

OpenBuildings Designer How-to Guides

2026

For OpenBuildings Designer 2023 and 2024 Version

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INTRODUCTION

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

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

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 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.

3 IFC+SG AS AN MVD

IFC+SG is much 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.

GENERAL BIM GUIDE

Note: It is preferable that users refer to the wiki from the authoring tool
[OpenBuildings - OpenBuildings Designer 2024.2 - Communities](#)

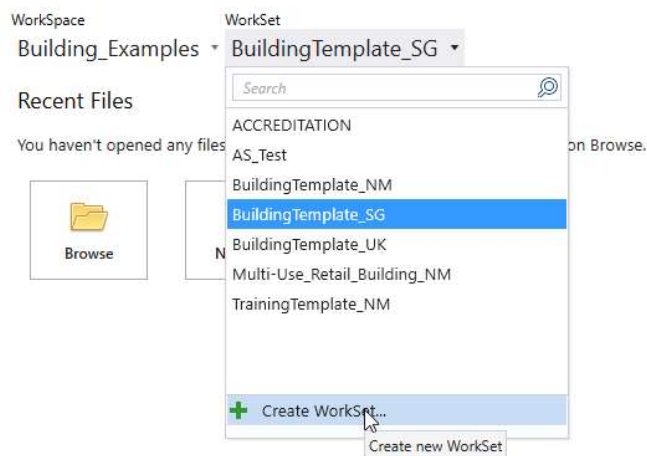


1 CREATING NEW WORKSETS

It is advisable to create a new workset since some of the files will be configured and userdefined psets will be added.

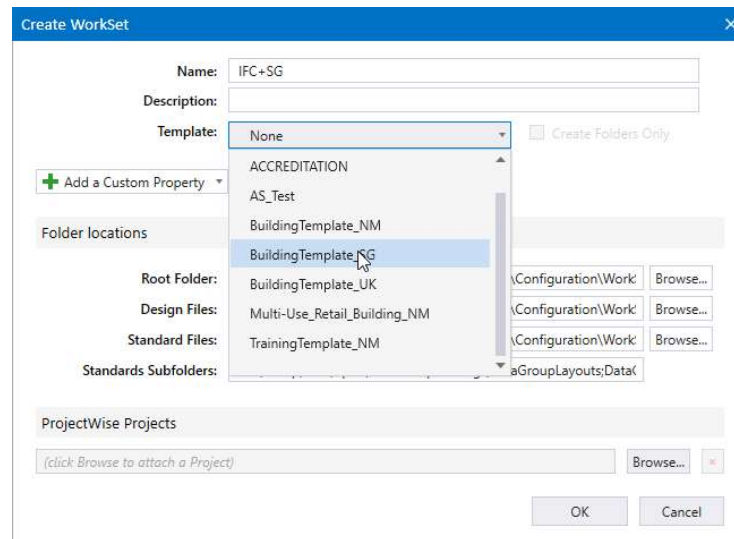
1. After opening OpenBuildings Designer, go to **Workset** and open the dropdown menu
2. Select **Create Workset...**

OpenBuildings Designer 2024



Creating New Workset

3. Type the name for the new *Workset*.
4. For the Template, open the dropdown menu and select **BuildingTemplate_SG**.
5. Click **OK**.



BuildingTemplate_SG as Template

CONFIGURING THE NEW WORKSET

The template's default setting excludes psets from the IFC configuration. The cfg file must be configured to expand the template's IFC Dataset. The worksets folder contains the CFG file. An example of a folder link is shown below.

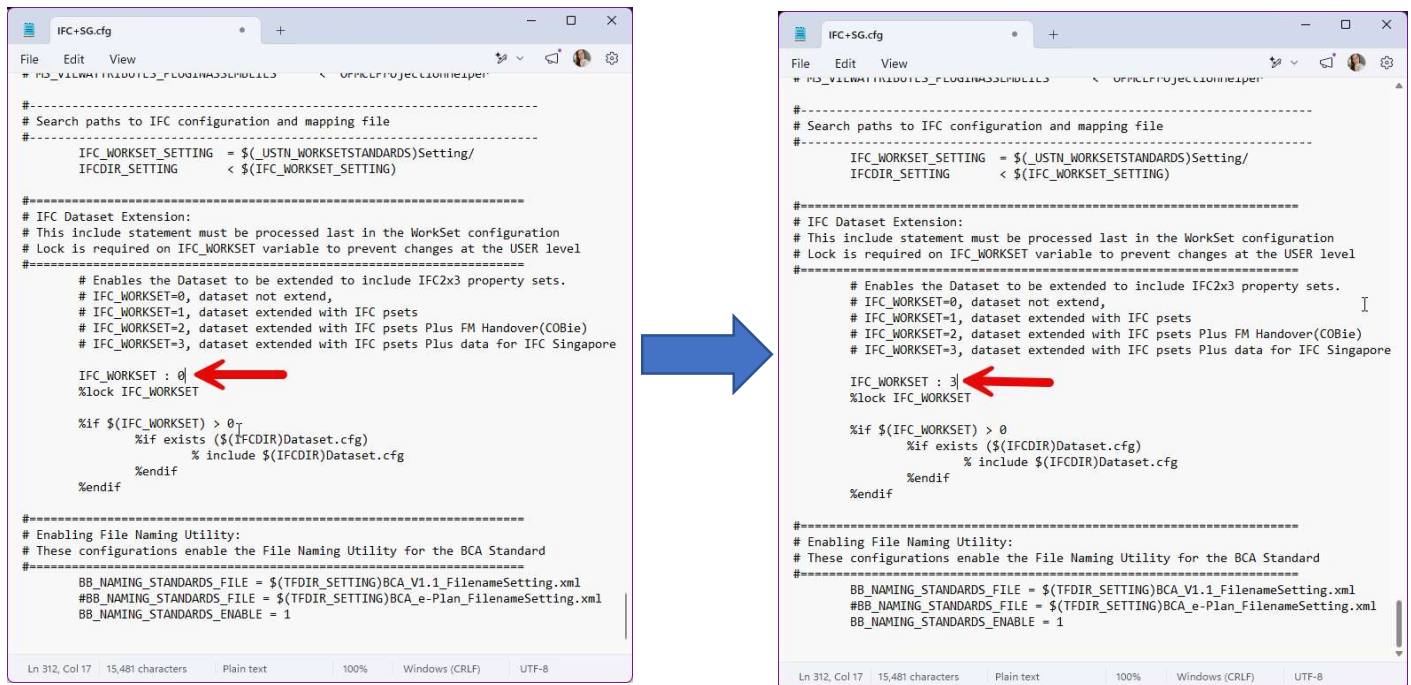
C:\ProgramData\Bentley\OpenBuildingsCONNECTEdition\Configuration\WorkSpaces\Building_Examples\worksets

1. Open the CFG file of the new workset with Notepad or any text editor app.

Name	Date modified	Type	Size
ACCREDITATION.dgnws	23/2/2026 10:31 pm	DGNWS File	47 KB
AS_Test.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
AS_Test.dgnws	5/5/2026 3:09 pm	DGNWS File	63 KB
BuildingTemplate_NM.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
BuildingTemplate_NM.dgnws	20/2/2026 4:19 pm	DGNWS File	47 KB
BuildingTemplate_SG.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
BuildingTemplate_SG.dgnws	9/9/2025 11:51 am	DGNWS File	47 KB
BuildingTemplate_UK.cfg	9/9/2025 11:51 am	Bentley MicroStati...	17 KB
BuildingTemplate_UK.dgnws	9/9/2025 11:51 am	DGNWS File	47 KB
Multi-Use_Retail_Building_NM.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
Multi-Use_Retail_Building_NM.dgnws	9/9/2025 11:51 am	DGNWS File	47 KB
TrainingTemplate_NM.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
TrainingTemplate_NM.dgnws	9/9/2025 11:51 am	DGNWS File	62 KB
IFC+SG	23/6/2026 3:44 pm	File folder	
IFC+SG.cfg	9/9/2025 11:51 am	Bentley MicroStati...	16 KB
IFC+SG.dgnws	23/6/2026 3:44 pm	DGNWS File	47 KB

Editing IFC+SG.cfg File

2. Scroll down and look for *IFC Dataset Extension*.
3. Change the value of IFC_WORKSET to 3 to enable the psets in the template.



Enabling the Property Sets

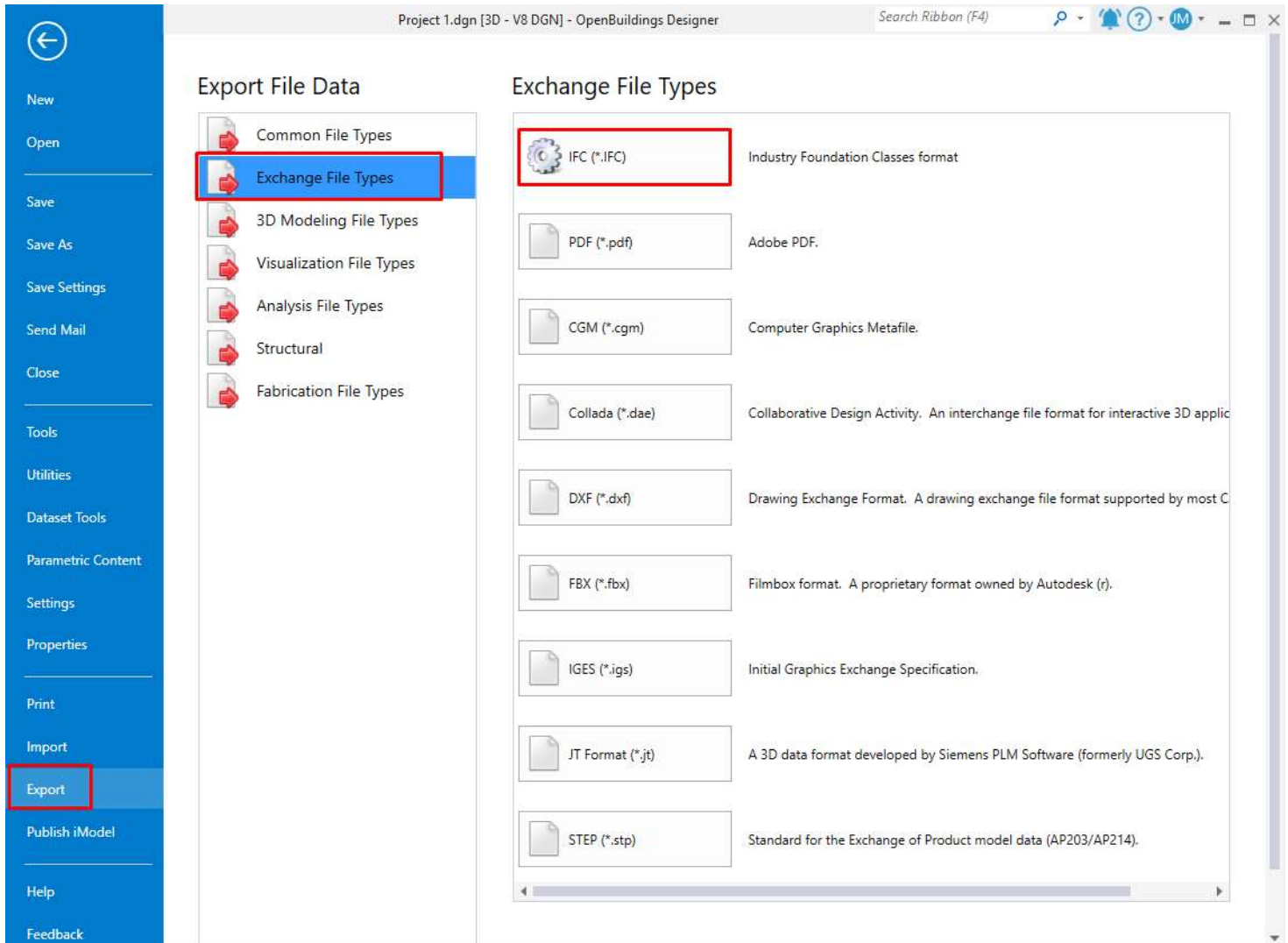
4. Save the cfg file.

2 HOW TO APPLY PREDEFINED AND USERDEFINED-PREDEFINED TYPE

The corresponding IFC Class and Type are already mapped to the default objects in OpenBuildings. However, the user can modify the value of the Predefined and the Userdefined Type using the IFC4 Override Property if necessary.

CLASS MAPPING

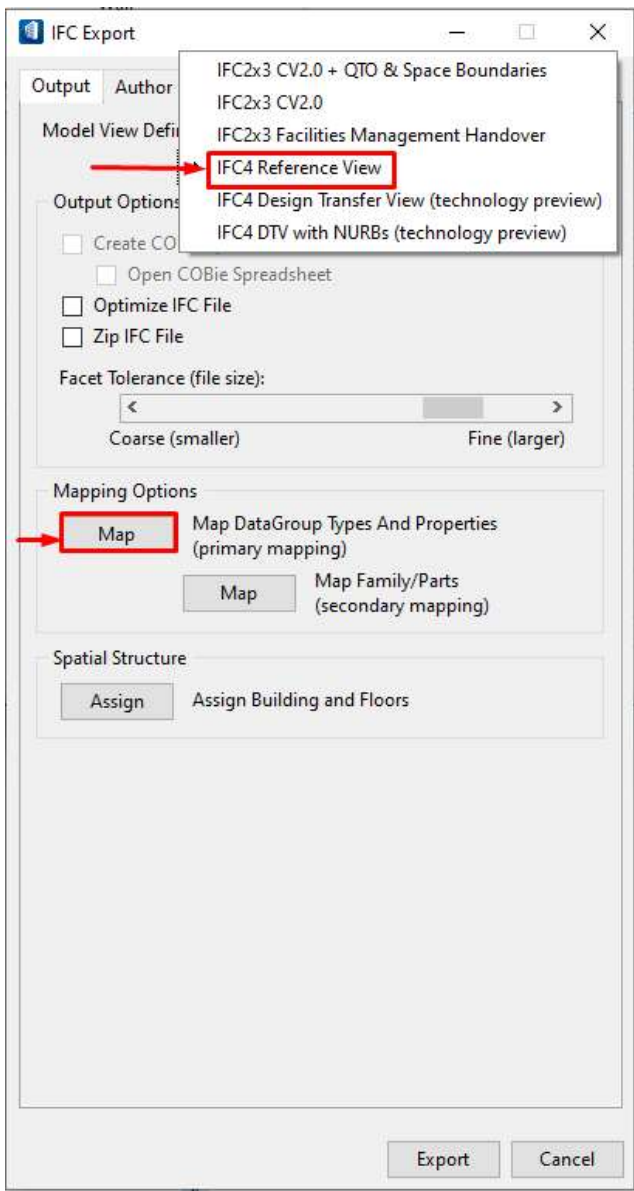
1. To edit the Predefined type, go to **File** and Select **Export**. Select **Exchange File Types** and choose **IFC**.



Export Settings for Class Mapping

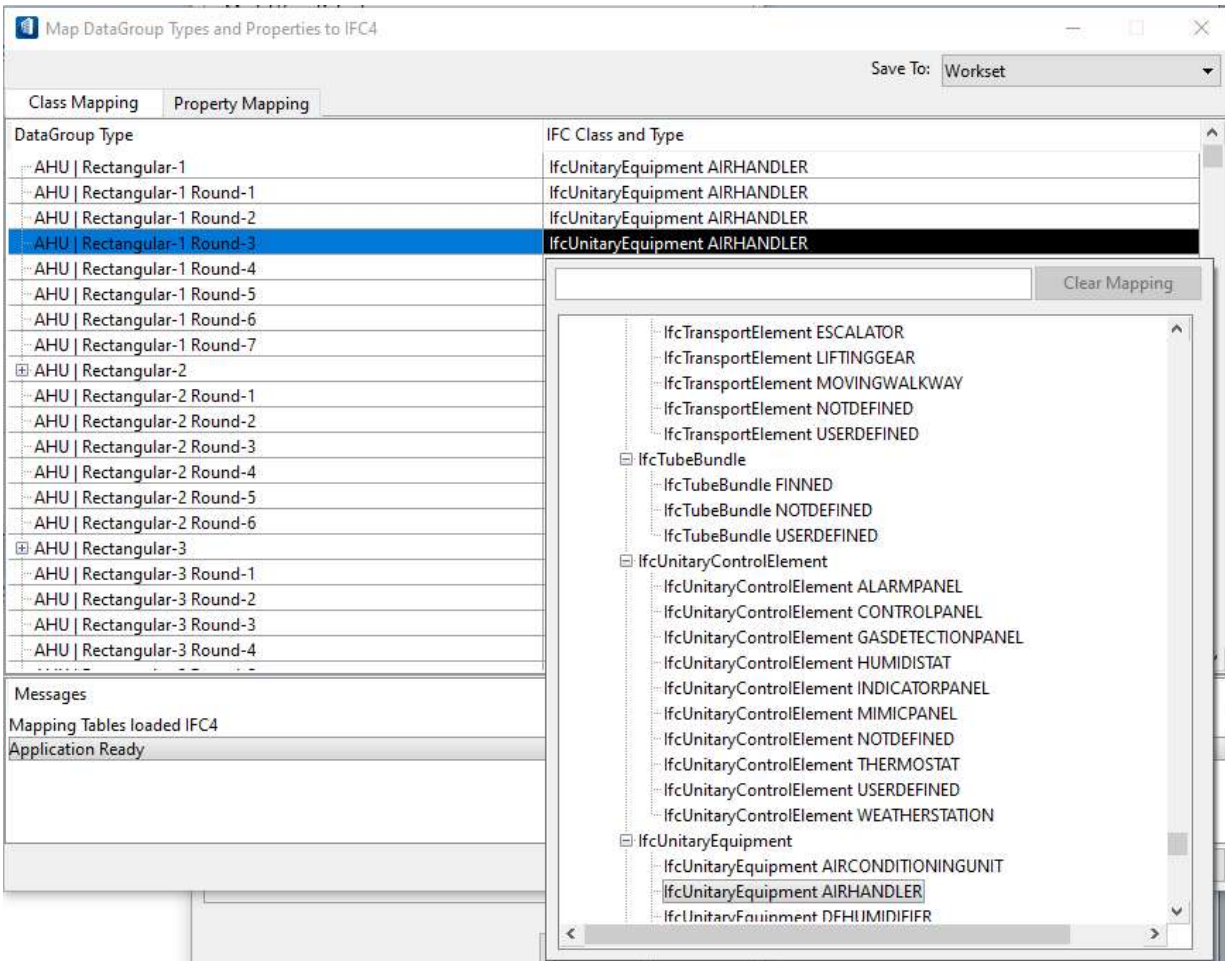
2. On the **Model View Definition**, open the dropdown list and select **IFC4 Reference View**.

3. Select **Map** (Map DataGroup Types and Properties) to open the list of all objects.



Map DataGroup Types and Properties from Mapping Options

- To modify the Predefined Type of an object, select it and then click on the IFC Class and Type.

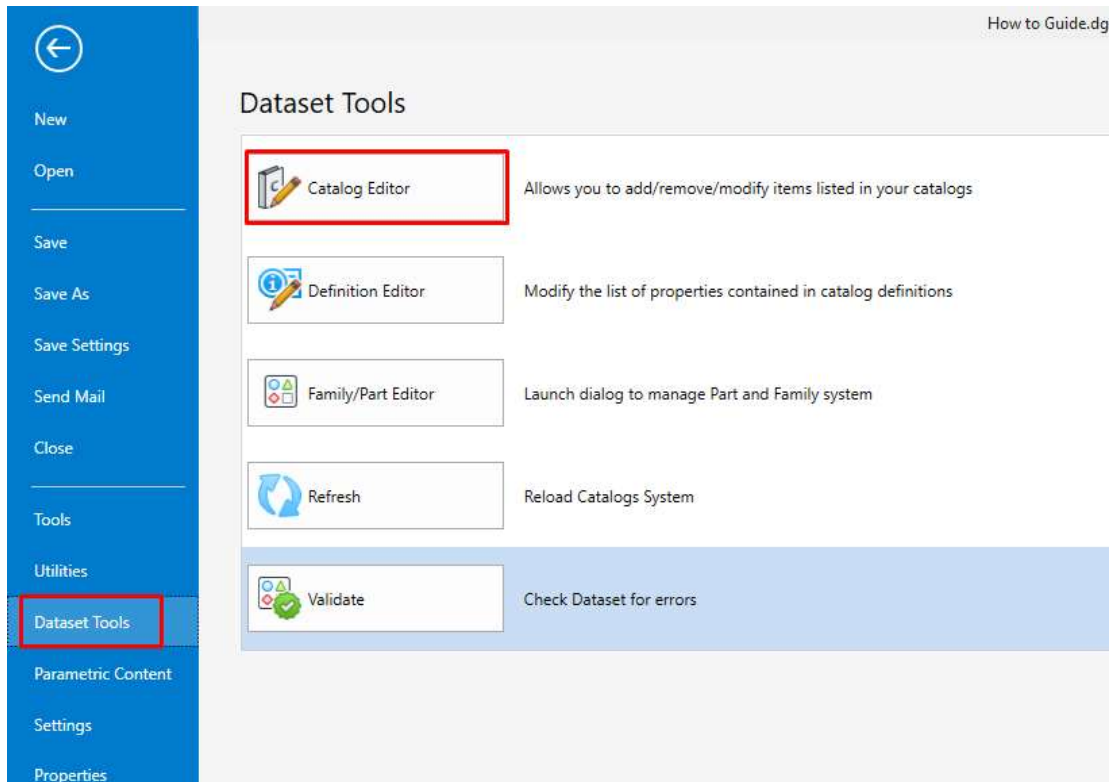


Modifying IFC Class and Type through Mapping Options

IFC4 OVERRIDE

The IFC4 Override is a property that can be assigned to any catalog type. Its function is to override the value of the IFC Class and Type of the object and modify the Predefined and Userdefined Type.

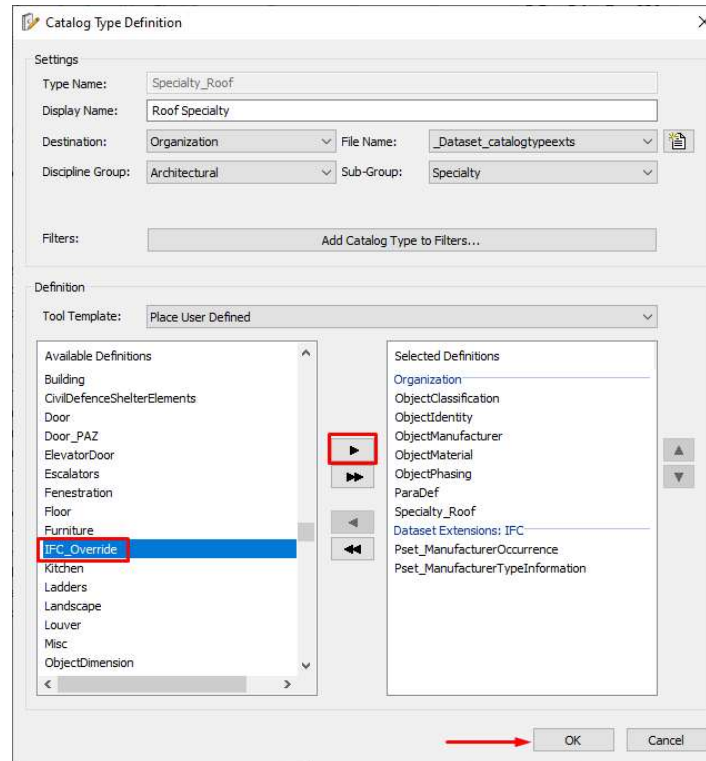
1. To assign the IFC4 Override property to any Catalog Type, Go to **File** and under **Dataset Tools**, Select **Catalog Editor**.



Location of Catalog Editor

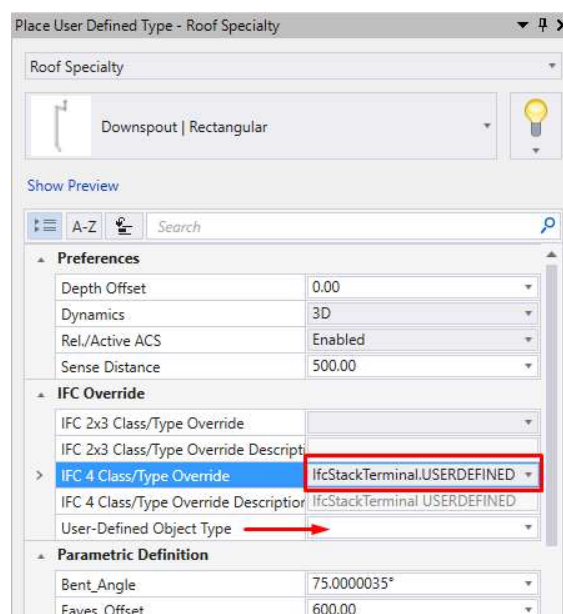
2. Right click on the **Catalog Type** and select **Properties**.

- On the available definitions on the left column, find and select **IFC_Override** and click the single forward button to assign the selected definition to the catalog type and click **Ok**.



Adding IFC_Override as Selected Definitions for Roof Specialty

- Save the changes made and restart OpenBuildings for the changes to apply.
- Before placing an object, on the Modify Panel, look the IFC Override property and open the dropdown list of **IFC4 Class/Type Override** to select the appropriate Class and type the object type under the **User-Defined Object Type**.



Classifying Userdefined Object