8_System

Data Transformation Operations			×
DTO	Selector	Actions	
System - Piping			÷
Action Calculated 💙 🕂			×
⇔ substr()			
		Index of	Offset Length
Tag 🎽 Pipeline			
🗘 tag()			$\otimes$
Tag name			
IN8_System			~
DTO Log			* 🗐
object: 90 Degree Direction Change-14862 will apply tag: IN8_System / IA object: Insulation Volume			ĺ
will apply tag: IN8_System / RWS object: Insulation Volume will apply tag: IN8_System / CWR			I
object: Geometry will apply tag: IN8_System / PW			
000		Run selected Run enabl	ed Test Save

Click on the **Run selected** button to execute the DTO, and then create the new tag according to your selection criteria.
Selection Information								
General	Name		Count					
<u>v</u>	<ul> <li>IN8_Syster</li> </ul>	n ·						
Tag			185					
ន	AQ		127					
Style	BD		162					
ъ	CF		950					
nen	СР		280					
	CWR		248					
	CWS		606					
ents	DMW		1538					
ilem	DR		804					
s	FP		218					
, initial init	IA		1530					
lyper	KS		32					
I	NG		42					
rties	PW		648					
edo.	RWS		1702					
ct Pr	SC		1053					
bje	SL		1516					
o a	SM		193					
Dat	STR		2					
ked	UW		966					
Ľ	ww		204					
	Insulation	Material						
	Insulation	Purpose						
	Insulation	Thickness						
	•		_					
	<i>a</i> ]							
	Tag Selected							
		13006 objects selected		<b>T</b> Filter				

## **1.6 QUANTIFY MODEL DATA**

Data Transformation Operations (DTOs) provide flexible and repeatable processes to quantify model data. In the following examples you will see how you can quantify model data using DTOs.

The InEight Model to InEight Estimate integration is the most efficient way to get quantities from a model into an estimate. See <u>Model-Based Takeoff Overview</u> and <u>Model to Estimate integration</u>.

NOTE The following examples do not use the InEight Estimate integration.

## **1.6.1 Extract quantities from model**

You can sum up quantities from your model to use for estimating or tracking subs by installed quantities.

### 1.6.1.1 Quantities by Count

You can add a DTO to find specific model objects to sum up their quantities, and then utilize the Quantity action type to

sum the quantities by count.

Add a DTO, and then name it Foundation Pier.

In the **Selector** tab create the following rule criteria:

Rule Type	Tag
Tag / OP Name	02 - Construction Levels
Operator	=
Value	G-Foundations
Exclude	children

Click on the Add row icon on the boottom left, and then use the following criteria:

Rule Type	Тад
Tag / OP Name	80 - Construction Items
Operator	=
Value	Drilled Pier

Use the **and/or** row toggle on the top left to select **and**.

When you use the **and** toggle, it means that both rules must apply to model object data.

Data Transformation Operat	ons					
	οτο	Selector		Actions		
Foundation Pier					C	● or +
• and						×
Rule Type Tag / OP N	ame	Operator	Value		Exclue	de
Tag 🎽 02 - Cons	truction Levels		G-Foundations		∼ child	ren 🐃 🚫
Tag 🎽 80 - Cons	truction Items		Drilled Pier		✓ child	ren 🐃 🚫
( + )						
DTO Log						2 🖻
000				Run selected	Run enabled	Test Save

In the Actions tab use the following criteria:

Action	Quantity
Quantity Type	count
Code	FND PEIR
Units	Items
Description	Foundation Pier

NOTE

You can give the Code and Description fields your own custom input to help organize the data.

Click the **Equals** icon to see your quantities. You can also use the Operation and Value fields to adjust your

quantities, and then click the Equals icon to see your updated quantities.

Data Transformation Operations					×
DTO		Sele	ctor	Actions	
Foundation Pier					$( \div )$
Action Quantity $\checkmark$					×
Quantity Type			Output Table		
count			InEight Estimate		
Code	Units		Description		
FND PIER	✓ Items		Foundation Pier		
Quantity		Operation Value		Result	
105		* ~ <u>1</u>		105	
DTO Log					2 1
000				Run selected Run enabled	Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### 1.6.1.2 Quantities by area

Add a DTO to find specific model object to sum up their quantities and then utilize the Quantity action type to sum the

quantities by area.

Add a DTO, and then name it Foundation Pier.

In the **Selector** tab create the following rule criteria:

Rule Type	Тад
Tag / OP Name	02 - Construction Levels
Operator	=
Value	G-Foundations

Use the **and/or** toggle at the top left to select **and**.

Click the Add icon on the bottom left, and then add the following criteria:

Rule Type	Tag
Tag / OP Name	80 - Construction Items
Operator	=
Value	Drilled Pier
Exclude	children

Data Transformation Operations						
DTO	Selector		Action	Actions		
Foundation Pier				• or (+		
and				×		
Rule Type Tag / OP Name	Operator	Value		Exclude		
Tag $\checkmark$ 02 - Construction Levels		✓ G-Foundations		🗠 children 🗠 😣		
Tag $\checkmark$ 80 - Construction Items		✓ Drilled Pier		🗠 children 🗠 🚫		
$(\div)$						
DTO Log				∠ t		
000			Run selected Run en	abled Test Sav		

In the **Actions** tab use the following criteria:

Action	Quantity
Quantity Type	sum area
Code	FND PEIR
Units	square feet
Description	Foundation Pier

Click the **Equals** icon to see your quantities. You can also use the Operation and Value fields to adjust your

quantities, and then click on the Equals icon to see your updated quantities.

Data Transformation Operations								×		
DTO				Sel	lect	tor		Actions		
Foundation Pier										+
Action Quantity										×
Quantity Type						Output Table				
sum area					1	InEight Estimate				
Code		Units				Description				
FND PIER		square feet			1	Foundation Pier				
Quantity			Operatior	n Value			Result			
14840.4				1			14840.4			
DTO Log										⊿ 🖬
000							Run selected	Run enabled	Test	Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### 1.6.1.3 Quantities by volume

You can add a DTO to find specific model object to sum up their quantities and then use the Quantity action type to sum up

the quantities by volume.

Add a DTO, and then name it **Foundation Pier**.

In the **Selector** tab create the following rule criteria:

Rule Type	Tag
Tag / OP Name	02 - Construction Levels
Operator	=
Value	G-Foundations

Use the **and/or** row toggle at the top left to select **and**.

Click the Add row icon on the bottom left, and then add the following criteria:

Rule Type	Tag
Tag / OP Name	80 - Construction Levels
Operator	=
Value	Drilled Pier
Exclude	children

Data Transformation Operations			×
DTO	Selector		Actions
Foundation Pier			• or (+)
and			×
Rule Type Tag / OP Name	Operator	Value	Exclude
Tag $\checkmark$ 02 - Construction Levels	~ = ~	G-Foundations	🗠 children 🔶 🚫
Tag 🎽 80 - Construction Items	~ = ~	Drilled Pier	🗠 children 🔶 🚫
$( \div )$			
DTO Log			∠ ₪
000			Run selected Run enabled Test Save

In the **Actions** tab use the following criteria:

Action	Quantity
Quantity Type	sum volume
Code	FND PEIR
Units	cubic yards
Description	Foundation Pier

Click the **Equals** icon to see your quantities. You can also use the Operation and Value fields to adjust your

quantities, and then click the **Equals** icon to see your updated quantities.

Data Transformation Operations				
DTO		Sele	ctor	Actions
Foundation Pier			_	(+
Action Quantity				×
Quantity Type			Output Table	
sum volume			InEight Estimate	
Code	Units		Description	
FND PIER $\checkmark$	cubic yards		Foundation Pier	
Quantity	Operation Value			Result
337.745	• ~ 1			337.745
DTO Log				∠ t
000				Run selected Run enabled Test Sav

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### 1.6.1.4 Quantities by tag

You can add a DTO to find specific model object to sum up the quantities and then utilize the Quantity action type to sum

up the quantities using a tag.

Add a DTO, and then name it **Foundation Pier**.

In the **Selector** tab create the following rule criteria:

Rule Type	Тад
Tag / OP Name	02 - Construction Levels
Operator	=
Value	G-Foundations
Exclude	children

Use the **and/or** row toggle at the top left to select **and**.

Click the Add row icon on the bottom left, and then add the following criteria:

Rule Type	Tag
Tag / OP Name	80 - Construction Levels
Operator	=
Value	Drilled Pier
Exclude	children

In the Actions tab use the following criteria:

Action	Quantity
Quantity Type	sum property
Tag	IN8_Area (sf)
Code	FND PEIR
Description	Foundation Pier

Click the **Equals** icon to see your quantities. You can also use the Operation and Value fields to adjust the quantities,

Data Transformation Ope	rations							×
	DTO			Sele			Actions	
Foundation Pier								$( \pm )$
Action Quantity								×
Quantity Type						o	utput Table	
sum property		Tag 🗸 🗸	IN8_Area	a (sf)		~ I	nEight Estimate	
Code		Units			Description			
FND PIER		square feet			Foundation Pier			
Quantity			Operation	Value		Result		
967.91						967.91		
DTO Log								2 🖻
000						Run sele	cted Run enabled	Test Save

and then click the **Equals** icon to see updated quantities.

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### 1.6.1.5 Access quantities via Excel

Model has a plugin for Microsoft Excel to access model quantities. To download the Excel Plugin Installer go to

#### InEight Downloads.

After you install the plugin, the InEight menu will show in the top menu ribbon of Excel.



Model and Excel interact with each other without the need to have the Excel application open. However, the data created

using quantity DTOs uses tables. You must be logged in to Model via Excel to access the table data.

When you click on the InEight tab in Excel, you can log in using the same credentials you use for Model.

Click Table-> admin-> config-> DTO-> DTO Estimate Record-> Query All.

AutoSave 💽 🛱 🧳 ୯ 🖓 ⊽ Book1 - Excel	,∕⊃ Sea	irch (Alt+Q)			¥δ	Dale 🌍		Ó <del>R</del>	o x
File Home Insert Page Layout Formulas Data Review	View	Help I	BLUEBEAM	InEight <sup>™</sup>			🖓 Con	nments	台 Share
Log Switch Acct: InEight Demo Table Project: DEMO - ALL.	Aur Is Fra	to Select me Selected	Audit Tags	Set ID Tag <none> L. Set Color <none> Show in Model Change</none></none>	g Adva is Sett	Mark Editable Fields inced ings			
Sign in Project Query Multiple Tables	- 8	Modifiers		Visual Reporting	_	Settings		_	^
A1 · : × · fx Existing Table									×
A B C D admin	>	config	>	DTO	>	DTO Action Record	>	R	s 🗖
2 Elements	>	links	>	Column Validator	>	DTO Estimate Record	>	Q	uery All
3 Notifications	>	other	>	Generic Picklist	>	DTO Function Record	>	Remo	ve Table
5 Tracked Issues	>	Item Reso	ource >	Label Color Configuration	>	DTO Record	>	R	ernove Table
6 Work Packages	>	Project R	esource >	Module Component Record	>	DTO Selector Rule Group	Record >		
8 Project Setting	>			Project Role Assignment	>	DTO Selector Rule Record	d >		
9 Workflow Decision Gate	>			Project Role Definition	>				_
11 Workflow Gate	>			Spiid Component	>				
12 Workflow Input State Config	>			User Input Validator Applications	>				
14 Workflow Record Field Map Re	cord >			User Input Validator Definitions	>				
15 Workflow State	>				_				
↔ Sheet1 ↔ Workflow State Validator	>	_		: 4	-		-	_	
Received record table list completely. Workflow Step	$\rightarrow$			Lag Dis	play Settin	195 🏛 🗉 🖽			+ 100%

The results of the Quantity DTOs executed in Model will show.

AutoSave 💽 🛱 🏷 < 🖓 🗸	Book1 - Excel			Dale Dutton 💡	• - • ×
File Home Insert Page Layout	Formulas Data Review	View Help BLUEBEAM	InEight™		다 Comments 🛛 🖒 Share
Log out Sign in Sign i	Table Import Data Set ID Tag <none> Attorns</none></none></none></none></none>	Auto Select Frame Selected Audit Tags Modifiers	Set ID Tag <none> L. Set Color <none> Show in Model Visual Reporting</none></none>	g Advanced s Settings Settings	_
A1 · : × √ fr Ins	tance Id				*
A	вс				
1 Instance Id	Created Date Created By	Last Modified Date Last Mod	ified By CBS Qty Unit	Description	Assembly
2 02e500f9-dc80-42de-b8fe-4a17350e8af8	8/18/2022 8:38 AM Dale	8/18/2022 8:38 AM Dale	1.1.1.1 337.7448705 cubi	c yards Foundation Pier	
3 f05b61fb-f6a9-4857-b7cb-d918ec8a36be	8/18/2022 8:56 AM Dale	8/18/2022 9:00 AM Dale	1.1.1.2 13 Item	s Foundation Slab	
4 aea0eb6a-b746-4f9d-a516-e710ef366c7f	8/18/2022 8:55 AM Dale	8/18/2022 8:55 AM Dale	1.1.1.3 1295.548656 cubi	c yards Cast In Place - CIP Concre	te
5 8ad869ca-824b-4974-9c6e-48e94a92979e	8/18/2022 9:24 AM Dale	8/18/2022 9:24 AM Dale	3.1.1.1 9508.531 feet	UG Small Bore Pipe - HDP	E (0" to 2")
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
DTO Estimate Record Sheet1	۲		: 3		
Selected 0 Table object id(s)			La Di	splay Settings 🔠 🖽	+ 100%

## **1.7 VALIDATE MODEL DATA**

Data Transformation Operations (DTOs) provide flexible and repeatable processes to validate model data. In the following examples you will see how you can find model objects that do not have certain values or validate specific model data format. This information can be used to communicate any model data that does not meet project requirements.

## **1.7.1 Validate model data is compliant**

You can validate that specific model data meets your project requirements.

### 1.7.1.1 Validate specific model data exists

You can find model objects that do not have certain values, such as length.

Add a new DTO, and then name it **W Shapes have no LENGTH** 

In the Selector tab use the following criteria:

Rule Type	Тад
Tag / OP Name	Revit_Family_Type
Operator	contains

### Value W Shape

Use the **and/or** row toggle on the top left and change it to **and**.

Click the **Add row** icon under the row, and then use the following criteria:

Rule Type	Tag
Tag / OP Name	Length
Operator	is null

Data Transformation Operations		×
DTO	Selector	Actions
W Shapes have no LENGTH		⊂ or ↔
and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Revit_Family_Type	✓ contains ✓ W Shape	none 🗡 🚫
Tag 🖌 Length	✓ is null ✓	none 🗠 🚫
$(\pm)$		
DTO Log		~ ₪
000		Run selected Run enabled Test Save

Click the Actions tab, and then use the following criteria:

Action	Тад
Tag Name	99 - Validation Issue
Tag Value	No Length

Data Transformation Operations		
	Selector	Actions
W Shapes have no LENGTH		Œ
Action Tag		×
Tag Name	Tag Value	
99 - Validation Issue	✓ No Length	
		, F
DTO Log		
000		Run selected Run enabled Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

### 1.7.1.2 Validate model data for specific format

You can validate that your Pipeline data has the system prefix followed by a dash, such as AQ-0001065.

First add a DTO to tag to all relevant data as invalid, and then create another DTO to find validated data. The purpose is to place the invalid and valid tag values in the same tag name. When you use the same tag name, the invalid data will switch to validated because an object can only have one value in a tag name.

You must run both DTOs at the same time, and in the correct order in the list. First run invalid data, and then validated

#### data.

Add a new DTO group, and then name it **Validation**. Add a new DTO in the group for all Pipeline data that will be tagged as invalid data, and then name it **Pipeline – Invalid**.

Data Transfo	rmation Operations						×
	DTO		Se	lector		Actions	
				<b>Q</b> Search			
		£	Ê	C7		$\otimes$	
Enabled	Name		Notes				
	<ul> <li>Power Plant</li> <li>Cleanup / Norma</li> <li>Plan Data</li> <li>Validation         <ul> <li>Pipeline - Invalid</li> <li>Pipeline - standa</li> </ul> </li> <li>RidgeGate Campus</li> </ul>	alize I Ird layout	I have NOT reviewed these Identify the data that doe:	yet s not meet the standard la	yout		
DTO Log						2	1
000		•			Run selected	Run enabled Test S	ave

In the Selector tab create the following criteria:

Rule Type	Тад
Tag / OP Name	Pipeline
Operator	not null

Data Transformation Operations		×
ото	Selector	Actions
Pipeline - Invalid		and
and		×
Rule Type Tag / OP Name	Operator Value	Exclude
Tag 🎽 Pipeline	$\sim$ not null $\sim$	none 🗡
<b>(</b> +)		
DTO Log		~ ₪
000		Run selected Run enabled Test Save

In the **Actions** tab use the following criteria:

Action	Tag
Tag Name	IN8_Validation - PowerPlant
Tag Value	Pipeline - Invalid

Data Transformation Operations		
		Actions
Pipeline - Invalid		$\oplus$
Action Tag		×
Tag Name	Tag Value	
IN8_Validation - PowerPlant	Yipeline - Invalid	
DTO Log		~ ₪
000		Run selected Run enabled Test Save

Click the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

Add another DTO in the group for all Pipeline data that will be tagged as valid data, and then name the new DTO

#### Pipeline – standard layout.

In the **Selector** tab create rule criteria to find all piping systems followed by a dash.

Rule Type	Тад
Tag / OP Name	Pipeline
Operator	contains
Value	List AQ- through WW-
Exclude	none

Use the **and/or** row toggle on the top left to select **or**.

Click the Add row icon on the bottom left to add new rows, and then include all your

values.

	Selector		
Pipeline - standard lavout			or (
or			
Rule Type Tag / OP Name	Operator	Value	Exclude
Tag 🎽 Pipeline	$\sim$ contains $\sim$	AQ-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	BD-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	CF-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	CP-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	CWR-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	cws-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	DMW-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	DR-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	FP-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	IA-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	KS-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	NG-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	PW-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	RWS-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	sc-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	SL-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	SM-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	STR-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	UW-	none 🗡 🤅
Tag 🎽 Pipeline	$\sim$ contains $\sim$	ww-	none 🗡 🤅
$\oplus$			
ĩO Log			2

In the **Actions** tab use the following criteria:

Action	Тад
Tag Name	Tag = IN8_Validation
Tag Value	Pipeline - Validated

ata iransiormation operations		
	Selector	Actions
Pipeline - standard layout		Θ
Action Tag		×
Tag Name	Tag Value	
IN8_Validation - PowerPlant	✓ Pipeline - Validated	
DTO Log		21
000		Run selected Run enabled Test Sa

Click on the **Run selected** button to execute the DTO and create the new tag according to your selection criteria.

This page intentionally left blank.



# **LESSON 2 – STYLES**

Lesson Duration: 40 minutes

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Create and manage styles
- Create and manage style sets
- Apply styles to tags
- Assign styles using Excel

**Topics in this Lesson** 

## 2.1 STYLING OVERVIEW

Materials and colors are not fixed, or assigned universally to all model objects, like they are in other modeling environments. You have the flexibility to view the model in the way that makes sense for yourself. In Model, you need to remember:

- Styles are the materials or colors in Model
- Style Sets are collections of assigned Styles

Styles allow you to switch between Style Sets to change the way you visualize the model. For example, creating a Style Set that emphasizes a system, such as HVAC, or a Style Set that has the colors to conform to an owner's requirements. With these visually highlighted, it helps to identify those areas which you want to focus on when looking at the model.

The Styling panel allows the manipulation of the appearance (surface and line, color and transparency) of geometry. There are two tabs in the Style panel: Styles and Style Sets.

## 2.1.1 Launch Styling Menu

To access the Styling panel, select View > Styling.

<u>F</u> ile <u>E</u> dit	<u>V</u> iew Object	<u>L</u> ux	<u>T</u> ime	<u>L</u> ogic	<u>A</u> rchive	Puls
Training	Master Preset	5			Ctrl+M	
	Styling					
	Tags and Obje	ects				
	<u>C</u> amera Settin	gs				
	<u>First Person Se</u>	ettings	5			
	<u>S</u> ectioning					
	Measurement					
	Create New M	arkup			Ctrl+Shift	t+N
	Camera Auto	Orbit			Ctrl+Shift	t+O
	First Person N	avigat	ion		Ctrl+F	
	Show Model S	Spots			Ctrl+Shift	t+.
	Toggle Fullscr	een			F11	
	Home Position	n			Home	
	Optional Mod	lules				•

• This will open the Styling window.



## 2.2 CREATE AND MANAGE STYLE SETS

There are predefined style sets grouped under Basic when a project is created. New style sets can be created to represent real-world material characters such as glass and steel, or simple colors, to represent different disciplines or systems.

## NOTE

The predefined style sets cannot be edited. They can be duplicated to create new, custom style sets.



## 2.2 Step by Step 1 – Create a Style Set

#### 1. Select Add.



- The New Style Set dialog box will open
- 2. Type in a desired name for your new style set (i.e. Major Systems).



- 3. Click OK.
  - The new style set will be grouped under the project name



- 4. Select the style set to make it active.
  - Any styles applied will be a part of the active style set

## 2.2 Step by Step 2 — Edit a Style Set

Once one or more styles have been applied to a style set, the style set can be managed.

### 1. Select a style set.



- 2. Select Edit.
  - The Edit Style Set dialog box will open



- To remove a style, click the red X.
- To reorder styles, drag a style up or down within the list.

NOTE When multiple style assignments apply to an object or tag, those higher in the list take precedence.

3. When finished, select OK.

### 2.2 Step by Step 3 — Delete a Style Set

- 1. Select a style set, then click the **Delete** icon.
  - Or, right click on the style set, then select Delete Selected Style Set



## 2.3 CREATE AND EDIT STYLES

There are predefined styles, which cannot be modified, but can be duplicated to create a new style. All newly created styles will be grouped under the project name.

### 2.3 Step by Step 1 — Create a New Style

1. Select the Styles tab and then select Add.



• The Edit Style window will open



- 2. Click Choose Line Color....
  - Or toggle the Enabled box to have no outline color



- The Select Color dialog box will open
- 3. Select your desired color and click OK.

Select Color	×
Basic colors	
Pick Screen Color	
<u>C</u> ustom colors	Hug: 120   Red: 0 Sat: 255   Green: 255 Val: 255   Blue: 0 HTML: #00ff00
;	OK X Cancel

4. Change the line thickness as desired.



#### 5. Click Choose Line Color.

Edit Style Currently Editing	X		
Category	Training		
Lines			
✓ Enabled	✓ Enabled		
Choose Line Color	Choose Fill Color		
Line Thickness 1 px 💙			
Save Save As	Cancel		

- The Select Fill Color dialog box will open
- 6. Select you desired color and set an opacity if desired, then click **OK**.

Select Fill Color	×
Basic colors	
Pick Screen Color	
<u>C</u> ustom colors	Hue: $180 \Leftrightarrow \underline{R}ed: 0 \Leftrightarrow$ Sat: $255 \Leftrightarrow \underline{G}reen: 255 \Leftrightarrow$ <u>Val: 255 \Leftrightarrow Blue: 255 \Leftrightarrow</u>
	Opacity: 50 🜲
Add to Custom Colors	HTML: #00ffff
	V OK X Cancel

7. Select **Save As...** to save as a new style (i.e. Glass – Transparent).

Edit Style	x			
Currently Editing				
Category	Training			
Lines	Fills			
✓ Enabled	✓ Enabled			
Choose Line Color	Choose Fill Color			
Line Thickness 1 px 💙				
Save Save As	Cancel			
	_			

New Style X		
Enter name for new Style:		
Glass - Transparent		
🗸 ок	X Cancel	

• The new styles will be grouped under the project name



## 2.3 Step by Step 2 — Edit a Style

1. Select a Style Set, then click the **Edit** icon.



## 2.3 Step by Step 3 — Set a Style as a Default

1. Select a style, then right click and select Make default for selected StyleSet.



TIP Once Styles are assigned, then any style can be identified as the default (i.e. Transparancy).
#### 2.3 Step by Step 4 — Delete a Style

- 1. Select a style, then click the **Delete** icon.
  - Or, right click on the style set, then select Delete Selected Style



# 2.4 APPLY STYLES TO TAGS

Styles are appearance definitions. Assigning a style to a tag will change the appearance of model objects with that tag. When a Style Set is active, it will be denoted at the top of the Styling panel.

Styling Sects	Active Style Set: Major Systems	×
Styles Styl	<ul> <li>Basic Colors</li> <li>Brick</li> <li>Ceramic</li> <li>Cloth</li> <li>Concrete</li> <li>Diagnostic</li> <li>Flat</li> <li>Glass</li> <li>LightSource</li> <li>Liquid</li> <li>Media</li> <li>Metal</li> <li>Nature</li> <li>Diagnostic</li> </ul>	
	┿ →] 🖋 Add Assign Edit	1) Delete

TIP Styles can be applied to objects or tags; however, it is always preferable to use tags whenever possible as this provides greater flexibility.

**NOTE** If a style was applied to an object and that object was removed and redrawn within the design software, then that object will no longer be assigned the style.

### 2.4 Step by Step 1 — Apply a Style to a Tag

- 1. Select a tag withing the Tags panel.
  - This will select model objects
- 2. Withing the Styles tab, select a **style**, then click **Assign**.

Styling 🛛 🖾
Active Style Set: Major Systems
Search
<ul> <li>Concrete</li> <li>Diagnostic</li> <li>Flat</li> <li>Glass</li> <li>AGS Dielectric basic</li> <li>Eriks Ice</li> <li>Frosted Glass 01</li> <li>Furniture Glass</li> <li>Furniture Glass Darker</li> <li>Add Assign Edit Delete</li> </ul>
Tags and Objects
8 Q Search
♦ Manufacturer ♦ Material Glass Metal - Aluminium, Black-Apodized
Stone - Granite

• Or, drag and drop a style on top of a tag



• This method will not select model objects

# 2.5 ASSIGN STYLES USING EXCEL

Before beginning, ensure you have only one instance of InEight Model and one instance of Excel open. Matching unique tag category and values need to be in the model and in Excel.

Within the Tags and Objects menu, identify a Category Name and its values. For this example, the Tag Category will be Material and the Values are also shown as Glass, Metal and Stone.



In Excel, type the tag and object names into the first cell on the Excel sheet.

File Home Insert Page Lay	out Form	nulas Data iet ID Tag Asset_ID D Bulk Assign Tags P Select Tag	Review View Auto Select Frame Select	etted Help Audit Tags	BLUEBEAM Visual Reporting ~	InEight™ © Settings	
Project	Data	Actions	Modif	iers			^
A1 · : × · $f_x$	Material						~
A	в	C D	E	FG	і н		J 🖌 📥
1     Material       2     Glass							
3 Metal - Aluminium, Black-Anodized							
<ul> <li>4 Stone - Granite</li> <li>5</li> <li>6</li> <li>7</li> </ul>							
→ Sheet1 (+)			:	4			
Ready			다. Display Setting	s 🌐 [			

Now that there is a unique tag category with values within excel that match the model, a style set can be pushed from excel into the model.

#### 2.5 Step by Step 1 — Color Excel Cells

1. Add color to the cells.



2. Within the Excel menu bar, select the InEight tab.

File Home Insert Page Lay	out F L Import	ormulas Set ID Tag Bulk Ass Select Ta Actio	Data Asset_ID sign Tags ag	Review N	View H elect Selected	Help Line Audit Tags	BLUEBEAM Set ID Tag <n Set Color <no Visual R</no </n 	InEight™ one> pne> Show in Model	Settings v	3 🖓
		71000					Tibudi H	oporting		
$\begin{array}{c c} A4 & \bullet \\ \hline \end{array} : & \swarrow & Jx \\ \hline \end{array}$	Stone -	Granite	_	_	_	_	_		_	~
A		с	D							k 📤
1 Material										
2 Glass										
3 Metal - Aluminium, Black-Anodized										
4 Stone - Granite										
5										
6										
7										
→ Sheet1 +					: 📢					
Ready				्रिक Displ	ay Settings				+	100%

- 3. Within the Visual Reporting section:
  - Set ID Tag: click on a cell within the Tag Category, then select Set ID Tag.
  - Set Color: click on a cell that has the color identified, then select Set Color.

File	Home	Insert	Page Layou	it Fo	ormulas	Data	Review	√iew	Help	BLUEBEAM	InEight™	E	
Log in	User: Acct: Project: <n< td=""><td>one&gt; ~</td><td>Table II</td><td><b>↓</b> mport</td><td>Set ID Tag ◇ Bulk As &amp; Select T</td><td>Asset_ID sign Tags <sup>Ta</sup>g</td><td>Auto S</td><td>elect Selected</td><td>Audit Tags</td><td>Set ID Tag Ma Set Color Ma</td><td>terial Show in Model</td><td>Settings</td><td></td></n<>	one> ~	Table II	<b>↓</b> mport	Set ID Tag ◇ Bulk As & Select T	Asset_ID sign Tags <sup>Ta</sup> g	Auto S	elect Selected	Audit Tags	Set ID Tag Ma Set Color Ma	terial Show in Model	Settings	
	Project		Data	a	Actic	ons	1	Modifiers		Visual R	eporting		<u> </u>
A4	•	- × •	f <sub>x</sub>	Stone -	Granite								~
					с	D							k 🗖
1 Mat 2 Glas	terial ss 1												
3 Met 4 Stor	tal - Alumin ne - Granite	ium, Plack-A	nodized										
5 6													
7	Sheet	t <b>1</b> (+)		_				: •				_	
Ready							다. 고망 Displ	ay Settings	; III			+	100%

4. In this case, the Set ID Tag and Set Color happen to be in the same column of Material. To push these colors into the model and create a new style set, select **Show in Model**.

File Home Insert Page Lay	vout Formulas Dat	ta Review View	Help BLUEBEAM	InEight™ 🖻 🖓
Log in Project: <none> v</none>	Set ID Tag Asso Import Set ID Tag Asso Bulk Assign Select Tag	et_ID Auto Select	Set ID Tag M Set Color M Tags	Material Show in Model
Project	Data Actions	Modifiers	Visual	Reporting
A4 · : × · $f_x$	Stone - Granite			~
А	B C	D E F	G H	J   k
1 Material				
2 Glass				
3 Metal - Aluminium, Black-Anodized				
4 Stone - Granite				
5				
6				
7				
Sheet1 +		: [	•	
Ready		🖓 Display Settin	gs 🌐 🗉 💾	+ 100%

 Your project in Model will reflect the colors selected for those objects. Once Show in Model is executed, a new style set is created within the Styles Sets tab under Visual Reports



NOTE This style will not be saved with the project in this state.

5. To save this style set with the project, right click on the style set and select **Duplicate Selected Style Set**.

Edit Selected Style	
Edit Colortod Chilo	
Eait Selected Style	
Duplicate Selected Style	Ctrl+D
Delete Selected Style	
Make default for selected StyleSet	

• This new Style Set will appear under the project name



# 2.6 STYLE LEGEND

The Style legend option provides visibility into the color definitions applied to the geometry. You can easily communicate the information to all project stakeholders.

You can open the Styling legend in View > **Style Legend**.

<u>View</u> Object <u>L</u> ogic <u>A</u> rchive	Track Debug <u>H</u>
Master Presets	Ctrl+M
✓ Styling	
Style Legend	
✓ Tags and Objects	
Elements	
AWP	
<u>C</u> amera Settings	
Sectioning	
Show Grids	
Measurement	
First Person Settings	
Create New Markup	Ctrl+Shift+N
Camera Auto Orbit	Ctrl+Shift+O
First Person Navigation	Ctrl+F
Show Model Spots	Ctrl+Shift+.
Toggle Fullscreen	F11
Texture Preview Resolution	•
Home Position	Home

The Style Legend window opens and shows the style name, tag name, and tag value associations that are included in the selected style set.

e :	Style Set: RidgeGate Campus		
	Style Name	Tag Name	Tag Value
	concrete-01_preview	Material Name - CAD	03 30 00_Concrete_Cast-in-Place
	Yellow	Material Name - CAD	ADA
	Black Oxide Steel_preview	Material Name - CAD	Black Metal
	Black Oxide Steel_preview	Material Name - CAD	Black Metal - Corrugated
	Black Oxide Steel_preview	Material Name - CAD	Black Metal - Flat
	maxwoodCherry4_wCoatings_preview	Material Name - CAD	Casework
	Clearance	Material Name - CAD	Clearance
	concrete-19_preview	Material Name - CAD	Concrete
	concrete_scratched_preview	Material Name - CAD	Concrete - Cast-in-Place Concrete
	pavement_sidewalk_preview	Material Name - CAD	Concrete (Standard)
	concrete-19_preview	Material Name - CAD	Concrete TYP 2
	concrete_scratched_preview	Material Name - CAD	Concrete, Cast-in-Place gray
	concrete-01_preview	Material Name - CAD	Concrete, Precast
	Rough dirty metal_preview	Material Name - CAD	Duct Fittings
	Rough dirty metal_preview	Material Name - CAD	Duct Insulations
	browntowel_preview	Material Name - CAD	Earth
	bluel_rmetal_preview	Material Name - CAD	Electrical Equipment
	cyanImetal_preview	Material Name - CAD	Electrical Fixtures
	Glass - Transparent	Material Name - CAD	Glass
	Glass - Transparent	Material Name - CAD	Glass - Clear
	Glass - Transparent	Material Name - CAD	Glass - Frosted
	Glass - Transparent	Material Name - CAD	Glass - Spandrel
	Glass - Transparent	Material Name - CAD	Glass Screen

The window automatically refreshes after you make a change to the active style set.

A selected Percent complete style set shows the percent complete for each element style color.

This provides the visibility of the status of each element, so you have the data to plan accordingly.

Q. Saarch				
Work Package Progress     Work Package Progress     Element Progress     Material Component Percent Complete     Assembly Component Percent Complete     Addrifty Component Percent Complete				
DEMO - LOW VALLEY OIL	Style Le	gend		
Default Model	Antines	Chula Cale Ashibi Campage	at Descent Complet	_
> 🗋 Basic	Style	Style Name	Tag Name	e Tao Value
		Blue (40% - 60%)	Activity ID - Pier	G1-Pier-001
		Purple (60% - 80%)	Activity ID - Pier	G1-Pier-002
		Light Green (80% - 100%)	Activity ID - Pier	G1-Pier-003
		Green [100%]	Activity ID - Pier	G1-Pier-004
		Green [100%]	Activity ID - Pier	G1-Pier-005
		Orange (0% - 20%]	Spool	A2-077DGR-0001-01-01
r Presets Styling	100	Purple (60% - 80%)	Spool	A2-077DGR-0002-01-01
		Purple (60% - 80%]	Spool	A2-077DGR-0002-01-02
		Purple (60% - 80%]	Spool	A2-077DGR-0005-01-01
		Red [0%]	Spool	A2-077DGR-0006-01-01
		Orange (0% - 20%)	Spool	A2-077DGR-0011-01-01
		Red [0%]	Spool	A2-077DGR-0017-01-01
		Red [0%]	Spool	A2-077DGR-0017-01-02
		Purple (60% - 80%]	Spool	A2-077P-0865-01-01
		Purple (60% - 80%]	Spool	A2-077P-0865-01-02
		Purple (60% - 80%]	Spool	A2-077P-0865-02-01
		Blue (40% - 60%]	Spool	A2-077P-0865-03-01
		Purple (60% - 80%]	Spool	A2-077P-0866-01-01

#### Lesson 2 Review

- 1. InEight Model offers basic, pre-defined styles.
  - a. True
  - b. False
- 2. When creating a new style, what two features can you set?
  - a. Line color, fill color
  - b. Fill color, shadow
  - c. Shadow, line color
  - d. None of the above
- 3. You can only apply a style at the project level.
  - a. True
  - b. False

#### Lesson 2 Summary

As a result of this lesson, you can:

- Create and manage styles
- Create and manage style sets
- Apply styles to tags
- Assign styles using Excel



# **LESSON 3 – MASTER PRESETS**

Lesson Duration: 30 Minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Create and edit master presets
- Group master presets
- Share master presets

**Topics in this Lesson** 

# 3.1 MASTER PRESETS OVERVIEW

Create a master preset to capture and save the context or state of your project through a filtered lens or camera angle. Navigate between master presets to help you effectively manage your model and share your perspective with other users.

NOTE Master presets are created on a project level. Once created, anyone can use or edit your master presets.

### 3.1.1 Master Preset Editor

From an open model(s), navigate to the view that you want to save as a master preset. When ready to capture that viewpoint, navigate to **View** and select **Master Presets**. Then, select **Add** and select your preset preferences.



• Model Visibility shows models that are visible and in-view

- NOTE Once selected, Model Visibility will not show any new model streams that may be added to the project. To set or adjust model visibility settings, open the Object panel or right click menu to view the show/hide and selection options.
- Selected Objects shows any objects you have selected on the model
- Style Set shows any styles already assigned to the visible objects of your model
- Object Visibility saves the objects' states so that any objects already hidden remain hidden
- Workspace saves the user interface configuration, their location, and current screen resolution
- NOTE Selecting Workspace may cause undesirable results for users with different screen resolutions and configurations. Avoid selecting the Workspace when working in a shared preset.
- TIP When a custom Workspace is necessary, create and label a folder in your master preset panel where you can save that preset. Add your Workspace selection (and parameters, if possible) to the master preset description.
- **Camera** saves the current camera settings (i.e. the camera's position in space, direction, and depth of view)
- Archive saves any open documents in the Archive Library
- TIP Using Archive, you can bookmark pages within a document so that users open to a specific page while viewing the project from your master preset.
- Sectioning shows any planes or sections of your model(s) that are visible
- · Measurements shows selected measurements graphically or visually
- **Camera Transition Time**, with the Camera option selected, allows you to adjust the speed of the camera's transition time. The default Camera Transition Time is 1,000 milliseconds

NOTE If Camera is not selected, you cannot adjust the Camera Transition Time.

### 3.1.2 Reset Workspace

If a master preset has messed up your workspace, you can reset your workspace by going to the Settings and selecting **Reset Workspace**.

### 3.1.3 Right Click Menu Features

Quickly access additional master preset options by right clicking within the Master Preset panel.

- Edit and Update Selected ... opens the Master Preset Editor so you can quickly make and save changes to a preset for the selected assets
- Update Select w/ Current Values updates a Master Preset with the current model view configuration without opening the Master Preset Editor
- Set as Project Default will make the selected master preset the default view (of the project you have open) anytime you load that project
- **Copy URL to Clipboard** copies the master preset of your project to share with other collaborators
- Delete Selected deletes any selected master preset(s)
- Add Group ... allows you to add a group from the right click menu
- Rename Group ... allows you to rename a group from the right click menu
- Delete Group deletes any selected group(s)
- Expand All shows all folders in the master preset panel
- Collapse All collapses all folders in the master preset panel
- Export as Viewpoints allows you to create an XML file that you can import into Navisworks. In other words, you can share your viewpoint (including any presets you have, the order of those presets, and your spatial view of the model) with others through Navisworks



# 3.2 CREATE AND MANAGE MASTER PRESETS

#### 3.2 Step by Step 1 — Creating a Master Preset

1. Select Add to create a new preset.

Master Presets		X
<b>Q</b> Search		
Name	Description	
🕨 🗋 Training		
+ ⊡ ∥ Add Group Edit		û Delete

- The Master Preset Editor will open
- 2. Name your master preset.

Master Preset Editor
Name: Unnamed Master Preset
Include Current Settings for:
Model Visibility Selected Objects
Style Set Object Visibility
Workspace Camera
Archive Sectioning
Measurements
Camera Transition Time
1000 ms
Description:
V OK Cancel

TIP It is good practice to create one or more HOME master presets.

3. Next, check the filter selections you would like to apply to this preset.



Mouse over settings for tool tips.

- 4. Add a description to help others who use this preset to know what view of the project they are seeing and why (optional).
- 5. When finished, select **OK**.



### 3.2.1 Master preset object visibility maximum dialog box

This is a rare notification that you could encounter when you are trying to Hide Unselected while you are also selecting the Object Visibility option when creating the Master Preset.

You can also get that dialog box if you published one entire model from Navisworks.



It is recommended that you publish discipline specific models or area specific models. Then select objects, RMC, and select Hide Models from Unselected. Then RMC and select Hide Unselected. After that, create the Master Preset with Object Visibility option.

#### 3.2 Step by Step 2 — Editing a Master Preset

1. Select the master preset that you want to modify and select the Edit icon.

Master Presets	
<b>Q</b> Search	
Name	Description
<ul> <li>Training 1.15.2020</li> <li>Example</li> </ul>	
Solar Panel Installation Statu	15
	<u>ه</u>
Add Group Edit	Delete

• The Master Preset editor will open

2. Make your changes and select OK.



#### 3.2 Step by Step 3 — Editing a Master Preset - Model View

- 1. Prepare your model view.
- 2. Select a master preset and click the Edit icon. Then, select OK.
  - Or, right click on a master preset, then select Update Selected w/Current

### Settings

Master Presets		×
<b>Q</b> Search		
Name	Description	
🝷 🗋 Training		
! Home	New Master Preset	
	Edit and Update Selected	
	Update Selected w/ Current Values	
	Set as project default	
	Copy URL to clipboard	
	Delete Selected	
	Add Group	
	Rename Group	
	Delete Group	
	Expand All	
	Collapse All	
+ 🕞 🖌	Export as Viewpoints	ŵ
Add Group Edit		uu Delete

#### 3.2 Step by Step 4 — Deleting a Master Preset

1. Select the master preset that you want to remove and select the **Delete** icon.

Master Presets		×
<b>Q</b> Search		
Name	Description	
<ul> <li>Training 1.15.2020</li> <li>Example</li> <li>Group 1</li> </ul>		
Test1 Solar Panel Installation	Status	
+ ⊡ 🖍 Add Group Edit		tin de la companya de

# 3.3 ORGANIZE MASTER PRESETS

Organize master presets into contextual groups to distinguish between executive-level, task-specific, team-specific views. Drag and drop master presets and groups within the Master Preset panel to create comprehensive organization.

#### **3.3 Step by Step 1** — Grouping Master Presets

1. Select the **Group icon** and enter a group name. Then select **OK**.



Master Presets	x
<b>Q</b> Search	
Name	Description
<ul> <li>Training 1.15.2020</li> <li>Example</li> <li>Solar Panel Installation</li> <li>Ent</li> <li>Gr</li> </ul>	Statuc New Master Preset Group X er name for new group: oup 1 V OK X Cancel
+ 主 🖍 Add Group Edit	Delete

2. Now, you can add presets to this group.

Master Presets	
Name	Description
<ul> <li>Training 1.15.2020         Example     <li>Group 1         Test1         Solar Panel Installation Status     </li> </li></ul>	5
+ ि⊒ 💉 Add Group Edit	Delete

NOTE Notice, you cannot drag and drop a group above the project name. That's because groups are created under the parent project.

#### 3.3 Step by Step 2 — Set a Master Preset as the Project Default

A master preset can be set as the project default so that when a project loads the model view is set to the default master preset.

1. Right click on a master preset, then select Set as project default.



# 3.4 SHARE AND EXPORT MASTER PRESETS

Quickly communicate by sharing a master preset with other project collaborators. Add emphasis or clarity by assigning colorful style sets and tags to your master preset. Or, use master presets to check project progress or review changes by comparing the captured viewpoint against its archived state in the Project History folder (View > Project History).

#### 3.4 Step by Step 1 — Sharing a Master Preset

1. Select and right click on the master preset that you want to share. Select **Copy URL to Clipboard.** 

Q Search				
Name Description				
Training 1.15.2020				
Solar Panel Installation Status	New Master Preset			
	Edit and Update Selected			
	Update Selected w/ Current Values			
	Set as project default			
+ 🗉 🖍	Copy URL to clipboard			
Add Group Edit	Delete Selected			
	Add Group			
	Rename Group			
	Delete Group			
	Expand All			
	Collapse All			
	Export as Viewpoints			

• You can now paste your preset URL to an email, message, or other means of communication.

#### 3.4 Step by Step 2 — Exporting Master Presets

1. Right click on a master preset, then select Export as Viewpoints.



#### Lesson 3 Review

- 1. Master presets can help you to...
  - a. configure a custom workspace.
  - b. create profiles or filters of your model to convey specific information.
  - c. All of the above
  - d. None of the above
- 2. From the Master Preset Editor, selecting \_\_\_\_\_\_ will show any planes of your model that are visible.
  - a. Measurements
  - b. Sectioning
  - c. Archive
  - d. Model Visibility
- 3. Only project administrators can group or share presets.
  - a. True
  - b. False

#### Lesson 3 Summary

- · Create and edit master presets
- Group master presets
- Share master presets

This page intentionally left blank.



# LESSON 4 – COORDINATION - CLASH MANAGER

#### Lesson Duration: 20 Minutes

#### Lesson Objectives

After completing this lesson, you will be able to:

- Create and manage a coordination rule
- Create and manage coordination rule groups
- Define clearance settings

**Topics in this Lesson** 

# 4.1 CLASH MANAGER OVERVIEW

Coordination is the process of using rules to identify hard and soft clashes, creating grouped clashes into trackable issues, and assigning them to users or user groups to resolve.

Clash Manager rules are flexible rules established to detect clashes between model objects by examining geometric relationships between tags. Clash manager rule groups can be created to organize rules and to quickly execute multiple rules at the same time.

Clash Manager Projec Results		×
	8	
Q Search		Q Search
Rules		Groups $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
ER: Gas Pipe vs ALL	6	V 🗅 RidgeGate
PP: Duct Bank vs Pipe Support Foundations		Office 1     Office 1
Pipe Supports vs Duct Bank	6	RG: Ducting vs Structural Framing
RG: Ducting vs Structural Framing	6	RG: Piping vs Structural Framing
RG: Piping vs Structural Framing		Ridgegate - Vapor Barrier vs Pipe
RG: Structural Framing vs Piping	6	
Ridgegate - Vapor Barrier vs Pipe	â	
Rule definition		~
000		

The Clash Manager results tab shows the clashes detected after running a rule.

Clash	Manager				×
R	ules Results				
ф	⊖   \$				
			Q s		
Nam	• 1	Count	Select Tag Name		~
~ C	] RG: Piping vs Structural Framing	619 clashes			
>	Pipe Fittings	2 clashes			
>	Pipe Fittings	2 clashes			
>	Pipe Fittings	2 clashes			
>	Pipe Fittings	1 clashes			
>	Pipe Fittings	1 clashes			
>	Pipe Fittings Standard 2#1498507	1 clashes			
>	Pipe Fittings Standard 2#1547901	1 clashes			
>	Pipe Fittings Standard 2#1559628	1 clashes			
>	Pipe Fittings Standard 2#1579820	2 clashes			
>	Pipe Fittings Standard 2#1579854	2 clashes			
>	Pipe Fittings Standard 2#1580386	2 clashes			
>	Pipe Fittings Standard 2#1581546	2 clashes			
>	Pipe Fittings Standard 2#1583221	1 clashes			
>	Pipe Fittings Standard 2#1583347	2 clashes			
000					

# 4.2 CREATE AND MANAGE COORDINATION RULES

Coordination rules are triggers from tags. In Clash Manager, rules are created to fine-tune the workload and the focus of the coordination.

A best practice is to create discipline focused rules. For example, when you clash piping/plumbing versus steel, then make the piping/plumbing your primary tag and steel your secondary tag. This type of rule groups related steel clashes to a single piping/plumbing clash.

### 4.2.1 Considerations

Admin and Standard users can create coordination rules. Read-only users can also create coordination rules but cannot save any actions to the project.

Rules that are linked to issues are locked and cannot be modified.

#### 4.2.2 Steps

To open the Clash manager, go to Logic > **Clash Manager**.

#### Create a coordination rule

- 1. In the Rules tab, click the **Add** icon. The Rule definition dialog box shows.
- 2. Enter a name in the **Title** field.
- 3. Select a Primary Tag Name and Primary Tag Value.
- 4. Select a Secondary Tag Name and Secondary Tag Value.
- 5. Add Tolerance Settings as needed. For more information, see <u>Tolerance Settings</u>.
- 6. Select the **Include Objects From Same Model Stream** checkbox if your primary and secondary tags are within the same model stream.
| Clash Manager  | ×   |
|--|---|
| Rules Results  |   |
| ⊕ @   ♡   ▶   ♡ C  |   |
| <b>Q</b> Search  | <b>Q</b> Search   |
| Rules $\Box \rightarrow A$                                   | dd to Group <b>Groups</b> $\mapsto$ Remove from Group       |
| Ridgegate - Vapor Barrier vs Pipe                            | G > C RidgeGate   |
|  | ~   |
| Rule definition  | × م   |
| 2<br>Title   |   |
| ELE Fixtures vs Office 1                                     |   |
| Primary Tag Name   | Primary Tag Value   |
| Revit_Family_Type  | Electrical Fixtures : ME-Disconnect Balanced : $\checkmark$ |
| Secondary Tag Name   | Secondary Tag Value   |
| Model Group  | RidgeGate Office_1  |
| 5<br>Primary Tag O Secondary Tag<br>Tolerance Settings Value | Preview on Selected Object                                  |
| Cylinder × 2.0000  | 🗘 in 🗸  |
| 6<br>Include Objects From Same Model Stream                  | Save Rule Definition  |

# Edit a coordination rule

- 1. Select a rule from the list.
- 2. Click the **Edit** icon. The Rule definition dialog box opens.
- 3. Make your rule definition changes in the **Rule Definition** dialog box.
- 4. Click the Save Rule Definition button.

Clash Manager				×
Rules Results				
⊕ ₪   ♂ <mark>2</mark> ▶   ☞ ☞	<b> </b> ⊗ ⊡	□ <b>                                    </b>		$\otimes$
<b>Q</b> Search	٩	Search		
Rules Add	to Group Gr	oups 🛛 🖂		oup
LR: Gas Pipe vs ALL	6 > C	C RidgeGate		
PP: Duct Bank vs Pipe Support Foundations	<u> </u>			
Pipe Supports vs Duct Bank	6			
RG: Ducting vs Structural Framing	6			
RG: Piping vs Structural Framing				
RG: Structural Framing vs Piping	6			
Ridgegate - Vapor Barrier vs Pipe	6			
Rule definition			7*	ć
Title 3				
Pipe Supports vs Duct Bank				
Primary Tag Name	Primary Tag Value			
Model_Stream	KP Supports.nw	d	~	•
Secondary Tag Name	Secondary Tag Va	lue		
30_EstimatingTags_PowerPlant_WT	WT_ELE_DUCT_	3ANK	~	·
O Primary Tag O Secondary Tag Tolerance Settings Value		— 🔲 Preview Unit	v on Selected Objec	ct
None ~ 0.0000	$\hat{\mathbf{v}}$	m	~	
Include Objects From Same Model Stream		4	Save Rule Definitio	on

To view the Rules and Results tab side-by-side, click the **Expand** icon at the bottom left of the panel.

### **Export rules**

- 1. Click the **Export** icon.
- 2. Select **Export All Rules...** or **Export Selected Rules...**. The export file is saved in a *.cr* file extension in xml format.

Clash Manager								×
Rules	Resu	ılts						
$\oplus$ $\mathbb{H}$	Ľ	►	Ţ	D	$\otimes$	Đ	▶   🗗	$\otimes$
<b>Q</b> Search				<b>C</b>	Export All R Export Sele	ules cted Rules		
Rules				→ Ado	l to Group	Groups	Remove fr	
LR: Gas Pip	e vs ALL				6	> 🗅 Rid	geGate	
PP: Duct B	ank vs Pipe	Support	Foundatior	าร				

# Import rules

- 1. Click the **Import** icon.
- 2. Select the file to import, and then click the **Import** button.

Clash Manager			×
Rules	Results		
⊕ ⊕	C I	>   ↺ ↺   ⊗	
<b>Q</b> Search			<b>Q</b> Search
Rules			Groups 🕞 Remove from Group
LR: Gas Pip	oe vs ALL	6	> 🗅 RidgeGate
PP: Duct B	ank vs Pipe Suppo	rt Foundations	

NOTE When importing, the tags identified in the rules are created as tags in the project if they do not already exist.

# **4.3 TOLERANCE SETTINGS**

Tolerance settings are used to define minimum clash tolerances or tolerance zone requirements around objects. You can isolate an object, and then preview the selected object to visualize and experiment with these settings.

The following table is a list of the available tolerance settings:

Setting	Description
None	Used to detect any geometric intersection.
Expand	<ul> <li>Expands the geometry in all directions by the defined value.</li> <li>Use a negative number to require a minimum Clash Tolerance. Negative a tenth of an inch will require a collision of a tenth of an inch or more before listing it as a Clash.</li> <li>Use a positive number to establish a clearance zone around the object. Positive one foot will list any geometry within a foot of the object as a Clash.</li> </ul>
Sphere	Establishes a spherical Clash Tolerance or Clearance Zone.
Cylinder	Establishes a cylindrical Clash Tolerance or Clearance Zone.

🕞 🔘 Primary Tag —— 🔿 S	econdary Tag	Previev	v on Selected Object
Tolerance Settings	Value	Unit	
None Expand	0.0000	) m	~
Sphere Cvlinder	vodel Stream		Save Rule Definition
, 			

### 4.3.1 Steps

NOTE You must first select an object. The object selected represents all objects with the same Primary or Secondary Tag Value selected.

### Create rules for Expand, Sphere, and Cylinder tolerance settings

- 1. Fill in the Rule definition fields to create a rule.
- 2. Select Expand for Tolerance Settings.
- 3. Select the Preview on Selected Object checkbox.
- 4. Select a Unit from the drop-down list.
- 5. Enter a value in the Value field.

Clash Manager Rules Results Rules       Q       Search       Rules	
Ridgegate - Vapor Barrier vs Pipe	
Rule definition	
Title 🚺	
ELE Fixtures vs Office 1	
Primary Tag Name	Primary Tag Value
Revit_Family_Type	Electrical Fixtures : ME-Disconnect Balanced : Y
Secondary Tag Name	Secondary Tag Value
Model Group	RidgeGate Office_1
O Primary Tag     O Secondary Tag     Tolerance Settings     Value     Expand     2      20000     5	3 · ☑ Preview on Selected Object Unit ûn 4 ✓
Include Objects From Same Model Stream	Save Rule Definition
000	

You can follow the same steps for Sphere and Cylinder tolerance settings as shown in the images below:

#### Sphere

Clash Manager Rules Results O Game C T T	×	
	C C C C C C C C C C C C C C C C C C C	
Ridgegate - Vapor Barrier vs Pipe	RidgeGate	
	×	
Rule definition	^ L	
Title		KXXXX (
ELE Fixtures vs Office 1		
Primary Tag Name	Primary Tag Value	
Revit_Family_Type	Electrical Fixtures : ME-Disconnect Balanced : 🗡	
Secondary Tag Name	Secondary Tag Value	
Model Group ~	RidgeGate Office_1	
O Primary Tag O Secondary Tag Tolerance Settings Value	Preview on Selected Object Unit	
Sphere Y 2.0000	↓ in ↓	
Include Objects From Same Model Stream	Save Rule Definition	

### Cylinder

Clash Manager       Rules       Results       Image: The second se
Q Search Q Search
Rules 🛛 🖂 Add to Group Groups 🖵 Remove from Group
Image: Ridgegate - Vapor Barrier vs Pipe     Image: RidgeGate
Rule definition
Title
ELE Fixtures vs Office 1
Primary Tag Name Primary Tag Value
Revit_Family_Type    Electrical Fixtures : ME-Disconnect Balanced :
Secondary Tag Name Secondary Tag Value
Model Group
O Primary Tag      O Secondary Tag     Preview on Selected Object     Tolerance Settings     Value     Unit
Cylinder V 2.0000 🗘 in V
Include Objects From Same Model Stream Save Rule Definition

# **4.4 CREATE AND INTERROGATE CLASH RESULTS**

In Clash Manager you can run clash rules or rule groups to get clash results. The clash results can then be reviewed and interrogated. To open Clash Manager, go to Logic > **Clash Manager**.

NOTE

A best practice is to use a master preset to focus on a specific area of the federated discipline models before running a rule to review focused clash results.

# 4.4.1 Considerations

Admin and Standard users can create coordination rules. Read-only users can also create coordination rules but cannot save any actions to the project.

### 4.4.2 Steps

### Create clash results

1. In the Clash Manager Rules tab, select a rule or rule group, and then click the **Run rule** icon.



The Results tab will open and show the clash results grouped by the primary tag selected in the rule creation.

Clash	Manager			×
R	ules Results			
			<b>Q</b> Search	
Name	• 1↓	Count	Select Tag Name	
~ C	] RG: Piping vs Structural Framing	619 clashes		
	Pipe Fittings	2 clashes		
	Pipe Fittings	2 clashes		
	Pipe Fittings	2 clashes		
	Pipe Fittings	1 clashes		
	Pipe Fittings	1 clashes		
	Pipe Fittings Standard 2#1498507	1 clashes		
	Pipe Fittings Standard 2#1547901	1 clashes		
	Pipe Fittings Standard 2#1559628	1 clashes		
	Pipe Fittings Standard 2#1579820	2 clashes		
	Pipe Fittings Standard 2#1579854	2 clashes		
	Pipe Fittings Standard 2#1580386	2 clashes		
	Pipe Fittings Standard 2#1581546	2 clashes		
	Pipe Fittings Standard 2#1583221	1 clashes		
	Pipe Fittings Standard 2#1583347	2 clashes		

- 2. In the Results tab, select a clash result, and then select a tag in the **Select Tag Name** drop-down to view additional insight of the clash results.
- 3. To view a heatmap of results, click the **Clash results settings** icon to enable **Issued Result** and **Clash Points**.

Clash Manager					
Rules Results					
^   ⊖   🕸	]				
Issued Result		<b>Q</b> Search			
Clash Points () Name Sm Md Lg	Count	Material Name - CAD			
✓ ☐ RG: Piping vs Str J	82 clashes				
> Pipe Fittings	1 clashes	Pipe Fittings			
> Pipe Fittings Standard 2#1748817	1 clashes	Pipe Fittings			
> Pipe Fittings Standard 2#1748827	1 clashes	Pipe Fittings			
> Pipe Fittings Standard#1891733	1 clashes	Pipe Fittings			
> Pipe Fittings Standard#1914978	1 clashes	Pipe Fittings			
> Pipe Fittings Standard#2504456	1 clashes	Pipe Fittings			
✓ Pipes Hydronic#1770255	4 clashes	Pipes			
– 🛞 Structural Framing W21x62#2451772		Steel ASTM A992			
- 🚳 Structural Framing W21x62#2451802		Steel ASTM A992			
- 🛞 Structural Framing W21x62#2451826		Steel ASTM A992			
Structural Framing W21x62#2451832		Steel ASTM A992			
> Pipes Hydronic#1770614	1 clashes	Pipes			

- 4. Click the **Select all clash results** icon at the top left to group and view additional related clashes to group into a single issue.
- 5. Click the **Clear the results list** icon to clear and deselect clash results.

To view the Rules and Results tab side-by-side, click the **Expand** icon at the bottom left of the panel.

Clash Manager			
	Rules ——		Results
⊕ @   ₫   ▶   Ⴊ Ⴀ		⊡   ▶   ▷   ⊗	^   ⊖   ⊗
Rules 🖂 Add to			Name 11 Count Material Name - CAD ~
LR: Gas Pipe vs ALL	6 ~	/ D RidgeGate	V C RG: Piping vs Structural Framing 82 clashes
			> Pipe Fittings 1 clashes Pipe Fittings
PP: Duct Bank vs Pipe Support Foundations		V Doffice 1	Pipe Fittings Standard 2#1748817     1 clashes     Pipe Fittings
Pipe Supports vs Duct Bank	6	RG: Ducting vs Structural Framing	Pipe Fittings Standard 2#1748827     1 clashes     Pipe Fittings
# RC Duction or Structural Framion	A	DC: Dining or Structural Framing	Pipe Fittings Standard#1891733     1 clashes     Pipe Fittings
ii Ro. Ducting vs subctural framing	•	rid. Fipring vs do uctural Framming	Pipe Fittings Standard#1914978     1 clashes     Pipe Fittings
RG: Piping vs Structural Framing	Ê	Ridgegate - Vapor Barrier vs Pipe	Pipe Fittings Standard#2504456     1 clashes     Pipe Fittings
RG: Structural Framing vs Piping	A		V Pipes 1+ydronic#1770255 4 clashes Pipes
	-		Structural Framing/W21x62#2451772     Steel ASTM A992
Ridgegate - Vapor Barrier vs Pipe	6		Structural Framing[W21x62#2451802     Steel ASTM A992
			Structural Framing/W21x62#2451826     Steel ASTM A992
			Structural Framing/W21x62#2451832 Steel ASTM A992
			PipesHydronic#1770614     1 clashes     Pipes
			Pripesinydronic#1007307     TS cashes     Pripes
			Pripesjitydronic#180/407     TS Cashes     Pipes     Directliketenic#180/407     Second
Rule definition		2	Pripesinycromecrosore     Provide ProvideProvide Provide Provide Provide Provide Provide Provide Provide
000			

# 4.5 CREATE AND MANAGE COORDINATION RULE GROUPS

Coordination rules can be run individually or as groups in the Clash Manager Rules panel. Coordination rule groups let you run all rules that are relevant to a scope item at the same time. Rule grouping is helpful when the project's overall scope is divided across the project team.

A best practice is to create discipline focused rules. For example, when you clash piping/plumbing versus steel, then make the piping/plumbing your primary tag and steel your secondary tag. This type of rule groups related steel clashes to a single piping/plumbing clash.

### 4.5.1 Considerations

Admin and Standard users can create coordination rules. Read-only users can also create coordination rules but cannot save any actions to the project.

### 4.5.2 Steps

To open Clash Manager, go to Logic > Clash Manager.

### Create a coordination rule group

- 1. In the Rules tab, click the **Add Group** folder icon in the Groups section, and then enter the group name.
- 2. Click the new group folder, and then click Add folder to create a sub-folder.
- 3. Select one or more rules, select a Group folder, and then click the **Add to Group** button.

Clash Manager	×
Rules Results	
⊕ ⊞   ♂   ▶   ७ 0 8	
Q Search	<b>Q</b> Search
Rules Add to Group	Groups
ER: Gas Pipe vs ALL	∼ 🗅 RidgeGate
PP: Duct Bank vs Pipe Support Foundations	✓ ☐ Office 1 2
Pipe Supports vs Duct Bank	RG: Ducting vs Structural Framing
RG: Ducting vs Structural Framing	<b>3</b> RG: Piping vs Structural Framing
RG: Piping vs Structural Framing	Ridgegate - Vapor Barrier vs Pipe
RG: Structural Framing vs Piping	
Ridgegate - Vapor Barrier vs Pipe	
Rule definition	2
000	

To view the Rules and Results tab side-by-side, click the **Expand** icon at the bottom left of the panel.

### **Export rules groups**

- 1. Click the **Export** icon.
- 2. Select **Export All Groups...** or **Export Selected Groups...**. The export file is saved in a *.cr* file extension in xml format.



# 4.6 SHOW DUPLICATE OBJECTS

The Show Duplicate Objects option lets you perform duplicate checking operations in the aggregated Model environment.

Based on the data reported using the show duplicate option, the design team can remove duplicate object geometry from the authoring environment.

To see a list of duplicate objects, run the report in Logic > Show Duplicate Objects.

<u>L</u> ogic	<u>A</u> rchive	Track	Debug	<u>H</u> elp							
Cool	Coordination Ctrl+										
DTO Ctrl+9											
Anal	yze Model	Changes									
Shov	Show Dupiicate Objects										
Logi	c View										

A new window opens that shows grouped duplicate objects and provides the source file information so you can remove the duplicated geometry at the source.

Duplicate	e Objects			
Group	Source ID	Object Name	Model	InEight Model GUID
1	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d39	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
1	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d39	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
2	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
2	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
3	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d39	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
3	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d39	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
4	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
4	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
5	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
5	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
6	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
6	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3a	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
7	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
7	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
8	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
8	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d3b	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
9	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d37	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
9	83cf130e-0e6f-4fa3-b8fa-7b54eaca5e17-00143d37	UHMW, White	INT_OFFICE_2	6d817188-6587-49b7-af76-7dd65728c0d3
	8278	Duplicate Objects found in 14 Different Models		Expor

### 4.6.0.1 Export duplicate objects

You can export and view the data in an Excel file. Click the **Export** icon at the bottom right to start the export.

NOTE The default export file type is .csv.

The exported duplicate objects file can be imported to the archive library and attached to issues. You can then export them to a BCF export for the engineering team to review.

#### Lesson 4 Review

- 1. \_\_\_\_\_ are created to detect clashes.
  - a. Styles
  - b. Tags
  - c. Coordination Rules
  - d. None of the above
- 2. Coordination rules can only be run individually.
  - a. True
  - b. False
- 3. \_\_\_\_\_ define the parameters around objects for clash detection.
  - a. Clearance settings
  - b. Coordination issues
  - c. Coordination rules
  - d. None of the above

### Lesson 4 Summary

As a result of this lesson, you can:

- Create and manage a coordination rule
- Create and manage coordination rule groups
- Define clearance settings



# LESSON 5 – COORDINATION - ISSUE MANAGER

Lesson Duration: 60 minutes

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Create clash results
- Create and manage coordination issues
- · Find nearby clashes and add clashes to an existing issue
- · Create and manage coordination results

**Topics in this Lesson** 

# 5.1 ISSUE MANAGER OVERVIEW

Issue Manager lets you turn geometric clash issues, model review, and site-walk findings into issues. Issues can be grouped and then assigned and tracked all the way to completion.

The Issue Manager contains 3 tabs:

- Issues View the list of issues grouped in folders.
- **Details** Lets you add additional information such as status, assignee, set location pins, resolution information, add additional views, attachments, and markups.
- Summary Shows all clashes associated with the issue.

Issue Manager								
Issues		– Details –				– Summary —		
Q Search		Go To Pir	n î	Clash				
		🔿 Set Pin		✓ RG: Piping vs S	Structural Fra	ming		4
				Clash Name	Ignore	Status	View	Remove
ssue 1↓ Assigned Status				Pipes Hydronic#19		Active	ø	Θ
- 🗅 New Group				Pipes Hydronic#19		Active	ø	
- 🗀 Oil & Gas				Pipes Hydronic#19	0	Active	ø	Θ
D Power Plant	Status Assignee			Pipes Hydronic#19	0	Active	ø	Θ
C RidgeGate Campus	Open 🗡			`				
- 🗋 Concrete	Priority	Due Date						
- 🗅 Electrical	- Iou							
- 🗅 HVAC	LOW							
V D Piping	V Summary							
– • CI-00039 Open	Resolved by	Resolution date						
- CI-00040 Resolved								
Cl-00041 Closed	Last modified by	Last modified date		1				
	Dale	7/31/2023 2:54 PM						
	Created by	Date created						
	Dale	7/31/2023 2:53 PM						
	Views							
	View-01	8						
	🕀 Add	Export						
	✓ Attachments and Markups							
	Type 1 Location							
000								Open Issues: 2

To view all tabs side-by-side, click the **Expand** icon at the bottom left of the panel.

# 5.2 CREATE AND MANAGE COORDINATION ISSUES

Coordination issues are groupings of geometric clashes, viewpoints, documents, and markups that can be assigned to a user or a user group. You can create coordination issues without a geometric clash. All issues created can be exported.

# 5.2.1 Considerations

When creating and managing issues, one best practice is to have the Clash Manager's Results panel and Issue Manager panel open side-by-side. After you run a clash rule or rule group, your focus will be on their results in the Clash Manager's Results tab and the Issue Manager.

### 5.2.2 Steps

To open the Clash or Issue Manager, go to Logic > Clash Manager or Issue Manager.

#### Add folders and sub-folders to organize issues

- 1. In Issue Manager, to add a new folder, click the **Add folder** icon, and then name the folder.
- 2. To add sub-folders, select a folder, and then click Add folder icon.

#### Create a non-geometric clash issue

1. Select a folder, and then click the **Add issue** icon. A new issue is created, and the Details panel opens to fill in the issue details.

Issue Manager		×
<b>Q</b> Search		
⊕ E ď	ひ   ℃   ⊗	
Issue	↑↓ Assigned Status	

#### Create a coordination issue from clash results

- 1. Open the Clash Manager and the Issue Manager's panels side-by-side.
- 2. In Clash Manager, run a rule or rule group.
- 3. In Issue Manger, select or create a folder to push the clash results into.

ie Manager		Clash Manager			EIX DEMO - ALL INDUST	TRES			
		Rules Results							
		↑   Θ   ♥							
	⊂   ⊗						A ALL		
e 11 Assigned				u, search					
" New Gener									
101868		Carlos Piping vs Structural Framing	75 clashes				Aunon		1
T Power Plant		> Pipe Fittings	1 clashes						
1 RidgeGate Campus		> Pipe Fittings Standard 2#1748817	1 dashes						
- Cancerte		> Pipe Fittings Standard 2#1748827	1 dashes						
- C Bectrical		> Pipe Fittings Standard#1891733	1 clashes						2 Mar
		> Pipe Fittings Standard#1914978	1 clashes						
Diffeing		> Pipe Fittings Standard#2504456	1 clashes						
- • CI-00039	Open	> Pipes(Hydronic#1770255							
- • G-00040	Resolved	> Pipes(Hydronic#1770614	1 dashes						//
• CI-00041	Closed	> Pipes@tydronic#1807387	15 clashes						
- C Structural		> Pipes@tydronic#1807467	15 clashes					///	
		> Pipes(Hydronic#1891602	1 clashes						
		> Pipes(Hydronic#1891655	1 clashes						
		> Pipes@Hydronic#1905168	1 clashes						
		> Pipes@tydronic#1905180	1 clashes						
		Pipes(Hydronic#1920822	1 clashes				12		
		000							
1	Onen houser 2								

- 4. Select a clash result, and then in the viewer, zoom into the result.
- 5. Right-click the clash result, and then select **New Issue from selected result** or **Add selected results to current Issue**. The Details tab shows.

In the Details tab you can view and manage thumbnails, clashes, status, summary, views, attachments, and markups. For more information about the Details panel, see Details panel overview.

Issue Manager				×
KidgeGa	te Campus/Piping/CI-00050			
			🔎 Go To Pin	
			🔿 Set Pin	
Clashes				4
Status	Assignee			
Open 🗸	Sub_Piping			~
Priority			Due Date	
Medium		~	8/18/2023	Ŷ
Summary Resolved by			Resolution date	
Last modified by	1		Last modified date	
Dale			8/10/2023 8:34 AM	
Created by			Date created	
Dale			8/10/2023 8:32 AM	
Views				
	⊕ Add			
✓ Attachmer	nts and Markups			
Type †↓ Lo	cation			
	(+) Add			
000				Open Issues: 4

To view the all tabs side-by-side in Issue Manager, click the **Expand** icon at the bottom left.

NOTE When you create an issue offline, the issue ID number shows as a GUID. An issue ID number is assigned the next time you are online.

### Add markup

1. In the Details panel, under **Attachments and Markups**, click the **Add** button. A New Markup tab opens in the viewer window.



2. Markup the view using the markup tools.



3. To save the markup, click **Save to...**, and then you can select **Issue...** or **File...**.When saving to Issue, it saves the markup to the issue. When saving to File, it saves the markup to a PDF file.



- 4. Click the **Back to Model** button to go back to the viewer.
- 5. To close the markup view, click the **Close** icon at the far right.

### Edit an issue

1. Select an issue, and then click the Edit issue icon. The issue opens in the Details panel.

You can view and edit thumbnails, pins, clashes, status, assignee, priority, due date, summary, views, attachments, and markups.

 Select Clashes to view all clashes in the issue. You can edit active clashes and change to Ignore or Resolved. When all the clashes are set to Ignored or Resolved, the issue status automatically shows as Resolved.



NOTE When an issue is in Resolved status, the coordinator responsible should visually inspect the issue to ensure it has been resolved in a satisfactory manner. The coordinator can then change the issue status to **Closed**.

The status for a clash or clashes is automatically set to invalid when one or both intersecting objects are deleted in the design application, the model is published to InEight Model, and the **Update Issue** function is executed.

An invalid status indicates that InEight Model can no longer detect the clash since it cannot detect the source object or objects. Invalid clashes are treated as resolved.

### Import issues

- 1. In the Issues panel, select the **Import** icon.
- 2. Select your BCF file, and then select **Open**. Your files are imported to an **Imported Issues** folder.

### **Export issues**

- 1. In the Issues panel, select one or more issues or select a group folder that contains issues.
- 2. Click the **Export** icon, and then select **BCF 2.1** or **BCF 3.0**.
- 3. You can then name and save the file. The file is saved in a *.bcfzip* file format which can be opened in other applications as shown in the image below:



### **Update issues**

- 1. Publish a new model revision.
- 2. Click the **Update Issues** icon.



The resolved clashes automatically change the clashes in the issues to a Resolved status. If all clashes are resolved, the status for the Issue also shows as Resolved.

### Delete a coordination issue

1. Select a coordination issue, and then click the **Delete** icon.

# **5.3 COORDINATION ISSUE REPORTING**

Coordination Issue Reporting can be achieved by accessing Issues through the Excel plugin.

### Access Issues via Excel Plugin for Reporting

- 1. In Excel, select **InEight** in the menu ribbon.
- 2. Click the Login icon to log into your project. The Login to InEight dialog box opens.

File Home Inse Log in User: Acct: Project: <none> Project</none>	ert Page Layout F Table Import	Formulas Data F Set ID Tag Asset_ID Sulk Assign Tags Select Tag Actions	Review View Help Auto Select Frame Selected Audit Tags Modifiers	BLUEBEAM InEight™ Set ID Tag Material Set Color Material Show in Model Visual Reporting	
A1 · · ·	× ✓ fx				<b>v</b>
A B 1 2 3 4 5 6 7	C D	EF	G H I		
Ready			Lag Display Settings		+ 100%

3. Enter your password.

🛞 Login to InEight								
Username:	Dale							
Account:	demo-veo demo							
Password:	•••••							
Forgot Pass	word? OK Cancel							

• The Select Project dialog box opens.

4. Select your project, then click OK.

🖷 Select Project	-	$\times$
- 3 Story Building - HIGH - Thincast - InEight Demo - KBG-RidgeGate Car Model Comparison - Training - WT Plant	mpus Steel	
	ОК	

• User, Acct, and Project are shown.



5. Select the **Table** icon.

6. Hover over Tracked Issues > Tracked Issue, and then click Query All.

File Home Insert Pag User: Log out Project DEMO - RID v	e Layout Formulas Dat Table Import Set ID Tag <noi ≫ Bulk Assign ☆ Select Tag</noi 	a ne> Tags	Review	View uto Select ame Selected	Help Help Audit Tags	BLUEBEAN Set ID Ta Set Color	M InEig g <none> r <none></none></none>	aht™ ↓ Show in Model	Settings	re 🖵 Comme Question Template Tool ~	ents
Project	Query Multiple Tables			Modifiers		Vis	sual Reporting	9			
A1 • : 🗙 🗸	Existing Table							_			~
📕 А В С	admin	>	G	н	1	J	К	L	M	N	-
2	Elements	>									
3	Notifications	>									
4 5	Tracked Issues	>	Tr	acked Issue	>	Query	y All				
6	Work Packages	>	Tra	acked Issue I	History >		43				
7 Sheet1 ↔	MAJOR_EQP_MAINT	>			:	4					<b>-</b>
Opened project 'DEMO - RIDGEGATE CAMPL	Major_Equipment	>			도索 Displa	Y Settings		I –		+	100%

NOTE All the Coordination issues are shown. This is a direct view into the database tables

File Log ou	e Hou User: Acct: Project	me li ct: DEMO Project	nsert ) - RID v	Page Layo Table	ut Forr	mulas Set ID Tag 》 Bulk A 尔 Select Act	Data <none> ssign Tags Tag ions</none>	Review View	Help ted Audit Tags	BLUEBEAN Set ID Tag Set Color Visi	I <u>InEight™</u> ( <none> <none> Show in Model ual Reporting</none></none>	Share Comm	ients
A1		• :	×	f <sub>x</sub>	Instance	Id							¥
					м			0			Q		
1	d	Priority	Subtype	Category	Summary	Status	Descriptio	n	Subcontrac	tor Person	Subcontractor Team	Responsible Person	Res
2 0	1-00005		CLASH			Open						Sub_Piping	Sub
3 0	CI-00012		CLASH			Open	Take a loo	k at the piping				andre	
4 0	I-00014		CLASH			Open	Check this	out				Sub_HVAC	Sub
5 0	00006		CLASH			Open						Sub_Piping	Sub
6 0	CI-00001		CLASH			Open						Sub_Piping	Sub
7 0	1-00007		CLASH			Open						Sub_Piping	Sub
~ ~	1 00004		CLACU			0						cule pistere	C Is
<b>∢</b> Fracke	ed Issue - co	Tracked	Issue	Sheet1	( <del>)</del>				्र्स्ट Displa	▲ Settings		+	100%

#### Lesson 5 Review

- 1. Coordination issues are created from \_\_\_\_\_\_.
  - a. Model streams
  - b. Tags
  - c. Master presets
  - d. Clashes
- 2. Issue statuses always start as \_\_\_\_\_\_.
  - a. In progress
  - b. Open
  - c. Closed
  - d. Flagged
- 3. After resolving a coordination issue, the reviewer should physically review the site to ensure the issue (and any potential related issues) is resolved.
  - a. True
  - b. False

#### Lesson 5 Summary

As a result of this lesson, you can:

- Create clash results
- Create and manage coordination issues
- Find nearby clashes and add clashes to an existing issue
- · Create and manage coordination results



# **LESSON 6 – ARCHIVE**

Lesson Duration: 40 minutes

### **Lesson Objectives**

After completing this lesson, you will be able to:

- Import and manage project documents
- Link documents to objects and tags
- Link specific pages
- View documents within InEight Model

**Topics in this Lesson** 

# 6.1 ARCHIVE OVERVIEW

The **Archive** is a repository for documents. Archive supports files of any size and type, provides finegrained permission controls, and retains a complete revision history. The Archive is accessible within InEight Model, Mobile and Web applications.

Archive includes **Archive Library** for storing and managing files, and the **Archive Viewer** for viewing supported files types.

Archive Library		æ 🛛
Library Selection <b>F</b> ilter		
File Name	Labels Type Last Modified	
Issue Attachments		
<ul> <li>Duct Insulation.docx</li> </ul>	DOC Wed Mar 25 10:32:59 2020	
<ul> <li>What is InEight Model.pdf</li> </ul>	PDF Mon Apr 6 10:22:33 2020	
⊥ [∃ →] → ↓ Import Folder Assign Label Downl	oad	Delete
Archive Library Selection Information		
Archive Viewer		
Selection What is InEight Model	.pdf 🙁	
What is InEight Mc	bdel	nts ing and ition y and icking
hEight Inc.   Release 23.10		age 359 of 49

## 6.1.1 Archive Library

View, manage, and organize all project documents within the Archive Library. Create labels and link documents to model object tags for enhanced usability.

To launch the Archive Library panel, select **Archive > Library**.

InE	InEight MODEL								
<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Object	<u>L</u> ux	<u>T</u> ime	<u>L</u> ogic	<u>Archive</u> Pulse Track <u>H</u> elp		
Viewer	r						Library		
							Viewer		
							Configure Auto File Sync		
							Archive View		

The Archive Library panel has two tabs: the Library tab and the Selection tab.

### 6.1.1.1 Library Tab

The **Library Tab** contains all the documents imported into the project. It provides the means to organize documents within a folder structure and to link documents to model object tags.

TIP Documents associated to tags will maintain its association through model updates, assuming no manipulation to tags.
Archive Library Library Selection <b>T</b> Q <i>Search</i>	5	_			]
File Name	Labels	Туре	Last Modified		
<ul> <li>Issue_Attachments</li> <li>Duct Insulation.docx</li> <li>What is InEight Model.pdf</li> </ul>		DOC PDF	Wed Mar 25 10:32:59 2020 Mon Apr 6 10:22:33 2020		
	l nload			) Delete	

# 6.2 MANAGE DOCUMENTS

Documents can be grouped in a folder structure, have permissions set at the folder level, have labels assigned, and access document information.

#### 6.2 Step by Step 1 — Import Documents

Documents in the Archive Library are either cached locally or only indexed from the online database. Any document uploaded is automatically cached locally on the computer that uploaded it and is represented by a green dot.

- 1. Select the **Import** icon.
- 2. Then select either File or Directory from the drop-down menu.

Archive Library	x
Library Selection Filter	
File Name Labels Type Last Modified	
	Ŵ
Import Folder Assign Label Download I File	Delete
Directory	

• Windows Explorer opens

TIP Drag and drop files and/or file folders into the Archive Library panel.

- 3. Browse to the File or Directory location.
- 4. If **File** was selected, select one or multiple documents to be imported, then click **Open**. If **Directory** was selected, select on the directory folder to be imported, then click **Open**.

Confirm Directory Import			×		
Confirm import of the following:					
Name	Size	Туре	Date Modifi		
Documents		File Folder	3/27/2020		
1st Floor.png	77.80 KiB	png File	3/27/2020		
2nd Floor.png	107.91 KiB	png File	3/27/2020		
3rd Floor.png	107.44 KiB	png File	3/27/2020		
📴 A1-Floor_Plan.pdf	545.92 KiB	pdf File	3/27/2020		
A2-Sections.pdf	313.42 KiB	pdf File	3/27/2020		
E101-Electrical_Power_Riser_Diagram.pdf	193.44 KiB	pdf File	3/27/2020		
📴 E201-1st Floor-Lighting_Plan.pdf	195.31 KiB	pdf File	3/27/2020		
E301-Lighting_Details.pdf	301.13 KiB	pdf File	3/27/2020		
🚾 HVAC_Manual.pdf	7.02 MiB	pdf File	3/27/2020		
🚾 M100-Mechanical_Legend.pdf	67.78 KiB	pdf File	3/27/2020		
M201-1st_Floor_Plan_A_HVAC.pdf	222.51 KiB	pdf File	3/27/2020		
M202-1st_Floor_Plan_B_HVAC.pdf	375.88 KiB	pdf File	3/27/2020		
		🗸 ок	X Cancel		

- The Confirm Directory Import dialog box opens
- 5. Click OK.

#### 6.2 Step by Step 2 — Download Documents

Any document within the Library represented with a red dot is only indexed from the online database and needs to be downloaded to access it.

- 1. Within the Archive Library panel, select one or multiple documents.
- 2. Then select the **Download** icon.

• Or right click and select Download Selected

Archive Library				x
Library Selection <b>Filter Q</b> Search				
File Name	Labels	Туре	Last Modified	
<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> <li>Example Folder 2</li> </ul>	Design, Facility	PDF	Mon Apr 6 15:14:44	
<ul> <li>File_1.txt</li> </ul>	Design, Example 2	тхт	Mon Apr 6 15:15:21	1
<ul> <li>File_2.txt</li> </ul>	Design	ТХТ	Mon Apr 6 15:15:21	
⊥ [= み] ぐ ↓ Import Folder Assign Label Downlo	bad		Dele	te

- The Download dialog box opens
- 3. Click Download Selected.



• **Download Entire Library**: downloads and caches the entire library. **Warning**: this can take a long time and use a lot of disk space with large libraries

- Download Selected to External App: downloads the file directory to the local computer without caching it locally to VEO\_Cache
- Save to ...: saves selected to a specific location

#### 6.2 Step by Step 3 – Organize Documents

Organize and group documents by creating folders. Drag and drop folders and documents to rearrange them as desired. Right click on the document or folder to rename it.

- 1. Within the Archive Library panel, click the Folder icon.
- 2. Name the folder.



### 6.2 Step by Step 4 — Delete Documents or Folders

- 1. Select one or multiple document(s) or folder(s), then click the **Delete** icon.
- 2. Answer the validation response(s).



NOTE Deleting a folder will delete all documents within the folder. The deleted document/folder is not deleted from the local cache.

There are additional options for removing documents/folders within the **Right Click menu** under **Delete**:

- Delete > From Archive Library: removes document/folder from library (same as Delete icon)
- Delete > Selected from Cache: removes only the local cache copy of a document
- Delete > Historical Versions from Cache: removes previous versions of document/folder from local cache
- Delete > Upload Data from Cache: removes all locally uploaded document/folders from local cache Warning: this can take a long time and InEight Model will be unresponsive while it is in progress

#### 6.2 Step by Step 5 — Accessing Document Information

Additional document information is maintained within the document information window within the Archive Library panel.

- 1. Select a document.
- 2. With the mouse on top of the slider bar, click and slide open.

Archive Library				
Library Selection Filter				
File Name	Labels	Туре	Last Modified	1
<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> </ul>	Design, Facil	PDF	Mon Apr 6 15:14:44 2020	
Example Folder 2     File_1.txt	Design, Exa	TXT	Mon Apr 6 15:15:21 2020	
File_2.txt	Design	IXI	Mon Apr 6 15:15:21 2020	
🛨 🖿 A] 🔷 🗍				ŵ
Import Folder Assign Label Downlo	bad		De	elete

• The Document Information window opens

Archive Library Library Selection	arch			x
File Name	Cory	#	Date	Size
<ul> <li>Example Folder 1</li> </ul>	Hist	2	Tue Apr 7 14:00:57 2020	6 by
<ul> <li>What is InEight Moc</li> <li>Example Folder 2</li> </ul>	Labels	1	Mon Apr 6 15:15:21 2020	0 by
<ul> <li>File_1.txt</li> <li>File_2.txt</li> </ul>	Objects			
	sbe			
±	1			ŵ
Import Folder Assign Label D	ownload			Delete

- History: displays the historical information of the document
- Labels: displays the list of available labels and which labels are associated to the document
- · Objects: displays objects linked to the document
- **Tags**: display tags linked to the document
- TIP Right click on a document and select **Copy Selected File Information to Clipboard** to paste document information to an external application (i.e. MS Excel, Word, Email, etc.).

#### 6.2 Step by Step 6 — Apply Permissions to Folders

NOTE Only Admin users can apply specific folder permissions. By default, folder permissions are inherited by project level permissions.

Permissions can be set at the folder level. Nested folders inherit parent folder permissions. By default, folder permissions inherit project permission for users.

- 1. Select a folder, then right click and select Edit Folder Permissions.
  - The Set Archive permissions dialog box will open

Set Archive Permissions	?	×
Select Permission Preset:		
Read		
Hide		
View / Edit Current Permissions		
	Ca	ancel

There are three permission levels:

- None Granted: folder is hidden
- Can Read: read-only permissions
- Can Read and Write: has read, write, and edit permissions
- 2. Select a Read permission.
  - Can Read permissions are auto assigned to all groups within the system and all users assigned to the project

Group / User	Permissions	
SE Pipeline	Can Read	~
GGG	Can Read	~
Example	Can Read	*
CSI Electric	Can Read	<b>~</b>
Use Project Permissions		

- 3. Make any changes as desired, then click OK.
- 4. Select a Hide permission.
  - None Granted permissions are auto assigned to all groups within the system and all users assigned to the project

Edit Permissions For Selected Folder			×
Group / User	Permissions		
SE Pipeline	None Granted		<b>→</b>
GGG	None Granted		<b>→</b>
Example	None Granted		<b>~</b>
CSI Electric	None Granted		<b>~</b>
Use Project Permissions	✓ ок	X	Cancel

- 5. Make any changes as desired, then click OK.
- 6. Select View / Edit Current Permissions.
  - Displays all Current Permissions for the folder with applying any changes as it opens

#### 6.2 Step by Step 7 — Search Documents

Search filters the library list to the criteria in the search bar and only searches on the File Name of the Document and/or Folder.



When using Filters in conjunction with Search, only visible content is searched.

1. Type in criteria within the Search bar.



# 6.3 CREATE AND MANAGE LABELS

Labels can be utilized to quickly group and filter files. Multiple labels can be assigned to files.

#### 6.3 Step by Step 1 — Create and Apply a Label to a Document

- 1. Select one or more documents.
- 2. Click the Label icon.

• Or, right click and select Label Selected

А	rchive Library				x
l	ibrary Selection <b>T</b> <i>Selection</i>				
	File Name	Labels	Туре	Last Modified	
	<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> <li>Example Folder 2</li> </ul>		PDF	Mon Apr 6 15:14:44 2020	
	File_1.txt		TXT	Mon Apr 6 15:15:21 2020	
	<ul> <li>File_2.txt</li> </ul>		TXT	Mon Apr 6 15:15:21 2020	
Ir	ע (ד א) ע nport Folder Assign Label Downk	oad			<b>Delete</b>

- The Add or remove labels dialog box will open
- 3. Type in a name, then click Add.

Add or remove labels:	
Example 2	Add

• The Label dialog box will stay open and show a checked box with a new label

Add or remove labels:	
✓ Example 2	
1	
	Add

NOTE Labels only display in the Add or Remove Label dialog box if they have been applied to document. Once a label has been removed from all documents, it will no longer appear in the Add or Remove Label dialog box.

1. Select anywhere outside of the Label dialog box to close it and apply the checked label.

Archive Library				x
Library Selection Filter				
File Name	Labels	Туре	Last Modified	
<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> <li>Example Folder 2</li> </ul>		PDF	Mon Apr 6 15:14:44 2020	
File_1.txt	Example 2	TXT	Mon Apr 6 15:15:21 2020	
• File_2.txt		ТХТ	Mon Apr 6 15:15:21 2020	

## 6.3 Step by Step 2 — Apply an Existing Label to a Document

- 1. Select one or multiple documents.
  - And/Or select one or more folders
- 2. Click the Label icon.
  - Or right click and select Label Selected



- 3. Select the desired labels to apply to the selected documents.
- 4. Select anywhere outside of the Label dialog box to close it and apply the checked label(s).

#### 6.3 Step by Step 3 — Apply or Remove Labels within the Document Info area

- 1. Select one or multiple documents.
- 2. With the mouse on top of the slider bar, click and slide the advanced panel open.

Archive Library				x
Library Selection Filter				
File Name	Labels	Туре	Last Modified	
<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> <li>Example Folder 2</li> </ul>	Design, Facil	PDF	Mon Apr 6 15:14:44 2020	
File_1.txt	Design, Exa	ТХТ	Mon Apr 6 15:15:21 2020	
<ul> <li>File_2.txt</li> </ul>	Design	ТХТ	Mon Apr 6 15:15:21 2020	
・ ⊡ み] ? ↓ Import Folder Assign Label Downlo	bad		Dele	) :te

• Manage labels within the Labels tab



#### 6.3 Step by Step 4 — Filter Documents by Labels

1. Select the **Filter** icon.



• The Filter Criteria dialog box opens

**NOTE** The Filter Criteria is configured as an ALL criteria. The documents are filtered as ALL criteria is met within the Filter Criteria dialog box.

Filter Criteria Has Label:		
<ul> <li>✓ All</li> <li>✓ Unlabeled</li> <li>✓ Facility Management</li> <li>✓ Design</li> <li>✓ Example 2</li> </ul>	nt	
Status:		
All		<b>~</b>
Upload Date:		
Is Before		*
4/8/2020 😽	4/8/2020	~
Uploaded By:		
Any		<b>~</b>
File Type:		
Any		*
		X Clear

- Has Label: Filter documents according to checked labels
- **Status**: Filter documents according to their status (All, Unlinked Docs, Not Downloaded, or Downloaded)
- Upload Date: Filter documents according Uploaded Date criteria
- UploadBy: Filter documents according to who uploaded the documents
- FileType: Filter documents by file type
- Clear: Clear

# 6.4 LINK AND MANAGE DOCS TO TAGS

Documents can be linked directly to model object tags. Linking documents provides a convenient way to quickly access applicable documents by selecting model content within the 3D Viewer window.

#### 6.4 Step by Step 1 — Link Documents to Tags

1. Within the Tags and Objects panel, select a **Tag Value** (i.e. Pile).



- 2. Within the Archive Library panel, select one or multiple documents.
- 3. Click the **Assign** icon.

ibrary Selection <b>T</b> <i>Selection</i>			X
File Name	Labels	Туре	Last Modified
<ul> <li>Example Folder 1</li> <li>What is InEight Model.pdf</li> <li>Example Folder 2</li> </ul>	Design, Facility	PDF	Mon Apr 6 15:14:44
File_1.txt	Design, Example 2	TXT	Mon Apr 6 15:15:21
● File_2.txt	Design	IXI	Tue Apr 7 14:00:57
L [→] Import Folder Assign Label Downlo	bad		Delete
TID Drag and drop a docum	ont onto a Tag \	/aluo y	within the Tags and O

#### 6.4 Step by Step 2 — Associate a Specific Page within a PDF document to a Tag

After a PDF document has been linked to one or more model object tags, a specific page within the PDF can be associated to the link, so that, when the document is opened via the link, it will open to the associated page.

- 1. Select a PDF document that has been associated to a tag.
- 2. Open the Document Information window.

TIP

Archive Library			x
Library Selection Ϋ 🛛	Search		
File Name	Labels	Туре	Last Modified
<ul> <li>Example Folder 1</li> <li>What is InEigh</li> </ul>	Design, Facility Man	PDF	Mon Apr 6 15:14:44 2020
<ul> <li>Example Folder 2</li> <li>File 1.txt</li> </ul>	Design, Example 2	тхт	Mon Apr 6 15:15:21 2020
<ul> <li>File_2.txt</li> </ul>	Design	TXT	Tue Apr 7 14:00:57 2020
・ ビー・イン View Import Folder Assign Labe	l Download		Delete

3. Double click on the **page number**, then type in the desired page number.



# 6.4 Step by Step 3 — View and/or Remove an Object Tag Link via the Document Information Window

- 1. Select a document.
- 2. Open the Document Information window.

А	Archive Li	brary				x
	Library	Selection	Search			
	File Nan	ne	Labels	Туре	Last Modified	
	- 🗆	Example Folder 1				
	- 🗖	<ul> <li>What is InEigh</li> <li>Example Folder 2</li> </ul>	Design, Facility Man	PDF	Mon Apr 6 15:14:44 2020	
		File_1.txt	Design, Example 2	ТХТ	Mon Apr 6 15:15:21 2020	
		File_2.txt	Design	ТХТ	Tue Apr 7 14:00:57 2020	
I	⊥ mport F	[∓] <b>→]</b> older Assign Label	↓ Download		Delete	e

- 3. Select the **Tags** tab.
- 4. Select the Tag Link to view the linked model object.
- 5. Right click and select **Remove Tag Link** to remove the link.



# 6.4 Step by Step 4 — View and/or Remove a Document Link via the Selection Tab

The Selection tab within the Archive Library displays all documents linked to the Actively Selected Model Objects.

- 1. Select one or multiple model objects or a tag.
- 2. Within the Archive Library, select the **Selection** tab.
- 3. View associated document content by double clicking on the document.

4. To remove a link, select a document from the list, then click on the **Unassign** icon.

Archi Libra	ive Library ry <mark>Selection</mark> F	T Q Search			X
	File Name	Page #	Last Modified	Path	
۰	What is InEight Model.pdf	1	Mon Apr 6 15:14:44 2020	/Example Folder 1/	
•	File_2.txt	1	Tue Apr 7 14:00:57 2020	/Example Folder 2/	
€ Impor	⊡ X rt Folder Unassi	ign Label Downl	oad		Delete

#### Lesson 6 Review

- 1. You can view all project documents from the \_\_\_\_\_\_ tab of the Archive Library.
  - a. Objects
  - b. Tags
  - c. Selection
  - d. Library
- 2. You can only link a document to one object.
  - a. True
  - b. False
- 3. You can download documents from a model to keep on your desktop.
  - a. True
  - b. False

#### Lesson 6 Summary

As a result of this lesson, you can:

- Import and manage documents
- Link documents to objects and tags
- Link specific pages
- View documents within InEight Model

This page intentionally left blank.



# **LESSON 7 – SELECTION INFO**

Lesson Duration: 10 minutes

**Lesson Objectives** 

After completing this lesson, you will be able to:

• Navigate the Selection Information panel

**Topics in this Lesson** 

# 7.1 SELECTION INFO OVERVIEW

The **Selection Information panel** displays attribute data of actively-selected model objects. The displayed attribute data will change accordingly to the actively-selected model objects. The tabs within the Selection Information panel displays grouped attribute data. If there are no model objects selected, then the Selection Information panel will be blank.

Selecti	ion Information x
General	
Tags	
Styles	
Documents	
Object Properties	
Linked Data	
	Double click to frame an object
	Noming selected. Select an object to view its properties.

# 7.1.1 Selection Information Panel

To access the Selection Information panel, select **Object** from the menu bar at the top left of the screen. Then, select **Selection Information**.

<u>F</u> ile <u>E</u> dit <u>V</u> iew	Object <u>L</u> ux	<u>T</u> ime	<u>L</u> ogic	<u>A</u> rchive	Pulse	Track	<u>H</u> elp
Training	Selection						
	Show/Hide						
	<ul> <li>Selection Inf</li> </ul>	ormatio	n	Ct	trl+l		

## 7.1.2 General Tab

The **General tab** displays the Model Stream name of the selected objects, the Material Name – CAD tag value for each model object selected, the total surface area, the total volume, and the total number of objects currently selected.



## 7.1.3 Tags Tab

The **Tags tab** displays all metadata for the selected objects, the number of objects per metadata, and the total number of objects currently selected.



NOTE

There are additional actions that can be taken within the Tags tab: Filter the Selection, Select similar tags, and Tag Selected objects with a new tag.

• Select Tag - Right Click on a tag value, then click Select Tag to select all objects with the same tag



• Tag Selected - Click the Tag Selected icon to open the Create Tag dialog box

VEO	?	×
Tag Category Tag Value		
Column Location Mark Column Style Description Door Material Elevation at Bottom		
Add New Clicking OK will apply the selected tag to 4 objects	Add N	lew
	< ×	Cancel

## 7.1.4 Style Tab

The Style tab displays all the styles associated with the selected object.

#### NOTE The Style tab will not display information when multiple objects are selected.



# 7.1.5 Documents Tab

The **Documents tab** displays the documents associated to the selected objects.



NOTE There are additional actions that can be taken within the Documents tab: Filter the Selection, Open the Documents, or Reveal the documents in Archive Library.

Right Click on a document for additional actions.



## 7.1.6 Object Properties Tab

The **Object Properties tab** displays only the metadata that was selected as Object Property during the Model Stream Export/Import process.
Selec	tion In	formation			×
ieneral	☆	Parameter		Value	
g g	☆	Manufacturer	ACME		
Ta					
Styles					
ents					
Docum					
rties					
Prope					
Object					
bata					
inked [					
		1 object selec	ted		Ŧ
		2 object selet		Fi	lter

NOTE There are additional actions that can be taken within the **Object Property tab**: Filter the Selection and toggle a Parameter as a favorite. The favorited Parameters will appear at the top of the list.

# 7.1.7 Linked Data

The Linked Data tab can be associated to Record Tables created within InEight Compliance.

Record Table: Fab22_Subfab_Assets					
ق «	Parameter	Value			
Tags	UNIQUE_ID	10-01AW-FEE-SBU-02			
tyles	ASSET_TYPE	POC			
s S	AVAILABILITY	AVAILABLE			
ument	RESERVED_BY	N/A			
Å	TOOL_ID	N/A			
erties	Location	OC > Fab22 > Subfab > Bay 29F			
t Prop	Created By	NGray			
Objec	Created On	3/21/2019 9:12 PM			
ata	Property ID	{c814d3c7-a6cc-4b51-ad41-d9491399f806}			
Linked D					

### 7.1.7.1 Selection Filter

The **Selection Filter** can be launch by clicking on the Filter icon from any of the tabs. Then uncheck any of the Enable check boxes to fine tune your selection.

Selection Filter		×
Tag	Enabled	Count
<ul> <li>Asset_ID</li> </ul>		
Panel-001	$\checkmark$	2
Panel-002	$\checkmark$	2
<ul> <li>Example Status</li> </ul>		
Complete	$\checkmark$	2
<ul> <li>Installation Status</li> </ul>		
Complete	$\checkmark$	4
<ul> <li>Manufacturer</li> </ul>		
Siemens	$\checkmark$	4
<ul> <li>Material Name - CAD</li> </ul>		
Metal - Steel - 345 MPa	$\checkmark$	4
<ul> <li>Material Status</li> </ul>		
Installed	$\checkmark$	4
<ul> <li>Model</li> </ul>		
Structural.rvt	$\checkmark$	4
<ul> <li>Revit_Family_Type</li> </ul>		
Structural Foundations : M_Pile-Steel Pipe : 400	$\checkmark$	4
▼ Tag_Level		
01 - Entry Level	$\checkmark$	4
<ul> <li>Tag_PhysicalType</li> </ul>		
Foundation	$\checkmark$	4
<ul> <li>z_Construction Area</li> </ul>		
Area C	$\checkmark$	4
<ul> <li>z_Construction Level</li> </ul>		
Foundation	$\checkmark$	4
4 objects selected	🗸 ок	× Cancel

#### Lesson 7 Review

- 1. Which of the following is NOT a tab on the Selection Information panel?
  - a. Object Properties
  - b. Documents
  - c. Coordination
  - d. Linked Data

### Lesson 7 Summary

As a result of this lesson, you can:

• Navigate the Selection Information panel



# **LESSON 8 – SECTIONING**

Lesson Duration: 40 minutes

## **Lesson Objectives**

After completing this lesson, you will be able to:

- Apply sectioning using the set box
- Apply sectioning by dragging and dropping a tag
- Apply sectioning by the offset
- Reset the sectioning box to model boundary
- Use sectioning with master presets

**Topics in this Lesson** 

# 8.1 SECTIONING OVERVIEW

Sectioning lets you isolate a certain section or area of a project to easily visualize model content. Adjust the Sectioning box in the 3D viewer by managing the Top, Bottom, Left, Right, Front, and/or Back planes of the box.

TIP When the mouse cursor moves through the Sectioning panel a yellow outline is shown along with a corresponding yellow line in the 3D view indicating the current edge of the section.

# 8.1.1 Sectioning Panel

To access the Sectioning panel, select **View** from the menu bar at the top of the screen. Then, select **Sectioning**.

<u>F</u> ile	<u>E</u> dit	<u>V</u> iew	Object	<u>L</u> ux	<u>T</u> ime	<u>L</u> ogic	<u>A</u> rchive	Pulse
Trainin	Training		Master Presets				Ctrl+M	
		Styl	ing					
		Tags and Objects						
		<u>C</u> amera Settings						
		<u>F</u> irs	t Person Se	ettings				
		<u>S</u> ec	tioning					
			asurement					
			ate New N	larkup			Ctrl+Shi	ft+N
			Camera Auto Orbit				Ctrl+Shi	ft+O
		Firs	t Person N	avigat	ion		Ctrl+F	
	Show Model Spots Ctrl+Sh		Ctrl+Shi	ft+.				
Toggle Fullscr		een			F11			
			me Positio	n			Home	
		Opt	tional Mod	lules				•

This opens the Sectioning Panel.

Toggle **OFF** to **ON** to initiate a section box. Toggle **HIDE** to **SHOW** to see the section box in the 3D View.

Sectioning	×
OFF HIDE	Set Box
Offset All: 0 feet	🗘 0.000 inches 🗘
<b>V</b> ТОР	Set Top
Offset: 0 feet	0.000 inches
■ ВОТТОМ	Set Bottom
Offset: 0 feet	0.000 inches
V LEFT	Set Left
Offset: 0 feet	🗘 0.000 inches 🗘
	Set Right
Offset: 0 feet	🗘 0.000 inches 🗘
	Set Front
Offset: 0 feet	0.000 inches
✓ ВАСК	Set Back
Offset: 0 feet	0.000 inches
Rotation (degrees	s): 0.000 🗘

- Set Box Sets the entire section box to the selected objects boundary. Or if no objects are selected, then it resets the section box to the model boundary.
- Offset / Offset All Adjusts the section box according to the entered criteria.
- TOP / BOTTOM / LEFT / RIGHT / FRONT / BACK Can be enabled and can be set according to selected objects or no objects selected. If objects are selected, then the section is set to the object boundary. If no objects are selected, then the section is set to the model boundary.
- Rotation Rotates the section box.

# 8.1.2 Sectioning Icon

Sectioning can also be switched **ON** or **OFF** with a left mouse click on the **Section icon** located at the bottom left of the screen. Switch **SHOW/HIDE**, and launch the **Sectioning Panel** with a right click on the icon.



# 8.2 CREATE AND APPLY SECTIONING

Sectioning can be applied in different ways to yield desirable results.

### 8.2 Step by Step 1 — Apply Sectioning Using the Set Box

- 1. Switch Sectioning **ON**.
- 2. To see the sectioning box in the 3D viewer, toggle **SHOW**.



3. Select a model object or a tag.



4. Click the Set Box icon.



• The Sectioning box has been set to the model objects boundaries



# 8.2 Step by Step 2 — Apply Sectioning by Dragging and Dropping a Tag

- 1. Switch Sectioning **ON**.
- 2. From the Tags and Objects Panel, select a tag.
- 3. Drag and drop the tag onto a section part in the Sectioning Panel.



## 8.2 Step by Step 3 — Apply Sectioning by the Offset

- 1. Switch Sectioning **ON**.
- 2. With the mouse over an Offset field, scroll the mouse wheel to set a numeric offset
- 3. Or type in the preferred numeric offset.



### 8.2 Step by Step 4 — Move Sectioning Panes with Grips

- 1. Switch Sectioning ON.
- 2. Switch Section Box ON.
- 3. Hold the CTRL key and hover over the sectioning panes to see them highlight.
- 4. Hold CTRL + LMC (left mouse) to move a sectioning pane.



# 8.2 Step by Step 5 — Reset the Sectioning Box to Model Boundary

- 1. Switch Sectioning **ON**.
- 2. Ensure no model object is selected.
- 3. Click the Set Box icon.



NOTE Any of the Section Parts can be reset individually by ensuring that no model objects are selected, then select the specific Section part Set icon (that is, Set Top).



# 8.2 Step by Step 6 — Use Sectioning with Master Presets

- 1. Switch Sectioning **ON**.
- 2. Adjust the Sectioning as desired.
- 3. In the Master Preset Editor, click Sectioning.



#### Lesson 8 Review

- 1. You can quickly access sectioning from the Sectioning icon on the menu in the bottom, left.
  - a. True
  - b. False
- 2. You can apply sectioning to master presets.
  - a. True
  - b. False

#### **Lesson 8 Summary**

As a result of this lesson, you can:

- Apply sectioning using the set box
- · Apply sectioning by dragging and dropping a tag
- Apply sectioning by the offset
- · Reset the sectioning box to model boundary
- Use sectioning with master presets

This page intentionally left blank.



# **LESSON 9 – MEASUREMENTS**

Lesson Duration: 40 minutes

## **Lesson Objectives**

After completing this lesson, you will be able to:

- Navigate the Measurement panel and enter Measuring Mode
- Take and delete measurements
- Organize and clear measurements

**Topics in this Lesson** 

# 9.1 MEASUREMENTS OVERVIEW

The Measurements module lets you enter values to view your model in 3D, and then save the values in a folder for reference and use later. You must select a measure Mode to take measurements.

# 9.1.1 Measurement window

To access the Measurements window, select View > Measurement. The Measurement window opens.

<u>V</u> iew Object <u>L</u> ogic <u>A</u> r	chive Track Debug <u>H</u>
Master Presets	Ctrl+M
✓ Styling	
Style Legend	
<ul> <li>Tags and Objects</li> </ul>	
Elements	
AWP	
<u>C</u> amera Settings	
Sectioning	
<u>S</u> how Grids	
Measurement	
First Person Settings	
Create New Markup	Ctrl+Shift+N
Camera Auto Orbit	Ctrl+Shift+O
First Person Navigation	Ctrl+F
Show Model Spots	Ctrl+Shift+.
Toggle Fullscreen	F11
Texture Preview Resolution	ו <b>∢</b>
Home Position	Home

The Measurement window has six sections as shown below:

Measurements		×		
Mode 1 Units Format Precision Precision Precision Precision Precision Precision Precision Precision Point to Point Point $\checkmark$	Ignore Translucer 2 Respect Site Rotation Object Snaps3 ✓ Vertex Face Midpoint Object Center	Selection Distance4TotalImage: Selection DistanceDelta XImage: Selection DistanceDelta YImage: Selection DistanceDelta ZImage: Selection Distance		
Measurements 5 Selection Details 6 Temp DEMO - RIDGEGATE CAMPUS Selection Details 6 Global Units: Meters				
Clear Group Copy Updat	te Status Settings	Delete		

- 1 Measurement settings Measurement settings Lets you manage the mode, units, format, and precision of a measurement.
  - Mode Select between different modes to take your measurements:
    - Point to Point Basic Point A to Point B measurement.
    - Continuous Lets you continuously measure along a series of chosen points.
       Double-click on the last point to end the continuous measurement.
    - Area Select a series of points that define an enclosed area. Close the area measurement by clicking on Point A. Points picked must be on the same plane.
    - Angle Lets you pick three points to find an angle.
    - **Spot ID** Select a point to show the X, Y, Z coordinates of the point. Spot IDs can be copied to clipboard.
    - Units Select a unit to be shown when taking a measurement. Units are constrained according to the type of mode that is selected and will be denoted in italics and cannot be unselected.
    - Format Select a format to show when taking a measurement. Formats are constrained according to the type of mode that is selected and will be denoted in italics and cannot be unselected.
    - Precision Select the best precision for your measurement.
- 2 Measurement options You can adjust how the measurement tools interact with objects

and how measurements are calculated.

- Ignore Translucent You can select or unselect the Ignore Translucent objects during measurement mode. When selected, translucent objects in the view window are ignored. This lets you indicate whether translucent objects, such as room, operation, or maintenance volumes are included in the model project. Measurements do not consider translucent objects.
- **Respect Site Rotation** Measurement calculations are defined according to the Site Rotation Values defined on Model stream import.
- 3 Object Snaps Lets you select one or multiple object snaps to define selection type of taking a measurement. Face and Object are exclusive snaps and cannot be active at the same time.
  - Vertex Snap to any corner or endpoint.
  - Midpoint Snap to the middle of an edge.
  - Center Snap to the center of a face.
  - Face Snap to any face. The measurement is calculated according to the closest point between the face selected and the other objects involved in the measurement.
  - Object Snap to any object. The measurement is calculated according to the closest point between the object selected and the other objects involved in the measurement.
- 4 Selection Distance The total value of the measurement is shown, along with the X, Y, Z deltas when applicable.
- 5 Measurements There are two root level groups in the Measurement tree. The Temp group captures all measurements as they are created. The other group shows the Project name, so you can create additional groups and organize project measurements.
- 6 Selection Details All the details related to the selected measurement are shown. You can copy and paste in the free-form text section.

# 9.2 APPLY AND MANAGE MEASUREMENTS

Enter the Measurement Mode to start measuring the model.

#### 9.2 Step by Step 1 — Enter Measurement Mode

- 1. Select the **Ruler** icon in the notification tray to toggle the Measure Mode on and off.
  - Alternatively, press the M key on the keyboard to toggle the Measure Mode



 NOTE
 While in Measure Mode the cursor will become a cross hair and the Ruler icon will appear white.

 TIP
 Right-click on the Ruler icon to Start/Stop Measurement or to open the Measurement panel.

#### 9.2 Step by Step 2 — Take a Measurement

- 1. Enter Measure Mode.
- 2. Select the first point (it will be labeled "A").
- 3. Select the second point (it will be labeled "B").



This lettering series will continue in order for measurement types consisting of more than two points.



- The first object in the measurement will be highlighted blue
- The second object in the measurement will be highlighted in red
- The total distance between the selected points will be displayed in orange along the orange measurement line, which represents the closest distance between those points
- Additionally, the X, Y, Z details of each axis will be drawn as dotted lines with their respective values displayed along the path of the dotted line. The X, Y, Z axes will be colored red, green, and blue respectively
- TIP While Measure Mode is active, hold control to restore navigation to move without having to exit Measure Mode.

Measurements	8		
Mode     Point to Point     ✓     Object Snaps       Units     Inches     ✓     ✓       Vertex     ■     Face       Designed     ✓     ✓	Selection Distance       Total     193.6"       Delta X     185.1"		
Precision 0.1	Delta Y 31.5" Delta Z -47.2"		
Measurements    Measurements   Vertex to Vertex	Selection Details Global Units: Inches  Vertex to Vertex		
Training	Start Point A X,Y,Z: 545.149600, -906.893738, 0.000000 Object: Structural Foundations 800 x 1800 x 900mm#147734 End Point B X,Y,Z: 730.283467, -875.397630, -47.248029 Object: Structural Foundations 800 x 1800 x 900mm#147769		
★     Image: Imag	Delete		

- The first object in the measurement will be highlighted blue
- The second object in the measurement will be highlighted in red
- The total distance between the selected points will be displayed in orange along the orange measurement line, which represents the closest distance between those points
- Additionally, the X, Y, Z details of each axis will be drawn as dotted lines with their respective values displayed along the path of the dotted line. The X, Y, Z axes will be colored red, green, and blue respectively
- TIP While Measure Mode is active, hold control to restore navigation to move without having to exit Measure Mode.

Measurements				×
Mode Point to Point 👻 🗆 Object Snaps ———	Se	election Dis	tance	
Units Inches V Vertex Face	То	tal	193.6"	
5 i Deterline Midpoint Die	ct De	elta X	185.1"	
Format Decimal Center	De	elta Y	31.5"	
Precision 0.1	De	elta Z	-47.2"	
Measurements ^	Select	ion Details		
🔻 🗀 Temp	Global Units: Inches			
Vertex to Vertex	Vertex to Vertex			
Training	900mi End Pi X,Y 900mi End Pi X,Y 0bj 900mi	7,Z: 545.14 ject: Struct m#147734 oint B 7,Z: 730.28 ject: Struct m#147769	9600, -906.893738, 0.0000 ural Foundations 800 x 180 3467, -875.397630, -47.24 ural Foundations 800 x 180	000 0 x 8029 0 x
× ⊡ ☐ C ♥ Clear Group Copy Update Status Settings				Delete

#### 9.2 Step by Step 3 — Delete a Measurement

1. Select a Measurement, then click the **Delete** icon.



TIP

Another option is to right-click on the measurement, then select **Delete**.

## 9.2 Step by Step 4 — Clear Measurements

**Clear** allows the user to clear any measurements selected, which also clears the 3D view of displaying measurements.

1. As one or more measurements selected, click the Clear icon.

Measurements	×
Mode       Point to Point       Object Snaps         Units       Inches       ✓         Format       Decimal       ✓         Precision       0.1       ✓	t Selection Distance Total 193.6" Delta X 185.1" Delta Y 31.5" Delta Z -47.2" Selection Details
	Global Units: Inches 
X     Image: Imag	Delete

# 9.2 Step by Step 5 — Organize Measurements

Create groups under the project named folder to move measurements into.

- 1. Select your project named folder.
- 2. Select the Group icon.

Measurements		×
ModePoint to PointUnitsInchesFormatDecimalPrecision0.1	<ul> <li>Object Snaps</li> <li>✓ Vertex ■ Face</li> <li>■ Midpoint ■ Object</li> <li>■ Center</li> </ul>	Selection Distance         Total         Delta X         Delta Y         Delta Z
Measurements  Temp Vertex to Vertex Vertex to Vertex Vertex to Vertex Training		Selection Details Global Units: Inches
X Clear Group Copy Upda	C C ate Status Settings	الله Delete

TIP Another option is to right-click on the folder, then select **New Group**.

- The New Folder dialog box will open
- 3. Enter a folder name, then click OK.



4. Drag and drop measurements into a folder.

Measurements	×		
Mode Point to Point 💙 – Object Snaps ––––	Selection Distance		
Units Inches Vertex Face	Total 185.1"		
Format Decimal Midpoint Dobje	t Delta X -185.1"		
Center	Delta Y 0.0"		
Precision 0.1	Delta Z 0.0"		
Measurements	Selection Details		
▼ 🗀 Temp	Global Units: Inches		
Vertex to Vertex	Vertex to Vertex		
Vertex to Vertex	Start Point A X,Y,Z: 730.283467, -875.397630, -47.248029 Object: Structural Foundations 800 x 1800 x 900mm#147769		
Vertex to Vertex 💊			
🔻 🗋 Training	End Point B		
Foundations Vertex to Vertex	00, -875.397630, -47.248029		
	900mm#147734		
× n f c n			
Clear Group Copy Update Status Settings	Delete		

5. Right click on the measurement to rename it and better identify the measurement.

Measurements			x								
Mode Point to Point	Object Snaps ———	Selection Dis	stance								
Units Inches 💙	✓ Vertex	Total	185.1"								
Formet Desired X	🔲 🔲 Midpoint 🗖 Objec	t Delta X	-185.1"								
Format Decimal •	Center	Delta Y	0.0"								
Precision 0.1		Delta Z	0.0"								
Measurements	^	Selection Detail	S								
🔻 🗀 Temp		Global Units: Inches									
Vertex to Vertex		Vertex to Vertex Start Point A X,Y,Z: 730.283467, -875.397630, -47.248029 Object: Structural Foundations 800 x 1800 x 900mm#147769									
Vertex to Vertex											
💌 🗀 Training											
🔻 🗋 Foundations	Rename		L								
Vertex to Vertex	Copy Spot ID coloct	ion to dinhoar	5.397630, -47.248029 dations 800 x 1800 x								
	Copy Spot ID select	ion to clippoar	d								
	New Group										
× 🗉 🗐	Delete		<u> </u>								
<b>Clear</b> Group Copy <b>Upd</b> a	Update Status		Delete								

#### Lesson 9 Review

- 1. Which of the following is NOT an option on the Measurements panel?
  - a. Master presets
  - b. Object Snaps
  - c. Selection Distance
  - d. Selection Details
- 2. You cannot save measurements in InEight Model.
  - a. True
  - b. False
- 3. To begin working with measurements, you must first enter Measurement Mode.
  - a. True
  - b. False

#### Lesson 9 Summary

As a result of this lesson, you can:

- Navigate the Measurement panel and enter Measuring Mode
- Take and delete measurements
- Organize and clear measurements

# **LESSON 9 – MODEL EXPORTS**

#### Lesson Duration: 40 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- · Navigate the Measurement panel and enter Measuring Mode
- Take and delete measurements

• Organize and clear measurements

**Topics in this Lesson** 

# 9.1 IFC EXPORT

With IFC Export, you can select model objects and then export selected graphics and related TAG data into an IFC file format. This provides the ability to export collaborative updates to project teams members.

IFC 2x3 is the supported file type in Model. IFC files are an open international standard for Building Information Modeling (BIM) data that are exchanged and shared among software applications used by the various participants in the construction or facility management industry sector.

## 9.1 Step by Step 1 — IFC Export

- 1. To access IFC Export, select File from the menu bar at the top of the screen.
- 2. Select Export Selected to IFC.... The Windows Explorer opens.



3. Browse to the desired location to store the .ifc file.

4. Name the .ifc file with a relevant name , and then click Save.

Export Selected To IFC File		×
$\leftarrow \rightarrow \ \cdot \ \uparrow$ ] = « ! dem	O Proje → Training → ひ > Search Training	ng
Organize  • New folder		· · ·
📜 Power Plant	Name	Date mo
TRAINING	Coordination Reports	5/14/20
📥 OneDrive		
🧢 This PC		
🧊 3D Objects		
Desktop	✓ <	>
File name: Water Tre	eatment Plant CWA 100	~
Save as type: Text (*.ifc)		~
∧ Hide Folders	Save	Cancel

# 9.2 OBJ EXPORT

With the OBJ Export, you can select model objects, and then export selected graphics and related TAG data into an OBJ file format.

#### 9.2 Step by Step 1 - OBJ Export

- 1. To access OBJ Export, select File from the menu bar at the top of the screen.
- 2. Select Export Selected to OBJ... Windows Explorer opens.



- 3. Browse to the desired location to store the .obj file.
- 4. Name the .obj file with a relevant name, and then click **Save**.

Export Selected To OBJ File		×
$\leftarrow \hspace{0.1 cm} \rightarrow \hspace{0.1 cm} \cdot \hspace{0.1 cm} \uparrow \hspace{0.1 cm} \fbox{\rule[5ex]{0.5ex}{1.5ex}} \hspace{0.1 cm} *$ $\bullet$	Training V 🖸 🔎 Search Training	
Organize   New folder	-	0
Documents	Name	Date mo
<ul> <li>Downloads</li> <li>Music</li> <li>Pictures</li> </ul>	Coordination Reports	5/14/20
🔛 Videos 😂 OSDisk (C:)		
🜙 Data (D:)	< <	>
File name: Third Floor Zone A		~
Save as type: Text (*.obj)		~
▲ Hide Folders	Save Can	cel

# **LESSON 9 – MODEL-BASED TAKEOFF**

Lesson Duration: 40 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Navigate the Measurement panel and enter Measuring Mode
- Take and delete measurements
- Organize and clear measurements

**Topics in this Lesson** 

# 9.1 MODEL-BASED TAKEOFF OVERVIEW

There are two methods of utilizing quantities from Model. One way is to use the Quantity function with the DTOs and access the quantities through the Excel Plugin. Another way is through the Model and Estimate integration.

# 9.1.1 Model and Estimate integration

Model can be utilized to sum object quantities and sync quantities to Estimate.

Estimate has a section of integration functions to communicate with Model. These functionalities are found in the main ribbon under **More Actions** and then in the **Model Connector** area.

Schedule Sele	ection Selection g Days e <b>vn Structur</b>	♦ F	iwap - temove Ipdate Opera	tions	Bid Wizar	rd Calculator Checking	∑ Unit / ⊖ Refre ↑ Roll U To	/ Total Confirmatio ish Benchmarks Ip Quantities isolis	n (🖈 Ada	d Quote	Impo Update Data S	ort / CBS ~ fource	Select in Mo	del 🕥 Syn ted 🕃 Sen Model Conn	nc Model Quantities ad Selected CBS to Mo Hector	iel						
CBS Tree (Filt	er Mode)	×	Drag	olumns her	e to group													Saved view	s: Previou	us View	_	. ,
Code	Description JOB		CBS Position Co		de 🗎	Description			Optional Code		Forecast (T/O) Quantity		Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	User Defined 12	User Def 13	User Def 14	User Def 15		
	Prime Bond	nd		1		ЈОВ							1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
	Price % Ad	d-On		+		Prime Bond			F	PRIME BON			1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
	Job Financi	ancing		+		Price % Add-On		PRICE % ADD		ADD		1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar						
	Job Manag	fanagement i ral Expense		+		Job Financing		FINANCE E		XPE		1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar						
	General Exp			F .		Job Mar	nagement	& Equipment	JOB MANA		GEM		1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
	Piping			F		General	Expense		0	GENERAL E	XPE		1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
	valves		-	1		Piping							1.00	LF	\$0.00	\$0.00	U.S. Dollar					
			5	1.1		Underg	round Pipin	9					1.00	UF	\$0.00	\$0.00	U.S. Dollar					
				1.1.1		UG S	mall Bore P	ipe					1.00	LF	\$0.00	\$0.00	U.S. Dollar	z_Piping (LB / SB)	SB	Material	HDPE	
				2		Valves							1.00	Each	\$0.00	\$0.00	U.S. Dollar					
			→ [	2.1		Ball Val	ves						1.00	Each	\$0.00	\$0.00	U.S. Dollar	ShortCode	Ball Valve			
			*																			

- Select in Model- This toggle lets you select a cost item. The linked Model objects are then selected within Model.
- **Frame Selected** This toggle lets you select a cost item. The linked Model objects are then framed within the Model viewer.
- **Sync Model Quantities** After the quantities have been summed via a DTO execution, then they can be synced from Model into Estimate.
- Send Selected CBS to Model- Whether the parent of cost items or cost items are selected, the whole parent to children CBS structure will is pushed to Model.

There are 4 hardcoded fields that can also be used to pass data information from Estimate to Model, User Defined fields 12 through 15. Any information added to these fields will populate DTO Selector information when the cost item is pushed from Estimate to Model.

- User Defined 12 is used for the Tag / OP Name within the first rule.
- User Defined 13 is used for the Value of the Tag / OP Name within the first rule.
- User Defined 14 is used for the second Tag / OP Name within the second rule. It is also used for modifier with combination of the first and second rule.
- User Defined 15 is used for the Value of the Tag / OP Name within the second rule.

## 9.1.2 Requirements for Model and Estimate integration

- Estimate version 2023.0 or later must be installed.
- The Estimate add-in for Model Client Plugins must be installed.
- InEight Model must be installed.
- One instance of InEight Model and one instance of InEight Estimate must be open on the same computer.

# 9.2 MODEL TO ESTIMATE INTEGRATION

The following step-by-step walks you through the basic Model and Estimate integration.

## 9.2 Step by Step 1 — Estimate to Model integration

- 1. Create a new estimate or start with a template estimate.
- 2. Launch Model and select Load a Project.
- 3. Open the DTO panel.
- 4. In Estimate, select a cost item or parent of a cost item.
- 5. In the top ribbon, select More Actions.
- 6. In the Model Connector section, select the **Send Select CBS to Model** button.
|                       |                                    | S and the set     |                            |                    |              |                          |                |                    |                   |                   | <u> </u>          | - 62 |
|-----------------------|------------------------------------|-------------------|----------------------------|--------------------|--------------|--------------------------|----------------|--------------------|-------------------|-------------------|-------------------|------|
| Schedule Selection    | ♦ ► Swap ► Bid Wizard              | Dinit / Total C   | onfirmation 💬 Add Quote    |                    | Select in Ma | xdel () Sync             | Model Quantit  | es                 |                   |                   |                   |      |
| Unschedule Selection  | Remove - Subtotal Calculat         | or 😔 Refresh Bend | hmarks                     | Import /           | Frame Sele   | cted 😲 Send              | Selected CBS t | o Model            |                   |                   |                   |      |
| Calculate Plug Days   | C Update - Quantity Checkin        | g 🚹 Roll Up Quan  | ttes                       | Update CBS *       |              | - <b>•</b>               |                |                    |                   |                   |                   |      |
| Schedule              | Batch Operations                   | Tools             |                            | Data Source        |              | Model Conne              | ctor           |                    |                   |                   |                   |      |
| st Breakdown Struct   | ure (CBS) Register O               |                   |                            |                    |              |                          |                |                    |                   |                   |                   |      |
| columns here to group |                                    |                   |                            |                    |              |                          |                | Save               | ed views:         | Previous Viev     | N                 | _    |
| CBS<br>Position Code  | Description                        | Optional<br>Code  | Forecast<br>(T/O) Quantity | Unit of<br>Measure | Unit Cost    | Total Cost<br>(Forecast) | Currency       | User<br>Defi<br>12 | User<br>Def<br>13 | User<br>Def<br>14 | User<br>Def<br>15 |      |
| •                     | 306                                |                   | 1.00                       | Lump Sum           | \$385.00     | \$385.00                 | U.S. Dollar    |                    |                   |                   |                   |      |
| +                     | Prime Bond                         | PRIME BOND        | 1.00                       | Lump Sum           | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| +                     | Price % Add-On                     | PRICE % ADD       | 1.00                       | Lump Sum           | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| +                     | Job Financing                      | FINANCE EXPE      | 1.00                       | Lump Sum           | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| +                     | Job Management & Equipment         | JOB MANAGEM       | 1.00                       | Lump Sum           | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| +                     | General Expense                    | GENERAL EXPE      | 1.00                       | Lump Sum           | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| □ 1                   | OFFICE_1 Core & Shell              |                   | 1.00                       | Each               | \$125.00     | \$125.00                 | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.1                 | CONCRETE                           |                   | 1.00                       | Each               | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.2                 | STEEL                              |                   | 1.00                       | Each               | \$0.00       | \$0.00                   | U.S. Dollar    |                    |                   |                   |                   |      |
| □ 1.3                 | OPENINGS                           |                   | 1.00                       | Each               | \$75.00      | \$75.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.3.1               | Doors, Frames & Hardware           |                   | 1.00                       | Each               | \$25.00      | \$25.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.3.2               | Curtain Wall and Glazed Assemblies |                   | 1.00                       | SF                 | \$25.00      | \$25.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.3.3               | ACM Wall Panels and Assemblies     |                   | 1.00                       | SF                 | \$25.00      | \$25.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| □ 1.4                 | FINISHES                           |                   | 1.00                       | Each               | \$50.00      | \$50.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.4.1               | Framing Gypsum Wall Board          |                   | 1.00                       | Each               | \$25.00      | \$25.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 1.4.2               | Gypsum Wall Board                  |                   | 1.00                       | SF                 | \$25.00      | \$25.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| □ 2                   | Parking Garage                     |                   | 1.00                       | Each               | \$260.00     | \$260.00                 | U.S. Dollar    |                    |                   |                   |                   |      |
| 2.1                   | CONCRETE                           |                   | 1.00                       | Cubic Yard         | \$80.00      | \$80.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 2.1.1               | Cassons - Installed                |                   | 1.00                       | Cubic Yard         | \$50.00      | \$50.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| + 2.1.2               | Foundation Slab                    |                   | 1.00                       | Cubic Yard         | \$30.00      | \$30.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
| ■ 2.2                 | PRECAST CONCRETE                   |                   | 1.00                       | Each               | \$180.00     | \$180.00                 | U.S. Dollar    |                    |                   |                   |                   |      |
| + 2.2.1               | Ext_Precast Spandrel_8*            |                   | 1.00                       | Each               | \$60.00      | \$60.00                  | U.S. Dollar    |                    |                   |                   |                   |      |
|                       |                                    |                   | 1.00                       | Each               | 460.00       | 460.00                   | LLC Dallar     |                    |                   |                   |                   |      |

7. Click **OK** to close the Success dialog box when it shows.

The selected CBS structure is now sent over to Model's DTO panel.

## 9.2.1 Model integration configuration

The CBS structure of the selected cost item or parent cost item is now represented in the DTO panel. The CBS hierarchy is translated into DTO Groups and DTOs. All levels of the hierarchal tree create DTO Groups, with the last level of the tree creating a DTO.

The DTO utilizes the Selector area to create criteria to select model objects. The Operations area creates the summation of the quantities to share with Estimate.



The following step-by-step walks you through how to run Model DTOs.

## 9.2 Step by Step 2 — Run Model DTOs

1. In Model, select a DTO.

NOTE The Selector area has no predefined rules.

- a. The Operations area has been set to Action Type: Quantity
- b. Quantity Type, Code, Units, and Description fields are populated from Estimate.

ata mansionnation ope	erations	Selected DTO:	
Name	Enabled Notes	Selector	
Model Validations Model Custom Data Estimate * 2 2.1 2.12 2.2 2.21 2.22 2.23	V     V       ✓     Parking Garage       ✓     CONCRETE       ✓     Cassons - Installed       ✓     Foundation Slab       ✓     PRECAST CONCRETE       ✓     Ext_Precast Spandrel_8"       ✓     Ext_Precast Spandrel_9" (WA 10)       ✓     Ext_Precast Spandrel_29"	Rule Type       Tag / OP Name Operator       Value         No Predefined rules         Selector Type:       Tag / OP *         Operations         Publish a Quantity         Quantity Type:       Output Table:         sum volume       InEight Estimate         Code:       Units:       Description:         2.1.1       Cubic yards       Cassons - Installed         Quantity:       Operation: Value:       Result:         i       i       C	Test

2. Create one or more rules to find Model objects that should be included for the DTO 2.1.1 – Caissons – Installed for the parking garage.

- Select	tor ——					
		Rule Type	Tag / OP Name(	Operator	Value	
		Tag	✓ z_Foundation ➤	= *	G1-Foundation Pier	
Selecto	or Type:	Tag / OP 👻				Test

- 3. Click **Test** to validate and review all the information for model objects in the Selection Information Panel.
- 4. Validate that Quantity type is set to the desired summation of the quantities.

– Ope	erations									
	Publish a Quantity	,								
	Quantity Type:		Outp	out Table:						
	sum volume		➤ InEi	✓ InEight Estimate						
	Code: Units:		Description	Description:						
	2.1.1 <b>*</b> cubic ya	ards 👻	Caissons - Installed							
	Quantity:	Operation:	Value:							
		* *	1		С					
	L									
		Action 1	Type: Quantity	· · ·						

- 5. Repeat steps 1 thru 4 for the other DTO (Cost Items).
- 6. Run the individual DTOs or select higher in the hierarchy in which all the DTOs are under.
- 7. Right-click on a DTO Group, and then select **Run Selected DTO**.

DTO		
Collect Metadata Create Master 1	Table	
Data Transformation Operat	ions	Selected DTO:
Collect Metadata Create Master T Data Transformation Operati Name Er Model Validations V Collect Stimate V 2 2 V 2.1.1 V 2.1.2 V 2.2.2 V 2.2.1 V 2.2.2 V 2.2.3 V	Fable ions Tabled Notes A Parking Garage CONCRETE Caissons - Installed CONCRETE Caissons - Installed Add DTO PRECAST CONCRET Add DTO PRECAST CONCRET Add DTO Ext_Precast Spandre Delete DT Save DTO	Selected DTO: IOs ted DTO Group DTO TO Structure Is
	Run All DTOs	

## 9.2.2 Sync Model Quantities in Estimate

The following step-by-step walks you through how to sync Model quantities in Estimate.

#### 9.2 Step by Step 3 — Sync Model quantities

- 1. In Estimate, select the More Actions tab in the top ribbon.
- 2. In the Model Connector section, select Sync Model Quantities.
  - a. The Sync Model Quantities dialog box opens.
  - b. The Model QTY column shows the quantities in Model.

C. The Current QTY column shows the Forecast (T/O) Quantity in Estimate.



3. Multi-select all cost items, and then select the check boxes.

)	s	ync Model Quantitie	5	
CBS	Description	Model QTY	Current QTY	Units
2.1.1	Caissons - Installed	464.735	1	cubic yards
2.1.2	Foundation Slab	397.351	1	cubic yards
2.2.1	Ext_Precast Spandrel_8"	66	1	Each
2.2.2	Ext_Precast Spandrel_9" (WA 10)	69	1	Each
2.2.3	Ext_Precast Spandrel_29"	2	1	Each
Quantity Delta:	None < 25% > 25%		Cancel	Accept

#### 4. Click Accept.

The quantities derived from the model are now in Estimate.

· 🖬 ·				RidgeGate C	ampus - Estimate								
Setup Est	timate Quote Price	Execution	System Acti	ons More Actions								盦	Ħ
Schedule Selection	∢≽ Swap + 🛗 B	lid Wizard	∑ Unit / Total C	onfirmation 🕥 Add Quote	+	Select in Ma	odel 📿 Sync	Model Quantiti	es				
Unschedule Selection	😑 Remove 👻 🗍 S	ubtotal Calculator	😔 Refresh Bend	hmarks		Frame Sele	cted 📑 Send	Selected CBS t	to Model				
Calculate Plug Days	C Update -	Juantity Checking	1 Roll Up Quant	ities	Import / Update CBS *								
Schedule	Batch Operations		Tools		Data Source		Model Conne	ctor					
ost Breakdown Strue	cture (CBS) Register @												
ag columns here to grow	up								Save	d views:	Previous View		•
CBS Position Code	Description		Optional Code	Forecast (T/O) Quantity	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	User Defi 12	User Def 13	User Def 14	User Def 15	
	308			1.00	Lump Sum	\$43,502,28	\$43,502,28	U.S. Dollar					
+	Prime Bond		PRIME BOND	1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
+	Price % Add-On		PRICE % ADD	1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
+	Job Financing		FINANCE EXPE	1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
+	Job Management & Equip	pment	JOB MANAGEM	1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
+	General Expense		GENERAL EXPE	1.00	Lump Sum	\$0.00	\$0.00	U.S. Dollar					
<b>1</b>	OFFICE_1 Core & Shell			1.00	Each	\$125.00	\$125.00	U.S. Dollar					
+ 1.1	CONCRETE			1.00	Each	\$0.00	\$0.00	U.S. Dollar					
+ 1.2	STEEL			1.00	Each	\$0.00	\$0.00	U.S. Dollar					
□ 1.3	OPENINGS			1.00	Each	\$75.00	\$75.00	U.S. Dollar					
+ 1.3.1	Doors, Frames & Hardwa	are		1.00	Each	\$25.00	\$25.00	U.S. Dollar					
+ 1.3.2	Curtain Wall and Glazed	Assemblies		1.00	SF	\$25.00	\$25.00	U.S. Dollar					
+ 1.3.3	ACM Wall Panels and As	sembles		1.00	SF	\$25.00	\$25.00	U.S. Dollar					
■ <u>1.4</u>	FINISHES			1.00	Each	\$50.00	\$50.00	U.S. Dollar					
+ 1.4.1	Framing Gypsum Wall Bo	pard		1.00	Each	\$25.00	\$25.00	U.S. Dollar					
+ 1.4.2	Gypsum Wall Board			1.00	SF	\$25.00	\$25.00	U.S. Dollar					
<b>2</b>	Parking Garage			1.00	Each	\$43,377.28	\$43,377.28	U.S. Dollar					
■ 2.1	CONCRETE			1.00	Cubic Yard	\$35,157.28	\$35,157.28	U.S. Dollar					
+ 2.1.1	Caissons - Installed			464.74	Cubic Yard	\$50.00	\$23,236.75	U.S. Dollar					
+ 2.1.2	Foundation Slab			397.35	Cubic Yard	\$30.00	\$11,920.53	U.S. Dollar					
2.2	PRECAST CONCRETE			1.00	Each	\$8,220.00	\$8,220.00	U.S. Dollar					
+ 2.2.1	Ext_Precast Spandrel_8	r -		66.00	Each	\$50.00	\$3,960.00	U.S. Dollar					
+ 2.2.2	Ext_Precast Spandrel_9	" (WA 10)		69.00	Each	\$50.00	\$4,140.00	U.S. Dollar					
+ 2.2.3	Ext_Precast Spandrel_2	9"		2.00	Each	\$60.00	\$120.00	U.S. Dollar					

# 9.2.3 Select and frame Model objects

The following step-by-step walks you through how to select and frame Model objects.

### 9.2 Step by Step 4 — Select and frame Model objects

- 1. In Estimate, select the **More Actions** tab in the top ribbon.
- 2. In the Model Connector section, select the check boxes for Select in Model and Frame Selected.

® 💾 ,				RidgeGate Ca	mpus - Estimate			- o x
File Setup Estim	nate Quote F	Price Execution	System Actions	More Actions				盒 ☷ ②
E Schedule Selection	∢⊧ Swap +	🛗 Bid Wizard	∑ Unit / Total Confirmation	🗩 Add Quote	+	✓ Select in Model	Sync Model Quantities	
E Unschedule Selection	😑 Remove 👻	Subtotal Calculator	😔 Refresh Benchmarks			✓ Frame Selected	Send Selected CBS to Model	
Calculate Plug Days	C Update -	Quantity Checking	1 Roll Up Quantities		Import / Update CBS *			
Schedule	Batch Operations		Tools		Data Source	Mo	del Connector	^

- 3. Select a cost item in Estimate and see the model in Model reflect which model objects were used to create the quantities.



# 9.2.4 User Defined Fields

User Defined Fields (UDF) in Estimate align with Tag Category and Tag value in Model.

- UDF 12 = Tag Category
- UDF 13 = Tag Value from UDF 12 Tag Category

- UDF 14 = Tag Category
- UDF 15 = Tag Value from UDF 14 Tag Category

If UDF 12 and UDF 13 are populated and UDF 14 and UDF 15 are not populated, then only one rule is created in the DTO Selector area. If all four UDFs are populated, then two rules are created.

The following step-by-step walks you through rule setup for UDF fields 12 and 13.

**NOTE** The **Tag / OP Name** must exist within the model or it will be set to a random Tag / OP. The **Operator** is set to = by default. The **Value** must exist within the model or it will be set to a random value.

#### 9.2 Step by Step 5 — Rule setup UDF fields 12 and 13

- 1. In Estimate for cost item 2.1.1, type **z\_Foundations** into UDF field 12.
- 2. For cost item 2.1.1, type **G1-Foundation Pier** into UDF field 13.

g columns here to group								Saved views:	Previous View	
CBS Position Code	Description	Forec (T/O) Quant	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	User Defined 12	User Defined 13	User Defined 14	User Defined 1
<b>₽ 2</b>	Parking Garage	1.00	Each	\$43,377.28	\$43,377.28	U.S. Dollar				
□ 2.1	CONCRETE	1.00	Cubic Yard	\$35,157.28	\$35,157.28	U.S. Dollar				
+ 2.1.1	Caissons - Installed	464.74	Cubic Yard	\$50.00	\$23,236.75	U.S. Dollar	z_Foundations	G1-Foundation Pier		
+ 2.1.2	Foundation Slab	397.35	Cubic Yard	\$30.00	\$11,920.53	U.S. Dollar	z_Foundations	G1-Foundation Slab		
□ 2.2	PRECAST CONCRETE	1.00	Each	\$8,220.00	\$8,220.00	U.S. Dollar				
+ 2.2.1	Ext_Precast Spandrel_8"	66.00	Each	\$60.00	\$3,960.00	U.S. Dollar	Family	Ext_Precast Spandrel_8"		
+ 2.2.2	Ext_Precast Spandrel_9" (WA 10)	69.00	Each	\$60.00	\$4,140.00	U.S. Dollar	Family	Ext_Precast Spandrel_9" (WA 10)		
+ 2.2.3	Ext_Precast Spandrel_29"	2.00	Each	\$60.00	\$120.00	U.S. Dollar	Family	Ext_Precast Spandrel_29"		

- 3. In the ribbon, select the **More Actions** tab.
- 4. Select the Send Selected CBS to Model button.
- 5. When the Success dialog box opens, click **OK**.

The Model DTO Selector then automatically creates a rule from the info provided in the UDF fields.

Selec	tor	
	Rule Type Tag / OP Name Operator Value	
	Tag 💙 z_Foundation 🂙 = 💙 G1-Foundation Pier 🗸	
Selecto	tor Type: Tag / OP 👻	est

The following step-by-step walks you through rule setup for UDF fields 12 through 15.

**NOTE** The **Tag / OP Name** must exist within the model or it will be set to a random Tag / OP. The **Operator** is set to = by default. The **Value** must exist within the model or it will be set to a random value.

#### 9.2 Step by Step 6 — Rule setup UDF fields 12 through 15

- 1. In Estimate for cost item 2.1.1, type **z\_Foundations** into UDF field 12.
- 2. For cost item 2.1.1, type **G1-Foundation Pier** into UDF field 13.
- 3. For cost item 2.1.1, type **Model** into UDF field 14.
- 4. For cost item 2.1.1, type **STRUCT\_Parking** into UDF field 15.

CBS Position Code 📒	Description	Forec (T/O) Quant	Unit of Measure	Unit Cost	Total Cost (Forecast)	Currency	User Defined 12	User Defined 13	User Defined 14	User Defined 15
2	Parking Garage	1.00	Each	\$43,377.28	\$43,377.28	U.S. Dollar				
2.1	CONCRETE	1.00	Cubic Yard	\$35,157.28	\$35,157.28	U.S. Dollar				
+ 2.1.1	Caissons - Installed	464.74	Cubic Yard	\$50.00	\$23,236.75	U.S. Dollar	z_Foundations	G1-Foundation Pier	Model	STRUCT_Parki
+ 2.1.2	Foundation Slab	397.35	Cubic Yard	\$30.00	\$11,920.53	U.S. Dollar	z_Foundations	G1-Foundation Slab		
2.2	PRECAST CONCRETE	1.00	Each	\$8,220.00	\$8,220.00	U.S. Dollar				
+ 2.2.1	Ext_Precast Spandrel_8"	66.00	Each	\$60.00	\$3,960.00	U.S. Dollar	Family	Ext_Precast Spandrel_8"		
+ 2.2.2	Ext_Precast Spandrel_9" (WA 10)	69.00	Each	\$60.00	\$4,140.00	U.S. Dollar	Family	Ext_Precast Spandrel_9" (WA 10)		
+ 2.2.3	Ext. Precast Spandrel 29"	2.00	Each	\$60.00	\$120.00	U.S. Dollar	Family	Ext Precast Spandrel 29"		

- 5. In the ribbon, select the **More Actions** tab.
- 6. Select the Send Selected CBS to Model button.
- 7. When the Success dialog box appears, click **OK**.

The Model DTO Selector then automatically creates a rule from the info provided in the UDF fields.

– Selecto	or ——			
		Rule Type	Tag / OP Name Operator Value	
		Tag	z_Foundation ¥ = ¥ G1-F	oundation Pier
	AND	Tag	Model 💙 = 💙 STR	UCT_Parking
	_			
Selector	Туре:	Tag / OP 👻		Test



# **LESSON 10 – ELEMENTS**

Lesson Duration: 40 minutes

#### **Lesson Objectives**

After completing this lesson, you will be able to:

- Navigate the Elements panels and dialogs
- Know how to create an Element
- Create Elements from objects
- Unlink objects from an Element
- Delete an Element

**Topics in this Lesson** 

# **10.1 ELEMENTS OVERVIEW**

Elements formalize relationships between components, equipment, systems, subsystems, etc. Maintaining the thread of data from Design to Construction to Quality to Closeout; customizable based on project requirements and participating in an Advanced Work Packaging process.

The new Elements panel within InEight model provides the capability to create Material Components (individual or combined model objects). The Material Components created in Model are linked to the AWP process (Model <-> Plan and Model <-> Schedule) and to the Completions applications.

Within Completions, Assets have been transitioned into Elements, which provides a direct link from Completions to Model. In a general since, Elements created in Completions are now visible within Model and Elements created in Model are visible in Completions

Elements are more flexible than Assets in that they can have a hierarchical relationship and display different data based on Element type or classification (system, subsystem, building intersection, engineered equipment, etc.) With this transition, users can access Elements data from Completions HQ, Mobile, and Model applications.

## 10.1.1 Elements Panel

To access the Elements Panel, select **View** from the menu bar at the top of the screen. Then, select **Elements**.

<u>F</u> ile <u>E</u> dit	<u> V</u> iew Object <u>L</u> ux <u>T</u> ime <u>L</u> ogi	ic <u>A</u> rchive Puls
Training	Master Presets	Ctrl+M
	Styling	
	Tags and Objects	
	Elements	
	Camera Settings	
	Eirst Person Settings	
	<u>S</u> ectioning	
	Measurement	
	Create New Markup	Ctrl+Shift+N
	Camera Auto Orbit	Ctrl+Shift+O
	First Person Navigation	Ctrl+F
	Show Model Spots	Ctrl+Shift+.
	Toggle Fullscreen	F11
	Home Position	Home
	Optional Modules	•

This will open the Elements Panel.

Elements				×
Element Id	Element Type		Details for Selected Item	
Element Type: ALL	~	+ Add	Setti	<b>¢</b> ngs

Elements created within the Model application or the Completions application will be displayed.

- Element Type: A dropdown selection to filter displayed Elements
- Add...: provides the ability to:
  - Create a single Component
  - Create multiple Components from a selection
- Settings...: provides the ability to:
  - Toggle on/off the Auto-select model elements feature
  - Toggle on/off the Show linked model elements feature
  - Toggle on/off the Drop from Object Tree creates single Material Component feature
  - Toggle on/off the Compact Mode feature

# **10.2 CREATE AND MANAGE ELEMENTS**

You can create elements and link tags or objects to those elements by clicking the **Add** icon or moving tags and objects to the Elements panel.

#### 10.2 Step by Step 1 — Create an element

1. Click the **Add**icon.



2. Select Add Component.



3. Fill in the component fields.

Create Element	? ×
Element Type Material Component	~
Element Name MaterialComponent-	
Description 3	
Linked model items (dick one to use as Element name)	
4	
use Field Mapping	
	V OK X Cancel

	Field name	Value	
1	Element Type	Select Material Component.	
2	Element Name	Type in a name that represents the material component to be created.	
3	Description	Enter a description for the material component.	
4	Linked model item	This is used only when Add Component from Selection option is selected.	
5	use Field mapping	N/A	

You can see the new completed component in the Create Element dialog box.

Create Eler	ment	?	$\times$
Element Type	Material Component		~
Element Name	100-E-001		
Description	Duct Bank section 001		
Linked model	items (click one to use as Element name)		
use Field M	apping	🗸 ОК	× Cancel

4. Click **OK**, and then the new Material Component shows in the Elements panel.

lement Id	Element Type	- Details for Selected Item	
✓ 100-E-001	Material Component	Element Id Element Id Element Type Plan Status Location Created Project Suite User Id Modified Project Suite User Id Project Id Quantity UoM Id Level Id Construction Commodity Id	100-E-001 Material Component 0 0 0 0 0 2 0
		Description Comments Percent Complete Line Tag Number	Duct Bank section 001

**NOTE** The Element ID, Element Type, and Description cannot be changed. You must delete and recreate a new element.

- 5. You can add a model object to the element two different ways:
- Drag one or more tags into the element from the Tags tab.

Elements		2
Element Id	Element Type	Details for Selected Iter
✓ 100-E-001 100-	E-001	
		×
Element Type: ALL	• • • • • • • • • • • • • • • • • • •	Settings

The tags show below the element.

Element Id	Element Type	— Details for Selected Iter
<ul> <li>✓ 100-E-001</li> <li>         IWP / 100-E-001     </li> </ul>	Material Component	
1		

• Drag objects into the element by selecting one or more model objects from the Objects tab.



The objects show below the element.

Element Id	Element Type		- Details for Selected Iter
<ul> <li>✓ 100-E-001</li> <li>✓ IWP / 100-E-001</li> <li>✓ IFCBUILDINGELEMEN</li> <li>✓ IFCBUILDINGELEMEN</li> <li>✓ IFCBUILDINGELEMEN</li> </ul>	Material Component	*****	
	_		

**NOTE** The object values or tag values are linked to the element. When selecting values in the Elements panel, those values are also selected in the Tags and Objects tree.

#### 10.2 Step by Step 2 — Create elements from a selection of objects

- 1. Select one or more model objects.
- 2. Click the **Add** icon.



3. Click Add Components from Selection.



The Create Element dialog box is populated.

Cre	ate Element		? ×
Element	Type Material Component		~
Element	Name <objname> 2</objname>		
Descript	tion created from Model object: <objname:< td=""><td>× (3)</td><td></td></objname:<>	× (3)	
4	Object Name	Material Name	Description
1	IFCBUILDINGELEMENTPROXY Shape 526	IFCBUILDINGELEMENTPROXY Shape 526	created from Model object: IFCBUILDINGELEMENTPROXY Shape 526
	IFCBUILDINGELEMENTPROXY Shape 638	IFCBUILDINGELEMENTPROXY Shape 638	created from Model object: IFCBUILDINGELEMENTPROXY Shape 638
	IFCBUILDINGELEMENTPROXY Shape 300	IFCBUILDINGELEMENTPROXY Shape 300	created from Model object: IFCBUILDINGELEMENTPROXY Shape 300
	IFCBUILDINGELEMENTPROXY Shape 262	IFCBUILDINGELEMENTPROXY Shape 262	created from Model object: IFCBUILDINGELEMENTPROXY Shape 262
	IFCBUILDINGELEMENTPROXY Shape 109	IFCBUILDINGELEMENTPROXY Shape 109	created from Model object: IFCBUILDINGELEMENTPROXY Shape 109
	IFCBUILDINGELEMENTPROXY Shape 1243	IFCBUILDINGELEMENTPROXY Shape 1243	created from Model object: IFCBUILDINGELEMENTPROXY Shape 1243
use	Field Mapping 5		Cancel

	Field name	Value
1	Element Type	Select Material Component.
2	Element Name	Do not delete <objname>. This ensures that all the added objects are unique. You can add any text after the <objname> if needed.</objname></objname>
3	Description	Optionally type a description for the material component.
4	Linked model items	This is used only when Add Component from Selection option is selected.
5	use Field Mapping	N/A

ciementia	Element Type	Details for Selected Item	
<ul> <li>✓ 100-E-001</li> <li>✓ Z_UWP / 100-P-001</li> <li>✓ WP / 100-P-002</li> <li>✓ UWP / 100-P-002</li> <li>✓ UWP / 100-P-003</li> <li>✓ UWP / 100-P-003</li> </ul>	Material Component Material Component Material Component Material Component	Element Id Element Type Plan Status Location Created Project Suite User Id Project Id Quantity UoM Id Level Id Construction Commodity Id Description Comments Percent Complete Line Tag Number	z_IWP / 100-P-003 Material Component 0 0 0 0 0 2 0 0 created from Model Tag: [z_IWP / 100-P-003] 0

4. Click **OK**, and then the new Elements show in the Elements panel.

lement Id	Element Type		Details for Selected Item	
<ul> <li></li></ul>	Material Component Material Component		Element Id Element Type Plan Status	IFCBUILDINGELEMENTPROXY Shape 638 Material Component
	Material Component Material Component		Location Created Project Suite User Id Modified Project Suite User Id Project Id	
	Material Component	ł		
GO IFCBUILDINGELEMENTPROXY Shape 109     Solution (State 1997)     Solution (State 1997)     Solution (State 1997)     IFCBUILDINGELEMENTPROXY Shape 1243     IFCBUILDINGELEMENTPROXY Shape 1243	Material Component			0 created from Model object: IFCBUILDINGELEI
✓ IFCBUILDINGELEMENTPROXY Shape 1561 Ø IFCBUILDINGELEMENTPROXY Shape 1561	Material Component			
Green Control of	Material Component			~

NOTE

Each model object will have an element created with the individual model object linked to that element.

#### 10.2 Step by Step 3 — Create elements from the tags

1. To create elements from tags, in the Tags tab, drag one or more tags into the Elements panel.



The tags show below the element.

ement Id	Element Type	Details for Selected Item	
✓ 100-E-001 ✓ z_IWP / 100-P-001 ✓ IWP / 100-P-001	Material Component Material Component	Element Id Element Type Plan Status	z_IWP / 100-P-003 Material Component
♥ <>> 2_IWP / 100-P-002 ● IWP / 100-P-002	Material Component	Location Created Project Suite User Id	
2.JWP / 100-P-003 IWP / 100-P-003	Material Component	Modified Project Suite User Id Project Id Quantity UoM Id Level Id Construction Commodity Id Description Comments Percent Complete	0 0 0 2 0 0 created from Model Tag: [z_IWP / 100-P-003] 0
		Line Tag Number	

**NOTE** The element name will be derived from the tag, and the tag value is linked to the respective element.

#### **10.2 Step by Step 4** — Edit an element

1. In the Elements panel, right-click an element, and then select Edit Element.

The Edit Element panel opens and shows the associated element data.

2. Edit the element as needed.

Edit Element	 	 _	_
Element Type			
Component			
Location			
		 ~	
Position			
A2-077P-0866-01-02			
Location			
		 ~	
Tel.			
A2-077P-0866-01-02			
person test			
		 ~	
Hierarchy Position			
A2-077P-0866-01-02			
Component Core Data			
Id			
749004			
Name			
A2-077P-0866-01-02			
			C

3. Click **OK** to save your changes. Fields that cannot be edited show in a solid color.

#### 10.2 Step by Step 5 — Unlink objects from an element

- 1. Select an object or objects in one or more elements.
- 2. Right-click on the selected items, and then select Unlink item.



#### 10.2 Step by Step 6 — Delete an element

- 1. Select one or more elements.
- Right-click on the selected items, and then select Add/Remove Element > Delete Selected Elements.



#### Lesson 10 Review

- 1. The Material created are linked to the AWP process.
  - a. True
  - b. False
- 2. Elements have more \_\_\_\_\_\_ than Assets in that they have a \_\_\_\_\_ \_\_\_\_ relationship and display different data based on Element type.
  - a. information, variety
  - b. flexible, hierarchical
  - c. relationship, classification
- 3. Elements formalize relationships between these: (select all that apply)
  - a. tags
  - b. components
  - c. equipment
  - d. assets
  - e. data
  - f. systems
  - g. subsystems

#### Lesson 10 Summary

As a result of this lesson, you can:

- Navigate the Elements panels and dialogs
- Know how to create an Element
- Create Elements from objects
- Unlink objects from an Element
- Delete an Element

# LESSON 10 – ADVANCED WORK PACKAGING & WORKFACE PLANNING

Lesson Duration: 40 minutes

#### Lesson Objectives

After completing this lesson, you will be able to:

- Work Packaging Overview
- Creating & Managing CWAs, CWPs, & IWPs

**Topics in this Lesson** 

# **10.1 WORK PACKAGING OVERVIEW**

InEight Model allows visual work packaging to support an Advanced Work Packaging (AWP), Work Face Planning (WFP), or any other work scoping process.

Work Packaging breaks down projects into small, manageable scopes of work so that operation can be assigned to responsible supervision, executed, and tracked effectively. Within InEight, our approach is to break the work of your project into Construction Work Areas (CWAs), Construction Work Packages (CWPs), and Installation Work Packages (IWPs).

AWP activities span the entire project. Front-end planning and detailed engineering activities support enhanced execution at the work front. Project set-up and planning sessions establish the basis for coordinated construction, procurement, and engineering work packages (CWPs, PWPs, and EWPs).

AWP drives the WFP concepts to Engineering and Procurement. Drawings are issued to construction and vendors as complete Engineering Work Packages (EWP) and Procurement Work Packages (PWP) instead of individual drawing releases. The objective is to ensure all parties follow the project Path of Construction.



## 10.1.1 AWP Panel

To access the AWP Panel, select View from the menu bar at the top of the screen. Then, go to the Optional Modules and then select AWP.

<u>F</u> ile <u>E</u> dit	<u>View</u> Object <u>L</u> ux <u>T</u> ime	<u>L</u> ogic	<u>A</u> rchive	Pulse	Track	<u>H</u> elp	
Training	Master Presets		Ctrl+M				
	✓ Styling						
	<ul> <li>Tags and Objects</li> </ul>						
	Elements						
	<u>C</u> amera Settings						
	Eirst Person Settings						
	Sectioning						
	Measurement						
	Create New Markup		Ctrl+Shift	+N			
	Camera Auto Orbit		Ctrl+Shift	+O			
	First Person Navigation		Ctrl+F				
	Show Model Spots		Ctrl+Shift	+.			
	Toggle Fullscreen		F11				
	Home Position		Home				
	Optional Modules			•	AWP		
					DTO		Ctrl+9
					InEight l	Document	

This opens the AWP Panel.

- AWP Panel will display Work Packaging structure items (CWA, CWP, IWP) created in InEight Model, InEight Plan, or InEight Schedule applications
- Name: Work Package unique name or code
- Description: Brief work package description
- Start: Schedule start date
- Finish: Schedule finish date
- % Complete: Percent complete (earned work-hour basis)
- Platform: Identifies which platform (Model, Plan, Schedule) created work package structure item
- Add: provides the ability to:
  - Add CWA
  - Add CWP

- Add IWP
- Remove Item
- Settings: provides the ability to:
  - Toggle on/off the Auto-select material components feature
    - Visually select model objects that are assigned to work package structure
  - Toggle on/off the Show % complete feature
    - Activates progress visualization mode
  - Toggle on/off the Compact Mode feature
    - Reduces AWP panel down to only show CWA/CWP/IWP names
  - Toggle on/off the Edit RUID feature
    - Opens the AWP panel column customization widget

# 10.2 CREATING & MANAGING CWA, CWP & IWP

The InEight platform allows users to generate AWP structure components (Construction Work Areas (CWAs), Construction Work Packages (CWPs), and Installation Work Packages (IWPs)) within Schedule, Plan, and Model. InEight's cloud-based platform allows real-time synchronization between the solutions.

Adding to the existing AWP structure or creating a new structure to reflect the current project status is available in the Model.

#### 10.2 Step by Step 1 — Create a Construction Work Area (CWA)

#### 1. Select Add.



2. Click Add CWA.

Add CWA	
Add CWP	
Add IWP	
Remove Item	

3. Fill out the CWA ID (project unique code or identifier).

Add CWA	?	×
CWA Id:		
🗸 ок	×	Cancel

4. Click **OK**, then the new CWA will display within the AWP panel.

AWP			
Q Search		- Details for Colorted News	
Name WT P HRSG P CT	Description     Water Treatment Area     HRSG Area     Cooling Tower Area	Instance Id Created Date Created Date Last Modified Date Last Modified Date Last Modified By Id Platform Name Inactive Created Project Suite User Id Modified Project Suite User Id Display Id Description Position Notes	(ae47bfc7-7706-4bd7-98f0-aaa7b4c8b14d) 2020-12-16T17:36:10.0002 2020-12-16T17:42:37.0002 713 MODEL 0 1 1 1 222 WT Water Treatment Area 1
+ Add			Ç Settings

**NOTE** The platform name highlights which of the InEight solutions generated the CWA. Any CWA created in InEight Plan or Schedule will be available within Model.

#### 10.2 Step by Step 2 — Create a Construction Work Package (CWP)

1. Select an existing CWP item, then Select Add.

AWP			×
Q <sub>Search</sub>		Details for Selected Item	
Name  VT  In HRSG  CT	Description     Water Treatment Area     HRSG Area     Cooling Tower Area	Instance Id     Created Date     Created Date     Last Modified Date     Last Modified By     Id     Platform Name     Inactive     Created Project Suite User Id     Modified Project Suite User Id     Display Id     Description     Position     Notes	(ae472672-7706-4bd7-96f0-aaa7b4x8b14d) 2020-12-16T17:36:10.0002 2020-12-16T17:42:37.0002 713 MODEL 0 1 1 1 122 WT Water Treatment Area 1
+ Add			Šetlings

2. Click Add AWP.

Add CWA	
Add CWP	
Add IWP	
Remove CWA	

3. Fill out the CWP ID (project unique code or identifier).

Add CWP	?	×
CWP Id:		
		Canad
OK	×	Cancel

4. Click **OK**, then the new CWP will display within the AWP panel.
| AWP   |   |  |               |
|---|---|--|---------------|
| Q. Search   |   | - Datalis for Selected Item  |               |
| Q_Search<br>Name<br>▼ □ WT<br>□ WT-200<br>▼ □ HRSG<br>□ CWP test from Model<br>► □ CT | Description     Water Treatment Area     WT-200     WT-100     HRSG Area     CWP test from Model     Cooling Tower Area | Details for Selected Item           Instance Id         (d65ab109-e82f-4ed6-9f4d-c9           Created Date         2020-12-16T15:12:59.0002           Created By         Last Modified Date           Last Modified By         Id           Id         504           Platform Name         MODEL           Inactive         0           Created Project Suite User Id         1           Modified Project Suite User Id         1           Project Id         122           WorkPlanNumber         504           WorkPlanStabuild         10           ParentWorkPlanEld         ParentWorkPlanEld | 645+907ad     |
|   |   | ParentWorkPlanPlatformId<br>WorkPlanName WT-100<br>WorkPlanDesc WT-100<br>ScopeOWork<br>EngineerId 0<br>SuperintendentId 0<br>ScheduleStart<br>ScheduleFinish<br>TotalManHours 0<br>EarnedManHours 0<br>RiskId 0   |               |
|   |   | ApprovedBy<br>Score<br>ScheduleId<br>DisciplineId<br>WorkType<br>AccountCode<br>ForemanId<br>PercentageComplete<br>0<br>FileUploadHistoryId<br>ConstructionAreaId<br>713   |               |
| +<br>Add  |   |  | ¢<br>Settings |

**NOTE** The platform name highlights which of the InEight solutions generated the CWP. Any CWP created in InEight Plan or Schedule will be available within Model. With the InEight platform, additional metadata associated with the CWP will be visible within the InEight Model. Connecting AWP structure with InEight Schedule allows for schedule metadata to be visible within the InEight Model. Connecting AWP with InEight Plan & Progress allows for work-hours, progress percent complete, and other metadata to be visible within the InEight Model.

### 10.2 Step by Step 3 — Create a Installatoin Work Package (IWP)

1. Select an existing CWP item, then Select Add.



2. Click Add IWP.

Add CWA
Add CWP
Add IWP
Remove CWP

3. Fill out the IWP ID (project unique code or identifier).

Add IWP	?	×
IWP Id:		
🗸 ок	×	Cancel
	$\sim$	Cancel

4. Click **OK**, then the new IWP will display within the AWP panel.

R Search		💈 🔽 Details for Selected Item	
Name ▼ WT WT-200 * WT-100 WT-200-PIPE-101 WT-100-PIPE-103 * WT-100-PIPE-102 WT-100-PIPE-101 * WT-100-PIPE-101 CT	Description     Water Treatment Area     WT-200     WT-100     WT-200-PIPE-101     WT-100-PIPE-103     WT-100-PIPE-102     WT-100-PIPE-101     HRSG Area     Cooling Tower Area	Instance Id     Created Date     Created Date     Created Date     Last Modified Date     Last Modified Date     Last Modified By     Id     Platform Name     Insactive     Created Project Suite User Id     Modified Project Suite User Id     Project Id     WorkPlanNumber     WorkPlanNamber     WorkPlanNamber     WorkPlanName     WorkPlanNa	(7a1951de 505c-47/2-9/78-c3ece4/bds) 2020-12-16T17:39:19.0002 2021-10-28T21:44:43.0002 507 MODEL 0 1 1 1 22 507 10 504 (d65ab109-e82f-4ed6-9f4d-c9645e907 WT-100-PIPE-101 WT-100-PIPE-101 WT-100-PIPE-101 0 0 2021-01-14T07:00:00.0002 2021-01-15T07:00:00.0002 0 0

NOTE The platform name highlights which of the InEight solutions generated the IWP. Any IWP created in InEight Plan or Schedule will be available within Model. With the InEight platform, additional metadata associated with the CWP will be visible within the InEight Model. Connecting AWP structure with InEight Schedule allows for schedule metadata to be visible within the InEight Model. Connecting AWP with InEight Plan & Progress allows for work-hours, progress percent complete, and other metadata to be visible within the InEight Model.

### **10.2 Step by Step 4** — Deleting AWP Structure

- 1. Select one or multiple AWP structure items.
  - NOTE Removing AWP structure items (CWA / CWP / IWP) must happen at the lowest level of the structure first. If an IWP has elements associated with it, these elements must be unlinked before deleting. The same logic applies to CWPs and CWAs.
- 2. Right mouse click on the AWP structure items, then select Remove IWP (or Remove CWP, or Remove CWA).

Name <ul> <li>Description</li> <li>WT</li> <li>WT</li> <li>Water Treatment Area</li> <li>WT-200</li> <li>WT-200</li> <li>WT-100</li> <li>WT-200-PIPE-101</li> </ul> Instance Id     Created Date     22     Created By     22     Created By     23     24		≪ Search
ScopeOfWork EngineerId 0 SuperintendentId 0 ScheduleStart ScheduleFinish TotalManiHours 0 EarnedManHours 0 RiskId 0 ApprovedBy	(5894b08c-a97f-420c-98e7-786651503de 2020-12-16T17:39:41.0002 2020-12-16T17:39:41.0002 508 MODEL 0 r Id 1 er Id 1 122 508 10 504 d (d65ab109-e82f-4ed6-9f4d-c9645e907adC WT-100-PIPE-103 WT-100-PIPE-103 0 0	Name

### 10.2 Step by Step 5 — Filter AWP Structure

Filter the AWP structure per predefined criteria

Select one or multiple AWP structure items.

1. Select the Filter tab, then set the criteria as desired.



NOTE Additional filters can be added as desired.

## **10.3 USER MANAGEMENT**

## **10.4 USER MANAGEMENT**

When InEight Model is integrated with InEight Platform, users are managed in Platform. For more information, see <u>User management</u> in Suite administration.

# LESSON 10 – ADMIN TOOLS

### **Topics in this Lesson**

10.1 Introduction	. 474
10.2 Login	. 474
10.3 Slide-out Panel	. 479
10.4 Projects	480
10.5 User Access Overview	482
10.6 User Account Management	483

## **10.1 INTRODUCTION**

Admin Tools are not integrated with InEight Platform, therefore it is a central portal for administrators to configure the settings of Legacy Completions, Model projects, and user accounts.

### 10.1.1 Browser compatibility

Admin Tools is compatible with the following browsers:

- Chrome
- Firefox
- Safari
- Edge

## **10.2 LOGIN**

Single sign-on (SSO) reduces the need to maintain separate credentials to access Admin Tools. You can use existing credentials to open Admin Tools.



The login screen lets you use a single set of credentials and authenticate with SSO provider (Google or Microsoft) to sign into any projects that you have access to. SSO increases administrative efficiency by mitigating new user creation. Existing users can continue to sign in using their existing user name and password.

SSO authentication reduces the need to maintain separate credentials, and also minimizes the need to maintain a standalone set of credentials.

To enable SSO functionality for your organization, contact your account administrator.



User organizations can integrate with the Excel Plugin authentication service with their own existing authentication servers, which eliminates the need for standalone Excel Plugin user credentials.

Single sign-on recognizes which accounts users have access to, and presents a helpful account dropdown list. Authenticated users are then presented with a list of projects in the selected account that are controlled and assigned by the administrator.

### 10.2.1 Log-in Options

### **10.2.1.1 Username and Password Credentials**



#### **Reset password**

If you forget your password, click **Forgot password**. Enter your user name, account, and email address, and then click Submit. If your request is successful, an email is sent to you with instructions to complete your password reset. Return to the login page to enter your new password.

NOTE The Submit button is disabled until you enter a valid email address.

### 10.2.1.2 SSO by Microsoft



### 10.2.1.3 SSO by Google



### 10.2.2 Switch account

The Switch account button, located on the lower left panel, lets SSO users change between accounts to access different project lists.



## **10.3 SLIDE-OUT PANEL**

The slide-out panel gives you quick links to pages both inside and outside of Admin Tools. You can also use the slide-out panel to log out of Admin Tools.



To open the slide-out panel, click the **Main menu** icon.

The slide-out panel contains the following links:

- User Account Management See User Account Management for information about this page.
- Online Training Portal Takes you to the Knowledge Library.
- Completions Web Opens the Completions web interface in your browser.
- Feature Request Submit a request for a new feature.
- Support Opens an email to InEight support.
- Switch Account Lets SSO users change between accounts to access different project lists.

## **10.4 PROJECTS**

The Projects page shows all available projects. When you log to Admin Tools, the Projects page is the first page that opens. You can also click the Home icon to open the Projects page.

There are several methods to open the Configurations page opens for a specific project:

- Double-click the project name.
- Select a project, and then click **Configure**.
- Right-click a project, and then select **Configure** from the drop-down menu.

	Dev-intel Ococ	0
( Duplicate 🖏 Configure		Search Q
Name 🕇	Created	Created by
NewProjectTest	4/28/21	Jay
NewProjectTest2	4/28/21	Jay
NewProjectTest3	7/26/19	and a
NewProjectTest4	1/25/17	Minut
NewProjectTest5	1/22/18	Vickie
NewProjectTest6	3/28/18	1000
NewProjectTest7	3/29/18	prog.
		•
Show projects with no users or groups		

## 10.5 USER ACCESS OVERVIEW

There are three types of users:

User type	Description
Admin	Allows you to have complete access and control of all functionality in the environment.
Standard	<ul> <li>Allows you to have limited access and functionality in a project. You will not be able to:</li> <li>Create users.</li> <li>Create projects.</li> <li>Delete an object in Viewer.</li> </ul>
Read-Only	<ul> <li>Allows you to have read-only rights to a project. You can access and utilize all functionality in a project. You will not be able to:</li> <li>Save any changes to a project.</li> <li>Create users.</li> <li>Create a project.</li> <li>Publish models.</li> </ul>

The default user type is Standard. You can assign a user type when creating a new user.

	D Create Projects	ם Manage Users	Import Model Streams	Import Model Streams - Model Goups	Project Structure	User Interface	Delete Objects	Project Updates	Tags & Objects	Data Transformation Operations	Styles	Master Presets	Coordination Rules	Create Coordination Issues	Manage Coordination Issues	Archive Library	Archive Library Folder Permissions	Selction Info	Sectioning	Measurement	Elements	AWP
Users	Poi	rtal											inout									
ADMIN	~	<ul> <li>Image: A start of the start of</li></ul>	~	~1	~	~	√2	~	~	<ul> <li>Image: A second s</li></ul>	~	~	~	~	~	~	~	<ul> <li>Image: A start of the start of</li></ul>	~	~	~	~
STANDARD	×	×	<ul> <li>✓</li> </ul>	<b>~</b> 1	•	<b>~</b>	×	<ul> <li>✓</li> </ul>	<b>~</b>	<ul> <li>✓</li> </ul>	×	<b>~</b>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	√ 3	×	×	<b>~</b>	<ul> <li>✓</li> </ul>	1	× .	<ul> <li>✓</li> </ul>
READ_ONLY	×	×	×	×	•	<ul> <li>Image: A second s</li></ul>	×	<ul> <li>Image: A set of the set of the</li></ul>	•	•	•	•	•	•	•	•	×	•	•	•	•	•
*Group (Write)	×	×	<ul> <li>✓</li> </ul>	<b>~</b> 1	•	<ul> <li>✓</li> </ul>	×	<ul> <li>✓</li> </ul>	<b>~</b>	<ul> <li>✓</li> </ul>	<b>~</b>	<b>~</b>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<b>√</b> <sup>3</sup>	<b>~</b>	×	<b>~</b>	<ul> <li>✓</li> </ul>	<ul> <li>✓</li> </ul>	<b>~</b>	<ul> <li>✓</li> </ul>
*Group (Read)	×	×	×	×	•	✓	×	•	•	•	•	•	•	•	•	•	×	•	•	•	•	•
Note <sup>1</sup> Note <sup>2</sup> Note <sup>3</sup>	Deno Deno Deno Impo Objec By De (Stano	tes Us tes Us tes Us rting o ts are fault, S dard u	er has er is a er has if mod not tr Standa ser, in	full Co ble to no Ac lel stre uly de ard Us adividu	ontrol View ccess ams c leted, ers ca ial use	an be object nnot n rs and	restric s are t nanag I/or us	ed for turned e Coor er gro	differ I invisi rdinati bups)	rent M bile to on Iss	odel G all use ues. In	iroups ers in t Eight (	the pro	oject fo ggle th	or curr ne follo	ent ar	nd futi to hav	ure rev ve perr	visions	; ns		

- NOTE If a Read Only type user is applied to a project with Write access, they will still only have TIP read only rights to the project.
- If a Standard or Admin type user is applied to a project with Read Only access, they will TIP only have read only access.

## **10.6 USER ACCOUNT MANAGEMENT**

Users can have Read or Write access to a project.

User Account Management settings let you manage users, user groups, and access to projects. You can navigate to User Account Management through the quick link in the slide-out panel.



You must be an account administrator to manage user accounts.

The User Account Management has two tabs:

- Users & Groups Manage users and user groups.
- Project Permissions Assign users and user groups to projects.

### 10.6.1 Users & groups tab

The Users & Groups tab has two panels. The Users panel lets you manage users, and the Groups panel lets you manage groups. You can use the buttons in the center of the page to add and remove selected users to and from groups.

s & Groups P	Project Permissions								L
Jsers				C	ર		Groups	Search	C
Ð 🗹							$\oplus$		
Туре	User Name	Email	Status	SSO			≫ Name		
Admin	!!aditi	testsso030@gmail.com	Activated		-		12 IITEST		
Admin	!!aditi_g1	i@gmail.com	Activated				✓ II lattest		
Admin	!!aditi_g2	testssoflow222@gmail.com	Activated	~			ISteve SSO Test		
Admin	!!aditi_google	testssoflow111@gmail.com	Activated	~			V 😫 ITest Read Only		
Admin	!!aditi_ms	i@ineight.com	Activated	~			V 12 !Testers		
Read_only	!aditi_ro	test	Activated				VIII ITLC Test 1		
Admin	!alina	>@ineight.com	Activated				✓ 1 0_miscreants		
Admin	1000	>@ineight.com	Pending			Add >	V 1274 AZTRIO - DE	IGN	
Admin	Lanother	t	Activated				V 1274 AZTRIO - EH	3	
Standard	!alina_ext	pw	Activated			← Remove	V 1274 AZTRIO - GC		
Admin	_google	letustest2021@gmail.com	Activated	~			1274 AZTRIO - OW	NER	
Admin	!alina_google1	ineight.testing@gmail.com	Activated				1274 AZTRIO - SU	1	
Read_only	!alina_guest	a	Activated						
Admin	!alina_ms	>@ineight.com	Activated	~					
Admin	!alina_ms_2	letustest2021@outlook.com	Activated						
Admin	!alina_multiple	multiplesso@gmail.com	Activated	~					
Standard	!alina_read_only	d	Activated				ACE CX		
Admin	la_g1	ssotesting7@gmail.com	Activated	~			ALRU		
Standard	!Billy	@gmail.com	Activated	~			AERO CX		
Admin	!colin	test-mail@m-six.com	Activated				AES		
Admin	!colin2	test-mail@m-six.com	Activated		-		~ 11		

#### 10.6.1.1 Users

You can select the following user types:

User type	Description
Admin	Create and manage users and duplicate projects.
Standard	Limited access and functionality in a project.

User type	Description
Read-Only	Unable to make changes to a project even if you have other roles that would otherwise allow it.

NOTE See <u>User Access Overview</u> for additional information.

### 10.6.1.2 Create single sign-on or password user

When creating a new user, the SSO On toggle lets you choose between creating a single sign-on (SSO) user, or a user that logs in using their user name and password. The default setting is *On*. This cannot be changed in edit mode.

Greate User			×		
User Details		SSO On		SSO Off	(
* Email	* Confirm Email				
* User Name	* User Type				
	STANDARD		•		
Contact Info					
* First Name	* Last Name		_		
Work Phone Number	Mobile Phone Number				
Address	Title				
			*		
Cancel Save					

#### Add user

### 10.6 Step by Step 1 — Add user

1. Click the Add user icon in the Users panel.

The Create User dialog box opens.

Create User	×
User Details	SSO 0n 🦲
* Email	* Confirm Email
* User Name	* User Type
	STANDARD -
Work Phone Number	Mobile Phone Number
Work Phone Number	Mobile Phone Number
Address	Title
Cancel Save	

2. Fill in the required fields indicated by an asterisk, and then click Save.

The SSO toggle lets you choose between creating an SSO user, or as a user that signs in with a user name and password. To add a user that signs in with a user name and password, switch the SSO On toggle to *Off*.

#### Edit user

### 10.6 Step by Step 2 — Edit user

- 1. Select a user from the Users panel.
- 2. Click the **Edit user** icon at the top of the Users panel.

You can also right-click a user, and then select Edit User in the drop-down menu.

3. Make the updates in the dialog box, and then click **Save**.

NOTE The user name cannot be edited, and the SSO toggle cannot be changed in edit mode.

#### Activate user

To activate a user, right-click the user, and then select **Activate User** in the drop-down menu.

NOTE To see a list of deactivated users that you want to activate, enable the Show deactivated Users toggle at the bottom of the Users and Groups panel.

#### **Deactivate user**

To deactivate a user, right-click the user, and then select **Deactivate User** in the drop-down menu. A deactivated user can no longer access their account.

Reset a user's password (SSO off)

To reset a user's password, right-click the user, and then select **Reset Password** in the drop-down menu. The user receives an email with instructions and a link to reset their password.

#### Set a user's temporary password (SSO off)

To set a temporary password for a user, right-click the user, and then select **Set Temp Password** in the drop-down menu. A temporary password lets you manually set a new password for the user.

#### Delete a pending user

To delete a pending user right-click the user, and then select **Delete User** in the drop-down menu.



You can only delete pending users for non-SSO users.

### Resend activation email (SSO off)

To resend an activation email to a pending user, right-click the user, and then select **Resend Account Activation Email** in the drop-down menu.

#### 10.6.1.3 Groups

Groups are made up of multiple users. You can assign multiple users to projects using groups.

#### Add a group

To add a new group, click the **Add group** icon at the top of the Groups panel. In the dialog box enter a group name, and then click **Save**.

#### Delete a group

To delete a group by right clicking a group, and then selecting **Delete Group** in the drop-down menu.



#### Rename a group

To change a group's name, right click a group, and then select **Rename Group** in the drop-down menu.

NOTE The new group name is shown in all historical data about the group.

### 10.6.2 Project permissions tab

The Project Permissions tab has two panels. You can add and remove selected users and Groups As Teams using the center buttons.

0				0		
Groups Search	۹		Projects			Q
➢ Name	T		☆ Project name	Read Only	Write	Team
V 22 All Users - [InEight Demo]	A		A Baseball Facility			-
V 22 Industrial Template Completions Admin		•	CoordinationSubContractor	0	۲	
V 22 !Testers		<b>U</b>	22 CoordinationSuperAdmin	0	۲	<ul> <li>Image: A second s</li></ul>
V 2 Client Team		Add →	2 <sup>2</sup>	0	۲	<b>~</b>
Commissioning Team		Add Crown An Team	V 22 InEight	0	۲	<b>~</b>
V 22 Completions Demo - CON/Elec			V 22 Project Admin	0	۲	<b>~</b>
✓ SS Completions Demo - Project Management		← Remove	V 💵 Test Group	0	۲	<b>~</b>
CoordinationCarpenterSub			andre	0	۲	
CoordinationConcreteSub			✓ Building Market Demo - PB			
CoordinationDesign			V Canstruction 2021			
CoordinationElectricalSub			V CAPRA - AREA A (TEST)			
CoordinationFieldEngineer	-		4			
	•		Show projects with no users or groups			

	Item	Description
1	Groups panel	Shows groups and their users.
2	Projects panel	Shows projects and the users and groups assigned to each project. You can manage user and group access to a project
3	Add, Remove, and Add Groups As Team	You can use the buttons in the center of the page to add and remove selected users and Groups As Teams to and from projects.
NC	TE Every user must b	e on a team but can only belong to a single team per project. Failure to

```
assign a user to a team for a given project will result in a misconfiguration error.
```

```
NOTE Best practice is to add Groups As Teams to projects instead of adding individual users.
```

Users and Groups As Teams have the following access types:

- Read Only Unable to make changes to a project even if they have roles that would otherwise allow it.
- Write The default access given to a user or group.

NOTE If you used the Add button, you can then simply click the checkbox in the Team column.

### 10.6.3 Export

You can export a Microsoft Excel file with user information and to which projects users are assigned to. Export files are useful for audits.

To export, click **Export** in the top right of the page to download the file.