

## AUTODESK REVIT CONTENT USER GUIDE



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## TABLE OF CONTENTS

<b>1</b>	<b>VERSION CONTROL</b>	<b>3</b>
<b>2</b>	<b>THE PURPOSE OF THE DOCUMENT</b>	<b>3</b>
<b>3</b>	<b>INSTALLING INTO REVIT CONTENT</b>	<b>4</b>
3.1	Unpacking the content	4
3.2	Loading component content (RFA files)	4
3.3	Loading system and material families (RVT)	5
3.4	Common placement issues	6
3.5	Viewing Materials	7
<b>4</b>	<b>PARAMETERS INCLUDED IN THE DATASET</b>	<b>9</b>
4.1	Included Parameter Protocols	9
4.2	Utilised Revit Hard Coded Parameters	9
4.3	Specification Parameters	9
4.4	COBie Parameters	10
4.5	Industry Foundation Class (IFC)	11
<b>5</b>	<b>CONTACT INFORMATION</b>	<b>11</b>

## 1 VERSION CONTROL

Version	Approved	Date	Approved	Date
1.0	Rob Clark	19/02/2016		

## 2 THE PURPOSE OF THE DOCUMENT

The Revit content is intended to be used by experienced Autodesk Revit users. The purpose of this guide is to support the user in working with the content on new and existing projects.

Revit content produced by Excitech can contain the following, however not all content will contain every point listed here,

- A managed level of detail (“LOD 200” (AIA) or above) 3D geometric representation of the product.
- CAD appearance data (Coarse and Fine detail)
- Revit material asset data were applicable
- Appearance data including visualisation images were available.
- Product identification information
- Revit MEP electrical connections were applicable
- COBie UK 2012 data as required by the NBS BIM Object Standard
- IFC data as required by the NBS BIM Object Standard
- Uniclass classification system data as required by the NBS BIM Object Standard
- NBS specification data as required by the NBS BIM Object Standard

## 3 INSTALLING INTO REVIT CONTENT

To install either a single or multiple products into another Autodesk Revit project or template please follow these instructions.

### 3.1 Unpacking the content

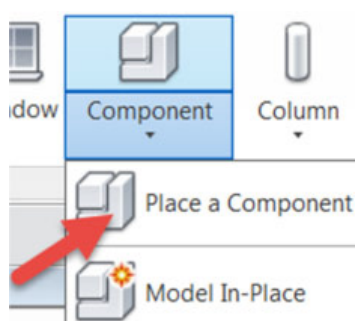
1. Use a program like Winzip or Alzip to open the downloaded .ZIP compressed file.
2. If material image files are included, extract (consult your software help files on how to extract files if you are unsure) the “Materials” folder to the following directory on your computer, C:\LocalRVT\Excitech\Materials.
3. Extract the RFA file(s) to your content library. We suggest not extracting the files to the Metric Libraries that come with Revit as these can be manipulated during installs, repairs and service packing of your Revit software.

### 3.2 Loading component content (RFA files)

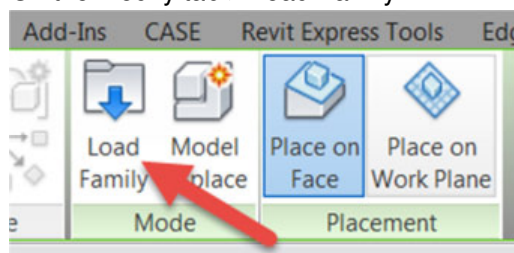
Loadable component families is any content distributed within a Revit RFA file.

1. Open the Autodesk Revit project or template file that you wish to load the content into
2. The method of loading content differs depending on the category of component;
  - a. For general components such as FFE - Go to the Home\* tab > Component > Place a Component
  - b. For windows – Go to the Home\* tab > Window
  - c. For doors – Go to the Home\* tab > Door
  - d. For MEP components, choose the correct tool under the Home\* tab
  - e. For Structural components, choose the correct tool under the Home\* tab

(\*=in full Revit, the Home tab is split into three separate tabs, Architecture, Systems and Structure)

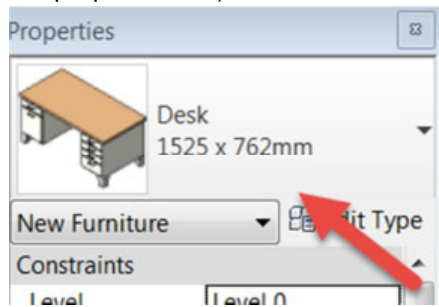


3. On the Modify tab > Load Family



4. Navigate to the folder you extracted your RFA into > Select the file > Open

- Ensure you have the correct component selected in the Type selector (type "PP" if you can't see the properties tab)

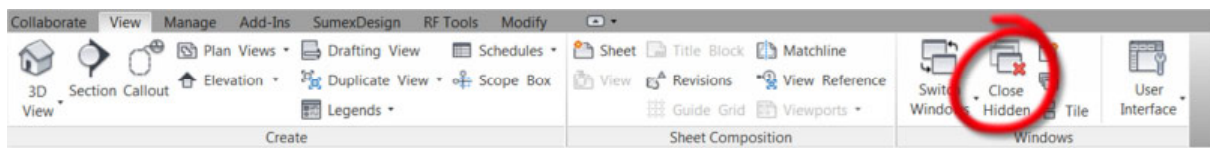


- Now place your component in the drawing view.

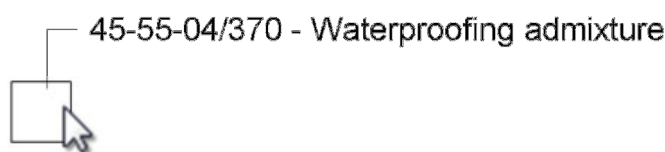
### 3.3 Loading system and material families (RVT)

System families is any content distributed within a Revit RVT file.

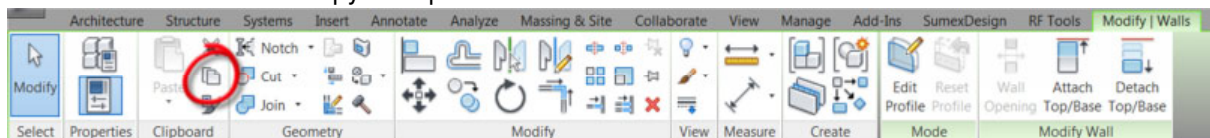
- Open the Autodesk Revit project or template file that you wish to copy the materials into
- Ensure no other models are open.
- Open up a Floor Plan view, typically the Ground floor is best and maximise the view.
- Use Close Hidden on the Windows tab to close all other views



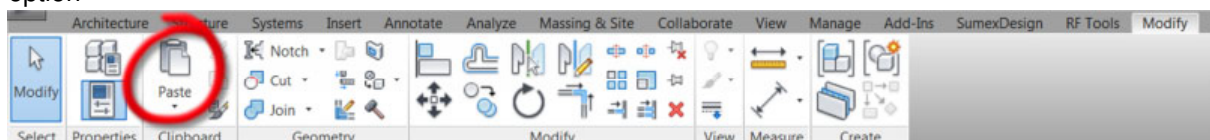
- Open the Revit project file that contains the System family and / or material that you have downloaded.
- Select the system or material host (such as floor, ceiling, wall, roof) that you wish to include in your project.



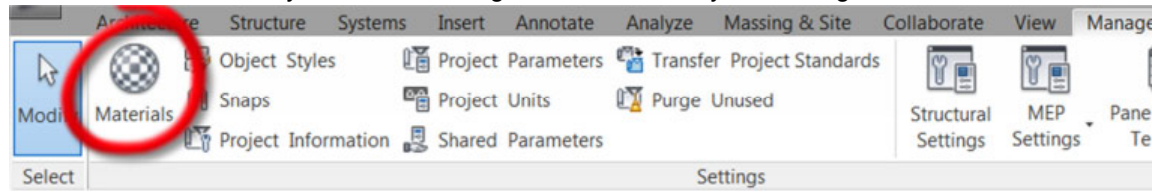
- Left click on the wall and Hold down CNTRL key and press the letter C, or go to the Modify | Walls tab and select the Copy to Clipboard tool



- Switch to the project that you want to copy the wall into.  
*Tip. Use CTRL-TAB to quickly switch between open windows.*
- Hold down the CTRL key and press the letter V, or go to the Modify tab and select the Paste option



10. This will place the object onto your cursor. Place with a left click in open space within your project.
11. Once placed you can delete them again by selecting them and then pressing the DELETE key on your keyboard.
12. The next step depends on the type of content you added
  - a. To place the system, such as a floor, wall, ceiling or roof, go to the appropriate tool and select your object from the Type selector
  - b. To view a material that you have added, go to Materials on your Manage tab

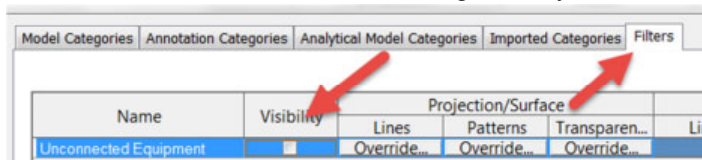


You should now be able to find the materials in your material list for use within any suitable family, such as systems like floors, walls, ceilings and roofs. They can also be added to component families (RFAs) that have been loaded into your project.

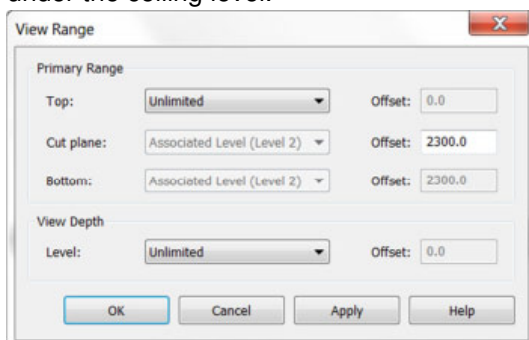
### 3.4 Common placement issues

If you are unable to see the content after placement, the below check list should prove useful,

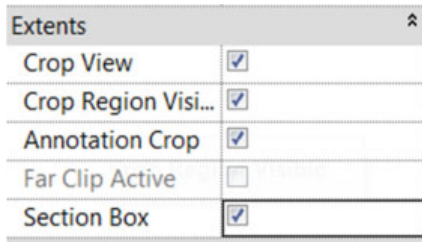
1. Check the category is visually switched on in the selected view (Visual Graphics settings).
2. Ensure other categories that could be preventing the viewing of the content are switched off.
3. Make sure no visual filters are affecting visibility



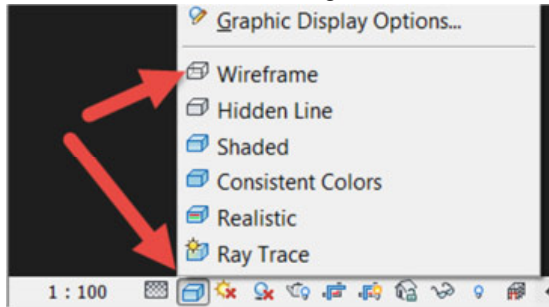
4. Make sure the view range is not preventing visibility. In ceiling plans, the cut plane should be under the ceiling level.



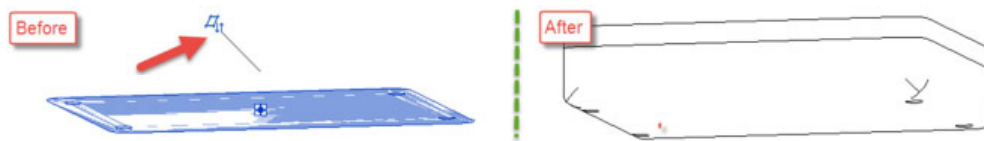
5. Ensure the crop is not preventing the visibility.
6. In a 3D view, check that the section box is activated. Note that section boxes can be hidden both by Element and Category



7. Check that there is not an obstacle in the way. Switch to Wireframe to remove all surfaces and ensure you can see the content. If you can, then you need to hide the object that is causing the obstruction before switching back to a Hidden Line, Shaded or Rendered View



8. If your content is hosted, such as “face based”, “ceiling based” etc. Check have suitable surface like a ceiling present in the view. If not, use a reference plane with a name applied to host the content by selecting ‘Place on Work Plane’
9. Ensure the content is not flipped into the surface. If it is, use the “flip” to switch the side of the surface it is on:

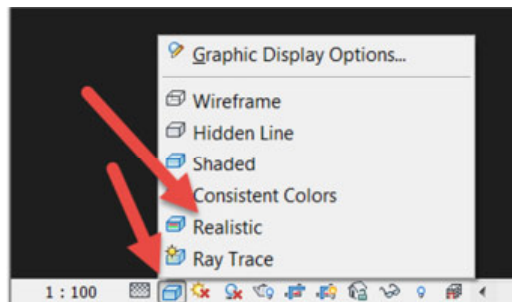


### 3.5 Viewing Materials

Content may have custom materials embedded to ensure the correct representation. If you are unsure if these were included, speak to the content provider.

To view these materials, follow the below steps:

1. Ensure you have extracted the materials as instructed in “Unpacking the Content”. If you have not done this, go to these instructions, follow these and then restart the Revit software.
2. Switch to the Realistic Mode to see the materials



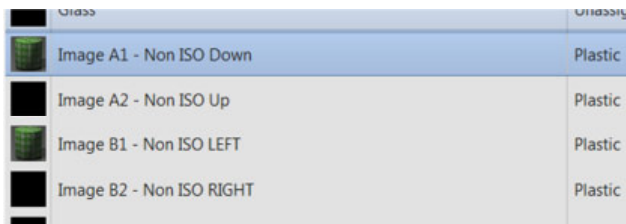



3. Custom materials should now be visible



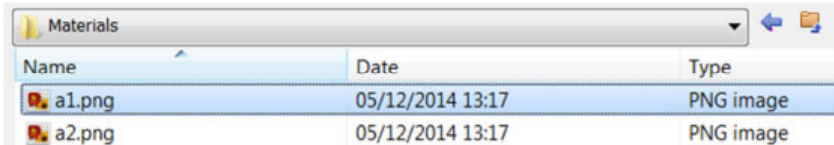
4. If custom materials are still not visible then ensure you have extracted the materials as instructed in “Unpacking the Content” and then restart the software. If you cannot extract the materials go to **C:\LocalRVT\Excitech\Materials**, go to Manage > Materials

5. Find the correct material and double click



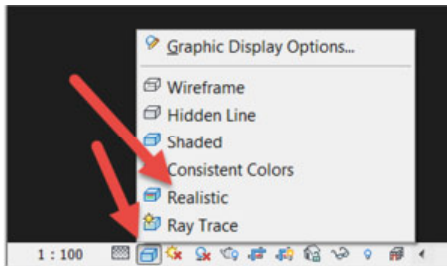
6. Go to the Appearance Asset and select Expand the “Generic” section, you will notice a . Click on this:

7. Navigate to the folder you extracted the materials to and click the image and click Open



8. Repeat this procedure for all materials

9. Switch to the Realistic Mode to see the materials



Custom materials should now be visible.



## 4 PARAMETERS INCLUDED IN THE DATASET

### 4.1 Included Parameter Protocols

Content produced by Excitech usually contains the following protocols as required by the NBS BIM Object Standard:

1. **COBie UK 2012 FM Export**
2. **National Building Specification (NBS)**
3. **Uniclass 2**
4. **IFC**

Hard coded parameters are built into the Autodesk Revit database and are present (by default) in all RVT files. Shared parameters are created by the user and ensure data is stored in the same location within the database for many items of the same type; even if installed from many file locations.

### 4.2 Utilised Revit Hard Coded Parameters

The following Autodesk Revit hard coded parameters have been utilised:

Parameter Name	Description	Revit Units
Comments	General comments	Text
Description	Product marketing description	Text
Manufacturer	Manufacturer of the content	Text
Model	Product codes	Text
Name (Type)	Full product name	Text
Type (Material)	Autodesk material designations, i.e. Plastic	Text
URL	Website URL listing further information on the product	URL

### 4.3 Specification Parameters

For further information on NBS Product Specification, please visit - <http://www.thenbs.com/corporate/about.asp>

The following parameters follow the guidance as issued in the NBS BIM Object Standard

For further information on Uniclass 2, please visit the HM Government's BIM Task Group website - <http://www.bimtaskgroup.org/uniclass2/>

Parameter Name	Description	Revit Units
Author	Name of the person or organisation that authored the object (in this case Excitech Ltd)	Text
BIMObjectName	Alphanumeric text name that identifies and represents the BIM object within the BIM platform	Text
ProductInformation	URL to further product information available on the manufacturer's website	URL
ManufacturerURL	Manufacturer's main website URL	URL
NBS Description	Alphanumeric value of the appropriate NBS clause title from <a href="http://www.nationalbimlibrary.com/api/">http://www.nationalbimlibrary.com/api/</a>	Text
NBSReference	Alphanumeric value of the appropriate NBS clause reference from <a href="http://www.nationalbimlibrary.com/api/">http://www.nationalbimlibrary.com/api/</a>	Text
Revision	Current revision of the content. Filled to whole values, i.e. 1, 2, 3	Number

Uniclass2	Value of the appropriate Uniclass2 classification code and description. Uniclass can be found at <a href="http://www.cpic.org.uk/uniclass2/">http://www.cpic.org.uk/uniclass2/</a>	Text
Uniclass1	Value of the appropriate Uniclass1.4 classification code and description. Uniclass can be found at <a href="http://www.cpic.org.uk/uniclass1/">http://www.cpic.org.uk/uniclass1/</a>	Text
Version	Property completed with a numerical value, stated as a whole number, representing the sequence of the object publication	Text

#### 4.4 COBie Parameters

COBie is the information exchange specification specified by a number of clients, including those utilising the processes included in BSi PAS1192-2/3/4. It is part of the Government Construction Strategy published May 2011 which calls for implementation in 2016.

For further information on COBie and for an example COBie spreadsheet, please visit the HM Government BIM Task Groups website - <http://www.bimtaskgroup.org/cobie-uk-2012/>. The buildingSMARTalliance also has information including instructional videos online at [http://www.nibs.org/?page=bsa\\_cobie](http://www.nibs.org/?page=bsa_cobie)

The following parameters follow the guidance as issued in the NBS BIM Object Standard v1.1

The following COBie Parameters are utilised:

Parameter Name	Description	Revit Units
Name	Name of the product	Text
Category	Products are categorised using the Uniclass 2 classification system	Text
Description	A condensed version of our product description Review product specification data for more detail	Text
AssetType	The COBie approved values are fixed or moveable	Text
Manufacturer	Manufacturers name	Text
Model Number	Product model number	Text
WarrantyGuarantorParts	The parts gurantor	Text
WarrantyDurationParts	The duration in years of a parts warranty	Number
WarrantyGuarantorLabor	The labor gurantor	Text
WarrantyDurationLabor	Duration set in years	Number
WarrantyDurationUnit	The unit value of our warranty durations is years	Text
ReplacementCost	The cost of replacing the item	Text
ExpectedLife	The expected life of the item	Text
DurationUnit	All durations are shown in years	Text
WarrantyDescription	Description of any warranty terms	Text
NominalLength	Filled out in millimetres if available	Length
NominalWidth	Filled out in millimetres if available	Length
NominalHeight	Filled out in millimetres if available	Length
ModelReference	Name of the product	Text
Shape	Description of product shape if available	Text
Size	Overall size in millimetres if available	Text
Colour	Description of general product colour if available	Text
Finish	Description of finishes if available	Text
Grade	Description of standard grading if available	Text
Material	Description of materials if available	Text
Constituents	Description of parts within the products.	Text
Features	Description of any product features if available	Text

AccessibilityPerformance	Description of any known accessibility issues if available	Text
SustainabilityPerformance	Environmental statement	Text
CodePerformance	Description of any relevant standards or codes if available	Text

The following properties are also included as instance parameters and would be completed by the asset management team for each individual installation:

- 'SerialNumber' property completed with an alphanumeric default value 'n/a'
- 'InstallationDate' property completed with the default value '1900-12-31T23:59:59'
- 'WarrantyStartDate' property completed with the default value '1900-12-31T23:59:59'
- 'TagNumber' property completed with an alphanumeric default value 'n/a'
- 'Barcode' property completed with an alphanumeric default value 'n/a'
- 'AssetIdentifier' property completed with an alphanumeric default value 'n/a'

## 4.5 Industry Foundation Class (IFC)

The IFC file type is a platform neutral, open file format specification that is not controlled by a single vendor or group of vendors. It is an object-based file format with a data model developed by buildingSMART to facilitate interoperability in the architecture, engineering and construction (AEC) industry. It is a commonly used collaboration format in Building information modelling (BIM) based projects. The IFC model specification is open and available. In theory, it should enable you to use data in other BIM packages such as Graphisoft ArchiCAD.

Autodesk Revit allows for IFC export using an in-built exporter. IFC is a rapidly developing schema and several new releases of the IFC exporter are often developed within a single Revit software release cycle. If you are required to export to IFC we recommend you update the IFC exporter included in Revit to the latest addition. These tools can be found on the Autodesk Exchange Store - <http://apps.exchange.autodesk.com/RVT/en/Home/Index> and also <http://sourceforge.net/projects/ifcexporter/>

The content is supplied with parameters which are aligned to the IFC Property Sets (PSETS) required within the schema. These differ between types of elements, so a light fixture is required to have different properties in IFC schema to a plug socket. Below we list the common property sets, which includes the IFCExportAs, which is the IFC category. A full description of PSETs go to, <http://www.buildingsmart-tech.org/ifc/IFC2x3/TC1/html/index.htm> and then > Property Sets > PSD Alphabetical Index > then click on the individual PSET.

Please note the owner of the content, the content hosts and the authors are able to offer further advice or support on using this content in software other than Autodesk Revit.

Parameter Name	Description	Revit Units
IfcExportType	IfcExportType to define the PredefinedType of the specific IFC type	Text
IfcExportAs	IfcExportAs for the specific IFC Entity or type to be assigned to	Text

## 5 CONTACT INFORMATION

Please review contact information as included in the Revit Content.