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 (<u>ISO 16739-1:2018</u>) 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*.

| New Project | ? | × |
|--|------------|------------|
| Create a New Project from: | | |
| Template | | - i |
| ARCHICAD 24 Template.tpl | | ~ |
| ARCHICAD 24 Template.tpl | | |
| i Browse Template intro will create a new Project based on template file. | a selected | -1 |
| Launch a new instance of ARCHICAD | | |
| Work Environment Profile | | |
| Default Profile | | ~ |
| Cancel | New | |

Loading IFC-SG Template

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

| 🔼 New Project | ? | × |
|--|----------|---|
| Create a New Project from: | | |
| Template | | |
| IFC-SG Template v4.2.tpl | | ~ |
| O Latest Project Settings | | |
| This will create a new Project based on a template file. | selected | |
| Launch a new instance of ARCHICAD | | |
| Work Environment Profile | | |
| Current Profile | | ~ |
| Cancel | New | |

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*.

| | | | | | - |
|--|--------------|---|--|------|---|
| ш Q | Open | | | × | |
| > 🖗 ARCHICAD Classification - v 2.0 | Look in: | XML Files ~ | 3 🌶 📂 🛄 - | | |
| | - | Name | Date modified | Туре | ^ |
| | Quick access | ARCHICAD Default Classification ARCHICAD Property Manager STR | 23/06/2022 5:25 pm 23/05/2022 5:30 pm | XML | |
| | | ARCHICAD Property Manager ARCHICAD Property Manping | 23/06/2022 5:27 pm | XML | |
| | Desktop | ARCHICAD Type Mapping | 23/06/2022 5:28 pm | XML | |
| | | | | | |
| | Libraries | | | | |
| | | | | | |
| | This PC | | | | |
| | 9 | < | | > | |
| | Network | File name: ARCHICAD Default Classification | ✓ Ope | en | |
| | | Files of type: ARCHICAD Classifications and Pro | perties (*.xml ∨ Can | cel | ~ |
| | | | Property Manager | | |
| Show conflicts with Classification in Hotlinks | | | | | |
| New 🔻 Delete 🛈 | | | Cancel | OK | |

Adding A New Classification System

 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.

| Ouplic | ate Classification S | ystems | × |
|--------|-------------------------------------|--------------------------------------|---------------------|
| | One or more Cla already exist in | assification Systems the Project. | s in this file |
| | How do you wa | nt to import these | duplicates? |
| | Merge | Replace | Skip |
| | <u> </u> | | 2 D . C secult (STA |

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"

| Translators for Export | + |
|--|---|
| AECOsim Building Designer Export | |
| Allplan Engineering Export | |
| BIM4You (4D/5D) Export | |
| CostX Export | |
| DDS-CAD MEP Export | |
| Exact Geometry Export | |
| General Parametric Export | |
| IFC4 Design Transfer View-based Export | |
| IFC4 Reference View-based Export | |
| IFC-SG | |
| iTWO (5D) Export | |
| Plancal nova Export | |
| Revit Export for Reference Model | |
| Revit MEP Export | |
| Revit Structure Export | |
| Scia Engineer Export | |
| Tekla Structures Export | |
| | |
| | |
| | ~ |
| New Delete Set Preview 🛈 | Ð |

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.

| • 🖾 | FLOOR PLAN AND SECTION | | |
|-----|-----------------------------|----------------------|----|
| • 🖸 |] MODEL | | |
| • | CLASSIFICATION AND PROPERT | TES | |
| | CLASSIFICATIONS | | ~ |
| | ARCHICAD Classification - v | . Furniture | Þ |
| | | | |
| | | | ~ |
| * | ID AND CATEGORIES | | ^ |
| | ID | FU - 001 | |
| | Structural Function | Undefined | |
| | Position | Undefined | |
| * | RENOVATION | | |
| | Renovation Status | New | ī |
| | Show On Renovation Filter | All Relevant Filters | ¥ |
| | © Interior - Furniture | Cancel | OK |

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.

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.*

|) IFC Translators | /Da /Da 1545 | Tome Story. | ? × | | 520 | | 0.00° هَ ^{الْ} | clutife . |
|--|---------------------------------|---|-------------------------|-----------------------------------|---------------------------|---------------------|-----------------------------|-----------|
| 7 Q | Name of Translator for Export | b. | | | | | | |
| Name | IFC4 Reference View-based E | Export | | | | | | |
| Translators for Import | + Description: | | | | | | | |
| AECOsim Building Designer Import | Description | | | | | | | |
| Allplan Engineering Import | geometry (BREP), especially f | or model referencing and clash detecti | on. Use this | Type Mapping for IFC | Export | | | ? |
| DDS-CAD MEP Import | translator only if you are cert | tain that the recipient software suppor | ts IFC4 and this MVD. 🗸 | | | | | |
| Exact Geometry Import | | | | Available Presets: | | | | |
| General Import | | | | ARCHICAD Classification | - v 2.0 IFC2x3 | | | |
| Modeling Applications Import | * SETTINGS | | | ARCHICAD Classification | - v 2.0 IFC4 | | | |
| Plancal nova Import | IFC Column | IECA | | | | | | |
| Revit MEP Import | ir e schema. | | • | | | | | |
| Revit Structure Import | Model View Definition: | Reference View | ~ ① | New | Pename | Delete | | - C |
| Scia Engineer Import | Name of Custom MUD | | | | | Delete. | | |
| Structural Analysis Model Import | Name of Custom MVD. | | | ✓ SETTINGS | | | | |
| Tekla Structures Import | Conversion Presets | | | Open the mapping dialog | g to view or edit setting | s of current Preset | | |
| Translators for Export | + | | | | Man IEC Types f | or Export | | |
| AECOsim Building Designer Export | Model Filter: | | | | map in e types i | or exportan | | |
| Allplan Engineering Export | All 3D elements | | ~ | COMPATIBILITY | | | | |
| BIM4You (4D/5D) Export | | | | Compatibility of current P | reset with IFC Schemas | | | |
| CostX Export | Type Mapping: | | | A IEC2x3 Schema | | | | |
| DDS-CAD MEP Export | ARCHICAD Classificatio | n - v 2.0 IFC4 | ~ | ✓ IEC4 Schema | | | | |
| Exact Geometry Export | Geometry Conversion: | | | | | | | |
| General Parametric Export | Geometry conversion. | | | | | | | |
| IFC4 Design Transfer View-based Export | Precise BREP geometry | | × | | | | | |
| n IFC4 Reference View-based Export | Property Mapping: | | | | | | | |
| iTWO (5D) Export | Standard IEC4 Properti | ec. | ~ | ▼ RELATED TRANSLATO | IRS | | | |
| Plancal nova Export | Standard in C4 Hoperta | 6 | · · · · · | This Preset is currently us | ed in the following Tran | slators for Export: | | |
| Revit Export for Reference Model | Data Conversion: | | | IEC4 Design Transfer Min | w has and Expand (IEC4 D | esien Transfer Meur | | |
| Revit MEP Export | IFC Properties available | e in IFC Project Manager | ~ | IFC4 Reference View-bas | ed Export (IFC4, Referen | rce View) | | |
| Revit Structure Export | | | | | | | | |
| Scia Engineer Export | Unit Conversion: | | | | | | | _ |
| Tekla Structures Export | Metric (mm) (deg) (USD |) | × | | | | | |
| | | | | | | Cancel | | |
| New Delete Set Preview | Ð | Cance | I OK | | | | | |

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.

| Map Elements by: | O Element Type | (i) | Source Classification Syste | em: | |
|--------------------------|-------------------------|------------|-----------------------------|-----------------------------|--------|
| | Classification | <u>(</u>) | ARCHICAD Classificatio | on - v 2.0 | `` |
| | - | 0 | Show IFC Entities | s for IFC4 Schema | `` |
| Classification | | | IFC Type | | |
| ц Q | | | Mapping Status: | 🔿 by Parent | |
| RCHICAD C | lassification - v 2.0 | ^ | | Custom | |
| > 🔊 Site | | - 11 | IFC Type | | |
| > 99 Space | | | | lfcBeam | |
| v 🔊 Construc | tion Element | | Predefined Type: | BEAM | ``` |
| > 🔊 Buildin | g Element Proxy | | User Defined Type: | | |
| > 🗩 Wall | _ | | | | |
| > 🖉 Footin > 🖉 Columi | g n | | IFC Type Product | | |
| > 🔊 Pile | | | | IfcBeamType | |
| → y 🔊 Beam | | | Predefined Type: | BEAM | |
| 🗞 Beam | n Segment | | User Defined Type: | | |
| 🗞 Joist | | | _ | | |
| 🗞 Hollo | owcore | | Synchronize Predefine | d Type values when possible | |
| 🗞 Linte | 1 | | | | |
| 🗞 Span | drel | | | | |
| 🗞 T-Bea | am | | | | |
| 🗞 Cast- | in-situ Beam | | | | |
| 🗞 Conc | rete Beam | | | | |
| 🗞 Conc | rete Beam (Cantilever) | | | | |
| 🗞 Conc | rete Beam (End Span) | | | | |
| 🗞 Conc | rete Beam (Interior Spa | n) | | | |
| 🗞 Cond | rete Beam (Single Span) |) v . | | | |
| | and Managina | | | | |
| Re | set mapping | | | | |

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.

| Map IFC Types for Export | | ? × |
|--|----------|---|
| Map Elements by: O Element Type Classification | () () | Source Classification System: ARCHICAD Classification - v 2.0 V |
| - | | Show IFC Entities for IFC4 Schema |
| Classification | | IFC Type |
| μ Ξ Q | | Mapping Status: O by Parent |
| > D Building Element Proxy > D Wall | ^ | Custom |
| > D Column | | lfcBeam 🕨 |
| > De Pile | | Predefined Type: JOIST |
| 🗞 Beam Segment | . 1 | User Defined Type: JOIST HOLLOWCORE |
| Boliowcore | | IFC Type Product |
| Spandral | | If cBean T_BEAM USERDEFINED |
| Spanner Sa T-Beam | Ŷ | User Defined Type: |
| Reset Mapping | | Synchronize Predefined Type values when possible |
| | | Cancel |

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**.

| ? | × |
|---------------------|---------------|
| ema | ~ |
| | |
| y Parent Custom | |
| | • |
| AM AM ST | ~ |
| TEL NDREL EAM | |
| TDEFINED | |
| s when possible | 2 |
| т I s v | vhen possible |

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.

| Map IFC Types for I | Export | | | ? | × |
|----------------------------|-----------------|------------|-----------------------------|-----------------------------|---|
| Map Elements by: | O Element Type | (i) | Source Classification Syste | m: | |
| | Classification | (i) | ARCHICAD Classification | n - v 2.0 | ~ |
| | | | Show IFC Entities | for IFC4 Schema | ~ |
| Classification | | | IFC Type | | |
| ¥≣ Q | | | Mapping Status: | 🔿 by Parent | |
| > 🖉 Space | | ^ | | Custom | |
| ✓ 𝔅 Elements ✓ 𝔅 Construct | tion Element | | IFC Type | | |
| > 🔊 Building | g Element Proxy | | | lfcBeam | • |
| > 🗩 Wall | | | Predefined Type: | USERDEFINED | ~ |
| > 🔊 Footing | 2 | | Uses Defined Tones | EDIE ZE | |
| > 🗩 Column | • | _ | Ser Defined Type: | FRIEZEJ | |
| > 🔊 Pile | | | IEC Type Product | | |
| ∨ ∌ Beam | | | IFC Type Product | K-DT | |
| 🗞 Beam | Segment | | | псвеаттуре | |
| 🗞 Joist | | | Predefined Type: | USERDEFINED | ~ |
| 🗞 Hollo | wcore | | User Defined Type: | FRIEZE | |
| 🗞 Lintel | | | _ | | |
| Span | drel | | Synchronize Predefined | I Type values when possible | |
| ⊘g T-Bea | m rata Razm | | | | |
| Vg Conci | ete beam | | | | |
| Slab | | | | | |
| > (Boof | | | | | |
| 🗞 Shell | | | | | |
| Res | et Mapping | • | | | |
| | | | | Cancel OK | |

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.

|) Ођ | ject S | election Settings | ? | × |
|--------|------------|------------------------------|--------------------------------------|-------|
| Office | e Wor | kstation Solo 24 | Selected: 1 Editabl | le: 1 |
| • 0 |]î ₽ | REVIEW AND POSITIONING | | |
| . 5 | 3° • | | | |
| | ÷ 0 | FFICE WORKSTATION SOLO SE | TTINGS | |
|) E | 🛛 FI | LOOR PLAN AND SECTION | | |
| ١Ć |] M | IODEL | | |
| - [| E C | LASSIFICATION AND PROPERT | IES | |
| | | | | |
| | | APCHICAD Classification - V | Workstation | |
| | | Anomicab classification - M | | |
| | | | | |
| | | | | ~ |
| * | | PRODUCT DESCRIPTION (Exp | ression) | ^ |
| | e | Product location | <expression></expression> | |
| | e | Context ID | <expression></expression> | |
| | e | Dynamic ID by Classification | <expression></expression> | |
| | e | Classification ID | <expression></expression> | |
| | e | Classification Name | <expression></expression> | |
| * | _ | STRUCTURAL ANALYSIS DATA | A | |
| | C | Strength Grade | <undefined></undefined> | |
| • | | SGPset_Furniture | Falsa | |
| | - <u>c</u> | CarBarkAssass | False | |
| | e | FireAlarmGraphicSystem | False | |
| | - | SecurityCardAccess | False | |
| | e | WalkieTalkieChargingStation |) False | |
| • | | IFC PROPERTIES | | |
| | | IFC Type | lfcFurniture | |
| | | ARCHICAD IFC ID | 2gz18rJ9XC7vOV\$yeNm1Et | |
| | | Globalld (Attribute) | 2gz18rJ9XC7vOV\$yeNm1Et | |
| | | Name (Attribute) | FU - 001 | |
| | | Tag (Attribute) | AAF41235-4C98-4C1F-961F-FFCA17C013B7 | |
| | | PredefinedType (Attribute) | NOTDEFINED | |
| | | SerialNumber (Pset_Manufa | | |
| | | Manufacturer (Pset_Manufa | | |
| | | ProductionYear (Pset_Manu | | |
| | | | Manage IFC Properties | Υ. |
| | _ | | | |
| (=1)h | ٢ | Interior - Furniture | Cancel OK | |

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.

| _ | | | | | |
|-----------|------------------------------|---------------------------|-----------|-----------|--------|
| Object 9 | election Settings | | | ? | × |
| Office Wo | rkstation Solo 24 | | Selected: | 1 Editabl | e: 1 |
| . Dt. | | | | | |
| | REVIEW AND POSITIONING | | | | |
| ► 16 C | FFICE WORKSTATION SOLO SE | THNGS | | | |
|) 🖾 F | LOOR PLAN AND SECTION | | | | |
| • 🗇 🛚 | NODEL | | | | |
| - 🖹 (| LASSIFICATION AND PROPERT | IES | | | |
| | | | | | |
| | ARCHICAD Classification - v | Workstation | | Þ | |
| | | | | | |
| | | | | | |
| | | | | | |
| * | PRODUCT DESCRIPTION (Exp | ression) | | | ^ |
| e | Product location | <expression></expression> | | | |
| c | Context ID | <expression></expression> | | | |
| 6 | Dynamic ID by Classification | <expression></expression> | | | |
| C | Classification ID | <expression></expression> | | | |
| 6 | Classification Name | <expression></expression> | | | |
| * | STRUCTURAL ANALYSIS DATA | A | | | |
| 6 | Strength Grade | <undefined></undefined> | | | 1 |
| • | SGPset_Furniture | | | | L |
| e | ACMVSystem | False | | | |
| 6 | CarParkAccess | False | | | |
| 6 | FireAlarmGraphicSystem | False | | | |
| e | SecurityCardAccess | False | | | |
| e | WalkieTalkieChargingStation | False | | | |
| | IFC PROPERTIES | | | | \sim |
| | | | | | |

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

| 1 🚫 | New Project - ARCH | HICAD 24 | | | | | | | | | | | | | | | | |
|--------------|--------------------------------------|-----------------------|------------|-------------|---------------|-------|-------------|------------|----------|---------|-------------------|---------|---------|--------|------------|---------|------|-----------------|
| <u>F</u> ile | <u>E</u> dit <u>V</u> iew <u>D</u> e | sign Do <u>c</u> umer | t <u>C</u> | ptions | <u>T</u> eamv | vork | <u>W</u> in | dow | GSSC | 5 Add | Ons | Wind | low N | laker | <u>H</u> e | lp | | |
| \square | New | • | - | R XY: ▼ | # | • 🔊 | | | * | 8 - | | 12 | Χı | ļi 🖪 | ۰ 🔇 | - > | 2 | <u></u> |
| É | Open | • | | | | | | | | | | | | | | | | |
| Ľ | <u>C</u> lose Project | Ctrl+Shift+W | ⊢ | | | | | C 1 | | | | | | C | | | | |
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| B | Save | Ctrl+S | Inte | erior - Fu | rniture | | • | Office | Work | estatio | n Sole | o 24 | • | G | | J. | Ţ | |
| B | Save <u>a</u> s | Ctrl+Shift+S | | | | | | () [30 | D / AII] | 1 | | | | | | | ×Í | Actio |
| R | Export to BIMclou | ıd | | | | | | | | | | | | | | | | |
| ⇒ | Send Changes | Ctrl +Alt+S | | | | | | | | | | | | | | | | |
| ¥. | Create Travel Pack | | N | | | | | | | | | | | | | | | |
| 6 | Publish BIMx Hyp | er-model | | | | | | | | | | | | | | | | |
| | Interoperability | • | 0+0 | Merge | | | | | | • | 14 | // | // | // | // | | 47 | []] |
| | External Content | • | 8 | IFC | | | | | | 1 | E IFC | : Proje | ect M | anager | r | Ctrl+A | lt+l | $\vee/$ |
| | Libraries and Obje | ects + | \$ | SAF | | | | | | • | 😪 IFC Translators | | | | | 1/ | | |
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| F | Plot Setup | | | Classific | ations | and P | rope | rties | | ۱ 🧶 | | erae ta | IFC I | Model | | | | |
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| | Page Setup | Ctrl+Shift+P | 0 (59) | Place M | lesh fro | m Sur | veyc | ors Data | a | 5 | ໄປກ | date v | with II | FC Mo | del | | | |
| | Print | Ctrl+P | | Send M | odel to | Goog | le Ea | irth | | | | / | / | 7 1 | 7 | / / | 1 | 1 |
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| | | | | | | | | | | | | | | | | | | |

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.

| | | | | • | | | |
|-----|---|---|--|----|---|---|-------------|
| | | Name | Priority | N | ame: | | Editab |
| | | An space | ^ | | | | |
| | | Air space - Frame | | L | ir space | | |
| | _PR-04 | Aluminium | | | STRUCTURE AND APPEARA | NCE | |
| | EC 04 | Drick Finish | | | | | 2/2 179 |
| 22 | ST 02 | Brick Structural | | 6 | Air Space | • | 119 119 |
| | FF 01 | Concrete | | | | | ■ Ų 💿 🗌 |
| 100 | IST 04 | Concrete Structural | _ | | | 9777 | |
| | EE-03 | Concrete Block - Filler | | Fi | II Orientation: | Project Origin | |
| | ST-05 | Concrete Block - Structural | | M | nte: Fill Orientation is only ava | ilable for Composites and Comp | ex Profiles |
| | IE-05 | Contrasting colour band | | | see i in onentation is only ura | nable for composites and comp | en romes |
| | EN-02 | Corev dust | | 4 | 37 - | | |
| | EN-02 | Crusher run | | E | 式 L Air | • | |
| | IF-04 | Fiberboard | | | _ | | |
| | TEC-01 | Fire Proofing | | In | tersection Priority: | | 56 |
| | PR-04 | GALVANIZED MILD STEEL HEAVY D | 0. | | | Weak | Strong |
| | EN-00 | GENERIC - ENVIRONMENT | | | | EDTIEC | |
| | EC-00 | GENERIC - EXTERNAL CLADDING | | | CLASSIFICATION AND PROP | LKIILS | |
| | EF-00 | GENERIC - EXTERNAL FILLER | | | CLASSIFICATIONS | | |
| | EM-00 | GENERIC - EXTERNAL MEMBRANE | | | ARCHICAD Classifica | ition Air | Þ |
| | IN-00 | GENERIC - INSULATION | and the second s | | | | |
| | | | | | | | |
| | IC-00 | GENERIC - INTERNAL CLADDING | | | ID AND CATEGORIES | | |
| | IC-00 IF-00 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER | | | ID AND CATEGORIES | EF-06 | |
| | IC-00 IF-00 PR-00 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED | | | ID AND CATEGORIES | EF-06 | |
| | IC-00 IF-00 PR-00 ST-00 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL | | | r ID AND CATEGORIES ID Manufacturer Description | EF-06 | |
| | IC-00 IF-00 PR-00 ST-00 EF-05 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL Glass | | | ID AND CATEGORIES ID Manufacturer Description Participates in Collis | EF-06 | |
| | IC-00 IF-00 PR-00 ST-00 EF-05 EN-02 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL Glass Granite dust | | | ID AND CATEGORIES ID Manufacturer Description Participates in Collis COMMON (Materials | EF-06 | |
| | IC-00 IF-00 PR-00 ST-00 EF-05 EN-02 EN-02 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL Glass Granite dust Grass | | | ID AND CATEGORIES ID Manufacturer Description Participates in Collis COMMON (Material: | : EF-06 s) <undefined></undefined> | |
| | IC-00 IF-00 PR-00 ST-00 EF-05 EN-02 EN-02 EN-02 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL Glass Grantle dust Grass Gravel | | | ID AND CATEGORIES ID Manufacturer Description Participates in Collis COMMON (Material Common (Material Common (Material Common (Material) Common (Material) | EF-06 EF-06 s Undefined> <td></td> | |
| | IC-00 IF-00 PR-00 ST-00 EF-05 EN-02 EN-02 EN-03 IF-02 | GENERIC - INTERNAL CLADDING GENERIC - INTERNAL FILLER GENERIC - PREFABRICATED GENERIC - STRUCTURAL Glass Granite dust Grasel Gravel Gypsum Plasterboard | | | ID AND CATEGORIES ID Manufacturer Description Participates in Collis COMMON (Material Conservent) Conservent Category Category Category | EF-06 EF-06 so <undefined> <undefined> <undefined></undefined></undefined></undefined> | |

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.

| Wall Selection Settings | | ? | × | ancing | · · · · | | |
|--------------------------------|-------------------------|----------------------|------|-----------------|--------------------------------|-------------|--|
| | | | 10 | | | | ولل |
| | | Selected: 1 Editable | :1 | | | | |
| | | | | EF- | 01 Concrete | A | |
| Top Link: | | | | 12A A | Lightweight Concrete | ♦ 510 | |
| | | | | | | mm | IC 05 Tile Wall |
| 1. Ground Level (Home + 1) | | | | EC-01 | Fire Proofing | | IE-00 GENERIC - INTERNAL FILLER |
| | | | - 6 | EC-02 | Plaster - Lime Sand | | IF-01 Air Space - Frame |
| 0 | Concrete | | L mr | EC-03 | Intumescent Glass | ΠΠ | IF-02 Gypsum Plasterboard |
| | | | | EC-03 | Intumescent Paint | | IF-03 Gypsum Plasterboard - Waterproof |
| 3000 | | 274 | | EC-03 | Stone - Finish | | IF-04 Fiberboard |
| | | ↔ | | EC-04 | Brick - Finish | | IF-05 Contrasting colour band |
| | ΠΛΛ | //~ 90.00° | | EF-00 | GENERIC - EXTERNAL FILLER | | IF-05 Plywood |
| | | <u>110</u> | - | EF-01 | Concrete | | IF-05 Wood |
| Home Story: | | | | EF-02 | Masonry Block - Filler | | IN-00 GENERIC - INSULATION |
| 0. Basement (Current) | | | | EF-02 | Nylon | | IN-01 Insulation - Fiber Soft |
| | | | | EF-05 | Concrete block - Filler | | IN-02 Insulation - Fiber Hard |
| to Project Zero 🕨 | Reference Line: | + | _ #= |] FF 05 | Glace | | IN 04 Inculation Mineral Hard |
| 0 | ∭ • <u></u> ⇒> | 20 ···· | |] EF-06 | Air Snace | | IN-04 Insulation - Plastic Soft |
| | | | | EM-00 | GENERIC - EXTERNAL MEMBRANE | | IN-06 Insulation - Plastic Hard |
| PROFILE OFFSET MODIFIERS | | | | EM-01 | Timber - Roof | | IN-07 Membrane - Rainproof |
| FLOOR PLAN AND SECTION | | | | EM-02 | Insulation - Thermal Break | | IN-08 Membrane - Vapor Barrier |
| | | | | EM-03 | Membrane - Waterproof | | IN-08 MET |
| | | | | EM-03 | Waterproofing | | PR-00 GENERIC - PREFABRICATED |
| ▶ 評値 STRUCTURAL ANALYTICAL PAR | AMETERS | | | EM-04 | Tile - Roof | | PR-01 Timber - Structural |
| - E CLASSIFICATION AND PROPER | TIES | | | EM-05 | Titanium Zinc | | PR-02 Reinforced Concrete - Prefab |
| CLASSIFICATIONS | | | | EN-00 | GENERIC - ENVIRONMENT | | PR-03 Iron |
| | Wall | | | EN-01 | Water | | PR-04 Aluminium |
| E ARCHICAD Classification - V. | . wali | <u> </u> | | EN-02 | Corey dust | | PR-04 GALVANIZED MILD STEEL HEAVY DUTY |
| | | | | EN-02 | Crusher run | | PR-04 Heavy Duty Cast Iron |
| - ID AND CATEGORIES | 14/~11 | | | EN-02 | Grass | | PR-04 Non-skid aluminium |
| Characterization | vvdii | | | EN-02 | HDPE.High Density Polyethylene | | PR-04 Non-skid Tiles |
| Structural Function | Undefined | | | EN-02 | Phenolic | | PR-05 Stainless Steel |
| Position | Undefined | | | EN-02 | Recycled aggregates | | PR-05 Steel |
| RENOVATION | | 0 | | EN-02 | Sand | | PR-06 Steel - Structural |
| Renovation Status | New | Lå | | EN-03 | Gravel | | PR-07 Steel - Stainless |
| Show On Renovation Filter | All Relevant Filters | | | EN-04 | Soil | | ST-00 GENERIC - STRUCTURAL |
| GENERAL RATINGS | | | | IC-00 | GENERIC - INTERNAL CLADDING | | ST-01 Stone - Structural |
| Fire Resistance Rating | <undefined></undefined> | | | IC-01 | Plaster - Gypsum | | ST-02 Brick - Structural |
| Combustible | <undefined></undefined> | | | IC-02 | Timber - Floor | | ST-03 Masonry Block - Structural |
| C Thermal Transmittance | <undefined></undefined> | | ┙╠╞ | IC-03 | lactile | | SI-04 Concrete - Structural |
| | | | | | nie - rivor Plastic Solid | | ST-05 Concrete Block - Structural |
| ATTA C Structural Passis | | (a) | h | jiC-04 ▶ [12 | No Overrides | 00 Show All | Elements |
| Structural - bearing | • Can | UK | ^ | | in overlags / CM | | |

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 | |
| BIMvision | Hotlink and Element ID | Wall | ¥ |

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:

| Co | mposites | | ? × |
|------------|--|--|-----------------|
| | Double 50 Block Cavity | | • |
| | New Rename | Delete | |
| ▼ E | DIT SKIN AND LINE STRUCTURE | | |
| -√ √ | Skin and Separator ———— Outside/Top: Solid Line | KØH Line Pen Type 149 I ■ | ^ <u>& </u> |
| \$ | Concrete Block - Filler Solid Line | ▶ ✓ 149 ↓ ▶ 100 149 ↓ ■ ↓< | → |
| ÷ | Air Space Solid Line | 159 50 149 | |
| ÷ | Concrete Block - Structural | ✓ 149 149 149 149 | |
| | | Material Thickness | ~ |
| Total t | hickness: [mm] Insert Skin Remove Skin | 250 | Use with: |
| | | | Cancel OK |

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 will be hollow.

| | Wall Selection Settings | | ? | × | | |
|----|---------------------------------|-----------------|------------------------|-------------|--|------|
| | 公• | | Selected: 1 Edita | able: 1 | | |
| | ▼ ☐‡ GEOMETRY AND POSITIONING | | | | | |
| | Top Link: | | | | | |
| | 1. Ground Level (Home + 1) V | | | | | |
| | | | | | | |
| | | Double 50 Block | k Cavity Plastered | - 🕅 | Double 50 Block Cavity Plastere | :d |
| | | | | | | |
| | 3000 | | | | 100 Block Double Plastered | |
| | | | 11-1 00 00° | |] 100 Block Insulated Cavity 100 Block Insulated Cavity Plastered | |
| | | | 7/ or 90.00 | and Mill | 140 Block Insulated Cavity Plastered | |
| | Home Story: | | | a c ØR | 140 Block Insulated Cavity Plastered | |
| | 0. Basement (Current) ~ | | | arx | 215 Block Insulated Cavity | |
| | | | | | 215 Block Insulated Cavity Plastered | |
| | to Project Zero 🕨 | Reference Line: | | | Basement Wall | |
| | • | <u></u> | <u>₩</u> :* * 0 | 2 | Brick Double Plastered | |
| | | | | | Brick Single Plastered | |
| | PROFILE OFFSET MODIFIERS | | | ØR | Double 50 Block Cavity | |
| | FLOOR PLAN AND SECTION | | | 8B | Double 50 Block Cavity Plastered | |
| XX | | | | | Generic Roof/Shell | DOQA |
| | MODEL | | | | Generic Slab/Roof | DOQA |
| | ▶ ₱ STRUCTURAL ANALYTICAL PARAM | TETERS | | | Generic Wall/Shell | DOQA |
| | | | | | Stud Partition | |
| | | | | | | |

Applying Composites To The Object

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



| Ŀ | | | IFC Structure | ▼ 4 × |
|----|--------------|-----------------|--------------------------------------|-------------|
| ₽₽ | Acti ve | Туре | Name | Description |
| | \checkmark | 🕀 Project | Project | |
| | \checkmark | Site | Site | |
| | \checkmark | Building | Building | |
| | \checkmark | Building Storey | Basement | |
| | \checkmark | Walls | | |
| V | \checkmark | = 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

| | Untitled - ARCHICAD 24 | | | | | | | | |
|---------------|------------------------------------|-----------|----------------------------------|-----------------------|------------|----------------|-----------|--|--|
| File | Edit View Design Docume | nt (| Options Teamwo | ork Window He | elp | | | | |
| D | New | • • | × | - 🗋 🕴 📨 | රි 🔻 🎥 🏧 🌾 | : 译 🐼 🕶 | 28 | | |
| ß | Open | · Г | - | | | | | | |
| Ľ | <u>C</u> lose Project Ctrl+Shift+W | E | | Geometry M | lethod: | Reference Line | Location: | | |
| ĉ | Leave Teamwork Project | Str | ructural - Bearing | ctural - Bearing | | | | | |
| B | Save Ctrl+S | _ | Mation Contail | | | th Elevation1 | | | |
| B | Save <u>a</u> s Ctrl+Shift+S | 1:7 | [Action Center] | [J] [JD / Alij | | ith Elevationj | | | |
| R | Export to BIMcloud | Ŀ. | | | | | | | |
| \Rightarrow | Send Changes Ctrl+Alt+S | Ŀ | | | | | | | |
| ÷ | Create Travel Pack | | | | | | | | |
| 6 | Publish BIMx Hyper-model | Ŀ | | | | | | | |
| | Interoperability | | | | | | | | |
| | External Content | <u>ار</u> | | | | | | | |
| | Libraries and Objects | P | Li <u>b</u> rary Manager | r | | | | | |
| | Info | | Manage BIMclo | ud Libra <u>r</u> ies | | | | | |
| F | Plot Set <u>u</u> p | Ē. | Create Containe | :r | | | | | |
| Ŧ | P <u>l</u> ot | 胫 | Extract a Contai | ner | | | | | |
| - | Page Setup Ctrl+Shift+P | Ĥ | Show in Library | Manager | | | | | |
| ≞ | Print Ctrl+P | ß | New Object | | | | | | |
| | E <u>x</u> it Ctrl+Q | ĥ | [°] <u>O</u> pen Object | Ctrl+Shift+ | 0 | | | | |
| T | J | B | Save Selection a | S | • | | | | |
| E | 3 | 1Î1 | Share Object | | | | | | |
| Ę | ≥ | ₽¢ | Import Blocks fr | om DXF/DWG | | | | | |
| Ц |] | Š. | Import Rhino 3D | M File as Object | | | | | |
| ש | L | - | | | * | | | | |
| L | | | | | | | | | |

Selecting Library Manager

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

| Lubray menages r Lubray menages r Vame Location Size Status Imbedded Libray 0 bytes Imbedded Libray 24 Imbedded Libray 19 MB Imbedded Libray 19 MB Imbedded Libray 19 MB Imbedded From: 19 MB Imbedded Libray 0 Placed objects: 0 Placed instances: 0 Imbedded Successfully 10 ME | 6 | Librany Manager | | | | | 2 | ~ |
|---|---|---------------------------|--------------------------|-------------------------|---------|--------|----|---|
| Ubraries in Project Imme Location Size Status Immedided Library Obytes ARCHICAD Library 24 Ci-Program Files\GRAPHIS24\ARCHICAD Library 24 914 MB Immediate MEP Library 24 Ci-Program Files\GRAPHISHICAD 24\MEP Library 24 Immediate MEP Library 24 Ci-Program Files\GRAPHISHICAD 24\MEP Library 24 Immediate MEP Library 24 Ci-Program Files\GRAPHISHICAD 24\MEP Library 24 Immediate MEP Library 24 Ci-Program Files\GRAPHISHICAD 24\MEP Library 24 Immediate MEP Library 24 Ci-Program Files\GRAPHISHICAD 24\MEP Library 24 Immediate MEP Library 24 Ci-Program Files\Graphice Meridiate Meridi | | Cibrary Manager | | | | | | ^ |
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| Image: Second Secon | | Name | Location | | Size | Status | | |
| Add Image: Second Sec | | Embedded Library | Location | | 0 bytes | Status | | ~ |
| MEP Library 24 C:\Program Files\GRAPHISHICAD 24\MEP Library 24 19 MB Add | | ARCHICAD Library 24 | C:\Program Files\GRAPHIS | 24\ARCHICAD Library 24 | 914 ME | | | |
| Add Add Image: State of the selected type of library Image: State of the selected type of the selected type of the selected type of library Image: State of the selected type of the selected | | mEP Library 24 | C:\Program Files\GRAPHIS | HICAD 24\MEP Library 24 | 19 ME | | | |
| Add Add Image: | | | | | | | | |
| Add Add.selected type of library Library loaded from: Placed objects: 0 Placed objects: 0 Placed instances: 0 Placed instances: 0 | | | | | | | | |
| Add Add Library loaded from: Add selected type of library Placed objects: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: 0 Placed instances: Placed instances: Placed instances: Placed instances: Placed instances: Placed instances: | | | | | | | | |
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| Add Image: Second and | | | | | | | | |
| Add Image: Second and | | | | | | | | |
| Add Add Ibirary loaded from: Placed objects: O Placed instances: O Placed instances: O Ibirary parts were loaded successfully Ibirary Cancel OK | | | | | | | | |
| Add Add Ibirary loaded from: Placed objects: 0 Placed instances: 0 Placed instances: 0 Ibirary parts were loaded successfully Ibirary Cancel OK | | | | | | | | |
| Add Add Image: Second | | | | | | | | |
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| Add Add Add selected type of library Library loaded from: Placed objects: 0 Placed instances: 0 | | | | | | | | |
| Add Add selected type of library Library loaded from: Placed objects: 0 Placed instances: 0 | | | | | | | | |
| Add Add selected type of library Library loaded from: Placed objects: 0 Placed instances: 0 * All library parts were loaded successfully © Reload & Apply Cancel | | | | | | | | |
| Add Add selected type of library Placed objects: 0 Placed instances: 0 * ✓ All library parts were loaded successfully Cancel OK | | | | | | | | |
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| Placed instances: 0 | | Add select | ted type of library | Placed objects: | | | | 0 |
| All library parts were loaded successfully Cancel OK | | | | Discontinuation | | | | |
| All library parts were loaded successfully Reload & Apply Cancel | | | | Placed Instances: | | | | 0 |
| ✓ All library parts were loaded successfully | | | | | | | | |
| Reload & Apply Cancel OK | | All library parts we | are loaded successfully | | | | | |
| Reload & Apply Cancel OK | | All library parts we | ere toaded successfully | | | | | |
| Cancel OK | [| | Annh | | - | | OK | |
| 10 | l | 🥑 Reload & | арру | | Ca | ncel | OK | |

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.

| Name Location Size Status Image: Embedded Library 0 bytes 0 bytes Image: ARCHICAD Library 24 C:\Program Files\GRAPHIS 24\ARCHICAD Library 24 914 MB Image: MEP Library 24 C:\Program Files\GRAPHIS HICAD 24\MEP Library 24 19 MB Image: PUBObjetcs_AC24.lcf C:\Users\Jesa\Desktop\ACAD\PUBObjetcs_AC24.lcf 113 MB | | ^ |
|--|---------------|------------------|
| PUBObjetcs_AC24.lcf C:\Users\Jesa\Desktop\ACAD\PUBObjetcs_AC24.lcf 113 MB | | |
| | | |
| Add Image: The state initial state initinitial state initial state initinitial state initial | <u>AC24</u> . | <u>4.1c</u> (|

Reload & Apply The Changes

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

| n 🖉 Object Default Settings | | ? × | < |
|---|----------|--|----|
| • β • ☆ Q | ا | Anchor Block 135 Degree Bend Defaul | It |
| > D MEP Library 24 | ^ | | |
| · PUBObjetcs_AC24.lcf · ↓ ARCHICAD 24 | | | - |
| g 📄 Building Element Proxy Type | | Home Story: | |
| Condenser Type | | 0. Ground Floor (Current) V | |
| Cooling Tower Type | | to Project Zero 🕨 🗐 | |
| Distribution Chamber Element Type | ~ | ₩ 594 × | |
| | î | Image: Solution of the | |
| | | CUSTOM SETTINGS | |
| | | EXAMPLE AND SECTION | |
| | | > 🗇 MODEL | |
| Anchor Block 135 Degree Anchor Block Dead End | 1 V | E CLASSIFICATION AND PROPERTIES | |
| | | Cancel OK Cancel OK |] |

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.

| FC Project Manager | | | | > |
|-------------------------------|-----------------|-------------|-----------------------|------|
| 70 | All Selected: 0 | Editable: 0 | | T§ T |
| v 🛞 Project | Name | | Value Type | |
| ✓ (27) Site | | | | |
| △ Building | | | | |
| | | | | |
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| ti € | TH | | | |
| | | | | |
| > Ho IFC Groups | | | | |
| set IFC Zones | | | | |
| Sep IFC Building Systems | | | | |
| > 19 IFC Distribution Systems | | | | |
| , | | | | |
| | | | | |
| | | | | |
| ew Button | | | | |
| | | | | |
| | | | | |
| + | < | | | > |
| (*) | 86 × | ew | Apply Predefined Rule | |
| New | | | | |

New Button Located At Bottom Left Corner Of The Dialog Box

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

| C Project Manager | | | | | |
|---|-----|--------------------------------|--------------|----------------------|-------------------|
| 70 | | All Selected: 1 | Editable: 1 | | T§ T |
| Reviect | | Name | | Value | Туре |
| ✓ Ø Site | | IFC Type | | lfcBuildingSystem | |
| ✓ ↑ Building | | ARCHICAD IFO | ID | 2qdYuGdFb5_Pq | |
| ✓ □ 0. Ground Floor | | Attributes | | | |
| > Tel If (BuildingElementProxy (3) | | Globalld | | 2qdYuGdFb5_Pq | IfcGloballyUnique |
|) 臣 If(Slab (1) | | 🗹 Name | | New Building Syste | lfcLabel |
| > TE: If (Wall (4) | | Description | | | lfcText |
| , _, ., ., ., ., ., ., ., ., ., ., ., ., ., | | ObjectType | | | lfcLabel |
| | | PredefinedTyp | e | | IfcBuildingSystem |
| | | LongName | | | lfcLabel |
| | | Pset_Building | SystemCommon | | |
| b ⊨ Q | VII | Pset_ServiceL | feFactors | | |
| - | | SGPset_Buildi | ngSystem | | |
| Han IFC Groups | | | | | |
| 나는 IFC Zones | | | | | |
| IFC Systems | | | | | |
| ' 3출 IFC Building Systems | | | | | |
| V 🖏 New Building System | | | | | |
| New Relation | | | | | |
| E New Spatial Relation | | | | | |
| IFC Distribution Systems | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | < c | | | |
| (†) × | 6 × | New | | Apply Predefined Rul | e |

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

| IFC Project Manager | | | | × | | Bottom and Top: 430 | Size: | 350 |
|--|---|-----------------|---|---|-------|------------------------|-------|-----|
| | All Selected: 1 | Editable: 1 | | ₹§ ₹ | (Cu 🕨 | 100 | | 640 |
| ✓ | w model selection in list IFC Type ARCHICAD IFC ID | | Value IfcBuildingSystem 01xTwOVGL0Pul | Туре | | | | |
| | Globalld Name Description ObjectType PredefinedType | | 01xTwOVGL0Pul New Building Sy | IfcGloballyUniquelo IfcLabel IfcText IfcLabel IfcBuildingSystemTy | F | | | |
| A Tree is not up-to-date! | LongName Pset_BuildingSystem | emCommon | | lfcLabel | | | | |
| ₽ E Q VII | Pset_ServiceLifeFa SGPset_BuildingSy | actors ystem | | | | | |) [|
| New Building System New Relation New Relation New Spatial Relation Surgen-reduction System Surgen-reduction System | < New | | Apply Predefined Rul | > | | | [| |

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.

| IFOD 1 AN | - | | | Bottom and Top: | Size: |
|---|--|--|---|-----------------|---------|
| IFC Project Ivianager | | | × | 430 | ▶ ↔ 350 |
| | All Selected: 8 Editable: 4 | | Vş VZ | (Cu) 100 | 640 |
| Image: Size of the second s | All Selected: 8 Editable: 4 Name PG 196 ACCAD IFC ID ACCIAD IFC ID ACCI | Value Hr0Y3il 2x/Gurp/fmd5a 2x/Gurp/fmd5a SW - 001 Image: SW - 001 </th <th>Type Trype IfGoballyUniquek IfGabel IfGabel IfGdentifier IfoVallypeEnum</th> <th></th> <th></th> | Type Trype IfGoballyUniquek IfGabel IfGabel IfGdentifier IfoVallypeEnum | | |
| | < | | ~ | | |
| [° X | New | Apply Predefined Rul | le | | |

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

If cMapConversion 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.

If cMapConversion 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*.

| 7 Q | | Name of Translator for Export: | | | | | | | | |
|--|-----|-----------------------------------|------------------------------------|----------------------------|--|--|---------------------------|---|-----|----------|
| Name | | IFC4 Reference View-based Exp | port | | | | | | | |
| Translators for Import | + ^ | Description: | | | | | | | | |
| AECOsim Building Designer Import | | Export bared on the IECA Refer | rence View This MVD allows you | to chara pracira | | | | | | |
| Allplan Engineering Import | | geometry (BREP), especially for | model referencing and clash dete | ction. Use this | | | | | | |
| DDS-CAD MEP Import | | translator only if you are certai | in that the recipient software sup | ports IEC4 and this MVD. 🧅 | | | | | | |
| Exact Geometry Import | | | | | | | | | | |
| General Import | | | | | | | | | | <u> </u> |
| Modeling Applications Import | | | | | Type Mapping for | or IFC Export | | ? | ? | × |
| Plancal nova Import | | IEC Schema: | IEC4 | × 0 | - | | | | | |
| Revit MEP Import | | in e senema | | | Available Presets: | | | | | |
| Revit Structure Import | | Model View Definition: | Reference View | ~ 0 | ARCHICAD Classific | ation - v 2.0 IFC2x3 | | | | ^ |
| Scia Engineer Import | | Name of Custom MVD: | | | ARCHICAD Classific | | | | | 1 |
| Structural Analysis Model Import | | Name of Coston Arton | | | - | | | | | |
| Tekla Structures Import | | Conversion Presets | | | | | | | | ~ |
| Translators for Export | + | conversion research | | | New | Rename | Delete | | A D | 5 |
| AECOsim Building Designer Export | | Model Filter: | | | | | | | | 2 I |
| Allplan Engineering Export | | All 3D elements | | v | * SETTINGS | | | | | - |
| BIM4You (4D/SD) Export | | | | | Open the mapping | dialog to view or edit settings of | current Preset | | | |
| CostX Export | | Type Mapping: | | | - | Map IFC Types for 8 | xport | _ | _ | יר |
| DDS-CAD MEP Export | | ARCHICAD Classification | - v 2.0 IFC4 | ✓ … | | | | | _ | - |
| Exact Geometry Export | | Geometry Conversion: | | | * COMPATIBILITY | | | | | - 1 |
| General Parametric Export | | | | | Compatibility of cur | rent Preset with IFC Schemas | | | | |
| IFC4 Design Transfer View-based Export | | Precise BKEP geometry | | · · · · | IFC2x3 Schema | | | | | ^ |
| n IFC4 Reference View-based Export | | Property Mapping: | | | VIFC4 Schema | | | | | |
| iTWO (5D) Export | | Standard IEC4 Properties | | | - | | | | | |
| Plancal nova Export | | | | | | | | | | |
| Revit Export for Reference Model | | Data Conversion: | | | | | | | | |
| Revit MEP Export | | IFC Properties available in | n IFC Project Manager | v | T | | | | | |
| Revit Structure Export | | | | | RELATED TRAN | SLATORS | | | | |
| Scia Engineer Export | | Unit Conversion: | | | This Preset is curren | itly used in the following Transla | ors for Export: | | | |
| Tekla Structures Export | | Metric (mm) (deg) (USD) | | × | IFC4 Design Transf IFC4 Reference Vie | er View-based Export (IFC4, Desig w-based Export (IFC4, Reference | n Transfer View) /iew) | | | ^ |
| | | | | | | | | | | ~ |
| New Delete Set Preview | 0 🗄 | | Ca | ncel OK | | | Cancel | | ок | |

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.

| | - | | | | | |
|-------------------------------|----------------------------------|------------|------------------------------|----------------------------|----|---|
| Map Elements by: | Element Type | (i) | Source Classification System | m: 🔫 | | |
| | Classification | (i) | ARCHICAD Classification | - v 2.0 | | |
| | | | ARCHICAD Classification | - v 2.0 | | |
| | | | IFC-3G - MARCH 2022 | | | _ |
| Classification | | | IFC Type | | | |
| ¥II Q | | | Mapping Status: | 🔿 by Parent | | |
| Unclassified | Elements | | | Custom | | |
| ✓ ⊕ ARCHICAD CI | assification - v 2.0 | | IFC Type | | | |
| > 99 Space | | | | IfcBuildingElementProxy | | |
| > 🗩 Elements | | | Predefined Type: | NOTDEFINED | | _ |
| > 少 Componen > 少 Materials | ts | | User Defined Type: | | | |
| | | | IFC Type Product | | | |
| | | | I | fcBuildingElementProxyType | | |
| | | | Predefined Type: | NOTDEFINED | | |
| | | | User Defined Type: | | | |
| Re | set Mapping | | Synchronize Predefined | Type values when possible | | |
| | | | | Cancel | OK | |

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.

| V | ٩ | | 11 | Name of Translator for Export: | | | |
|---|--|-----|----|------------------------------------|--------------------------------------|------------------|---|
| | Name | | | IFC4 Reference View-based Expo | rt | | |
| | Translators for Import | + - | | Description: | | | |
| | AECOsim Building Designer Import | | | | | | |
| | Allplan Engineering Import | | | geometry (BREP), especially for m | odel referencing and clash detection | n. Use this | |
| | DDS-CAD MEP Import | | | translator only if you are certain | that the recipient software supports | IFC4 and this MV | π |
| | Exact Geometry Import | | | | | | |
| | General Import | | | | | | |
| | Modeling Applications Import | | | * SETTINGS | | | |
| | Plancal nova Import | | | IEC Schampi | IEC4 | | |
| | Revit MEP Import | | | in C Schema. | | | 4 |
| | Revit Structure Import | | | Model View Definition: | Reference View | ~ | |
| | Scia Engineer Import | | | Name of Curtom MVD: | | | |
| | Structural Analysis Model Import | | | Hand of Caston myb. | | | |
| | Tekla Structures Import | | | Conversion Presets | | | |
| | Translators for Export | + | | Conversion Presets. | | | |
| | AECOsim Building Designer Export | | | Model Filter: | | | |
| | Allplan Engineering Export | | | All 3D elements | | ~ | |
| | BIM4You (4D/SD) Export | | | | | | |
| | CostX Export | | | Type Mapping: | | | |
| | DDS-CAD MEP Export | | | ARCHICAD Classification - v | 2.0 IFC4 | ~ | |
| | Exact Geometry Export | | | Geometry Conversion: | | | |
| | General Parametric Export | | | | | | ÷ |
| | IFC4 Design Transfer View-based Export | | | Precise BREP geometry | | ~ | 1 |
| | A IFC4 Reference View-based Export | | | Property Mapping: | | | |
| | ITWO (SD) Export | | | Standard IFC4 Properties | | ~ | 7 |
| | Plancal nova Export | | | | | | - |
| | Revit Export for Reference Model | | | Data Conversion: | | | |
| | Revit MEP Export | | | IFC Properties available in I | FC Project Manager | ~ | 7 |
| | Revit Structure Export | | | | | | |
| | Scia Engineer Export | | | Unit Conversion: | | | 4 |
| | Tekla Structures Export | | | Metric (mm) (deg) (USD) | | ~ | |

| | | | × |
|---|--|-------|----------|
| Ø Data Conversion for IFC Export | | ? | |
| Available Presets: | | | |
| All Element and Component data | | | ^ |
| Firment Depending and Classifications only | | | |
| Element Properties and Classifications only | | | |
| IFC Properties available in IFC Project Manager | | | _ |
| Ontimized for CostY | | | |
| New Rename | Delete | 2 |) |
| ▼ SETTINGS | | | |
| Select ARCHICAD Data to Export: | | | |
| Classifications | | | |
| Element Properties | All | | |
| Building Material Properties | | | |
| Element parameters | All | | |
| Component parameters | All | | |
| Door-Window parameters | | | |
| Zone Categories | | | |
| Only Properties set in Property Mapping for the s | elected Translator | | |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: | elected Translator | | |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: ☑ IFC Base Quantities | elected Translator | | |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: ☐ IFC Base Quantities ☐ IFC Space Containment | elected Translator Filter Contai | nment | |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: IFC Base Quantities IFC Space Containment IFC Space Soundaries | elected Translator Filter Contai | nment | |
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| O Only Properties set in Property Mapping for the s Select Derived Data to Export: IFC Base Quantities IFC Space Containment COMPATIBILITY Compatibility of current Preset with Model View Def IFC2S Schema | Filter Contai | nment | _ |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If C Base Quantities If C Space Containment C If C Space Boundaries C COMPATIBILITY Compatibility of current Preset with Model View Def IFCCSA Schema C Contrainton View Version 2.0 | ielected Translator Filter Contai | nment | ^ |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If IC Base Quantities If IC Space Containment If IC Space Soundaries Compatibility of current Preset with Model View Def FUC23 Schema Coordination View Version 2.0 Coordination View Version 2.0 | elected Translator Filter Contai | nment | ^ |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: IFC Base Quantities IFC Space Boundaries COMPATIBILITY Compatibility of current Preset with Model View Def FC232 Schema Coordination View Version 2.0 Coordination View Version 2.0 Coordination View Surface Geometry) Coordination View Surface Geometry) Coordination View Version 2.0 Coordination View Version | elected Translator Filter Contai | nment | • |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If C Base Quantities If C Space Boundaries COMPATIBILITY Compatibility of current Preset with Model View Def If C2x3 Schema Coordination View Version 2.0 Coord | re Compatibility | nment | · · |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If IC Base Quantities If IC Space Containment If IC Space Boundaries COMPATIBILITY Compatibility of current Preset with Model View Def Coordination View Version 2.0 Coordination View (Surface Geometry) Coordination View (Surface Geometry) Coordination View (Surface Geometry) Coordination View (Surface Geometry) Coercide Settings to Ensure ReLATED TRANSLATORS | re Compatibility | nment | * |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: IFC Base Quantities IFC Space Containment IFC Space Containment IFC Space Containment IFC Compatibility of current Preset with Model View Def IFC State Soundaries Compatibility of current Preset with Model View Def IFC State Soundaries Compatibility of current Preset with Model View Def IFC State Soundaries Compatibility of current Preset with Model View Def IFC State Soundaries Compatibility of current Preset with Model View Def IFC Soundaries IFFC Soundaries | recompatibility | nment | * |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: IFC Base Quantities IFC Space Boundaries Compatibility of current Preset with Model View Def Compatibility of current Preset with Model View Def IFC 23 Schema Coordination View Version 2.0 | re Compatibility tors for Export tors for Export terve Trains 2.0, | nment | ^ ~ |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If IC Base Quantities If IC Space Containment If IC Space Boundaries Compatibility of current Preset with Model View Def FIC2X Schema Control Control View (Surface Geometry) Control | relected Translator Filter Contai initions: re Compatibility tors for Export: ation (Version 2.0) (V | nment | |
| O Only Properties set in Property Mapping for the s Select Derived Data to Export: If C Base Quantities If C Space Boundaries COMPATIBILITY Compatibility of current Preset with Model View Def Coordination View Version 2.0 View Version View Version 2.0 View View View View View View View View | recompatibility recompatibility tors for Export: ation View Version 2.0) rew Version 2.0) | nment | |

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)*

| Save Plan | | | | × |
|--------------|------------------------|--------------------------|--------------------------|--------|
| Save in | New Project | ~ | G 🤌 📂 🛄 - | |
| Quick access | Name | ^ No items match your | Date modified search. | Туре |
| Desktop | | | | |
| : Libraries | | | | |
| This PC | < | | | > |
| P | Export: Translator: | Entire project | | Filter |
| Network | File <u>n</u> ame: | New Project.ifc | ~ | Save |
| | Save as type: | (IFC Files (*.ifc) | ~ | Cancel |

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

| | | | | • | | Editabl |
|-------------------------|----------------|---------|---|--|--|---------|
| Name T | ype | Default | | Property Name: | Combustible | |
| InternalPassageD I | nteger | 0 | ^ | Property name. | Comparing | |
| OverloadProtecti T | rue/False | False | | Description: | | |
| SinglePhase T | rue/False | False | | | | |
| StandByGenerator T | rue/False | False | | A MALUE DEFINITION | | |
| FireRating S | itring | | | VALUE DEFINITION | | |
| InternalSurfaceAr N | lumber | 0.00 | | AVAILABILITY FOR CLASSIFIC | CATIONS | |
| SGPset_Stair | | | + | Available for items with the follo | owing Classifications: | |
| ConstructionMet S | itring | | | | | |
| Combustible T | rue/False | False | | () All | | |
| SGPset_PipeFitting | | | + | ○ None | | |
| HotDippedGalva T | rue/False | False | | Custom | | |
| WithFlange T | rue/False | False | | Cinting | | |
| CorrosionResistant T | rue/False | False | | Edit 🔫 | | |
| HighTemperature S | itring | | | Click | to edit the list of Classifications for | |
| PolyethyleneSleeve T | rue/False | False | | whic | h the selected Properties will be available. | |
| Pre-insulated T | rue/False | False | | | | |
| PressureRating S | itring | | | | | |
| Thickness M | lumber | 0.00 | | | | |
| WaterProofingTa T | rue/False | False | | | | |
| WeldedJoint T | rue/False | False | | | | |
| SGPset_PipeSegment | t i | | + | | | |
| FilledOrGrouted S | itring | | | | | |
| ConstructionMet S | itring | | | | | |
| Footpath T | rue/False | False | | | | |
| MaintainedByOw T | rue/False | False | | | | |
| Shared T | rue/False | False | | | | |
| CatchmentArea | lumber | 0.00 | | | | |
| RoughnessCoeffi N | lumber | 0.00 | | Transfer: | | |
| Coupling Diamet L | enath | 0 | ~ | # 1 × 2 | Classification Manager | |
| Show conflicts with Pro | operties in Ho | tlinks | | | | |
| Maur T | Dalata | 0 | | | Consul | 01 |

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.

| 🖉 Availability | ? | × |
|--------------------------|---|---|
| 📰 🖓 Q stair | | |
| > Ladder | | ^ |
| > 🗌 Stair Finish | | |
| > 🗌 Stair Structure | | |
| ✓ 🗌 Stair Layout | | |
| Access Staircase | | |
| Circular Staircase | | |
| Curved-run Stair | | |
| Double-return Stair | | |
| Exit Staircase | | |
| External Exit Staircase | | |
| Half-turn Stair | | |
| Half-winding Stair | | |
| Precast Staircase | | |
| Quarter-turn Stair | | |
| Quarter-winding Stair | | |
| Spiral Stair | | |
| Straight-run Stair | | |
| Three-quarter-turn Stair | | × |
| Cancel | C | К |

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

| | | | | ? | |
|--|-----|---------------------------------------|-------------------------------------|---------------------|-----|
| 7 Q | | Name of Translator for Export: | | | |
| Name | | IFC4 Reference View-based Export | | | _ |
| Translators for Import | + ^ | Description: | | | |
| AECOsim Building Designer Import | | Export bared on the IEC4 Reference | a View This MVD allows you to sh | | - |
| Allplan Engineering Import | | geometry (BREP), especially for mod | lel referencing and clash detection | n. Use this | |
| DDS-CAD MEP Import | | translator only if you are certain th | at the recipient software support: | s IFC4 and this MVE | э. |
| Exact Geometry Import | | | | | |
| General Import | | | | | |
| Modeling Applications Import | | ▼ SETTINGS | | | |
| Plancal nova Import | | IEC Schemat | IEC4 | ~ | 1.0 |
| Revit MEP Import | | n e seatana. | | | 11 |
| Revit Structure Import | | Model View Definition: | Reference View | ~ | ill |
| Scia Engineer Import | | Name of Custom MVD: | | | |
| Structural Analysis Model Import | | Name of Custom MVD. | | | |
| Tekla Structures Import | | Conversion Presets | | | |
| Translators for Export | + | conversion rresets. | | | |
| AECOsim Building Designer Export | | Model Filter: | | | |
| Allplan Engineering Export | | All 3D elements | | ~ | |
| BIM4You (4D/5D) Export | | | | | |
| CostX Export | | Type Mapping: | | | |
| DDS-CAD MEP Export | | ARCHICAD Classification - v 2 | .0 IFC4 | ~ | |
| Exact Geometry Export | | Coometry Conversions | | | |
| General Parametric Export | | Geometry Conversion. | | | 1.0 |
| IFC4 Design Transfer View-based Export | | Precise BREP geometry | | ~ | |
| IFC4 Reference View-based Export | | Property Mapping: | | | |
| iTWO (5D) Export | | Standard IEC4 Properties | | | L r |
| Plancal nova Export | | Standard in C4 Properties | | | ГU |
| Revit Export for Reference Model | | Data Conversion: | | | - |
| Revit MEP Export | | IFC Properties available in IFC | Project Manager | ~ | 1 |
| Revit Structure Export | | | | | 1 |
| Scia Engineer Export | | Unit Conversion: | | | |
| | | Metric (mm) (deg) (USD) | | ~ | |

Property Mapping Under IFC Translator

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

| ipign engineering impore | - Acourt | CLA TRUEL |
|--|----------|-----------|
| Property Mapping for IFC Export | ? | × |
| Available Presets: | | |
| Standard IFC2x3 Properties | | ^ |
| Standard IFC4 Properties | | |
| | | ~ |
| New Rename Delete | -⊅ | D) |
| ▼ SETTINGS | | |
| Open the mapping dialog to view or edit settings of current Preset | | |
| Map IFC Properties for Export | | |
| ▼ RELATED TRANSLATORS | | |
| This Preset is currently used in the following Translators for Export: | | |
| IFC4 Design Transfer View-based Export (IFC4, Design Transfer View) IFC4 Reference View-based Export (IFC4, Reference View) | | ^ |
| | | ~ |
| Cancel | ОК | |
| | | .:: |

Map IFC Properties For Export

5. Select the entity of the object and click New

| - Factoria | 100 | Descention | | | Managine Bulay in Order of Drive's | |
|-----------------------------|-----|-----------------------------|-------------------|---|---|--------|
| Endues: | | Properties: | | | Mapping Rules in Order of Priority: | |
| Show All IFC Entities V All | ~ u | | | | | |
| ✓ 🛞 (IfcBuildingElement) | ^ | Name | Туре | | | |
| 🗁 lfcBeam | * | Attributes | | ^ | | |
| IfcBuildingElementProxy | | Globalld (IfcRoot) | lfcGloballyUni | | | |
| IfcChimney | | Name (IfcRoot) | lfcLabel | | New Rule | Deleti |
| 1 IfcColumn | | Description (IfcRoot) | lfcText | | Herr Rule | Derett |
| IfcCovering | | ObjectType (IfcObject) | lfcLabel | | | |
| IfcCurtainWall | | Tag (IfcElement) | lfcldentifier | | Rule Content: | |
| F IfcDoor | | OverallHeight | IfcPositiveLeng | | | |
| IfcFooting | | OverallWidth | IfcPositiveLeng | | | |
| 11 IfcMember | | PreaefineaType | lfcDoorTypeEn | | | |
| [] IfcPile | | Uperation type | lfcDoorTypeO | | | |
| 11 IfcPlate | | Bret Condition | includer | | | |
| IfcRailing | | X Pset DoorCommon | | | | |
| IfcRamp | | X Pset DoorWindowGlazingTv | | e | | |
| IfcRampFlight | | Pset EnvironmentalImpactin | | | | |
| IfcRoof | | Pset EnvironmentalImpactVa | | | | |
| IfcShadingDevice | | Pset ManufacturerOccurrence | e | - | | |
| IfcSlab | | Pset_ManufacturerTypeInfor | | - | | |
| 🗟 lfcStair | | Pset_ServiceLife | | | | |
| IfcStairFlight | • | Pset_Warranty | | - | | |
| IfcWall | | | | | | |
| If cWindow | | | | | | |
| IfcCivilElement | | | | | | |
| > 🕅 IfcDistributionElement | | | | | | |
| ✓ (ifcElementComponent) | ~ | | | ~ | | |
| ; | < < | | | > | | |
| Clear All Settings | | New Import fro | m current Project | | Add Content 👻 | Remov |
| | _ | | | | | |

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*.

| | Create New IFC Property / Classification | on | ? | × |
|---|--|-----------------|----|---|
| C | Treate new | | | |
| (| Custom IFC Property | | | |
| | Property Set name: | SGPset_Material | | |
| | Property name: | Material | | |
| | Property type: | Single Value | | ~ |
| | Value type: | lfcLabel | | ~ |
| | Classification Reference | | | |
| | Reference name: | | | Þ |
| _ | | Cancel | 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 24 | | Default | - | |
| REVIEW AND POSITIONING | | | | |
| ▼ ↓ HINGED DOOR SETTINGS | | | hepth: | Flip: |
| ▲ ► E ² Threshold | | • | 1 Nominal Sizes and | d Tolerance |
| Threshold | | | Door Settings and The Frame and Leaf | d Opening |
| Side Overhang Opposite Side Side Overhang Opening Side | 0 | | A Natural Ventil | ation |
| | | | Handle and K | ick Board |
| | | | V - Opening Type a | ind Angle |
| LLI | | | Opening Line | s |
| | | | Model Attribute | 5 |
| | 12 | | Vall Opening | |
| | | | 🖉 Reveal | |
| | | | 🚈 Wall Closure | |
| | | | 예약 Masonry Arch | |
| | | | 📙 Model Attribute | 5 |
| | | | ✓ ☐ Fixtures and Fitting | ngs |
| | | | L Threshold | |
| | | | Sill | |
| | | | 🚰 Casing Outside | |
| | | | 當一 Casing Inside | |
| | | | Sunshade | |
| | | | Model Attribute | 25 |
| | | | U Floor Plan and Se | ction |
| | | | Minimal Space | |
| ▶ 5 FLOOR PLAN AND SECTION | | | E Description | |
| ▶ afle DIMENSION MARKER | | l | | |

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.

| Classification Manager | | | ? | × |
|--|--------------|---|---|---|
| μ. Q. | | ▼ CLASSIFICATION DEFINITION | | |
| ✓ | ^ | ID: | Beam | |
| > 🗩 Site | | Name: | | |
| > 🔊 Space | | 5 | | |
| ✓ ℘ Elements | | Description: | | |
| ✓ ℘ Construction Element | | | | ~ |
| > 🔊 Building Element Proxy | | ▼ AVAILABLE PROPERTIES | | |
| > 🔊 Wall | | Properties available for the selected (| Classification(s): | |
| > 90 Footing > 90 Column > 90 Pite | | ◯ All ◯ None | AntiCrackBar (SGPset_BeamReinforcement) AsRequiredBottomLeft (SGPset_BeamReinforcement) AsRequiredBottomMiddle (SGPset_BeamReinforcement) | ^ |
| >> >> >> >> >> >>> >>>>>>>>>>>>>>>>>>> | | Custom | AsRequiredStirrupsLeft (SGPset_BeamReinforcement) AsRequiredStirrupsMiddle (SGPset_BeamReinforcement) AsRequiredStirrupsMiddle (SGPset_BeamReinforcement) | Ē |
| So Joist New Classification in Branch | | Edit | AsRequiredStirupsRight (SGPset_BeamReinforcement) AsRequiredTopLeft (SGPset_BeamReinforcement) AsRequiredTopMiddle (SGPset_BeamReinforcement) | |
| 🗞 Hollov New Classification System | | | Beam length to be purchased (BEAM PURCHASE LENGTH | |
| Duplicate | | | (Expression)) Beam Overhang (BEAM PURCHASE LENGTH (Expression)) | |
| Spand Delete | | | BeamCage (SGPset_BeamReinforcement) BeamSpanType (SGPset_BeamReinforcement) | |
| 🚱 T-Bean | | | Bottom Surface (General) (GENERAL SURFACE DATA | |
| 🐼 Cast-in-situ Beam | | Transfer: | (Mapping)) | ~ |
| 🗞 Concrete Beam | ~ | 1 1 1 × 1 | Property Manager | |
| Show conflicts with Classification in Hotlinks | | | | |
| New 🔻 Delete 🛈 🔁 | } | | Cancel OK | |

Creating New Object Under Beam Entity

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

| 88 L | | CLASSIFICATION DEFINITION | N |
|----------------|--|--|--|
| 1 | | ID: Name: Description: | Beam |
| | > >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>> | Properties available for the select All None © Custom Edit | AntiCrackBar (SGPset_BeamReinforcement) AsRequiredBottomi.eft (SGPset_BeamReinforcement) AsRequiredBottomi.eft (SGPset_BeamReinforcement) AsRequiredBottomical effects BeamReinforcement) AsRequiredStrungshold (SGPset_BeamReinforcement) AsRequiredStrungshold (SGPset_BeamReinforcement) AsRequiredTopMtdGPset_BeamReinforcement) AsRequiredTopMtdGPset_BeamReinforcement) BeamCarg (SGPset_BeamReinforcement) BeamCarg (SGPset_BeamRei |
| Ne Ne Du | Show conflicts with Classification in Hotlinks New Delete | | Cancel OK |

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.

| ? × |
|-----|
| |
| |
| ^ |
| ~ |
| ОК |
| |

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*.

| 7 Q | | Name of Translator for Export: | | | | |
|--|-----|------------------------------------|---------------------------------------|----------------------|--|---------------------------------------|
| Name | | IFC4 Reference View-based Exp | ort | | | |
| Translators for Import | + ^ | Description: | | | | |
| AECOsim Building Designer Import | | Export based on the IEC4 Refere | ence View. This MVD allows you to sh | are precise | | |
| Allplan Engineering Import | | geometry (BREP), especially for r | nodel referencing and clash detection | n. Use this | | |
| DDS-CAD MEP Import | | translator only if you are certain | that the recipient software supports | : IFC4 and this MVD. | | |
| Exact Geometry Import | | | | | | |
| General Import | | | | | | |
| Modeling Applications Import | | ▼ SETTINGS | | | — Ø Type Mapping for IFC Export | ? × |
| Plancal nova Import | | IFC Schema | IEC4 | × 0 | _ | |
| Revit MEP Import | | | | | Available Presets: | |
| Revit Structure Import | | Model View Definition: | Reference View | ~ (i) | ARCHICAD Classification - v 2.0 IFC2x3 | ^ |
| Scia Engineer Import | | Name of Custom MVD: | | | ARCHICAD Classification - v 2.0 IFC4 | |
| Structural Analysis Model Import | | | | | - | |
| Tekla Structures Import | | Conversion Presets | | | | ~ |
| Translators for Export | + | contractor | | | New Rename Delete | A A A A A A A A A A A A A A A A A A A |
| AECOsim Building Designer Export | | Model Filter: | | | | |
| Allplan Engineering Export | | All 3D elements | | × | * SETTINGS | |
| BIM4You (4D/SD) Export | | | | | Open the mapping dialog to view or edit settings of current Preset | |
| CostX Export | | Type Mapping: | | | Map IFC Types for Export | |
| DDS-CAD MEP Export | | ARCHICAD Classification - | v 2.0 IFC4 | × | 6014017091/77/ | |
| Exact Geometry Export | | Geometry Conversion: | | _ | * COMPANDIENT | |
| General Parametric Export | | | | | Compatibility of current Preset with IFC Schemas | |
| IFC4 Design Transfer View-based Export | | Precise BREP geometry | | × | IFC2x3 Schema | ^ |
| IFC4 Reference View-based Export | | Property Mapping: | | - | ✓ IFC4 Schema | |
| iTWO (5D) Export | | Standard IEC4 Properties | | | - | |
| Plancal nova Export | | | | | | |
| Revit Export for Reference Model | | Data Conversion: | | | | |
| Revit MEP Export | | IFC Properties available in | IFC Project Manager | ~ | - | ~ |
| Revit Structure Export | | | | | | |
| Scia Engineer Export | | Unit Conversion: | | | This Preset is currently used in the following Translators for Export: | |
| Tekla Structures Export | | Metric (mm) (deg) (USD) | | × | IEC4 Design Transfer View-based Export (IEC4 Design Transfer View) | |
| | | | | | IFC4 Reference View-based Export (IFC4, Reference View) | |
| | | | | | | ~ |
| | ~ | | | | | |
| | * | | | | | |

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.

| Map Elements by: | O Element Type | (i) | Source Classification System | m: 🔫 | | | | |
|-------------------------------|-----------------------|-----|--|----------------------------|--|---|--|--|
| | Classification | (i) | ARCHICAD Classification | - v 2.0 | | | | |
| | | | ARCHICAD Classification | - v 2.0 | | | | |
| | | | 11 C-50 - MARCH 2022 | | | _ | | |
| Classification | | | IFC Type | | | | | |
| <u>ы</u> с | | | Mapping Status: | 🔘 by Parent | | | | |
| ① Unclassified | Elements | | | Custom | | | | |
| | lassification - v 2.0 | | IFC Туре | | | | | |
| > 99 Space | | | lfcBuildingElementProxy | | | | | |
| > 🔊 Elements | | | Predefined Type: | NOTDEFINED | | | | |
| > 🔊 Componer > 🔊 Materials | its | | User Defined Type: | | | | | |
| | | | IFC Type Product | | | | | |
| | | | I | fcBuildingElementProxyType | | | | |
| | | | Predefined Type: | NOTDEFINED | | | | |
| | | | User Defined Type: | | | | | |
| Re | set Mapping | | Synchronize Predefined Type values when possible | | | | | |
| Re | set Mapping | | | | | | | |

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.

| | Property Manager | | | | | | | | | |
|-----|---------------------|-------------------|-------------------------|---|---|--------------------|--------------|-------|-------------------|---------------------------------------|
| ā | Q | | | | | | | | | Editable |
| | Name | Туре | Default | | | Property Name: | | | | |
| ¢ | Moisture Diffusiv. | . Number | <undefined></undefined> | | ^ | | | | | |
| * | MECHANICAL (Ma | terials) | | + | | Description: | | | | · · · · · · · · · · · · · · · · · · · |
| ŧ | Dynamic Viscosity | Number | <undefined></undefined> | | | | | | | |
| ¢ | Young Modulus | Number | <undefined></undefined> | | | New Property / Gro | | ? | × | |
| ŧ | Shear Modulus | Number | <undefined></undefined> | | | Toperty / dre | , ap | | | |
| ŧ | Poisson Ratio | Number | <undefined></undefined> | | | New: | O Property | | | |
| ÷ | Thermal Expansi | String | | | | | Group | | | |
| • | OPTICAL (Material | s) | | + | | | 0 | | _ | |
| ŧ | Visible Transmitt | Number | <undefined></undefined> | | | Property Name: | New Propert | У | | · · · · · · · · · · · · · · · · · · · |
| ¢ | Solar Transmittan. | Number | <undefined></undefined> | | | Group Name: | SGPset Bean | 4 | | |
| ŧ | Thermal Transmit | Number | <undefined></undefined> | | | | Jointel_Deal | 1 | | |
| ŧ | Thermal Ir Emissi | Number | <undefined></undefined> | | | | | | | |
| ¢ | Thermal Ir Emissi | Number | <undefined></undefined> | | | | Cancel | ОК | | |
| ŧ | Visible Reflectan | Number | <undefined></undefined> | | | | | | | |
| ŧ | Visible Reflectan | Number | <undefined></undefined> | | | | | | | |
| ¢ | Solar Reflectance. | . Number | <undefined></undefined> | | | | | | | |
| ¢ | Solar Reflectance. | . Number | <undefined></undefined> | | | | | | | |
| Ŧ | STRUCTURAL ANA | LYSIS DATA | | + | | | | | | |
| ¢ | Strength Grade | String | <undefined></undefined> | | | Transfer: | | | | |
|] s | show conflicts with | Properties in Hot | links | | ~ | 75 1 | $\gg $ | Class | ification Manager | |
| | New 👻 | Delete | 0 5 | C | 4 | | | | Cancel | OK |

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.

| | U loo / m | | | ·9 |
|--|-------------------------|-----|------------------------|------------------------|
| Property Manager | | | | ? > |
| 11 Q | | | 1 | Editable: |
| Name Type | Default | | Property Group Name: | SGPset_Beam |
| MECHANICAL (Materials) | | + ^ | | |
| Dynamic Viscosity Number | <undefined></undefined> | | Description: | |
| Young Modulus Number | <undefined></undefined> | | | |
| Shear Modulus Number | <undefined></undefined> | | A New Property / Group | 2 × |
| Poisson Ratio Number | <undefined></undefined> | | Wew Property / Gloup | 1 ~ |
| Thermal Expansi String | | | New: P | roperty |
| OPTICAL (Materials) | | + | 0.6 | roup |
| Visible Transmitt Number | <undefined></undefined> | | | |
| Solar Transmittan Number | <undefined></undefined> | | Property Name: Com | hbustible |
| Thermal Transmit Number | <undefined></undefined> | | Add to Group: SG | Pset Beam |
| + Thermal Ir Emissi Number | <undefined></undefined> | | | |
| Thermal Ir Emissi Number | <undefined></undefined> | | | |
| + Visible Reflectan Number | <undefined></undefined> | | | Cancel OK |
| Visible Reflectan Number | <undefined></undefined> | | | |
| Solar Reflectance Number | <undefined></undefined> | | | |
| Solar Reflectance Number | <undefined></undefined> | | | |
| * STRUCTURAL ANALYSIS DAT | Γ A | + | | |
| Strength Grade String | <undefined></undefined> | _ | | |
| SGPset_Beam | | + | Transfer: | |
| Show conflicts with Properties | in Hotlinks | Ť | 1 1 1 V | Classification Manager |
| New 🔻 | Delete 🛈 🔁 | ₿÷ | | Cancel OK |

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…*

| | | | | Editable |
|---------------------------------------|-------------------------|---|---------------------------------|--|
| Name Type | Default | | Property Name: | Combustible |
| Dynamic Viscosity Number | <undefined></undefined> | ^ | Description | |
| Young Modulus Number | <undefined></undefined> | | Description | |
| Shear Modulus Number | <undefined></undefined> | | | |
| Poisson Ratio Number | <undefined></undefined> | | ▶ VALUE DEFINITION | |
| Thermal Expansi String | | | | |
| OPTICAL (Materials) | | + | · AVAILABILITT TOR CLASS | |
| Visible Transmitt Number | <undefined></undefined> | | Available for items with the fo | ollowing Classifications: |
| Solar Transmittan Number | <undefined></undefined> | | OAII | |
| Thermal Transmit Number | <undefined></undefined> | | ONess | |
| Thermal Ir Emissi Number | <undefined></undefined> | | | |
| Ihermal Ir Emissi Number | <undefined></undefined> | | Custom 3 | |
| Visible Reflectan Number | <undefined></undefined> | | Edit | |
| Visible Reflectan Number | <undefined></undefined> | | | |
| Solar Reflectance Number | <undefined></undefined> | | Click to which t | edit the list of Classifications for the selected Properties will be available. |
| Solar Reflectance Number | <undefined></undefined> | | | |
| STRUCTURAL ANALYSIS DATA | . Un defined | + | | |
| Strength Grade String ScReet Reem | < Undefined> | | | |
| Generality Support Beam | | + | | |
| | | ~ | transfer: | |
| | | · | 1 - N - N | Classification Manager |

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.

| Availability | ? | × |
|---|---|---|
| ш ч, Q | | |
| ✓ 🗌 Beam | | ^ |
| Beam Segment | | |
| ✓ Joist | | |
| Hollowcore | | |
| Lintel | | |
| Spandrel | | |
| T-Beam | | |
| Cast-in-situ Beam | | - |
| Concrete Beam | | |
| Concrete Beam (Cantilever) | | |
| Concrete Beam (End Span) | | |
| Concrete Beam (Interior Span) | | |
| Concrete Beam (Single Span) | | |
| Frieze | | |
| Floor Beam | | |
| Precast Beam | | |
| Prefabricated Beam | | |
| PT Beam | | ~ |
| Cancel | O | к |

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*

| Classification Manager | ? × |
|--|--|
| μ α | CLASSIFICATION DEFINITION |
| ✓ | ID: Beam Segment |
| > 🔊 Site | Name: |
| > 🔊 Space | Develoption |
| ✓ ∞ Elements | Description: |
| ✓ ⅔ Construction Element | |
| > 🔊 Building Element Proxy | ▼ AVAILABLE PROPERTIES 2 |
| > 🔊 Wall | Properties available for the selected Classification(s): |
| > 🔊 Footing | O All Beam length to be purchased (BEAM PURCHASE LENGTH A |
| > 🔊 Column | (Expression)) |
| > 🔊 Pile | Bottom Surface (General) (GENERAL SURFACE DATA |
| → 🔊 Beam | Custom 5 (Mapping)) Bottom Surface Area (General) (GENERAL SURFACE DATA |
| 🗞 Beam Segment 👖 | Edit 4 (Mapping)) Class of Surface (MAIN CONSTRUCTION) |
| 🗞 Joist | Clack to edit the list of Properties (PRODUCT DESCRIPTION (Expression)) |
| & Hollowcore | available for the selected Classifications. |
| 🗞 Lintel | Combustible (GENERAL RATINGS) Concrete Cover at Main Bars (MAIN CONSTRUCTION) |
| Spandrel | Conditional Surface Area of the Bottom (General) |
| 🚫 T-Beam | Conditional Surface Area of the Top (General) (GENERAL |
| > 5 Slab | Transfer: SURFACE DATA (Mapping)) |
| s (&) Roof | アロション Property Manager |
| Show conflicts with Classification in Hotlinks | |
| New 🔻 Delete 🛈 🔁 🕒 | Cancel OK |

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.

| V O | | | | | | |
|---|-----|--|--|---------------------------------------|--|----|
| | | Name of Translator for Export: | | | | |
| Name | | IFC4 Reference View-based Exp | oort | | | |
| Translators for Import | + ^ | Description | | | | |
| AECOsim Building Designer Import | | Depart beauties the IECA Date | This bear allowed and the second | | | |
| Allplan Engineering Import | | geometry (BREP), especially for | model referencing and clash detection | 1. Use this | | |
| DDS-CAD MEP Import | | translator only if you are certai | n that the recipient software supports | IFC4 and this MVD. \lor | | |
| Exact Geometry Import | | | | | | |
| General Import | | | | | | |
| Modeling Applications Import | | ▼ SETTINGS | | | | |
| Plancal nova Import | | IFC Column | IFC4 | | | |
| Revit MEP Import | | IFC Schema: | IPC4 | ~ W | Property Mapping for IFC Export | ? |
| Revit Structure Import | | Model View Definition: | Reference View | ~ ① | | |
| Scia Engineer Import | | | | | Available Presets: | |
| Structural Analysis Model Import | | Name of Custom MVD: | | | Standard IFC2x3 Properties | |
| Tekla Structures Import | | | | | Standard IFC4 Properties | |
| Translators for Export | + | Conversion Presets: | | | | |
| AECOsim Building Designer Export | | Model Filter: | | | | |
| Allplan Engineering Export | | All 3D elements | | | New Bename Delete | |
| BIM4You (4D/5D) Export | | - a so elements | | | | |
| CostX Export | | Type Mapping: | | | * SETTINGS | |
| DDS-CAD MEP Export | | ARCHICAD Classification | - v 2.0 IFC4 | · · · · · · · · · · · · · · · · · · · | Open the mapping dialog to view or edit settings of current Preset | |
| Exact Geometry Export | | | | | Man IEC Properties for Export. | |
| Canasal Decembric Funnet | | Geometry Conversion: | | | nup i creptitic ci cipatiti | |
| General Parallectric Export | | Precise BREP geometry | | × | ✓ RELATED TRANSLATORS | |
| IFC4 Design Transfer View-based Export | | | | | This Depart is successful used in the following Translation for Function | |
| IFC4 Design Transfer View-based Export | _ | Property Mapping: | | | This Preset is currently used in the following translators for export: | |
| IFC4 Design Transfer View-based Export 1FC4 Reference View-based Export ITWO (50) Export | | Property Mapping: | | | IFC4 Design Transfer View-based Export (IFC4, Design Transfer View) | |
| IFC4 Design Transfer View-based Export IFC4 Reterence View-based Export ITWO (SD) Export Plancal nova Export | | Property Mapping: Standard IFC4 Properties | | | IFG4 Design Transfer View-based Export (IFG4, Design Transfer View) IFG4 Reference View-based Export (IFG4, Reference View) | |
| General Pasallectic Export IFC4 Design Transfer View-based Export IFC4 Reference View-based Export IFWO (50) Export Plancal nova Export Revit Export for Reference Model | | Property Mapping: Standard IFC4 Properties Data Conversion: | | | IFG4 Design Transfer View-based Export (IFG4, Design Transfer View) IFG4 Reference View-based Export (IFG4, Reference View) | |
| IFC4 Design Transfer View-based Export IFC4 Design Transfer View-based Export IFW0 (5D) Export Plancal nova Export Revit Export for Reference Model Revit MPE Exort | | Property Mapping: Standard IFC4 Properties Data Conversion: | n IEC Droiert Mananer | | The Freek is contening occur in the following transactors for Caport: IFC4 Design Transfer View-based Export IFC4 (Sign Transfer View) IFC4 Reference View-based Export IFC4, Reference View) | |
| IFCA Design Transfer View-based Export IFCA Design Transfer View-based Export IFWO (5D) Export Plancal rows Export Revit Export for Reference Model Revit MEP Export Revit Studyne Panot | | Property Mapping: Standard IFC4 Properties Data Conversion: IFC Properties available in | n IFC Project Manager | | The Free's Suffering Used in the Nonewing Transactors for Export. IFCA Design Franker View-based Export (FCA, Belor Transfer View) IFCA Reference View-based Export (IFC4, Reference View) | 01 |
| General materials Capon (C) General materials (C) General materials (C) General materials (C) General materials (C) Generals (C) G | | Property Mapping: Standard IFC4 Properties Data Conversion: IFC Properties available in Unit Conversion: | n IFC Project Manager | | This Preces is unlenging used in the intermining instantiants for Spote. IFCA Design Transfer View-base Bogott (IFCA, Beith Frankfer View) IFCA Reference View-based Espott (IFCA, Reference View) Cancel | ОК |

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*.

| er | Oreate New IFC Property / Classification | | | ? | × |
|----------|--|----------------------------|------------------------|----|--------|
| nî | Create new | | | | |
| e | ۲ |) Custom IFC Property | | | |
| n | | Property Set name: | SGPset_Building | | ▶ |
| t) ia | | Property name: | ProjectDevelopmentType | | |
| it | | Property type: | Single Value | | ~ |
| u | | Value type: | lfcLabel | | \sim |
| | С |) Classification Reference | | | |
| 1 | | Reference name: | | | Þ |
| | _ | | Cancel | 01 | |
| | | | Cancel | 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



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 |