Archicad How-to Guides

2022

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1 Preface

It is recommended that users have gone through the documents in the resource kit, which provides an overview on the requirements and the importance of preparing an IFC model for submission to Corenet X;

Step 0) How to Learn IFC-SG,

Step 1) IFC 101,

Step 2) Industry Mappings,

Step 3) Configurations (respective BIM Authoring Tool)

Users may refer to Step 4) Exercise on IFC Key Data Structure to verify their understanding when they have completed all the steps listed above.

2 Introduction

IFC-SG aims to adopt the international Industry Foundation Classes (IFC) standard as the base for the common representation for BIM submission. IFC is a standardized, digital description of the built asset industry. It is an open, international standard (ISO 16739-1:2018) and promotes vendor-neutral, or agnostic, and usable capabilities across a wide range of hardware devices, software platforms, and interfaces for many different use cases.

This document is intended as a reference for the users in preparing BIM files for submission in IFC-SG. It contains software configuration setup, export settings, and IFC-SG-specific concepts used to map the native information for the applicable IFC-SG export.

2.1 UNDERSTANDING IFC-SG

With IFC being a semantically rich data structure, IFC Concepts are captured and used to map objects for IFC-SG. The building elements listed in the IFC-SG BIM Objects Dictionary are derived from various regulatory handbooks that are mapped in the early stage of IFC-SG. These objects are any physical elements referred to as BIM concepts such as walls, doors, and windows, and non-physical elements such as building containers, space, properties, and material information. IFC Concepts provide another level of identifying what an object is. IFC concepts are

- Standard IFC entities and types,
- predefined type enumeration, and
- IFC standard property set(s).

When no directly appropriate entity, predefined type, or property set is found, standard extension using USERDEFINED ObjectTypes and USERDEFINED PropertySets “SGPset_” is used.

2.2 IFC4 REFERENCE VIEW

IFC-SG is mapped using IFC4 Reference View, which is currently the broadest proliferation of IFC BIM data across many software application types supporting different communication and collaboration workflows.

IFC4 Reference View is particularly suitable for all BIM workflows that are based on reference models, where the exchange is mainly one-directional, similar to the workflow defined for the exchange in requirements in IFC-SG.

2.3 IFC-SG AS AN MVD

IFC-SG is like what an MVD does. It is only a subset of requirement definition from the overall IFC schema to describe data exchange for a specific use or workflow. Mainly, it narrows down the scope of the IFC schema to one that will be used as an exchange requirement for the local building plans submission using a neutral format.

3 Archicad

3.1 GENERAL BIM GUIDE

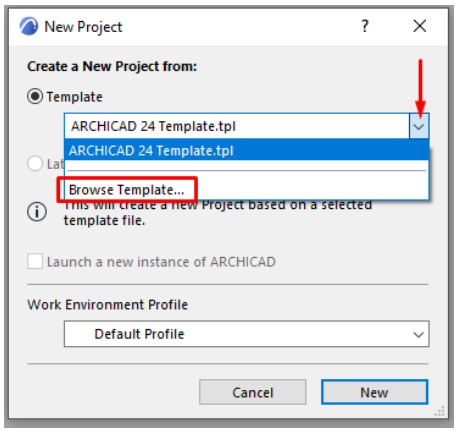
Note: It is preferable to use the original IFC referencing Guide from the authoring tool
https://learn.graphisoft.com/visitor_catalog_class/show/34409

3.1.1 USING IFC-SG TEMPLATE (NEW PROJECTS)

The userdefined-predefined type and userdefined psets are not included in Archicad's default template. These will be included in the template file. It is necessary to load the template file into the project to use it.

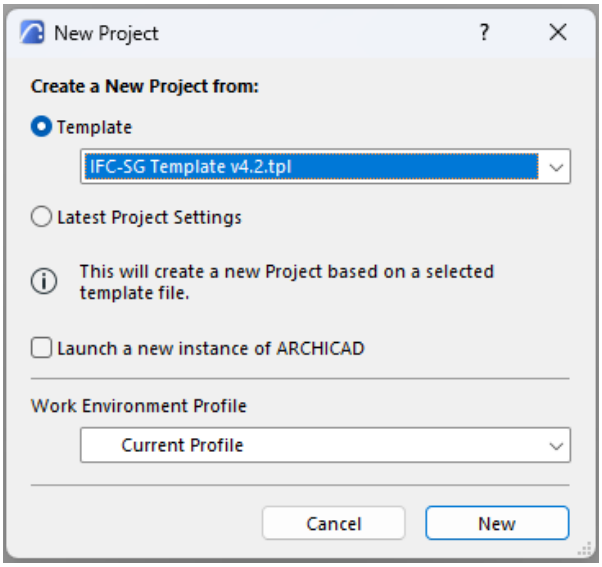
For advanced users who wish to customise the template further, please refer to Section 4 of the Archicad How-To guide for more information.

1. When creating a new project in Archicad, open the dropdown menu for the template and select *Browse Template*.



Loading IFC-SG Template

2. Select the IFC-SG template and click *New* to create a new project.



Loading The Tpl File

3.1.2 USING IFC-SG TEMPLATE (FOR UPDATE TO EXISTING PROJECTS)

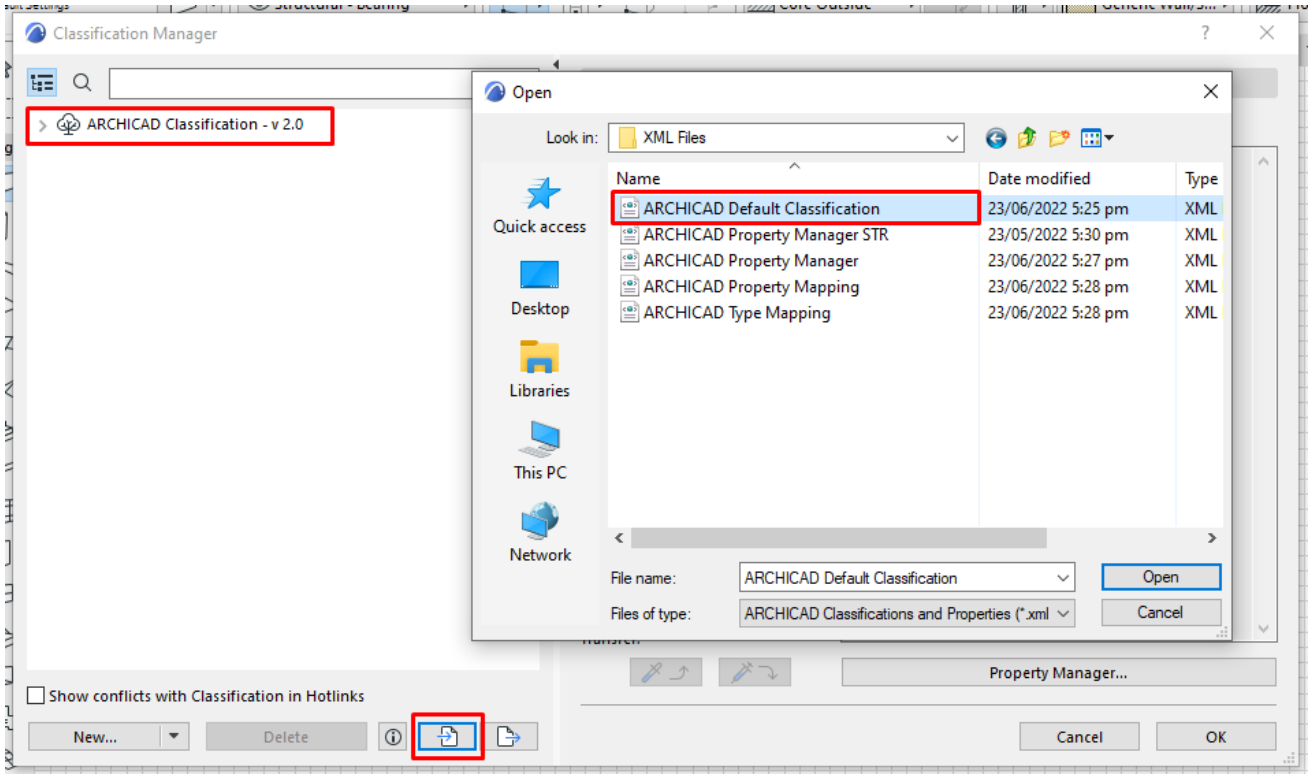
XML files containing the IFC-SG objects, systems, and properties can be loaded into an existing project to update the classification system and property manager.

TPL file containing the IFC-SG type mapping and settings can be loaded into an existing project to update the IFC translator.

Note: Importing XML into an existing project can produce different results depending on the structure of the existing Classification system in the model, but in Archicad, use classification schedule to map/update existing classifications.

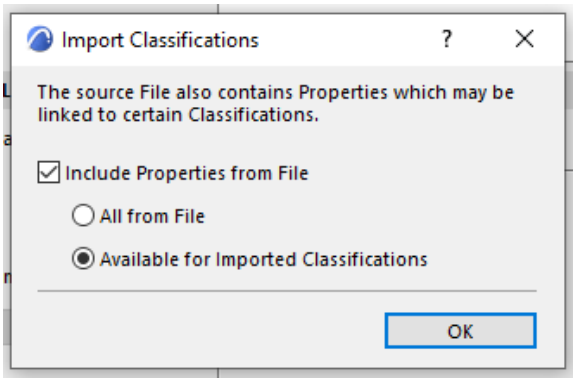
Importing Classification System and Property Manager via XML:

1. Go to *Option* select the **Classification Manager**.
2. Click the import button at the lower part of the window. Select the proper Classification XML files and click *Open*.



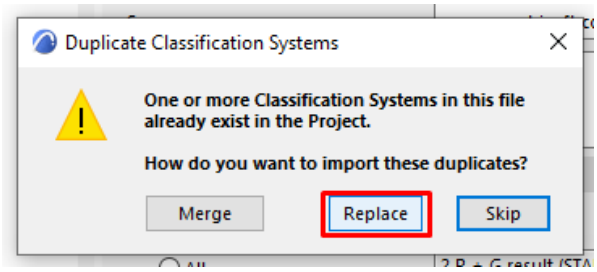
Adding A New Classification System

3. A pop-up dialog box will appear, with two options to import classification. **All from Project:** Export all Properties. **Available for Imported Classifications:** Export only those available properties among the Classification System are exporting.



Including The Properties Form File

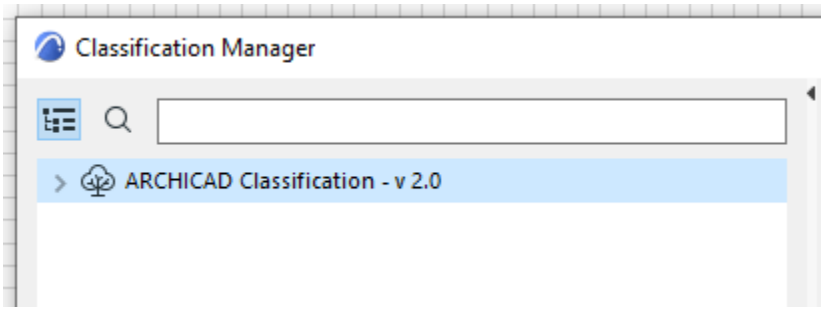
4. A pop-up box will appear for duplicate properties; select **Replace:** to replace objects already existing on the default Classification System. **Merge:** Incoming Classifications that do not already exist in the project are added to it. When there are duplicate Classifications, a dialog box appears with options for how to handle them.



Duplicated Objects for Classification

If successful imported, Classification systems will appear highlighted. Click *OK* to save.

5. Note: This step will also ensure that the property manager is updated.

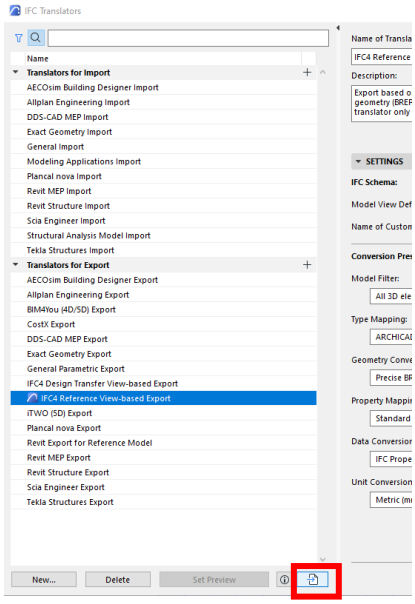


Successful Importing of the Classification System XML

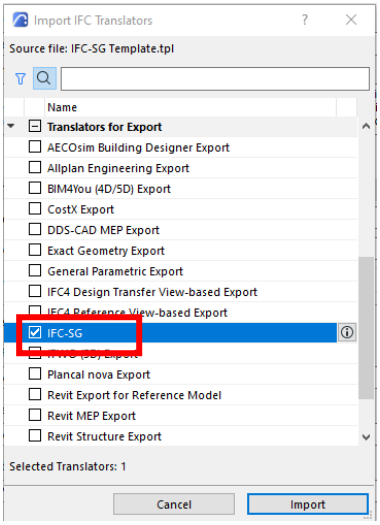
Using TPL file to update IFC Translator:

6. Go to **File > Interoperability > IFC choose the IFC Translators**.

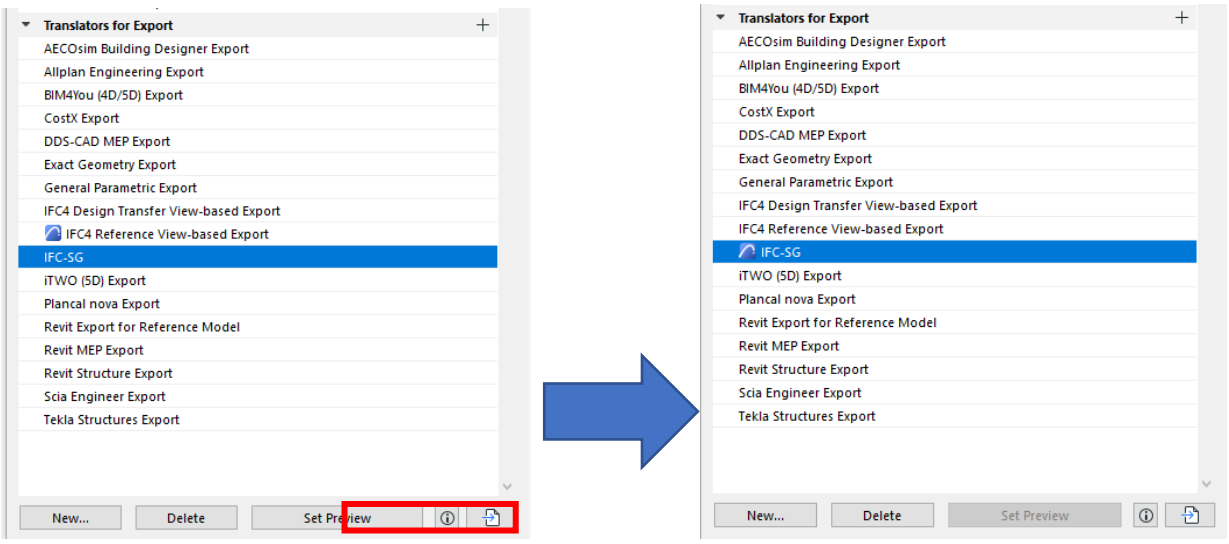
7. In the IFC Translator dialog, select “Import translator from external file” 



8. Select “IFC-SG” from tpl provided and click “Import”



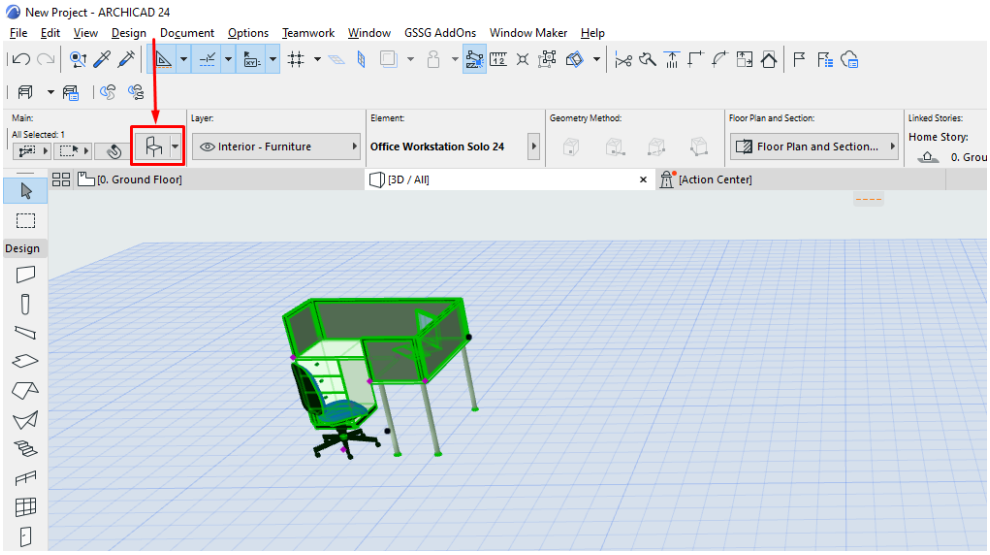
9. Select “Set Preview”



3.2 CLASSIFYING OBJECTS

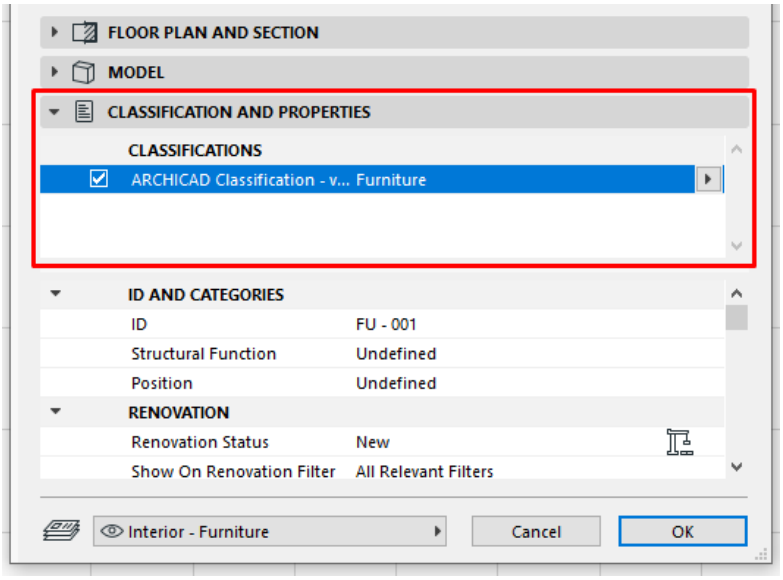
As a default, all objects in Archicad's library have a classification. However, there are instances when such classifications are inaccurate for the object. Furthermore, if new objects are imported or downloaded to the library, no classification will be assigned to them. The classifications can be easily modified in such cases using the Settings Dialog.

1. Select the object and open the settings dialog.



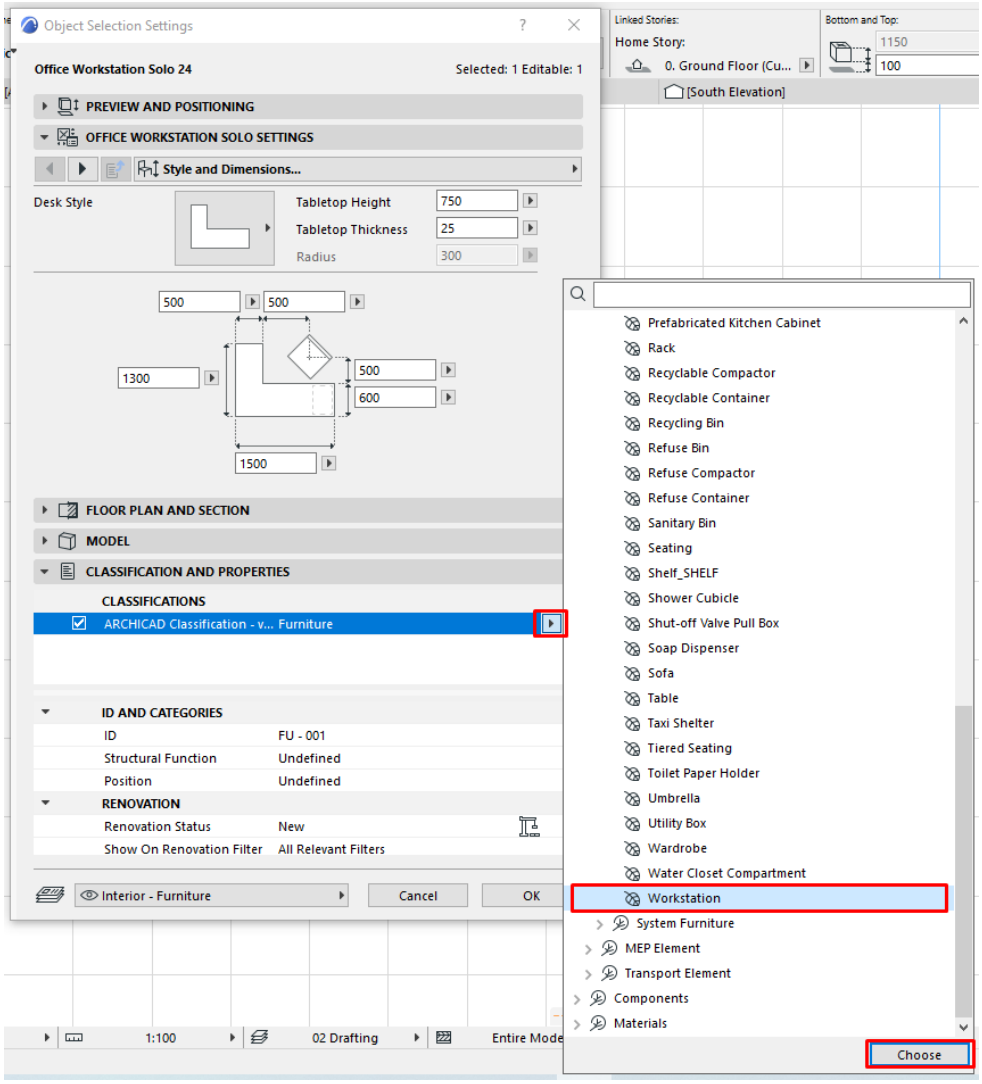
Classifying Objects

2. Open the Classifications and Properties toggle and open the dropdown menu for ARCHICAD Classification.



Classification Tree

3. Select the appropriate classification for the object and click *Choose.* Click *Ok* to apply the changes.

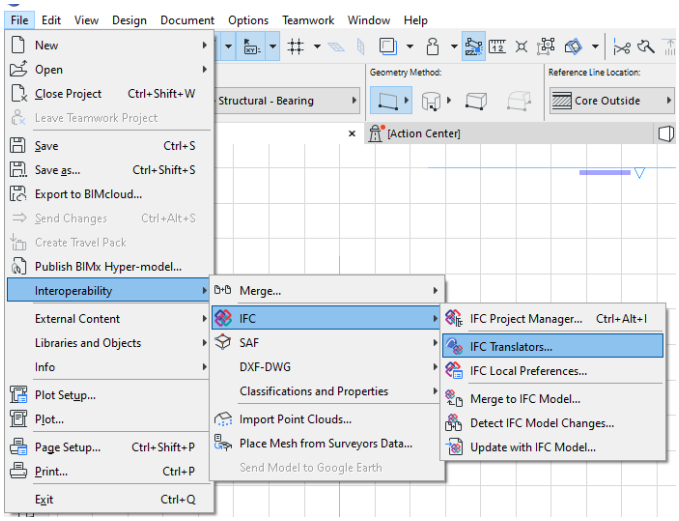


Selecting The Specific Classification

3.3 EDITING OBJECT TYPES

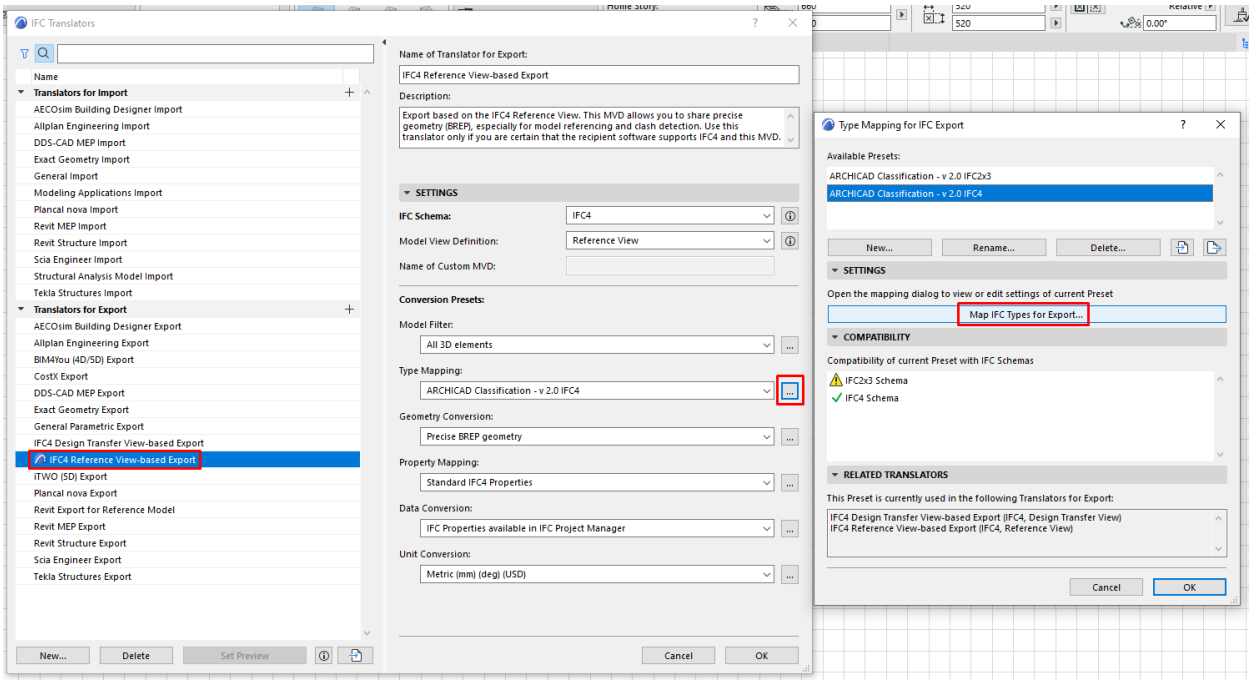
All objects in Archicad's default Classification Manager and in the template, already have an object type. To change object types, please follow the steps below.

1. To select Predefined Type or Userdefined Object Type for an object, under ***File > Interoperability > IFC*** choose the ***IFC Translators***.



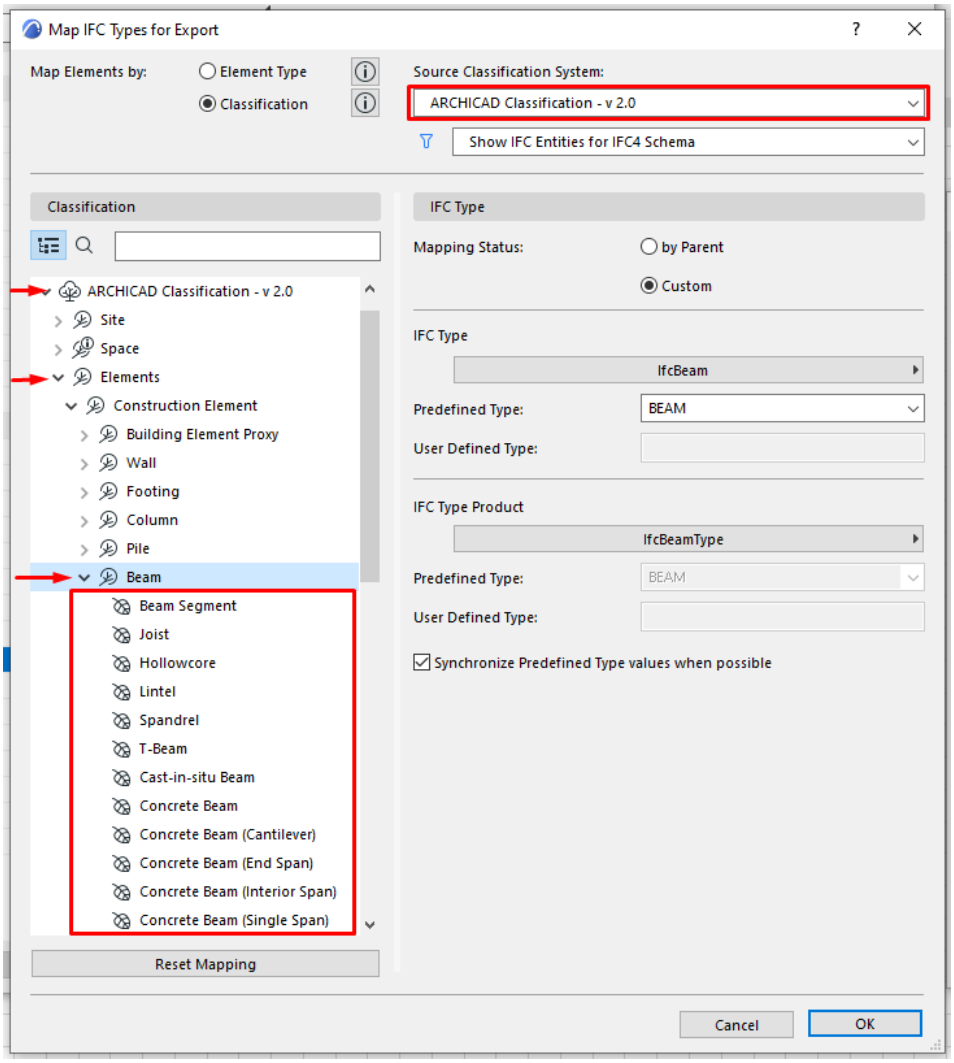
File Location For IFC Translator

2. Under Type Mapping, click the button on the right side to edit the type mapping presets. Select ***Map IFC Types for Export***.



Mapping IFC Types For Export

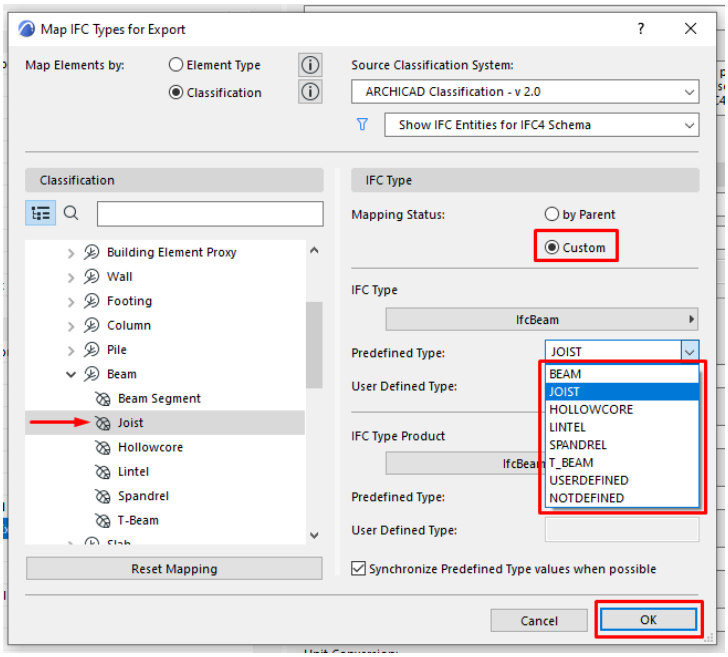
3. Choose an object from the Classification structure. Select the Classification System to which the object belonged in the Source Classification System.



Selecting Specific Object Under Classification Structure

3.3.1 PREDEFINED OBJECT TYPES UNDER IFC PROJECT MANAGER

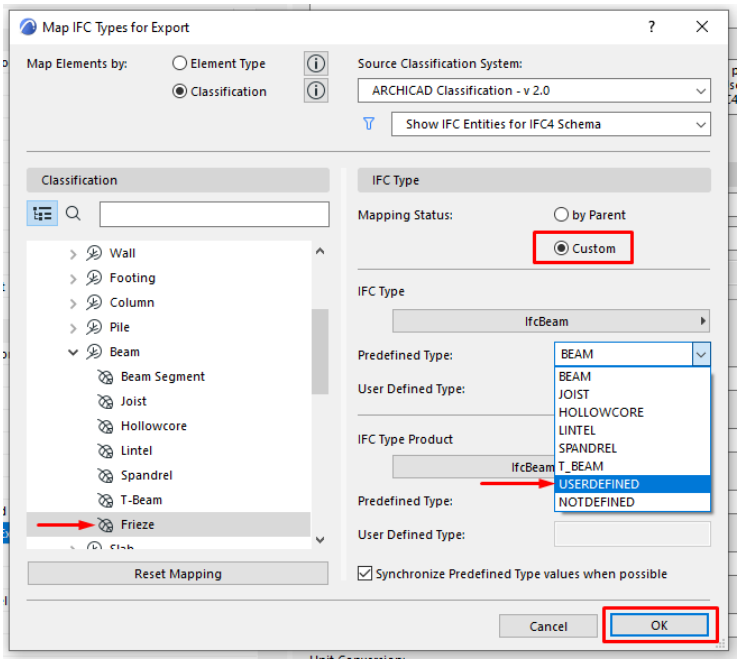
1. To change the object type, under *IFC Type* > *Mapping Status,* click *Custom* and choose from the Predefined list available. Click *OK* to save.



Selecting The Proper Predefined Type

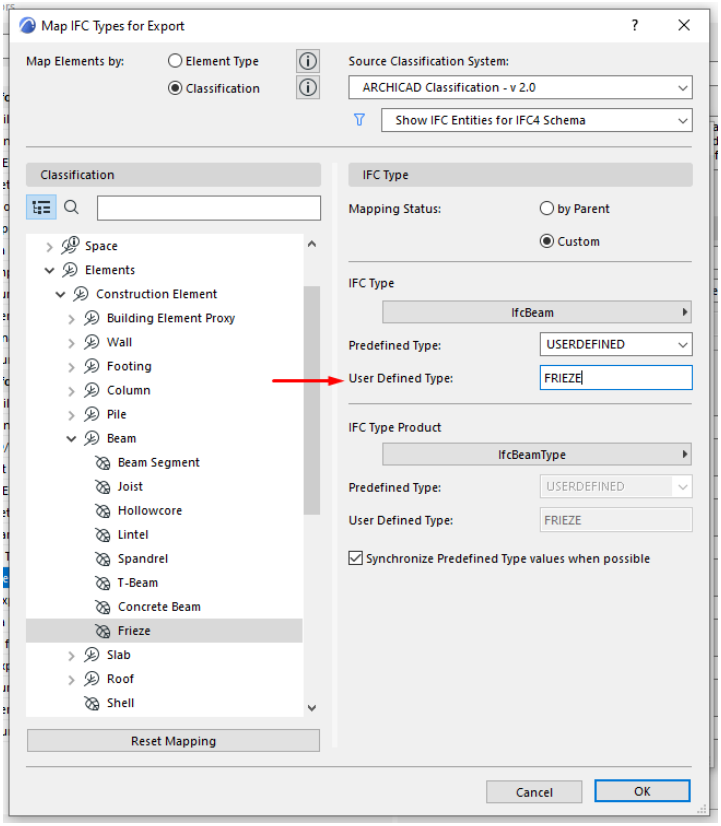
3.3.2 USERDEFINED OBJECT TYPES UNDER IFC PROJECT MANAGER

2. For Userdefined object type, under the Predefined Type list choose **USERDEFINED**.



Selecting The Userdefined Under The Predefined Type List

1. The *User Defined Type* tab will be available for custom values; enter the value and then click *OK* to save.



Inputting The Proper Userdefined Value Under User Defined Type

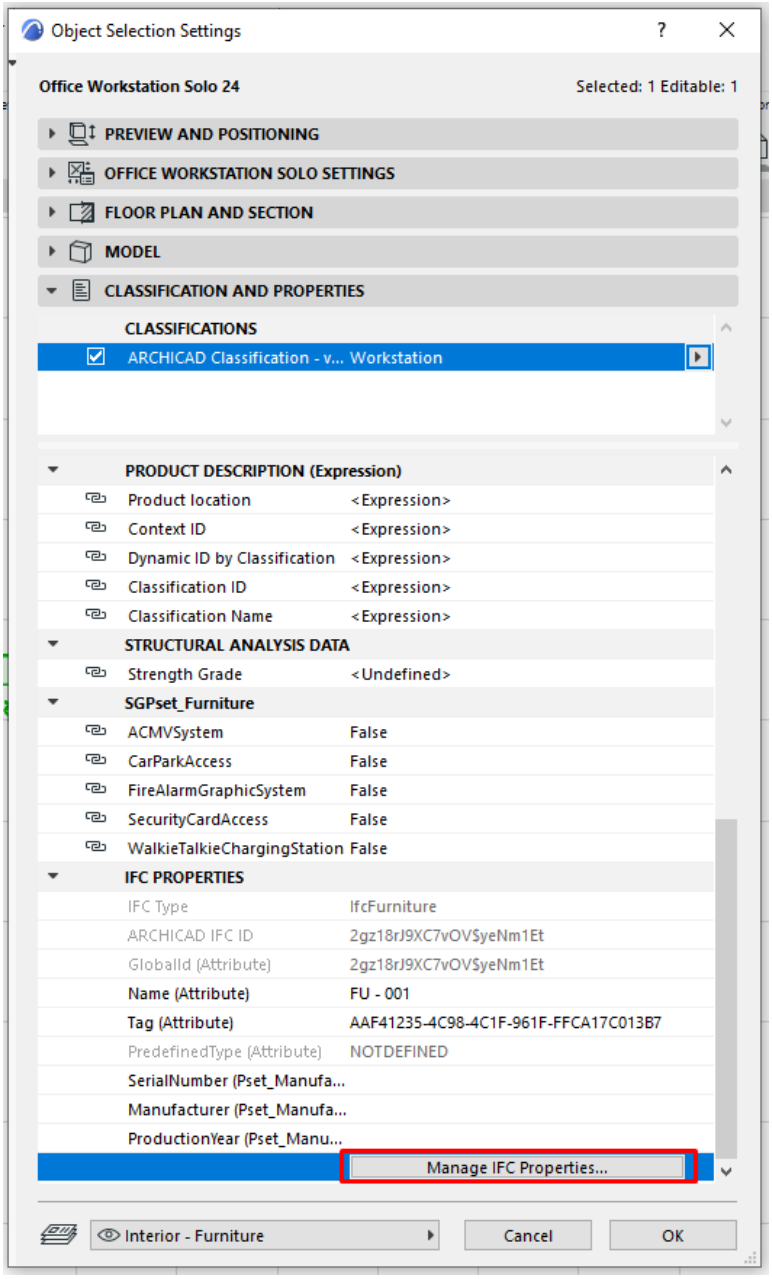
3.4 EDITING PROPERTIES

Predefined properties for objects are available by default in Archicad. The processes to populate the attributes dependant on the object for Userdefined properties are listed below.

For any object in the model, its properties can be found and edited in the ***Settings Dialog***.

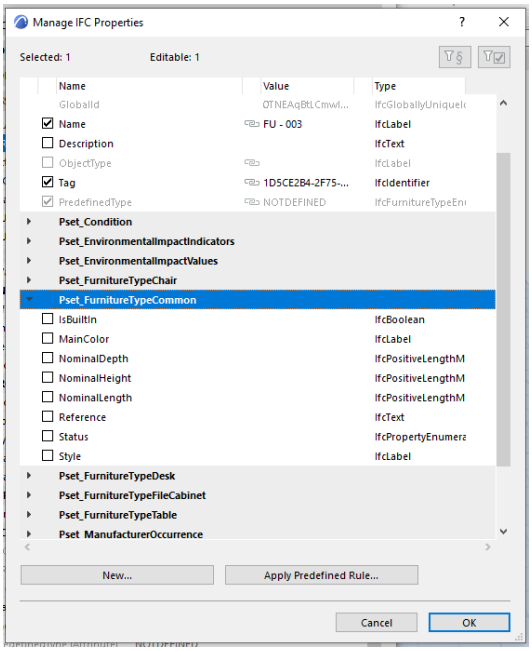
3.4.1 PREDEFINED PROPERTIES UNDER MANAGE IFC PROPERTIES

1. Select the object and open the *Settings Dialog.*
2. Go to the ***Classifications and Properties*** toggle and scroll down to the bottom and click the ***Manage IFC Properties*** button.



Selecting Manage IFC Properties Under Object Selection Settings

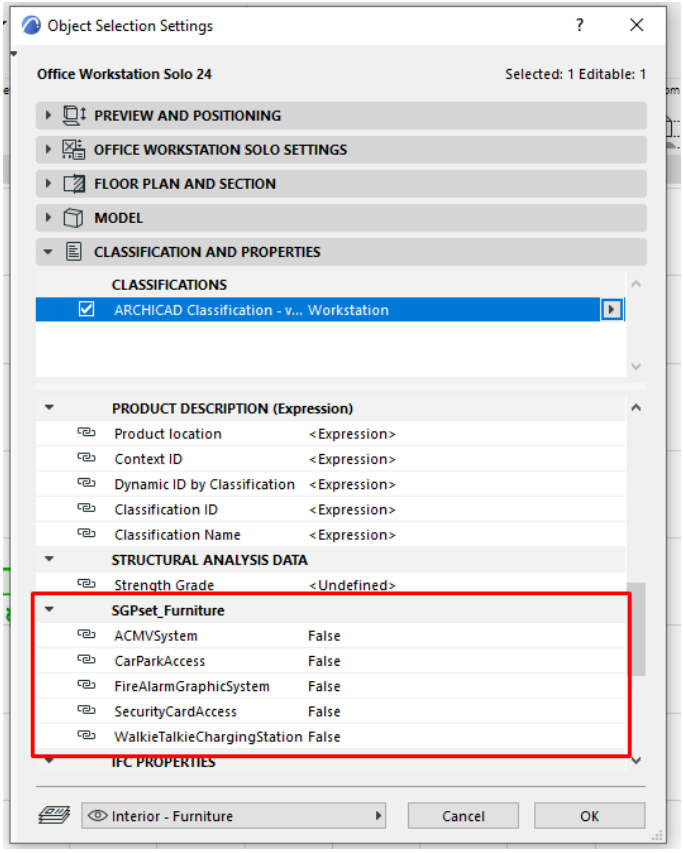
3. Open the toggle list to select properties and add specific values. After editing, click *Ok.*



Under The Selected Property Set, Check The Box Of The Property And Add The Value

3.4.2 USERDEFINED PROPERTIES UNDER OBJECT SELECTION SETTING

1. Select the object and open the *Settings Dialog.*
2. Go to ***Classifications and Properties*** toggle and find the userdefined properties grouped under the userdefined property sets. After editing, click *OK* to save.



Sgpset_Furniture Property Sets Under Object

3.4.3 PROPERTIES UNDER IFC PROJECT MANAGER

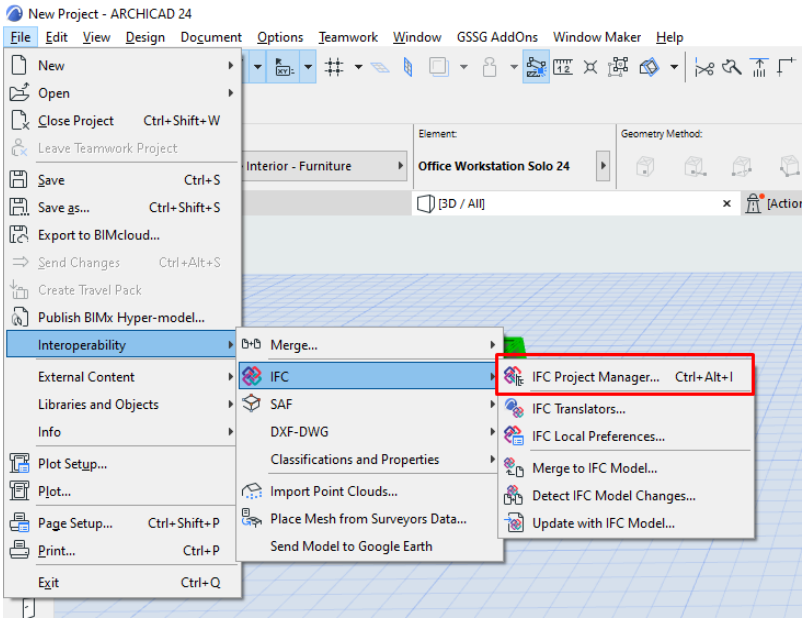
Predefined and Userdefined properties for:

1. IfcBuilding,
2. IfcBuildingStorey,
3. IfcBuildingSystem,
4. IfcDistributionSystem,
5. IfcGroup,
6. IfcProject
7. IfcSite,

8. IfcSystem,
9. IfcZone

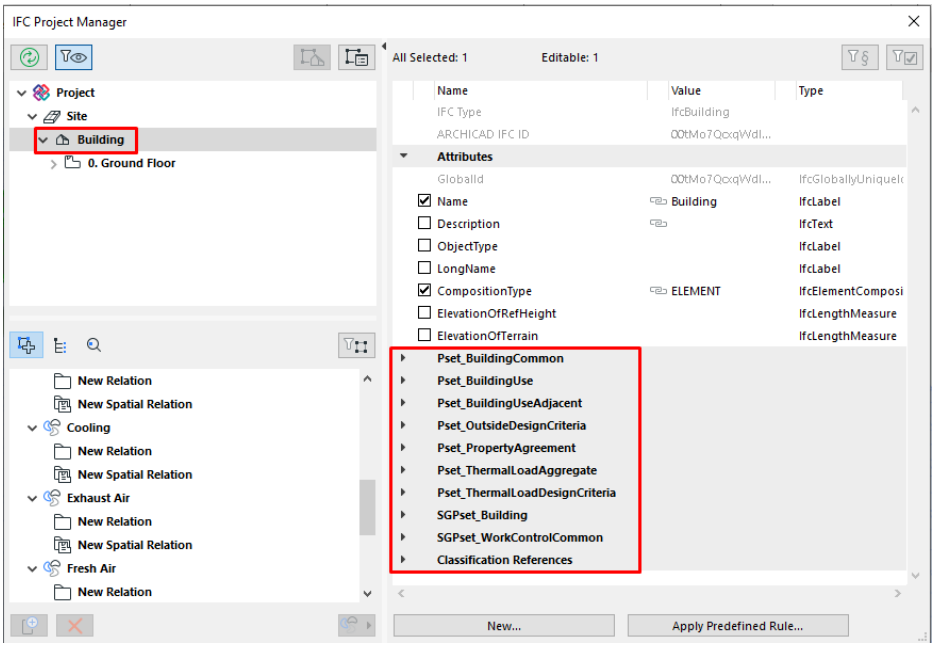
can be found and edited in the ***IFC Project Manager.***

1. *IFC Project Manager* can be found under *File* > *Interoperability* > *IFC* or use the shortcut key Ctrl + Alt + I



File Location For IFC Project Manager

2. Select the object and open the toggle list to see and edit its properties



Property Sets For Ifcbuilding

3. After editing, close the dialog box to apply the changes.

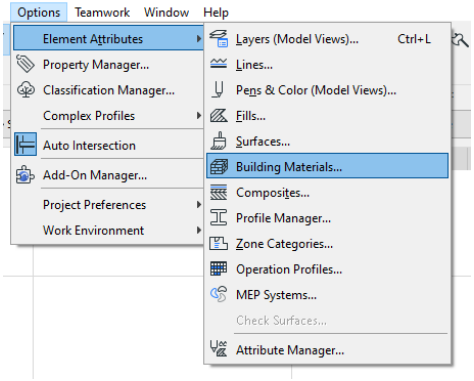
3.4.4 IFCMATERIAL/ IFCMATERIALLAYER

The material and material layer attribute is present in Archicad for basic objects and will automatically export as IfcMaterial and IfcMaterialLayer, while some objects have a surface attribute.

Building Materials: A Building Material is a “super attribute”, a combination of multiple attributes having defined properties. Building Materials are defined globally, in the Building Materials dialog box, then applied to construction elements in their own Settings dialog boxes, or used as components of Composite Structures and Complex Profiles. Editing the Building Material attribute makes changes throughout the model. Building Materials can be Classified, and properties can be assigned to them.

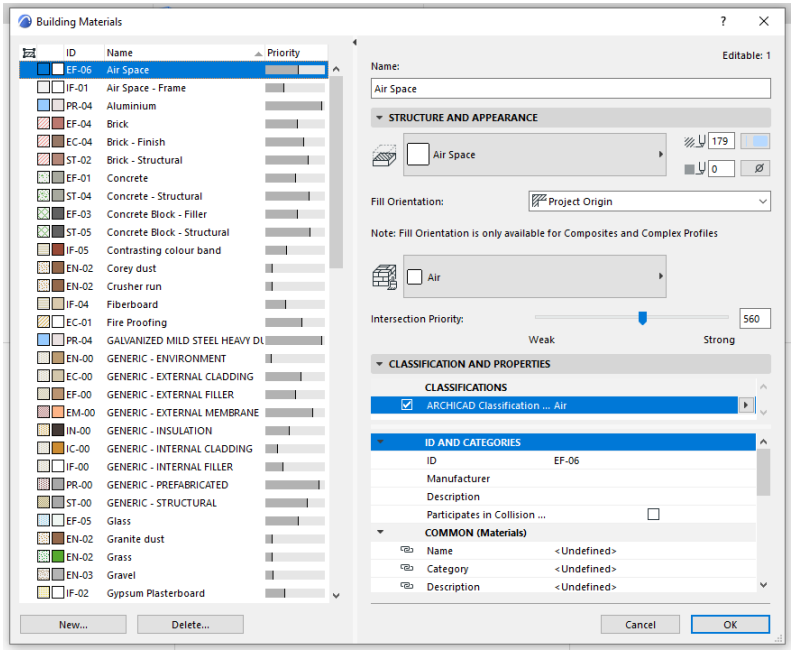
The Building Material combines the following: Cut fill, Cut fill pens (foreground/background), Intersection Priority, Fill orientation (if used for a composite or complex element), surface, and Classifications and properties, including Physical Properties.

1. Use *Options* > *Element Attributes* > *Building Materials* to open the Building Materials dialog box.



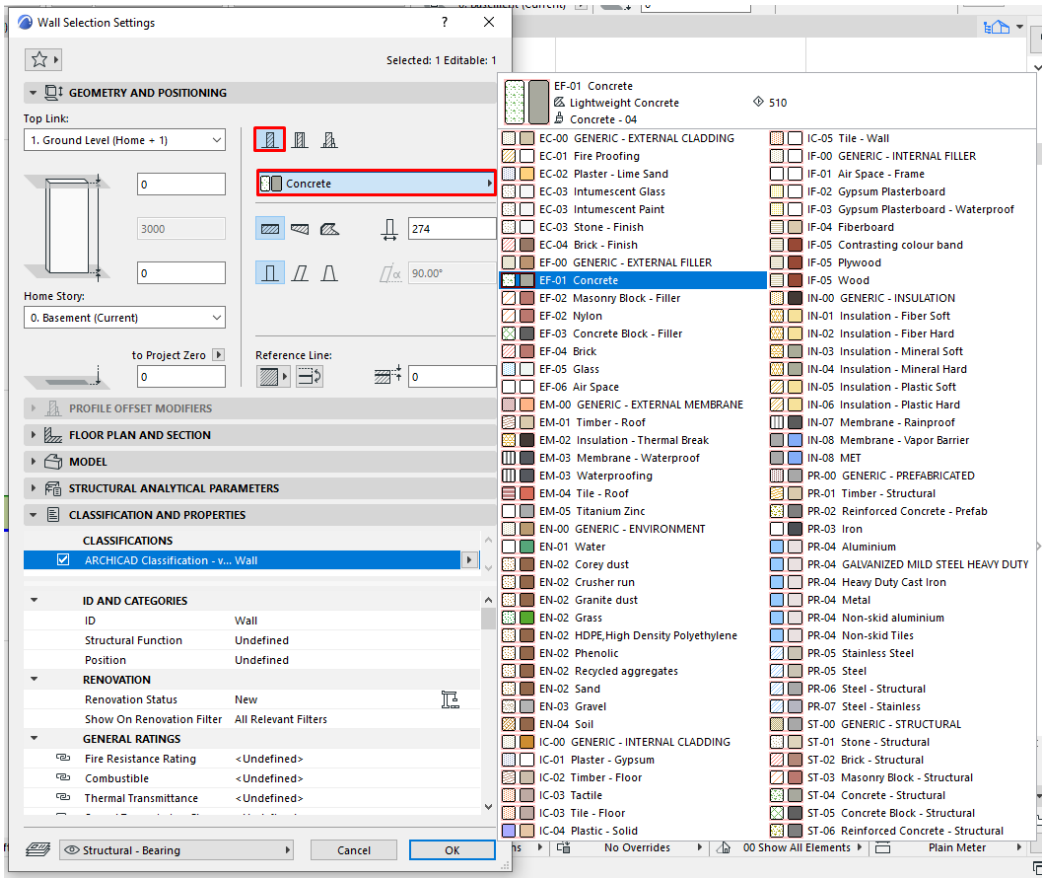
File Location For Building Material

2. Define, edit, duplicate, rename or delete Building Materials.



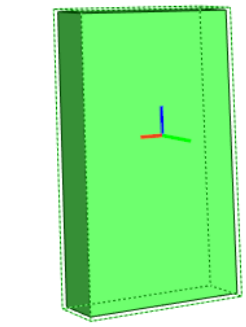
Building Material

3. To apply the building material to object. Open the Element Settings dialog box for the element type. In the **GEOMETRY AND POSITIONING** Panel, define the element's structure as a basic by clicking on the "basic" icon. Use the pop-up dialog box to choose a building material.



Applying Building Material To The Object

4. In an ifc file the building material can be seen under *ArchiCADProperties*:



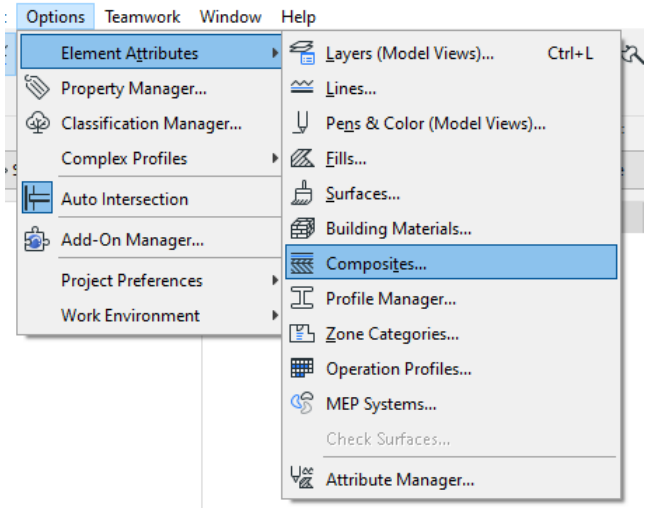
Element Specific	
Guid	33a5qgUX5FE8u3S_tD8dwT
IfcEntity	IfcWall
Name	Wall
PredefinedType	MOVABLE
Tag	C3905D2A-7A11-4F38-8E03-73EDCD227E9D
ArchiCADProperties	
Absolute Top Link Story	Ground Level
ARCHICAD Classification - v 2.0	Wall
ARCHICAD IFC ID	33a5qgUX5FE8u3S_tD8dwT
Building Material	Concrete
Building Material / Composite / Profile / Fill	Concrete
Building Materials (All)	Concrete
Colliding Zones	
Edge Surface	Concrete - 04
Element ID	Wall
Element Type	Wall
External IFC ID	
Geometry Method	Uniform
Home Story Name	Basement
Home Story Number	0
Hotlink and Element ID	Wall

BIMvision

Exporting Building Material

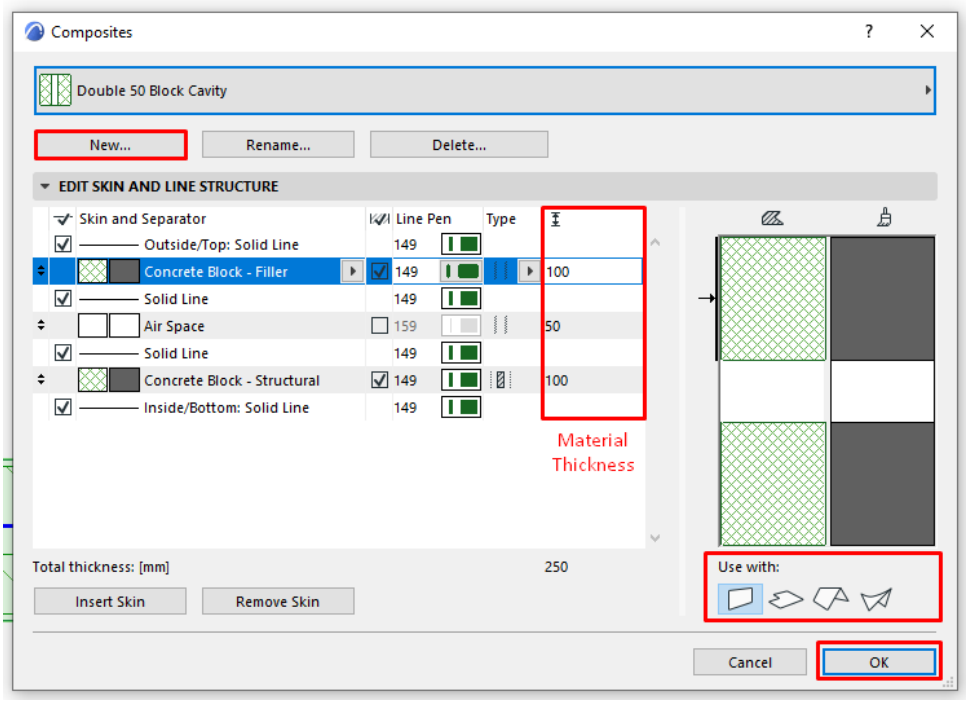
Composites: Composite Structures are defined for specific element types: Wall, Slab, Roof, and/or Shell, by the “Use With” control

1. Under *Options* > *Elements Attributes* > *Composites*



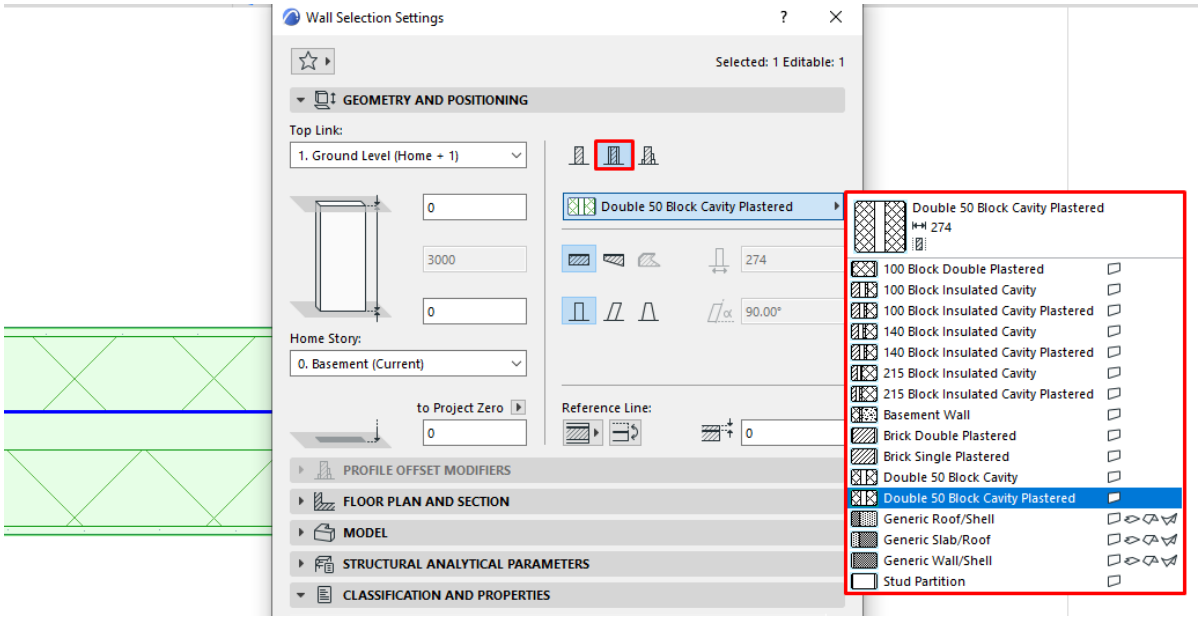
File Location For Composites

2. To create click *new* and add a name, modify the material for each skin and select the object in which the composite will be used with:



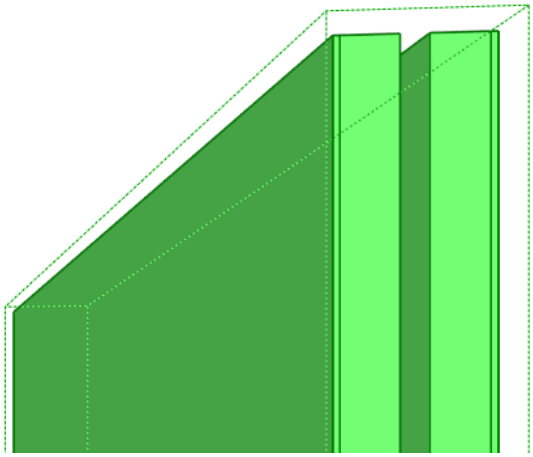
Composites

3. To apply the composite to object. Open the Element Settings dialog box for the element type. In the **GEOMETRY AND POSITIONING** Panel, define the element’s structure as a composite by clicking on the “Composite” icon. Use the pop-up dialog box to choose a composite structure. Notice the icon that indicates whether the selected composite contains a Core or not. In this selection since the core is *Air Space* it wil be hollow.



Applying Composites To The Object

4. In an ifc file it will be exported as *Material Layer*:



IFC Structure

Active	Type	Name	Description
	Project	Project	
	Site	Site	
	Building	Building	
	Building Storey	Basement	
	Walls		
√	Wall	Wall	
	Material layer	Plaster - Gypsum	
	Material layer	Concrete Block - Structural	
	Material layer	Concrete Block - Filler	
	Material layer	Plaster - Gypsum	
	Wall Type	Double 50 Block Cavity Plastered 274	

Composites Material As Material Layer

3.5 ADDING AN OBJECT TO THE MODEL

Additional objects can be downloaded in Archicad using the *Settings Dialog* or by visiting websites and adding them to the project's library.

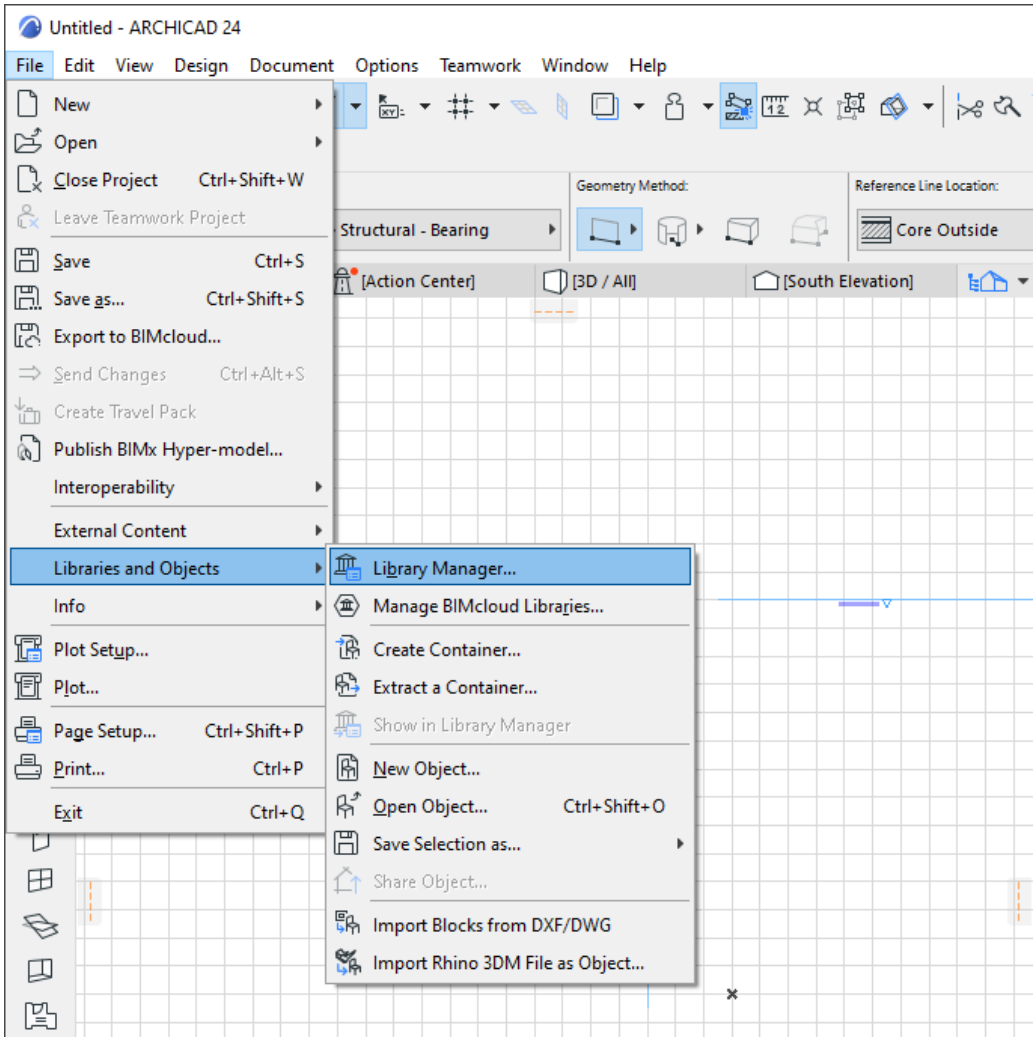
3.5.1 OBJECT MAKING WITH ARCHICAD

By modeling it to the project, you can create specific objects that aren't in the library or on the Graphisoft website for download, and then add IFC information and properties to them. On the Graphisoft website, there is a ten-part series in which a specific topic is thoroughly discussed. For more information, please see the link provided below.

https://sg-my.learn.graphisoft.com/visitor_catalog_class/show/33666

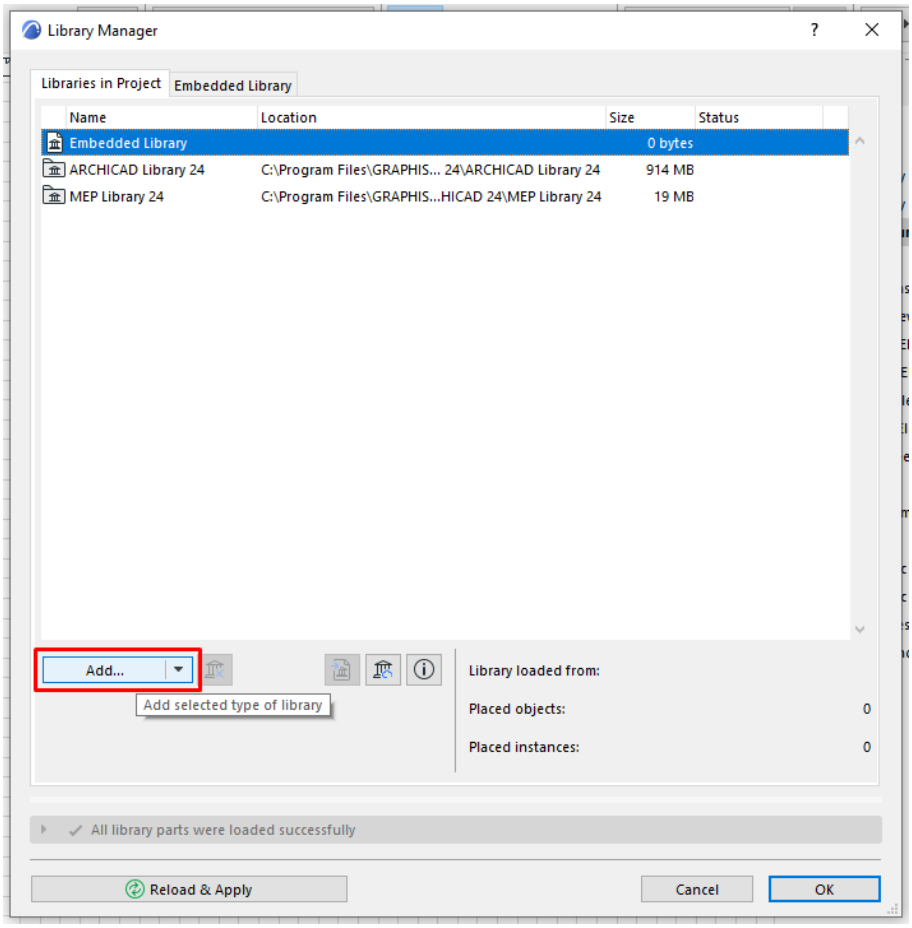
3.5.2 ADDING NEW LIBRARY CONTAINER FILE TO THE LIBRARY MANAGER

1. Go to File > Libraries and Objects > Library Manager



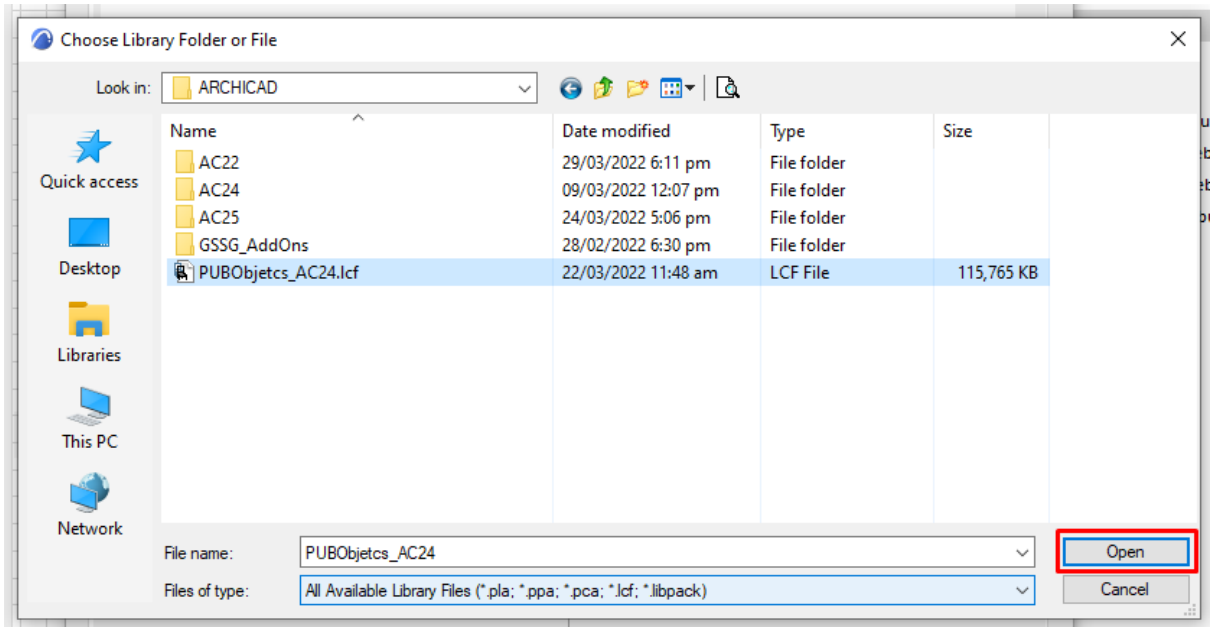
Selecting Library Manager

2. Click the ***Add selected type of library*** at the bottom of Library Manager.



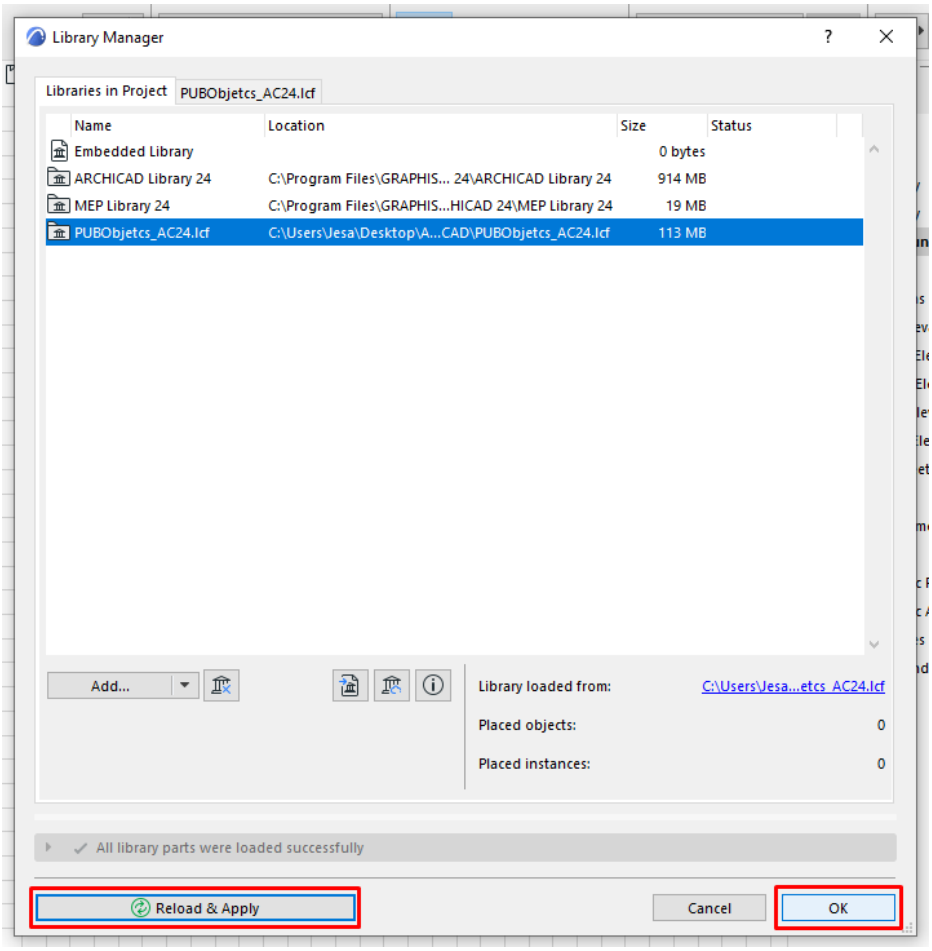
Adding A New Library

3. Select the appropriate lcf (Library Container File) to add to the Library Manager. Click ***Open*** to load.



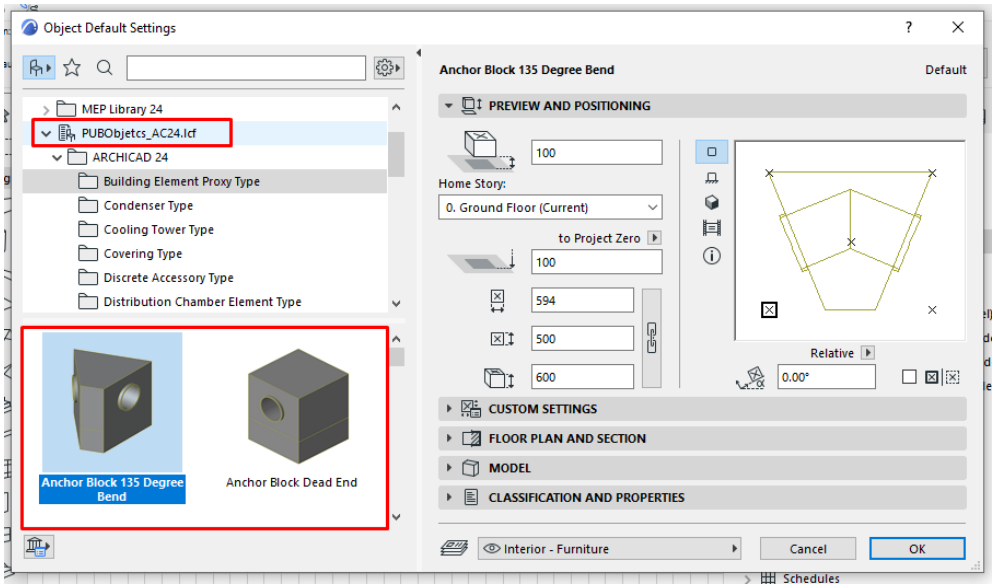
Selecting The Additional Library

4. Once imported click ***Reload and Apply*** and click ***OK*** to save.



Reload & Apply The Changes

5. Once loaded, the object can be opened in *Object Tool* and used for modelling.



Added Object Library

3.5.3 ADDING NEW OBJECTS FROM EMBEDDED & BIMCLOUD LIBRARIES

Export the embedded library to a local folder or BIMCloud libraries, then add it to the project library using the library Manager. To avoid increasing the file size, ensure that the embedded library library is removed.

The **Embedded Library** stores custom, project-specific objects in the project itself (rather than in your file system or on the BIMcloud), to ensure that they are always available and editable. For detailed procedure please see the link provided below.

https://helpcenter.graphisoft.com/user-guide/127914/

BIMcloud Libraries are located on the BIMcloud, but added to your project. You can add a BIMcloud Library to any project, either solo or Teamwork (provided that you can access the server).

To use a BIMcloud Library in either a Teamwork project or a solo project, do the following:

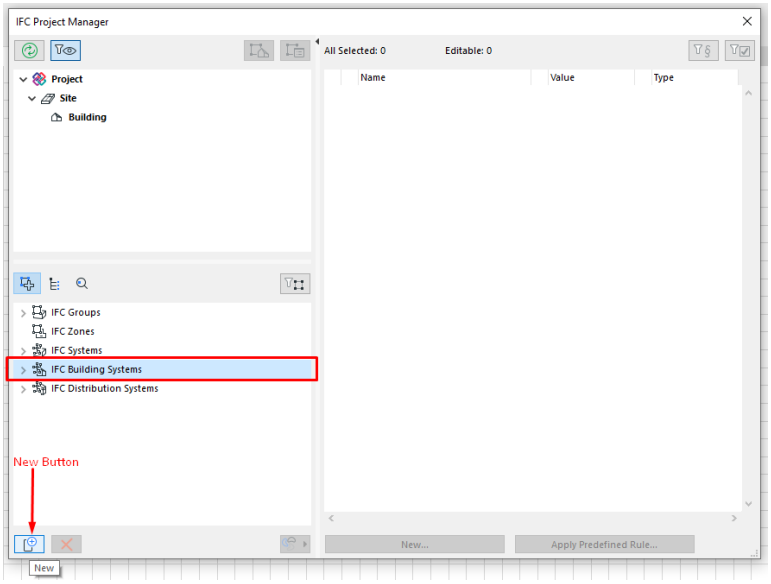
Upload the library to a BIMcloud

Add the library to the project using ARCHICAD's Library Manager.

3.6 IFCDISTRIBUTIONSYSTEM AND IFCBUILDINGSYSTEM

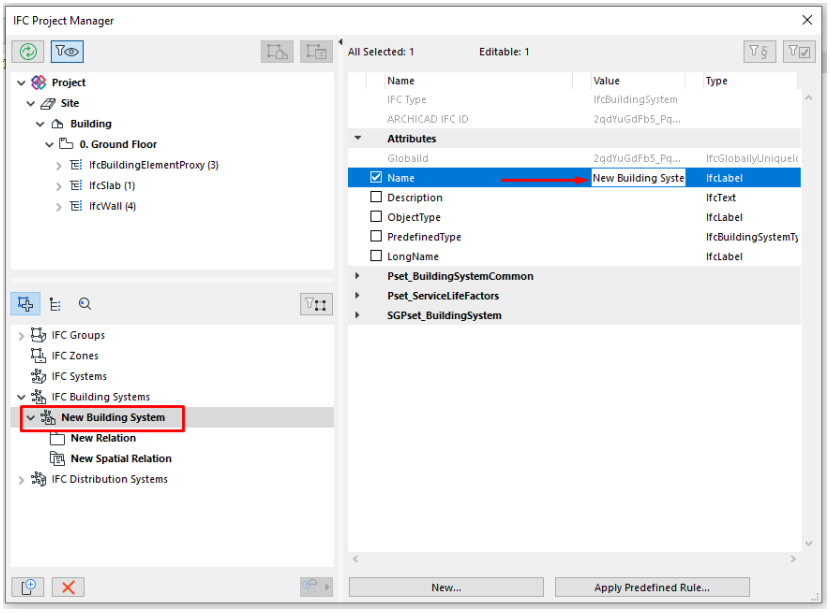
A System or Building System can be created in the IFC Project Manager.

1. Go to File > Interoperability > IFC > IFC Project Manager or use the shortcut Ctrl + Alt + I
2. Select IFC Building System and click the New button.



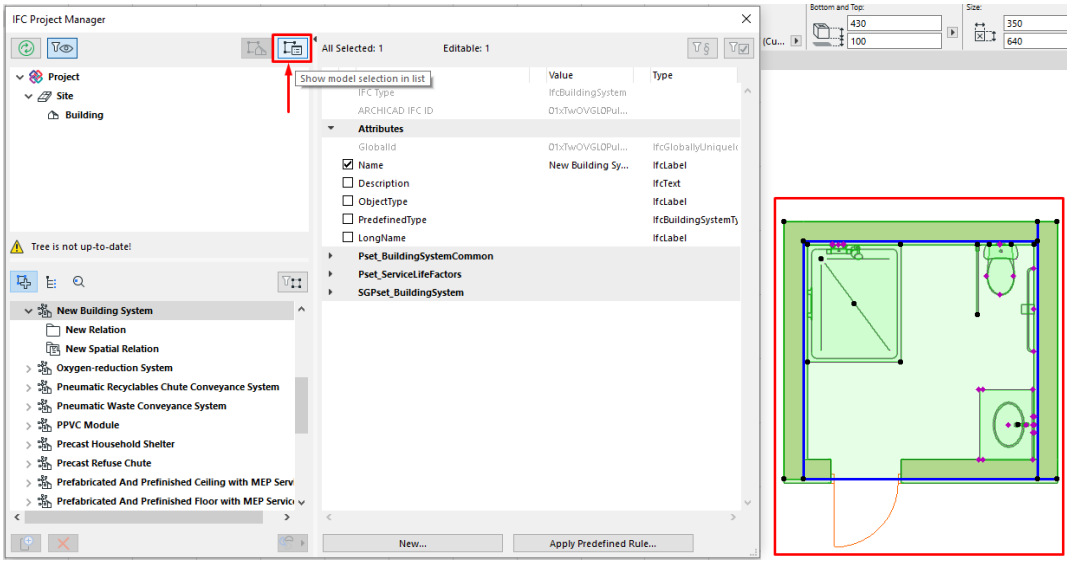
***New* Button Located At Bottom Left Corner Of The Dialog Box**

3. Select the newly created building system and change the Name.



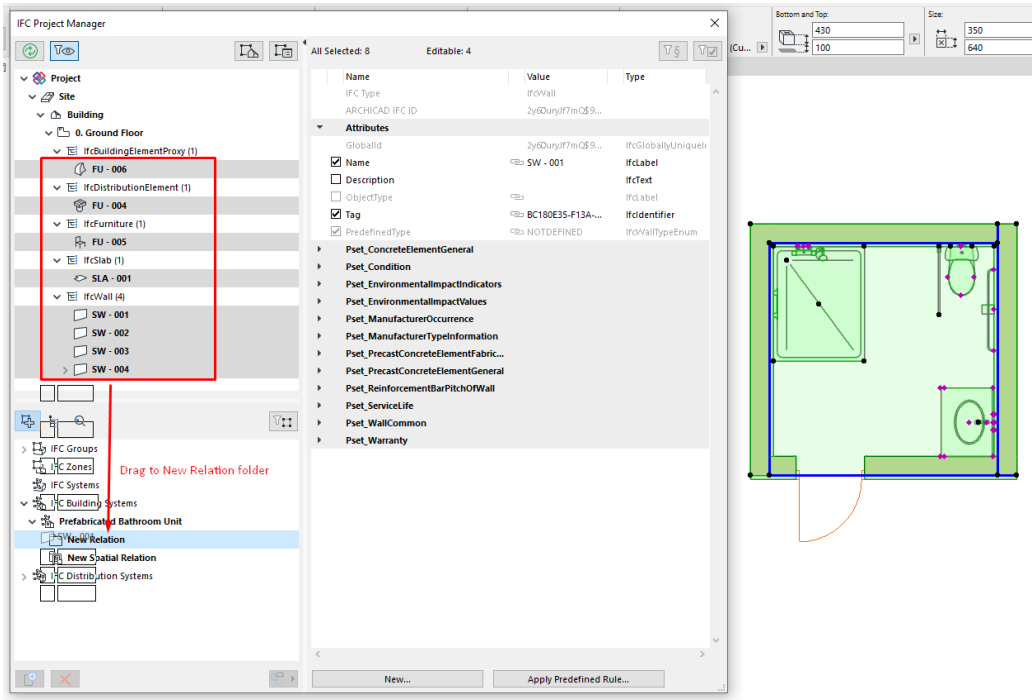
Tick The Box For Name And Add The Value

4. Select the objects to include in the building system from model view. Click the button to show model selection in the list



Show Model Selection In List **Located At The Upper Part Of Dialog Box**

5. The selected objects will appear in the list. To assign the objects to the IFC Building System, drag the objects to the ***New Relation*** folder.



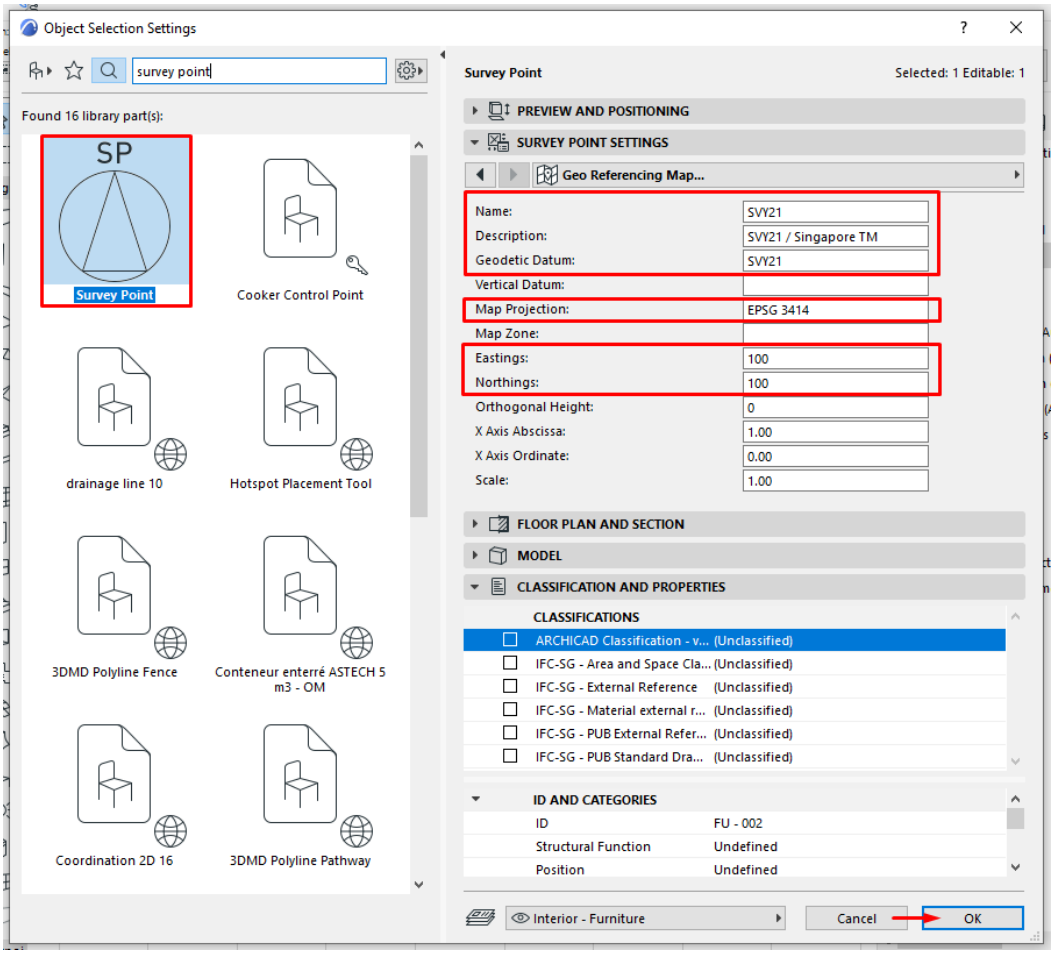
Drag Objects To *New Relation* Folder

For IFC Systems, IFC Groups, IFC Zones, and IFC Distribution Systems, the procedure of assigning items to systems is the same.

3.7 IFCMAPCONVERSION

IfcMapConversion converts the local engineering coordinate system's local origin to its location on the map. A *survey point* object must be created and set up in the project to set the project's eastings and northings.

1. Open the **Settings Dialog** of the Object tool
2. Search for “Survey Point” on the search bar and select the object.
3. Open the toggle of Survey Point Settings and select the setting for Geo Referencing Map
4. Edit the Name, Description, Geodetic Datum, Map Projection, Eastings, and Northings and click Ok.



Geo Referencing Information

5. Place the Survey Point in the model.

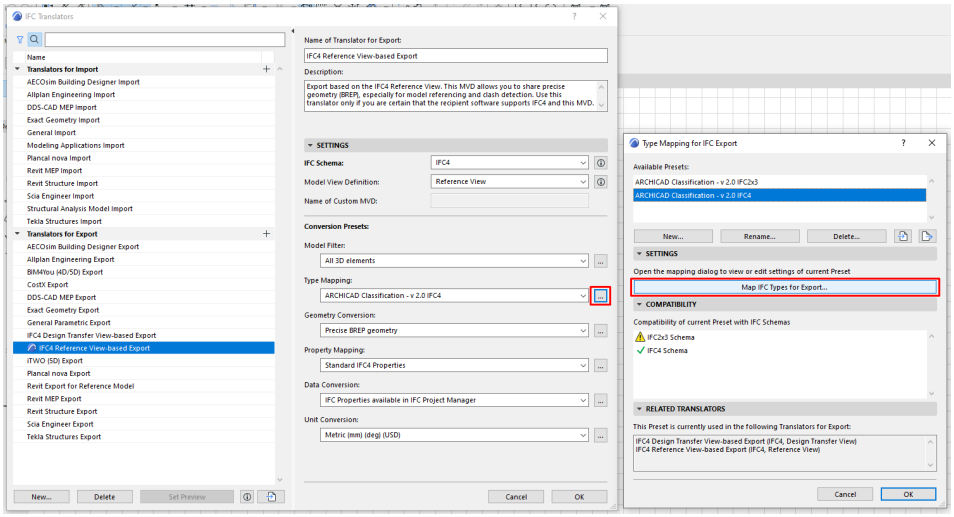
IfcMapConversion can be created in version 25 of Archicad through ***Options > Project Preferences > Location Settings*** and changing the Eastings and Northings values under the **Position** tab, then copy the information from the picture above for *Name, Description, Geodetic Datum,* and *Map Projection* under the **Geo referencing Parameters for IFC** tab.

3.8 IFC EXPORT SETUP

Make sure the Archicad settings are set to export the Classification and Properties before exporting the project.

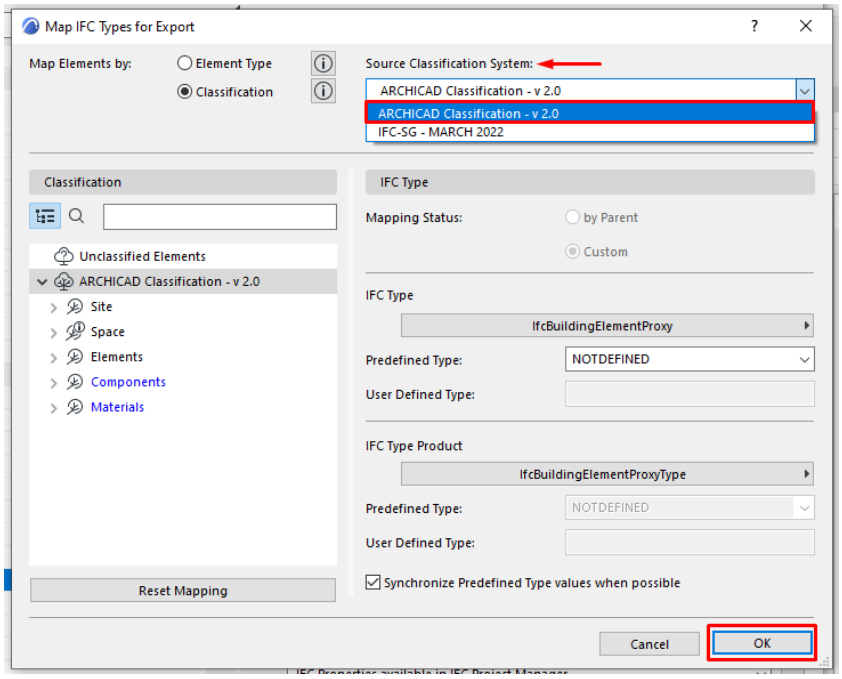
1. Go to ***File > Interoperability > IFC > IFC Translator.***

2. Under the Type Mapping tab, click the button on the right side. On the pop-up window click the *Map IFC Types for export*.



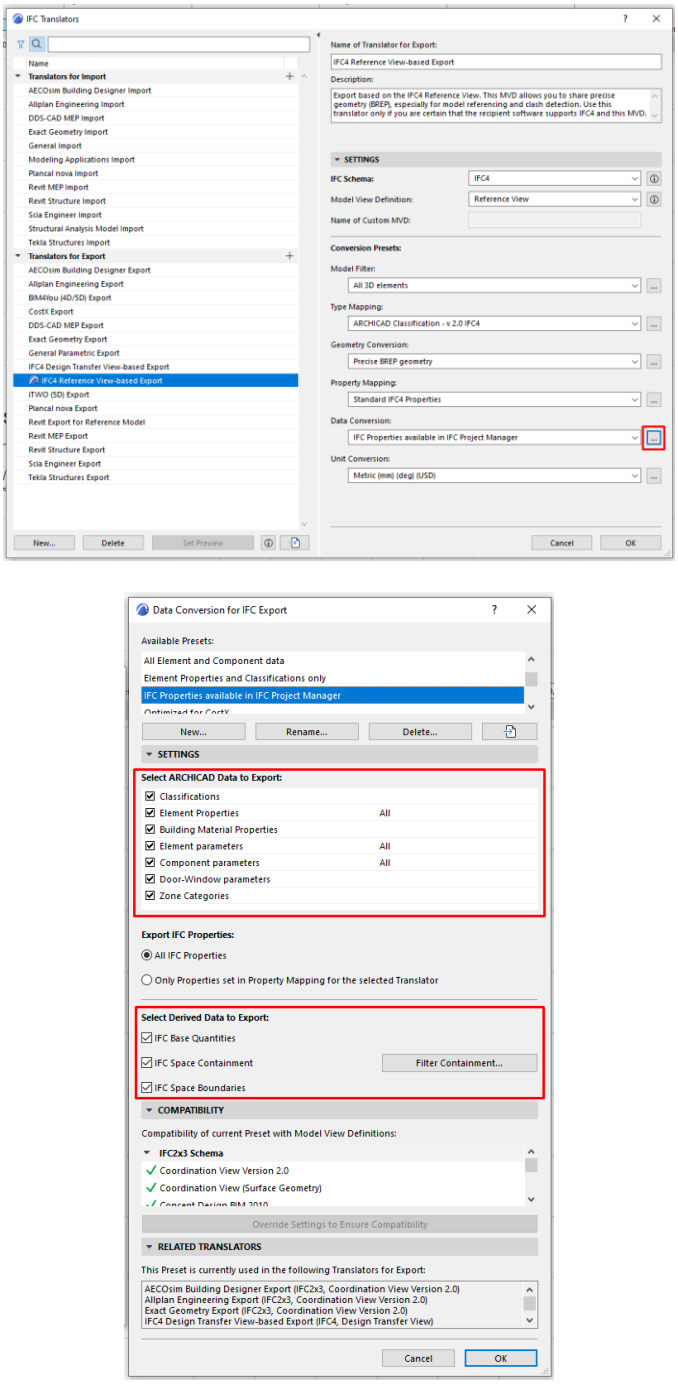
IFC Translator

3. On the Source Classification system tab, select the Classification into which the object type of objects will be exported. Click *Ok* to save.



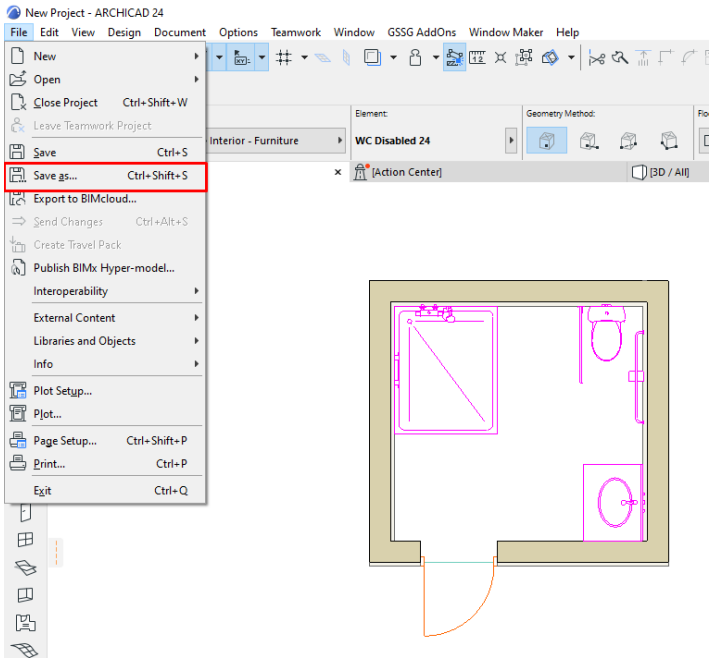
Source Classification System

4. Go back to the IFC Translator window under Data Conversion, click the button on the right side. Check all the boxes under *Select ARCHICAD Data to Export*, and *Select Derived Data to Export*. Click *OK* to save.



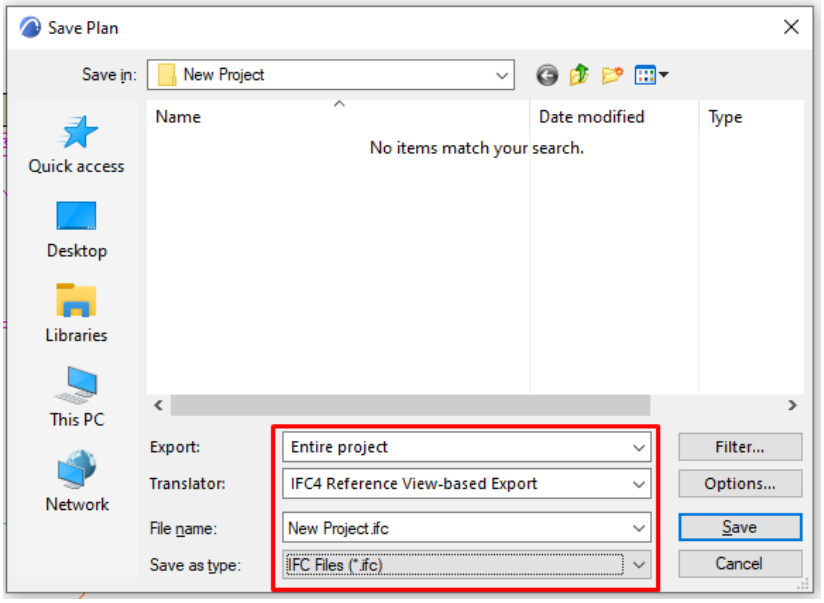
Settings Under Data Conversion For IFC Export

5. To export the project to an IFC file, go *to File* and click *Save As.*



Exporting Project Into IFC File

6. To export the complete project, choose ***Entire Project*** from the Export option. Only the selected objects can be exported if necessary.
7. Change the translator to ***IFC4 Reference View-based Export***
8. For the file type, choose ***IFC Files (*.ifc)***



IFC File Exporting Setup

4 IFC-SG (Singapore specific requirements for Building Regulatory Submission)

4.1 GENERAL

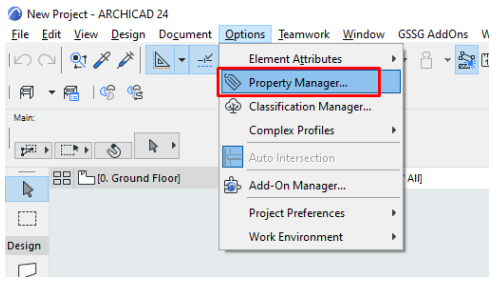
The Archicad template provided by IFC-SG would have been set up to capture all of the data needed for the CORENET X submission. If the user requires more advanced/additional configuration to the existing template, the sections below will guide users through the processes required for more customization. (Be aware that configuring the template may cause the export process to be disrupted; proceed with caution.)

Do note that BIM representations as stated in the document are for reference and not prescriptive, i.e. industry can continue to use their own object libraries and BIM tools as long as the IFC information that was exported is aligned with the Regulatory Requirements.

4.1.1 ADDING USERDEFINED PROPERTIES TO OBJECTS

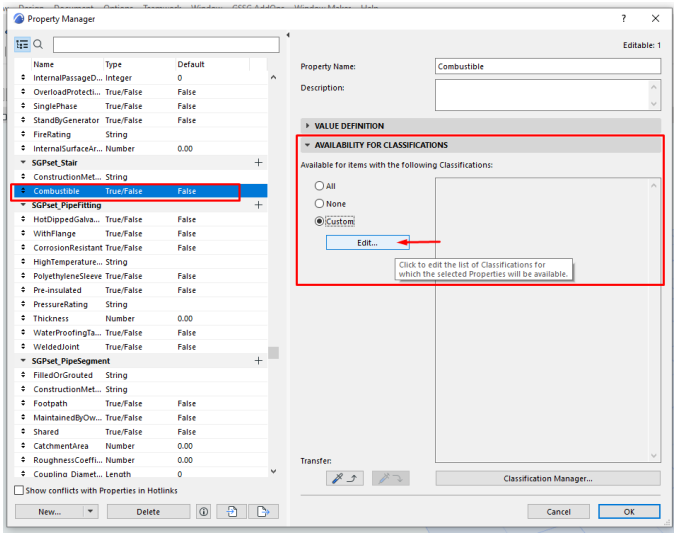
The userdefined properties are included in the template and have already been allocated to the objects. It can be found in the *Settings Dialog* of the object. However, the processes for adding userdefined properties to the object are outlined below.

1. Go to the Options tab and open Property Manager



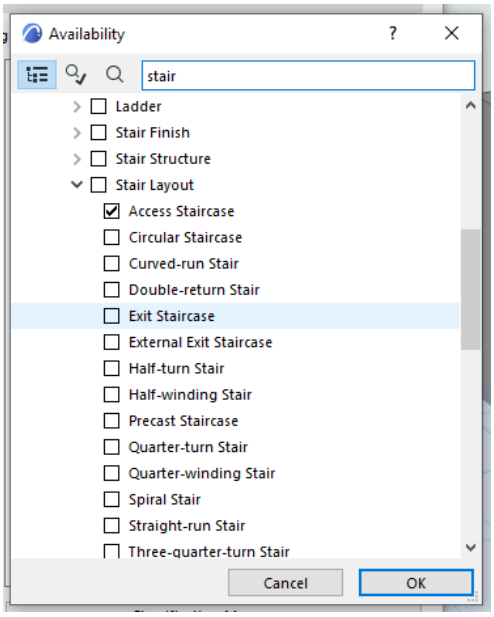
Property Manager Under Option Tab

2. Select the property and under ***Availability for Classifications***, select ***Custom*** and click ***Edit***



Property Manager

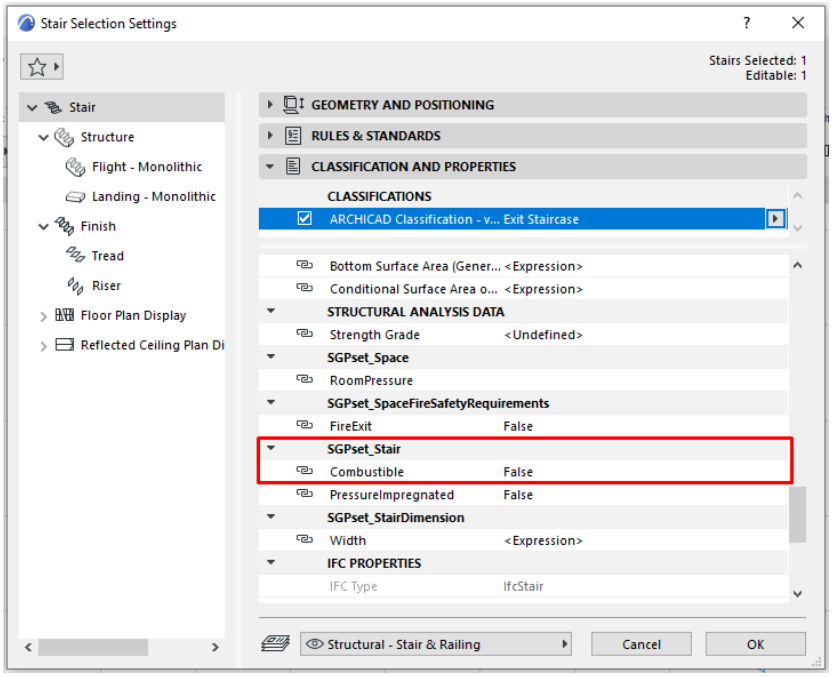
3. Select the appropriate object to which the property will be assigned and click *Ok.* Use the search bar to filter for similar objects.



Selecting Specific Object For The Property

4. Click *Ok* on the ***Property Manager*** to apply the changes.

5. The property is now assigned to the object and can be edited under ***Classifications and Properties***.

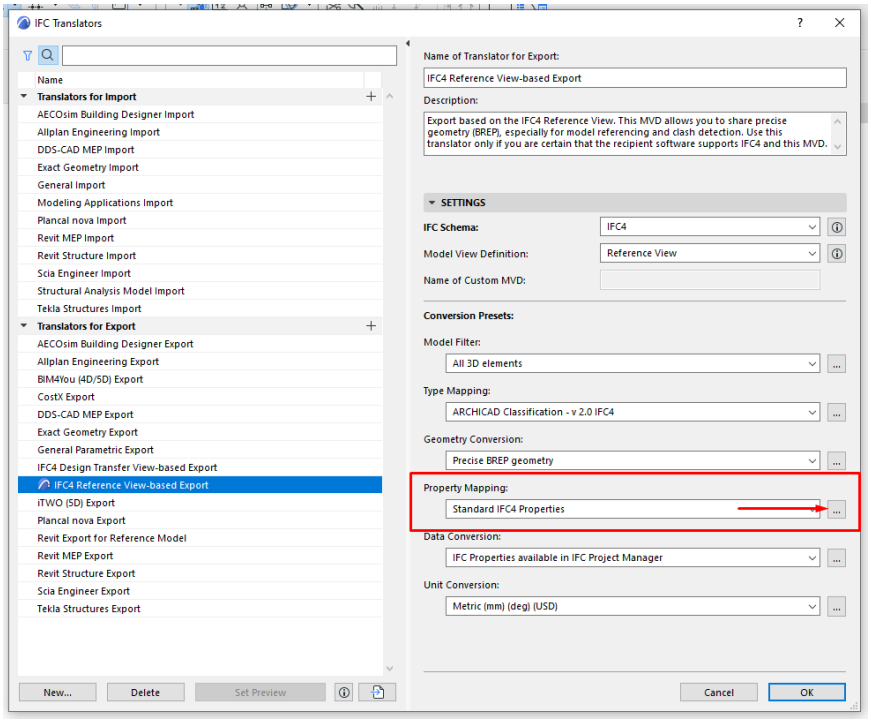


Properties Under The Object

4.1.2 ASSIGNING IFCSURFACESTYLERENDERING TO MATERIAL

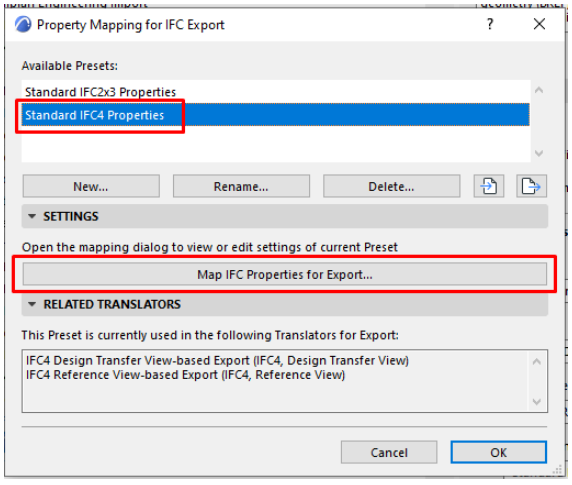
in Archicad, the material attribute is present for basic objects such as walls, slabs, columns, and beams. The surface attribute is present in other objects. If the object requires a material attribute, exporting the surface attribute as a userdefined property is advised.

1. Go to ***File > Interoperability > IFC > IFC Translator***
2. Select ***IFC4 Reference View-based Export*** translator
3. Under Property Mapping, click the button on the right side to edit the property mapping presets



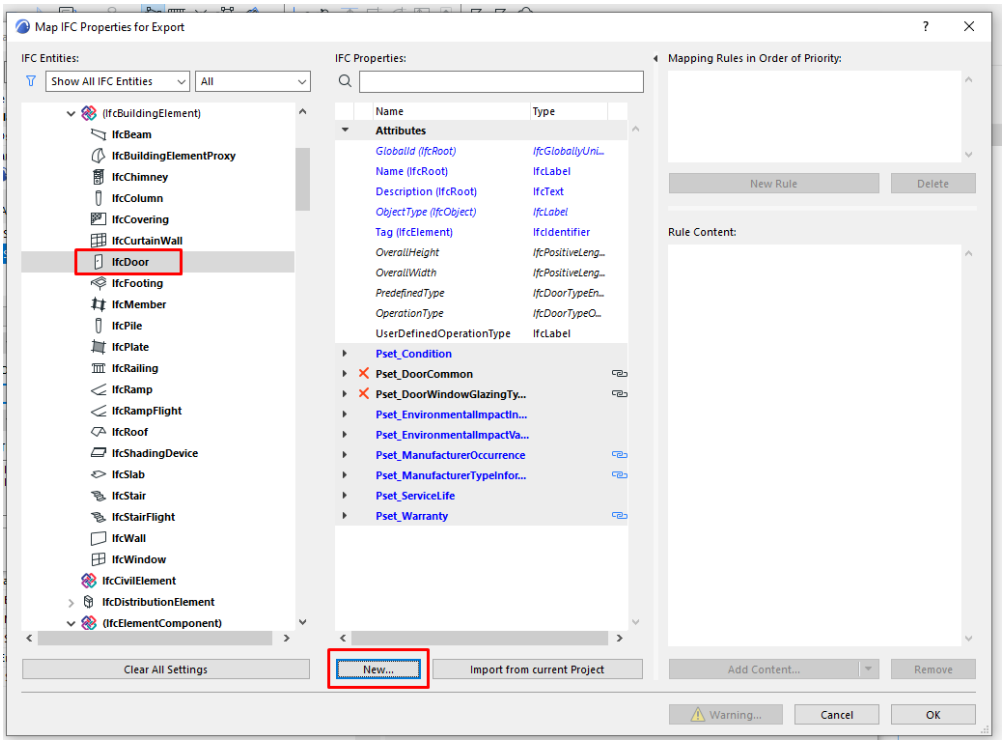
Property Mapping Under IFC Translator

4. For the preset, select Standard IFC4 Properties and then click Map IFC Properties for Export.



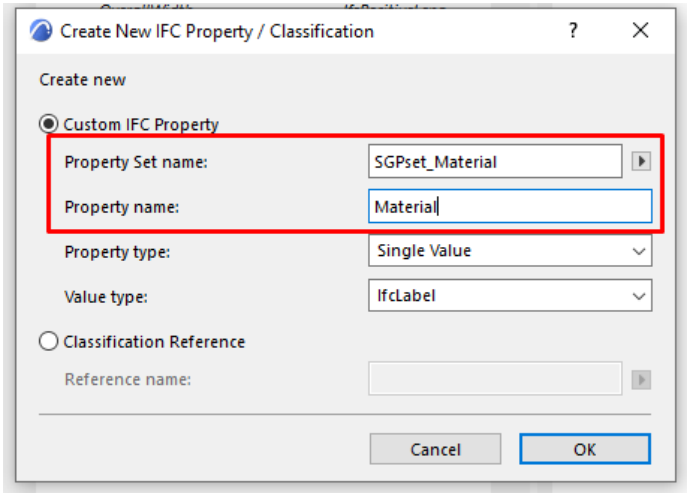
Map IFC Properties For Export

5. Select the entity of the object and click *New*



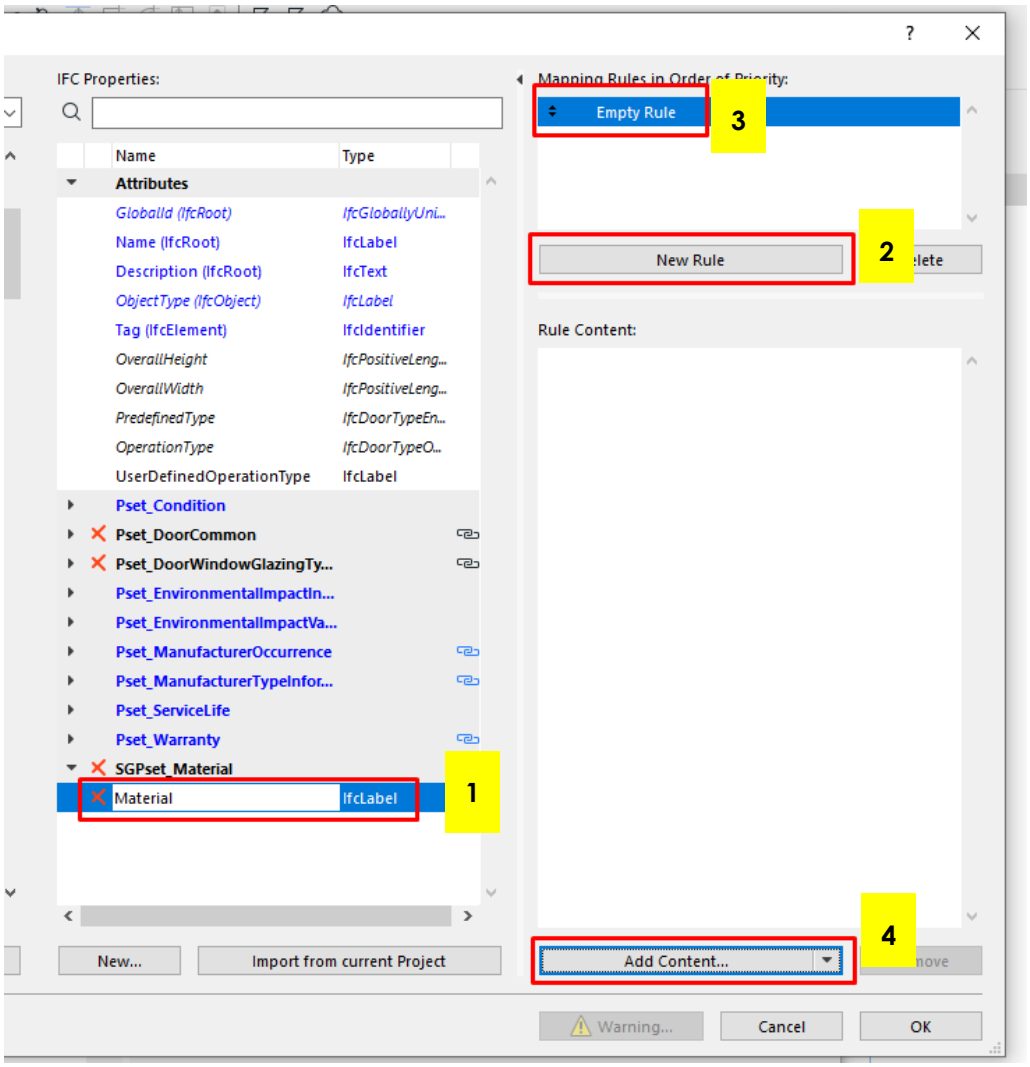
An Object Under Ifcobject

6. Set the Property Set name to ***SGPset_Material*** and the property name to ***Material.*** The property type is Single Value and the Value type is IfcLabel. After editing the values, click *Ok*.



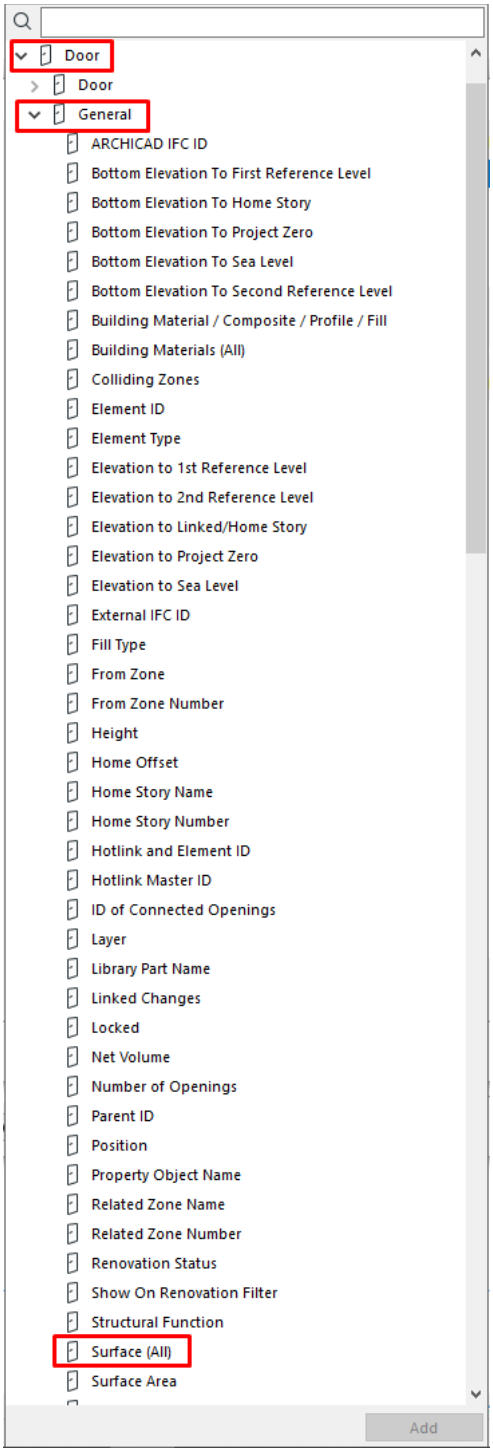
Creating New Property For Material Under *Custom IFC Property*

7. Select the ***Material*** property and click ***New Rule***
8. Select the ***Empty Rule*** and click ***Add Content***



In Creating Rule For Property Make Sure To Follow This Step By Step

9. Select (Entity)Door > General > Surface (All) and click Add.



Adding The Surface (All) Of An Object To A Rule

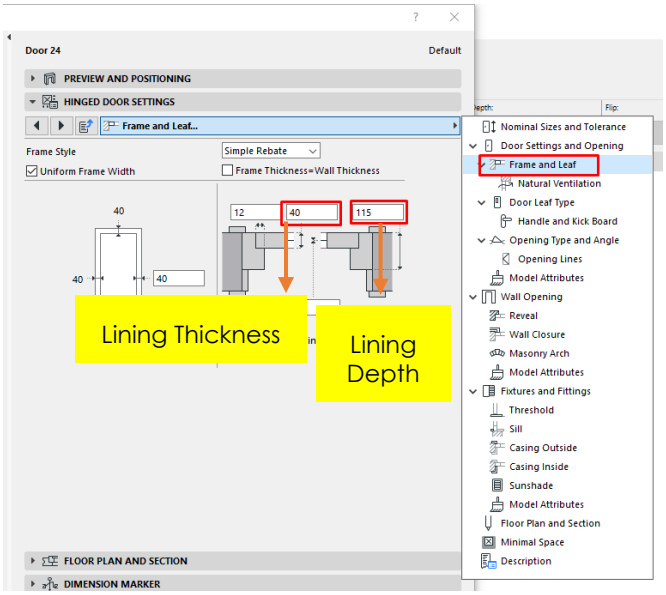
10. Click *Ok* to all open dialog boxes to apply the changes.

    The object's surface material will be automatically exported as a Material property under SGPset_Material.

4.1.3 IFCDOORLININGPROPERTIES AND IFCDOORPANELPROPERTIES

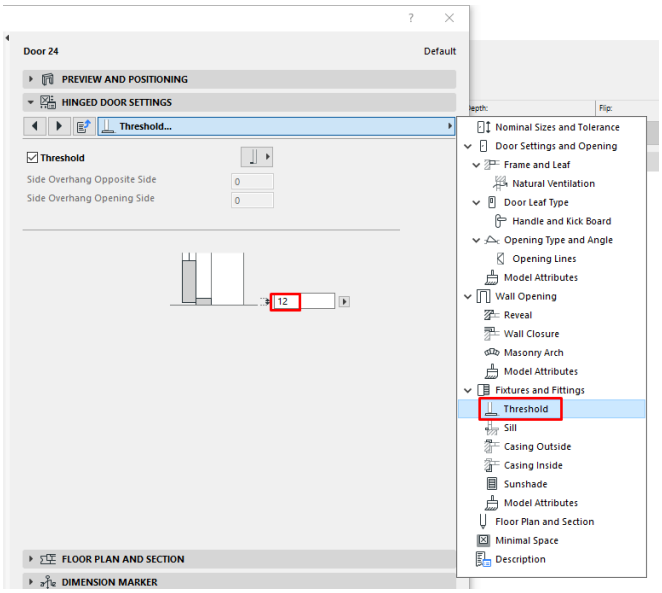
This is for default doors and default door settings. Custom doors must have the same parameter names as the door type, which can be accomplished by making it a subtype.

1. For Lining Depth and Lining Thickness, go to the Settings Dialog of the Door tool. Go to ***Hinged Door Settings > Frame and Leaf.***



Door Lining And Door Panel Properties

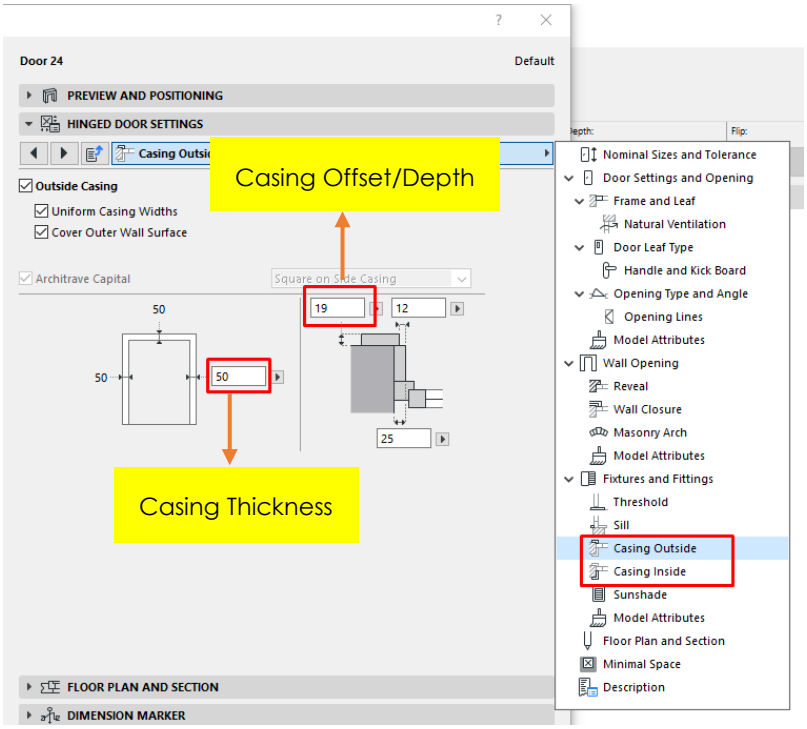
2. For Threshold Thickness, go to Hinged Door Settings > Threshold.



Door Threshold

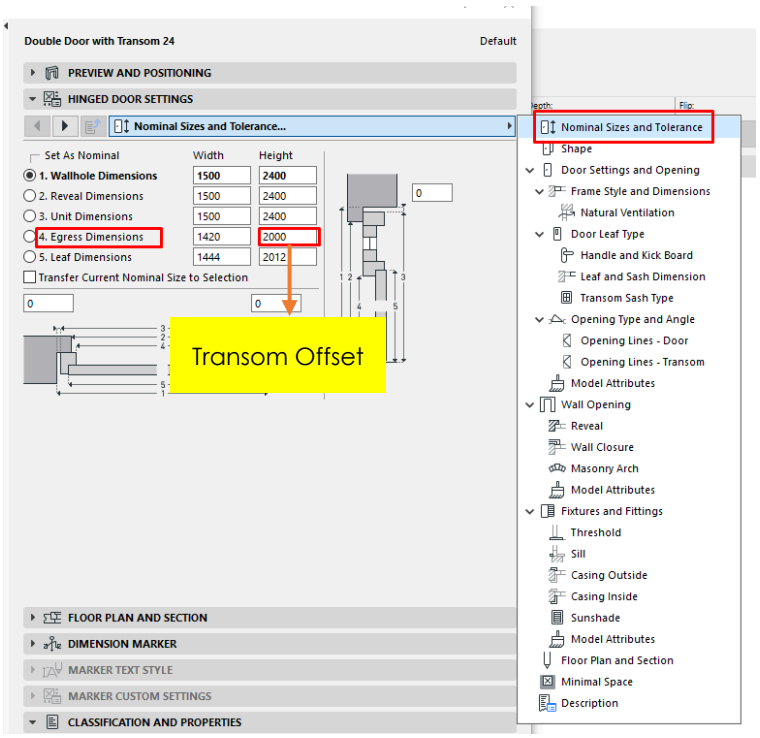
ThresholdThickness can be exported on other door types, such as Door Leaf, but not on Roll Up or Sliding doors.

3. For Casing Thickness and Casing Depth, go to Hinged Door Settings > Casing Inside/Casing Outside.



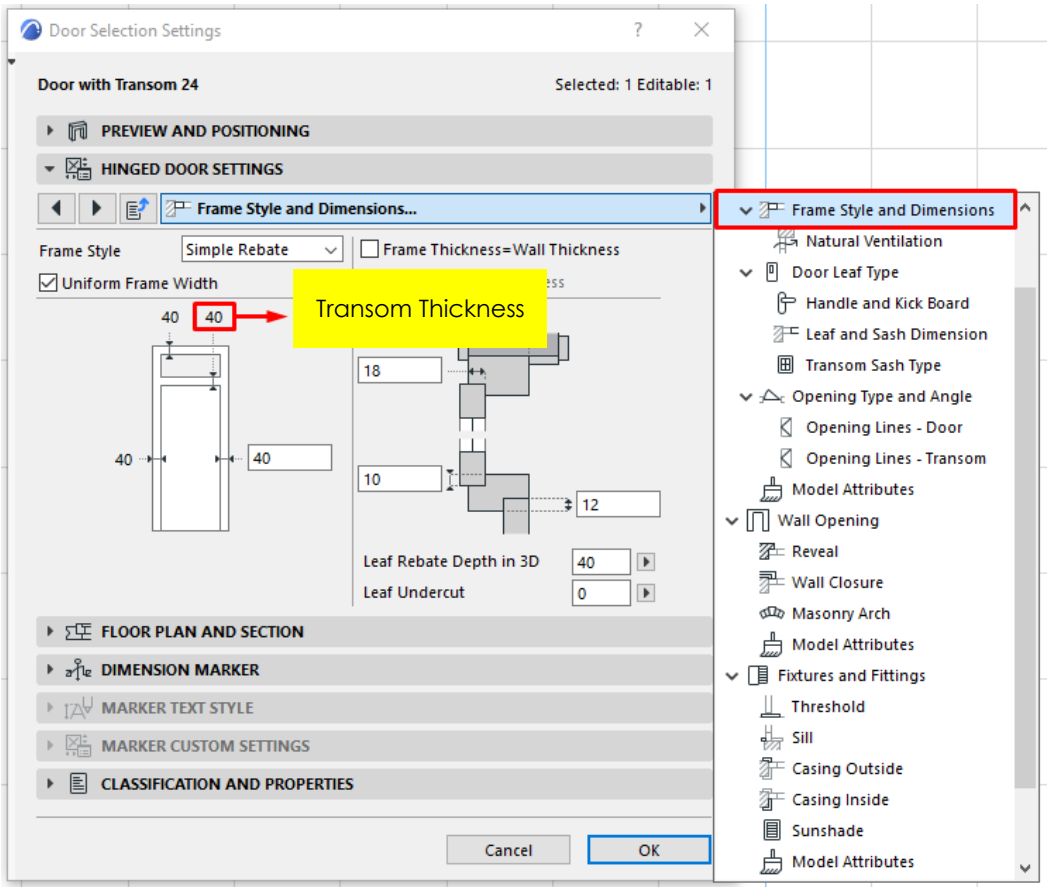
Casing Thickness And Casing Depth

4. For Transom Offset, first select a door that has a transom and then go to ***Nominal Sizes and Tolerance.***



Door Transom Offset

5. For Transom Thickness, go to Hinged Door Settings > Frame Style and Dimensions



Transom Thickness

Transom settings are only available for transom-equipped doors.

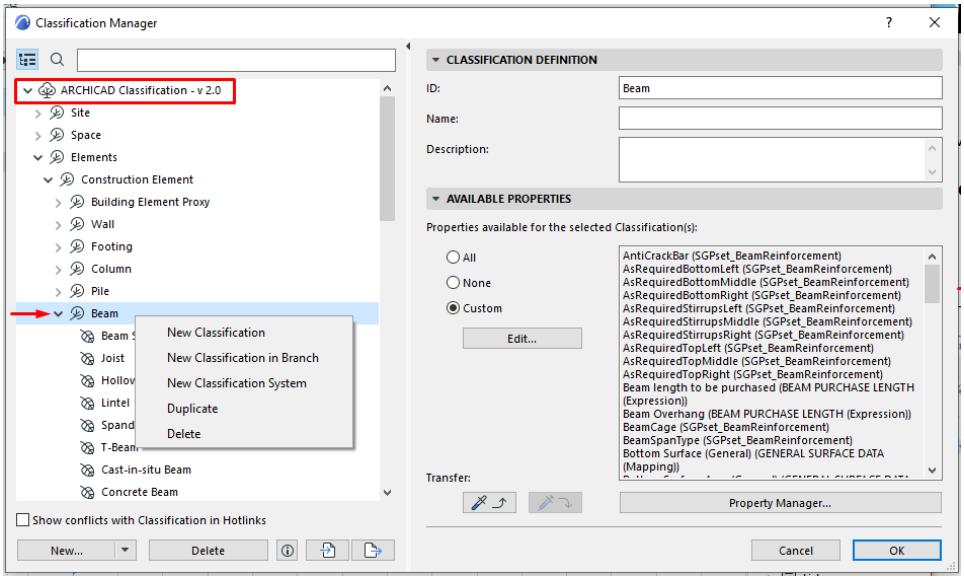
5 Advanced Users

The template and xml files provided by IFC-SG can be modified, and objects and properties can be added. Keep in mind that configuring it can corrupt the xml files, so proceed with caution.

5.1 CLASSIFICATION TREE

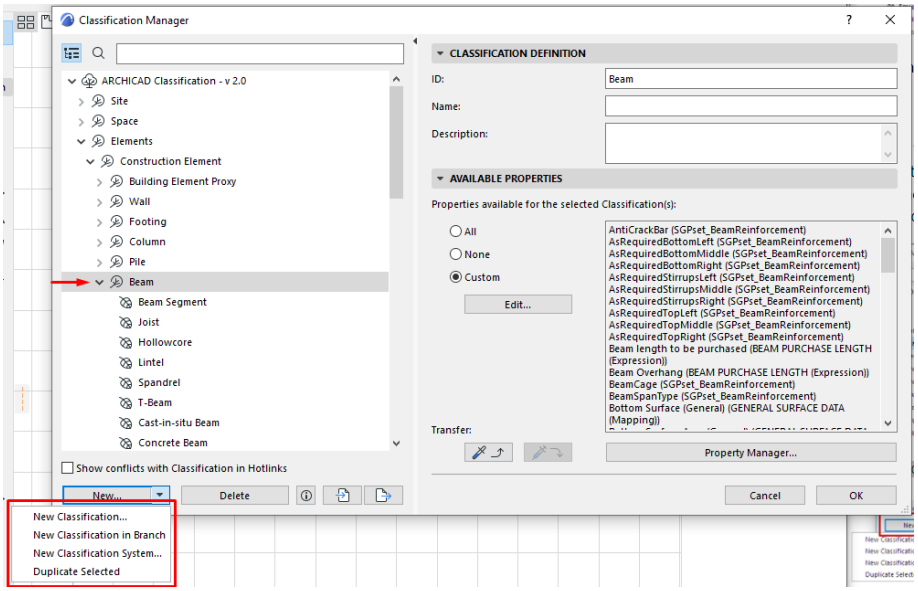
Objects can be added in Classification Manager.

1. Open the Classification Manager dialog box at ***Options > Classification Manager***.
2. Select an item in the Classification list: the new classification will be created as a leaf node to the selected item.
3. Do one of the following:
    a. Click anywhere in the Classification list and use the context menu.



Creating New Object Under Beam Entity

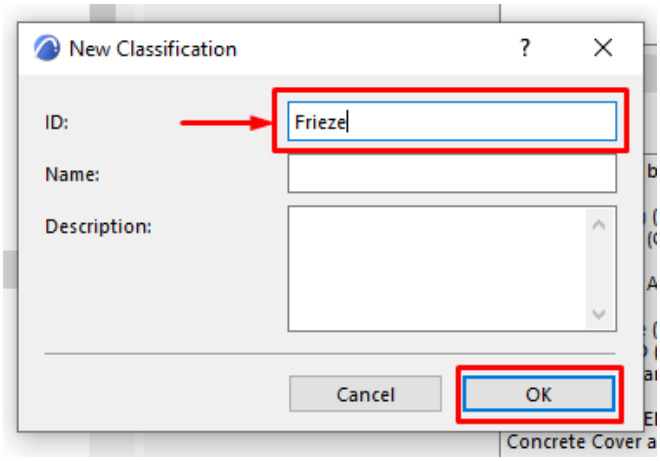
- Click the New button at the bottom of the dialog box.



Creating New Object Under Beam Entity

a) Choose the hierarchical level of the new Classification, relative to what is selected in the tree:
b) **New Classification** adds it to the bottom of the tree list within the current System
c) **New Classification in Branch** adds it to the currently selected level of the tree
d) **New Classification System** adds the new System to the bottom of the tree

4. In the New Classification dialog box: Define an ID, Name, and optional Description for the new Object, click *OK* to save.

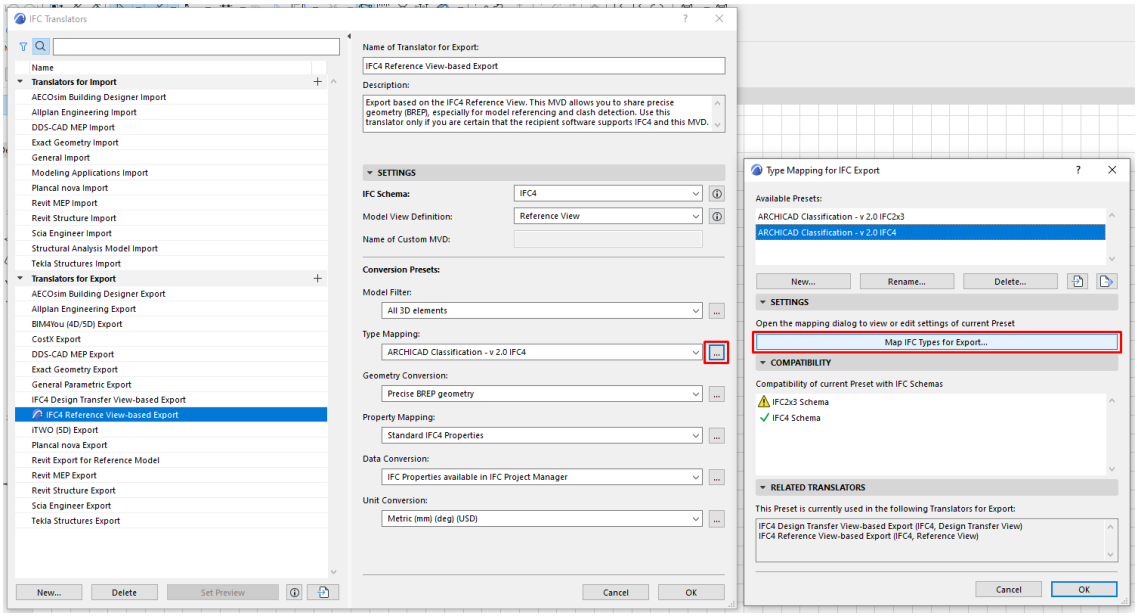


Adding Name As ID For The New Object

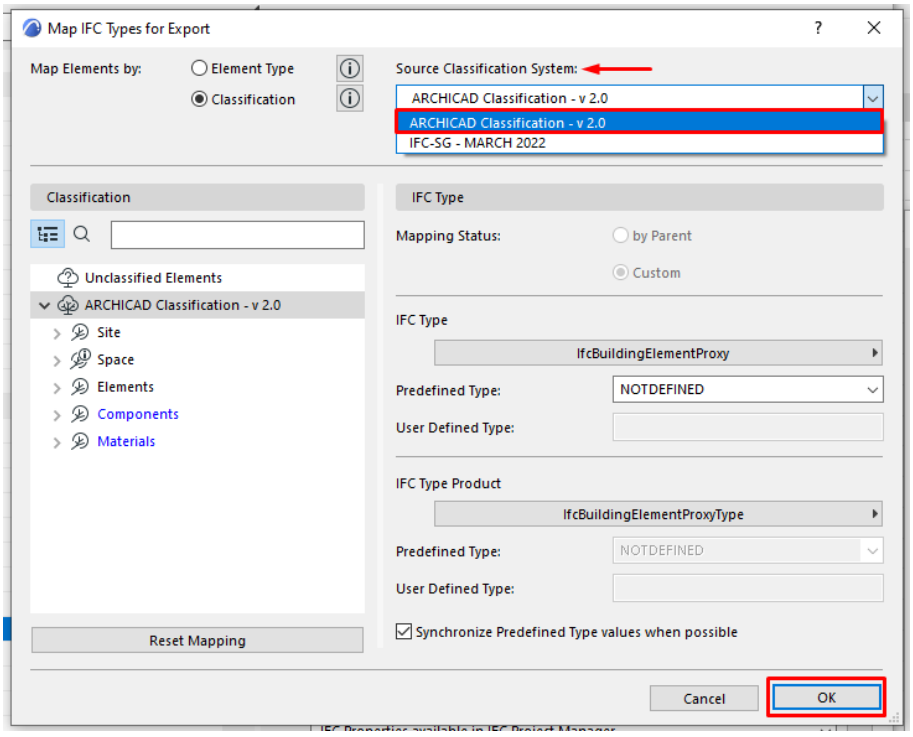
5.2 TYPE MAPPING

1. Go to ***File > Interoperability > IFC > IFC Translator.***

2. Under the Type Mapping tab, click the button on the right side. On the pop-up window click the *Map IFC Types for export*.



3. On the Source Classification system tab, select the Classification system into which the new object was added and the object type of it will be exported. Click *Ok* to save.

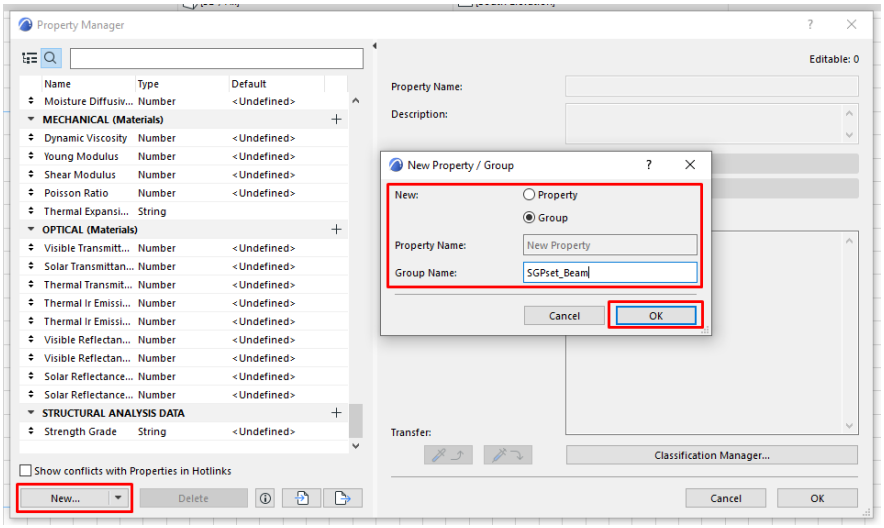


4. Refer to the preceding topic ***Editing Object Types*** from Section 1 Topic 3 to specify object types for the newly added object in classification.

5.3 PROPERTY MANAGER

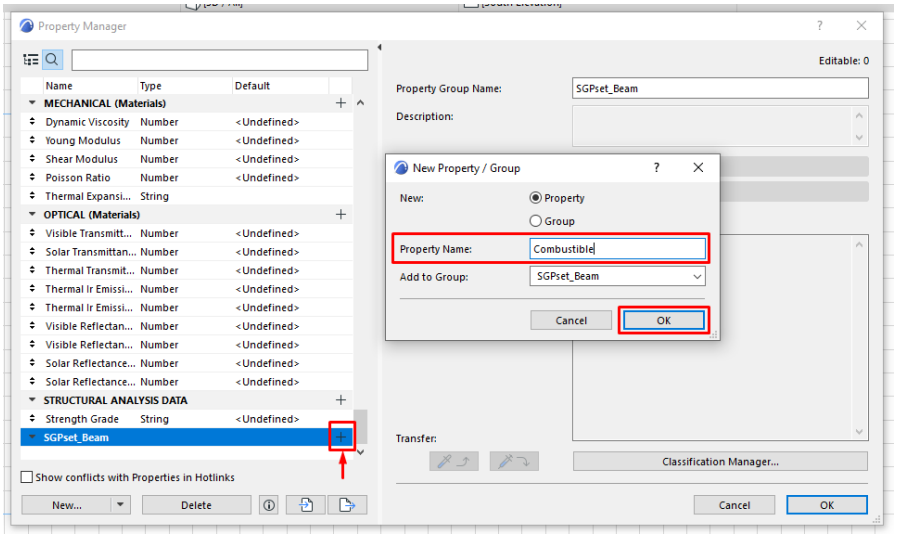
Adding and creating Userdefined Properties for objects in Classification Manager must be done in Property Manager.

1. Open the Property Manager dialog box at ***Options > Property Manage***.
2. Select *New* at the bottom left of the dialog box.
3. Select the Group and enter the Group name in the pop-up dialog box. Click *OK* to save.



Adding Information For New Property/Group

4. The new property group will automatically be placed at the bottom of the list. To add a property for it click the (+) sign beside the Property group.
5. On the pop-up dialog box now under the Property, type the Property Name. Click *OK* to save.



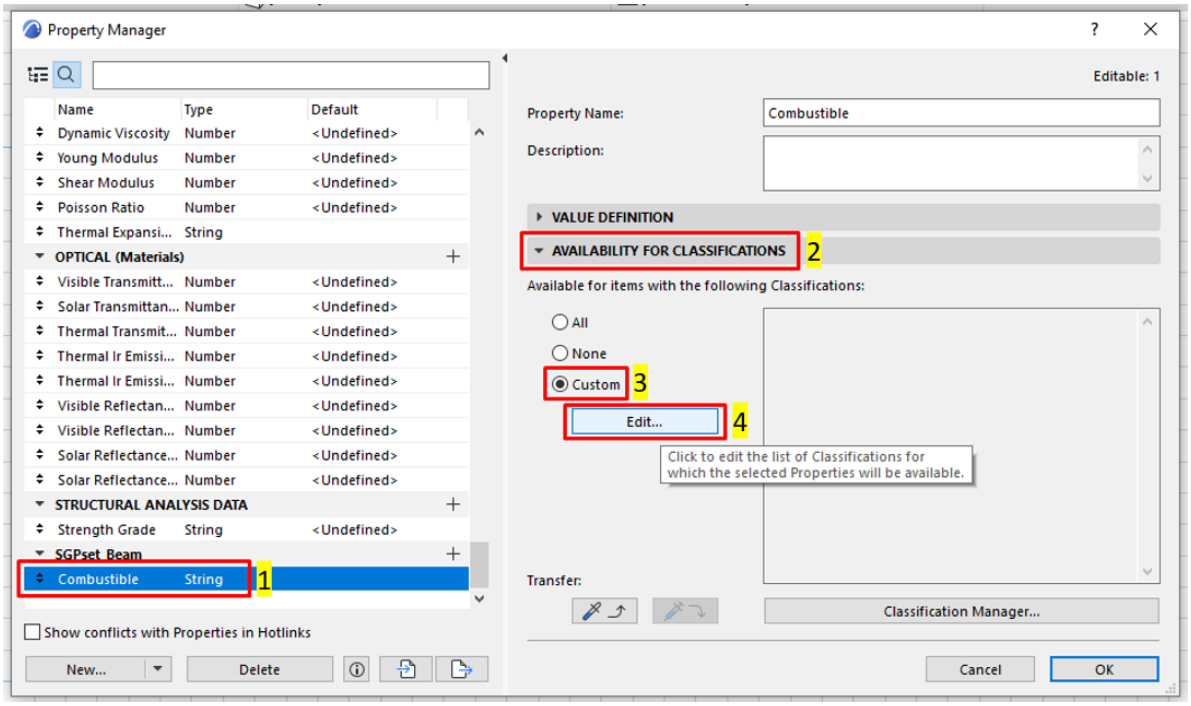
Adding Property Name For The New Userdefined Property

Note: The number of characters for property group set and property name in Archicad can support up to 500, whereas the maximum number of characters for property value is 255. A value of 256 or higher will not be exported.

There are 2 ways to add the newly created property to an object under Classification.

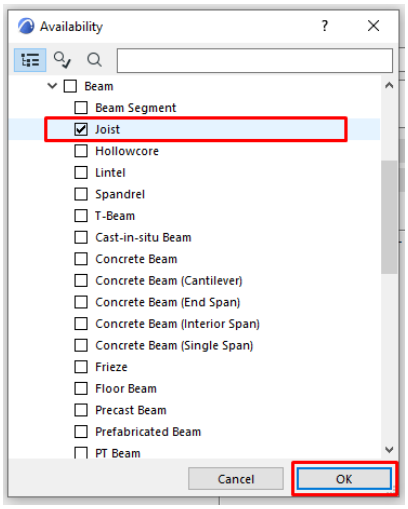
5.3.1 ADDING USERDEFINED PROPERTIES THROUGH PROPERTY MANAGER

1. From the Property Manager dialog box, select the Property, on the right side of the dialog box select the **AVAILABILITY FOR CLASSIFICATION**, select *Custom*, and click the *Edit…*



Adding Userdefined Property To An Object

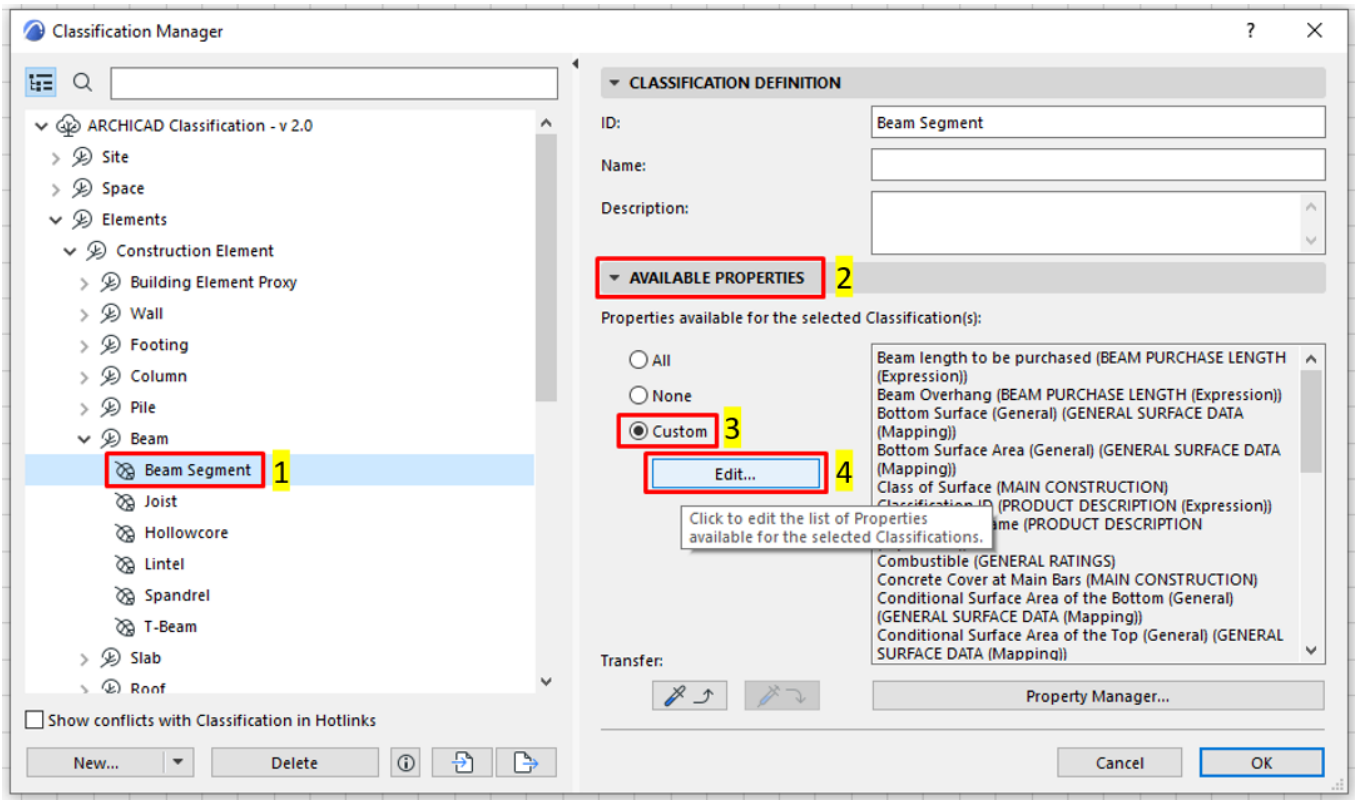
2. Select the object to which the property will be added in the pop-up dialog box. To save, click *OK*.



Selecting The Object Under Availability

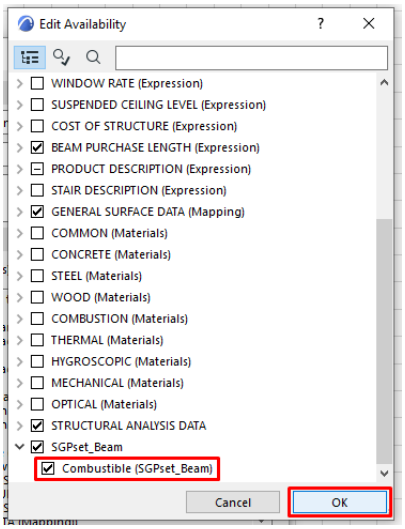
5.3.2 ADDING PROPERTY FROM THE CLASSIFICATION MANAGER

1. Open the Classification Manager dialog box at ***Options > Classification Manager.***
2. Select the object to which the property will be added.
3. On the right side of the dialog box under **AVAILABLE PROPERTIES**, select the *Custom* and click *Edit*



Adding Userdefined Property From Classification Manager

4. On the pop-up dialog box select the property and click *Ok* to save.



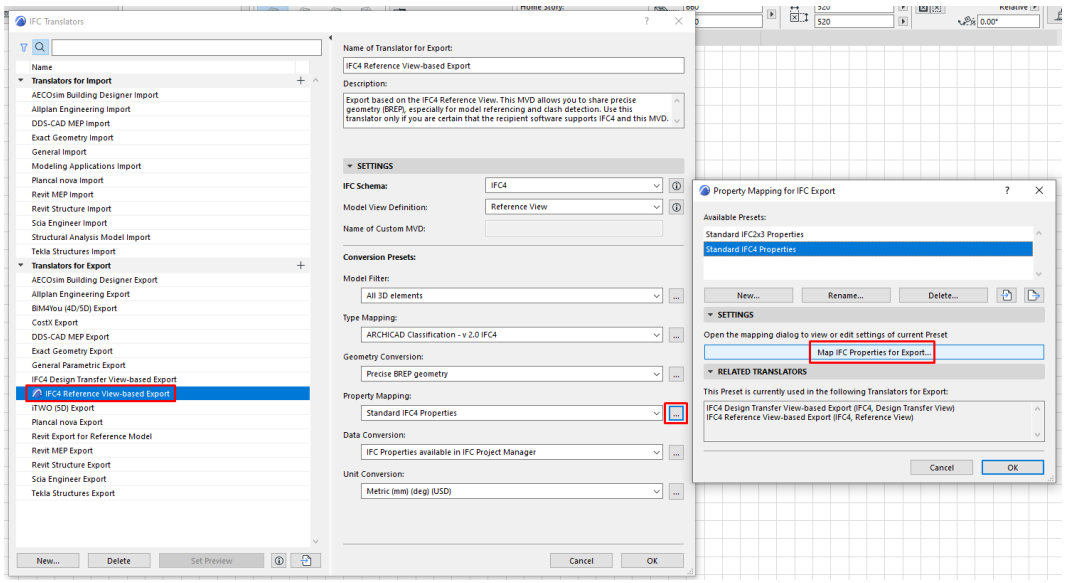
Selecting The Userdefined Property From Edit Availability

5.4 PROPERTY MAPPING

In the Property Mapping, userdefined properties for IfcBuilding, IfcBuildingStorey, IfcGroup, IfcBuildingSystem, IfcDistributionSystem, IfcProject, IfcSite, IfcSystem, and IfcZone can be created and edited.

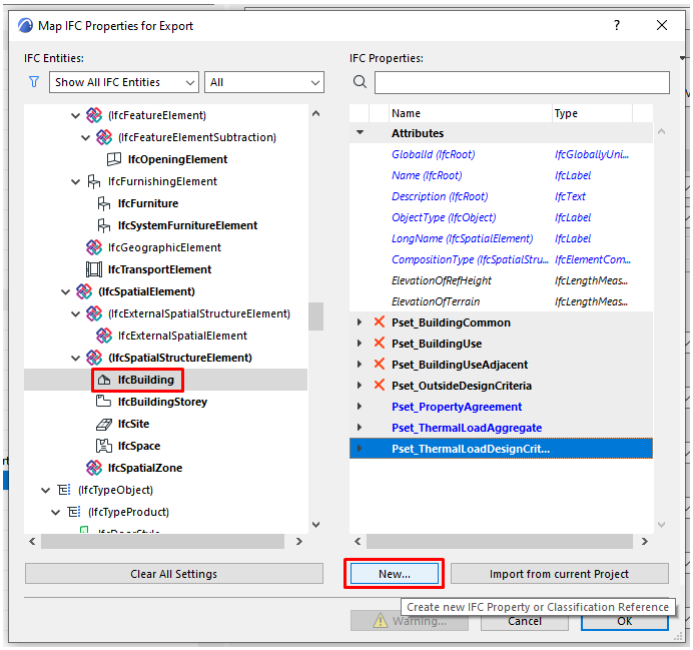
1. Open File > Interoperability > IFC and select IFC Translators.

2. Click the toggle beside the Property Mapping, on a pop-up dialog box select the Map IFC Properties for Export.



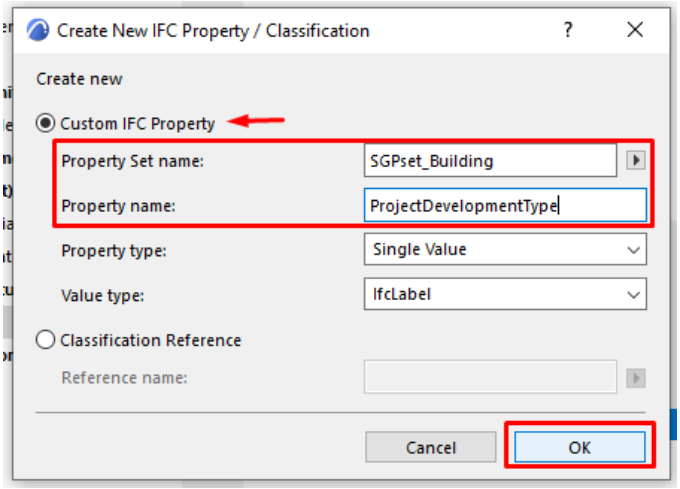
Map IFC Properties For Export Under IFC Translator

3. On the bottom of the dialog box, select the object to which the userdefined properties will be added, and then click the **New** button.



Adding Userdefined Properties For IfcBuilding Entity

4. Under Custom IFC Property, in the pop-up dialog box, type the value for *Property Set Name* and *Property Name*. For the *Property Type*, click the drop-down toggle and select the appropriate value type. To save click *OK*.



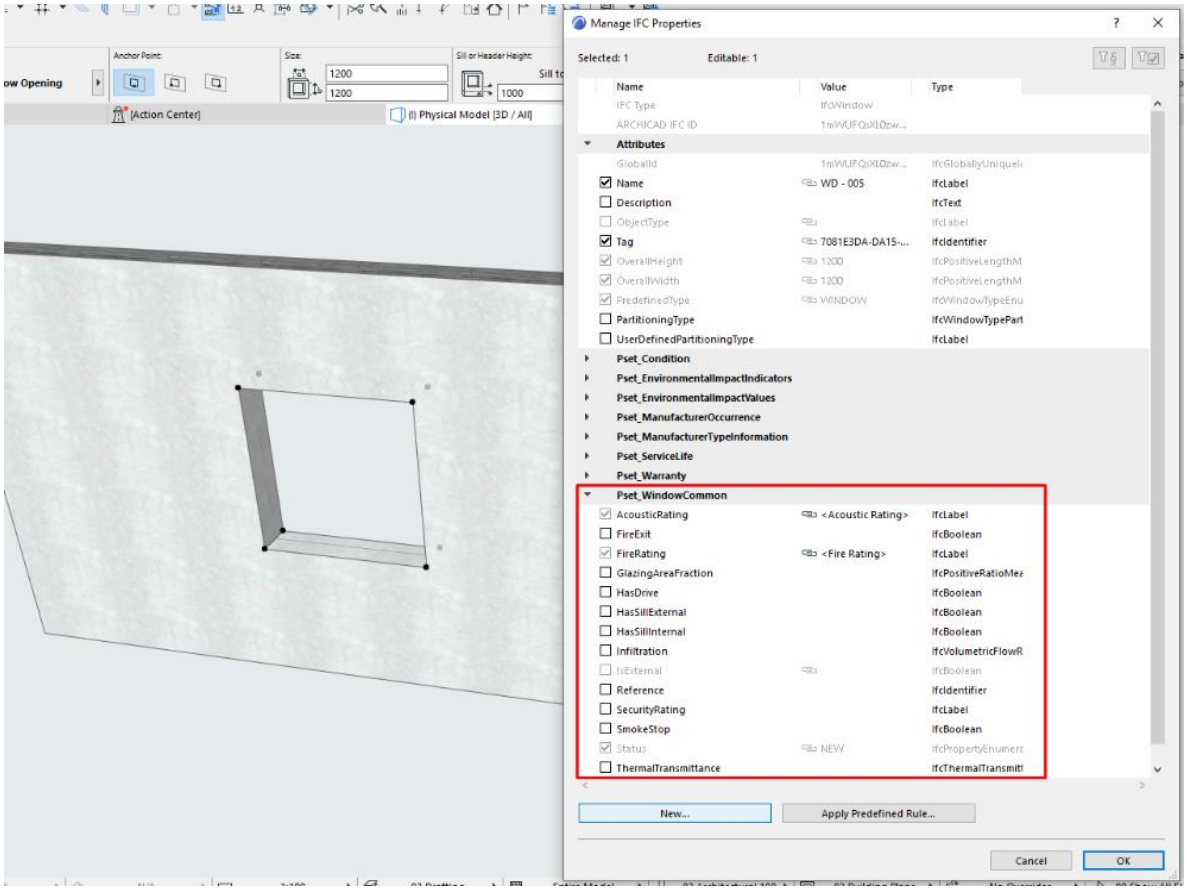
Adding Userdefined Properties Under *Custom IFC Property*

6 Additional How-To Model Guides

6.1 HOW TO ASSIGN PROPERTIES TO OPENING ELEMENT.

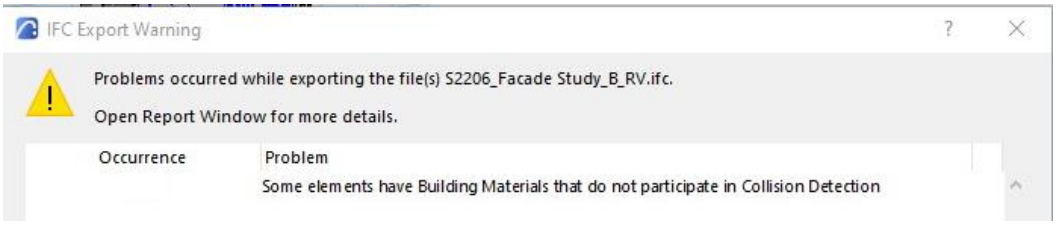
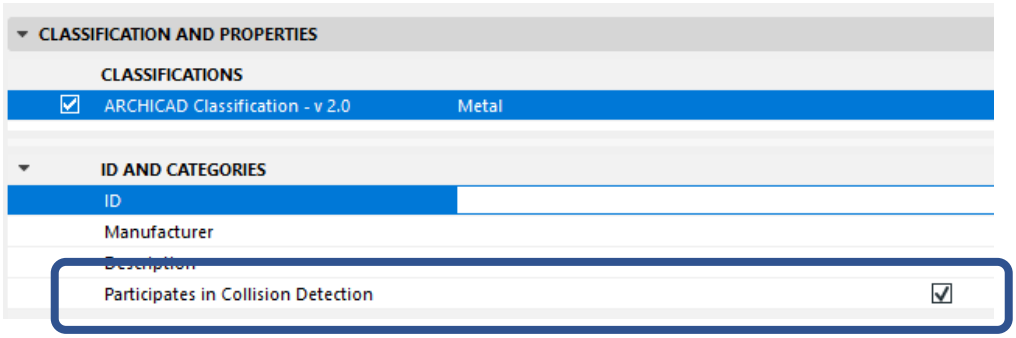
1. Opening element Properties to be linked to the object host.

   All IfcOpeningElement properties are greyed out and cannot be changed through object settings; any opening element parameters will be associated with the component host, i.e. FireExit will be linked to the host in the same way that a door or a window is.



Window Property Sets

7 Frequently Asked Questions

Question	On export to IFC, there was an error message on "Building materials that do not participate in Collision Detection" 
Description	Ensure that the element's Building Material were assigned with the setting "Participates in Collision Detection" Use the **Option > Element Attributes > Building Materials** dialog box to choose a material that participates in Collision Detection 

8 Change log

Date	Description
Sep 2022	Updated section 2.1.1 on using template for new and existing project
Aug 2022	Added FAQ
May 2022	Base Version completed
Feb 2023	Added Preface section and updated screenshots