

Standard information management plan

Master asset list and mapping resource

Adoption Guidance

Overview

The master asset list and mapping resource have been developed with industry expertise to provide a consistent approach for asset identification, grading, geometry classification assignment and OpenBIM data exchange, using Uniclass and Industry Foundation Class (IFC).

It can be adopted by Scottish public sector clients and their delivery teams on projects using the Standard information management plan resource (*) and Autodesk Revit software. The resource consists of:

- **Master asset list:** centrally hosted on Airtable: <https://airtable.com/shrIFHnD9ztZjweon>
- **Resource adoption guidance:** a step-by-step guide to support the master asset list, classification mapping integration and IFC export on your project model.
- **Master asset classification file:** for integrating the master asset list and classification data values into your project Revit model using the Autodesk Standardised Data Tool. (*Formerly the classification manager for Revit*)

(*) Before adopting the Master Asset Mapping Database and mapping file resource please refer to the SFT disclaimer in appendix A.

The master list is subject to change as new and existing assets are added and amended following live project feedback and periodical NBS Uniclass updates.

Resource adoption guidance

To add classification values to your Revit model elements, there is a Standardised Data Tool from Autodesk BIM Interoperability Tools. Using this tool, you can add classification codes to selected models' elements, dependant on the classification system of choice.

The Autodesk Standardised Data Tool download files and installation guide can be located here:

<https://interoperability.autodesk.com/classificationmanager.php>

Please note this guidance document only covers the Standardised Data Tool and you may still need to manually setup the COBie Extension to configure and export COBie depending on your project requirements. If required, this can be discussed with the BIM/ information manager on your project.

Assigning Uniclass with the Standardised Data Tool

1. Under *BIM Interoperability Tools* tab select *Assign Picklist* under *Standardised Data* per figure 1

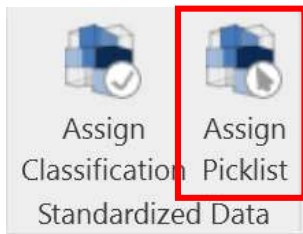


Figure 1 – Standardised Data ribbon – Assign Picklist

- Using *Select One Now* load in the master asset classification file: **SIMP2-SFT-XX-XX-SP-Z-0001_S2_Pxx_Master_Asset_Mapping** then click *Close*.

This file uses the following shared parameters:

Classification.Uniclass.Pr.Number, Classification.Uniclass.Pr.Description, Classification.Uniclass.Ss.Number, Classification.Uniclass.Ss.Description, Classification.NRM.Number, Classification.NRM.Description, IfcExportAs, COBie.Type.Category, IfcElementType[Type]

Note 1: The above parameters can be updated to suit your specific company standards or project requirements. Please consult with the BIM/ information manager on your project to ensure a consistency approach is maintained across the whole project team.

Note 2: Please note the following source notes regarding the Autodesk Revit parameter GUIDs:

- Classification.Uniclass.Pr.Number, Classification.Uniclass.Pr.Description, Classification.Uniclass.Ss.Number, Classification.Uniclass.Ss.Description, , IfcExportAs, COBie.Type.Category – GUIDs coming from BIM Interoperability Tools: COBie Extension file - *COBie Extension Shared Parameters.txt*
- IfcExportAs – GUIDs coming from BIM Interoperability Tools: Standardised Data Tool file - *SP_StandardizedData.txt*
- Classification.NRM.Number, Classification.NRM.Description – GUIDs have been created for SFT through industry support.
- IfcElementType[Type] – GUIDs coming from Autodesk GitHub Ifc Exporter Installation file - *IFC Shared Parameters-RevitIFCBuiltIn-Type_ALL.txt*

Note 3: Make sure *Set COBie Parameters* is ticked via *Options* per Figure 2 below – this will apply the classification code & description to COBie.Type.Category.

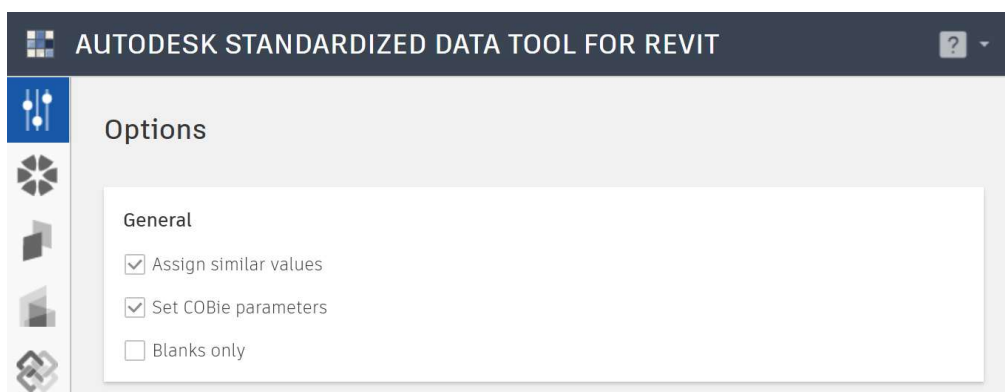


Figure 2 - Standardised Data Tool Options Menu (v 9.0.8119.0)

3. Select the *Assign Classification* on the Standardised Data Tool ribbon per figure 3, use the picklist icon per figure 4 to display the master asset list loaded in step 2.

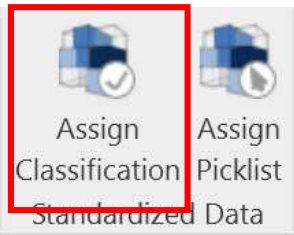


Figure 3 - Standardised Data ribbon – Assign Classification

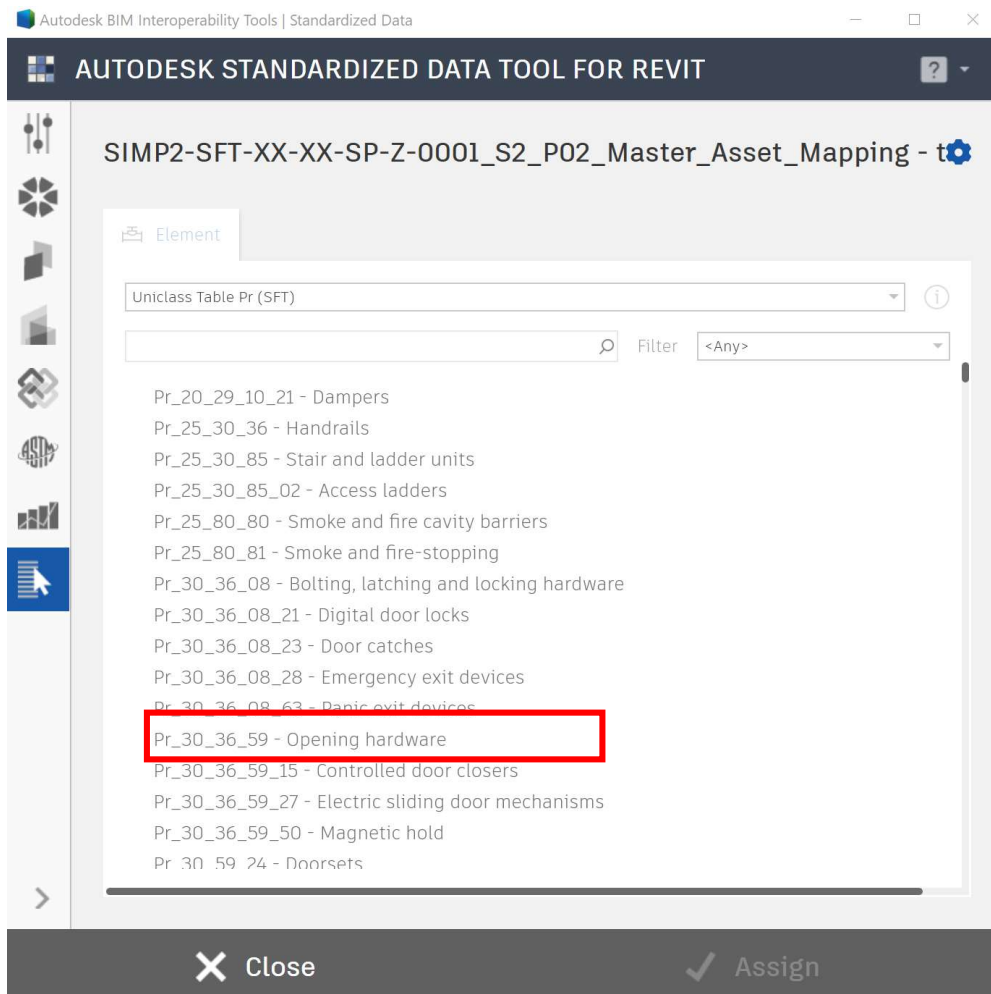


Figure 2 - Standardised Data Tool > Picklist and element selection

4. Within your model view select the element type you want to assign a Uniclass Product (Pr) classification value to and look through/search the range to select an appropriate code from the master asset list.

Note 4: Uniclass Table Pr will add corresponding Uniclass Table Ss, IFC2x3, IFCElementType & NRM 3 at the same time.

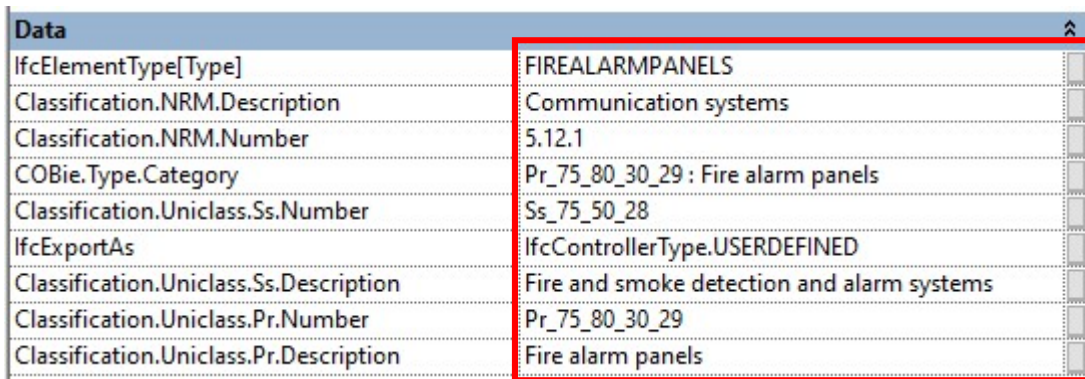
Note 5: Uniclass Table Ss is for reference ONLY and should not be selected.

Note 6: IFC2x3 is for reference ONLY and should not be selected.

Note 7: IfcElementType is for reference ONLY and should not be selected.

Note 8: NRM 3 is for reference ONLY and should not be selected.

Once you complete this process and the product classification code has been added you can select the model element and go to Type Properties. You will now see that Classification Parameters have been applied to the element per the figure 5 example. Repeat the previous steps for all maintainable assets in the project.



Data	
IfcElementType[Type]	FIREALARMPANELS
Classification.NRM.Description	Communication systems
Classification.NRM.Number	5.12.1
COBie.Type.Category	Pr_75_80_30_29 : Fire alarm panels
Classification.Uniclass.Ss.Number	Ss_75_50_28
IfcExportAs	IfcControllerType.USERDEFINED
Classification.Uniclass.Ss.Description	Fire and smoke detection and alarm systems
Classification.Uniclass.Pr.Number	Pr_75_80_30_29
Classification.Uniclass.Pr.Description	Fire alarm panels

Figure 3 - Element Classification example

Note 9: The above steps and notes ONLY apply to the master asset list range, and you may need to add further tables to the Standardized Data Tool to cover any additional assets as required by the client – if necessary, please discuss this with the BIM/ information manager on your project and inform the SFT BIM delivery group so they can update the master asset list.

Exporting Classifications to IFC

Once the COBie parameter fields and Classifications are populated you are ready to export to IFC. Next you need to ensure Revit is pointed to the correct IFC mapping files. This should be discussed in advance with the project BIM/ information manager to ensure a consistent approach is maintained across the project and into the project information & asset information models.

5. Via the Revit File tab select > Export > IFC > modify setup> Property Sets >

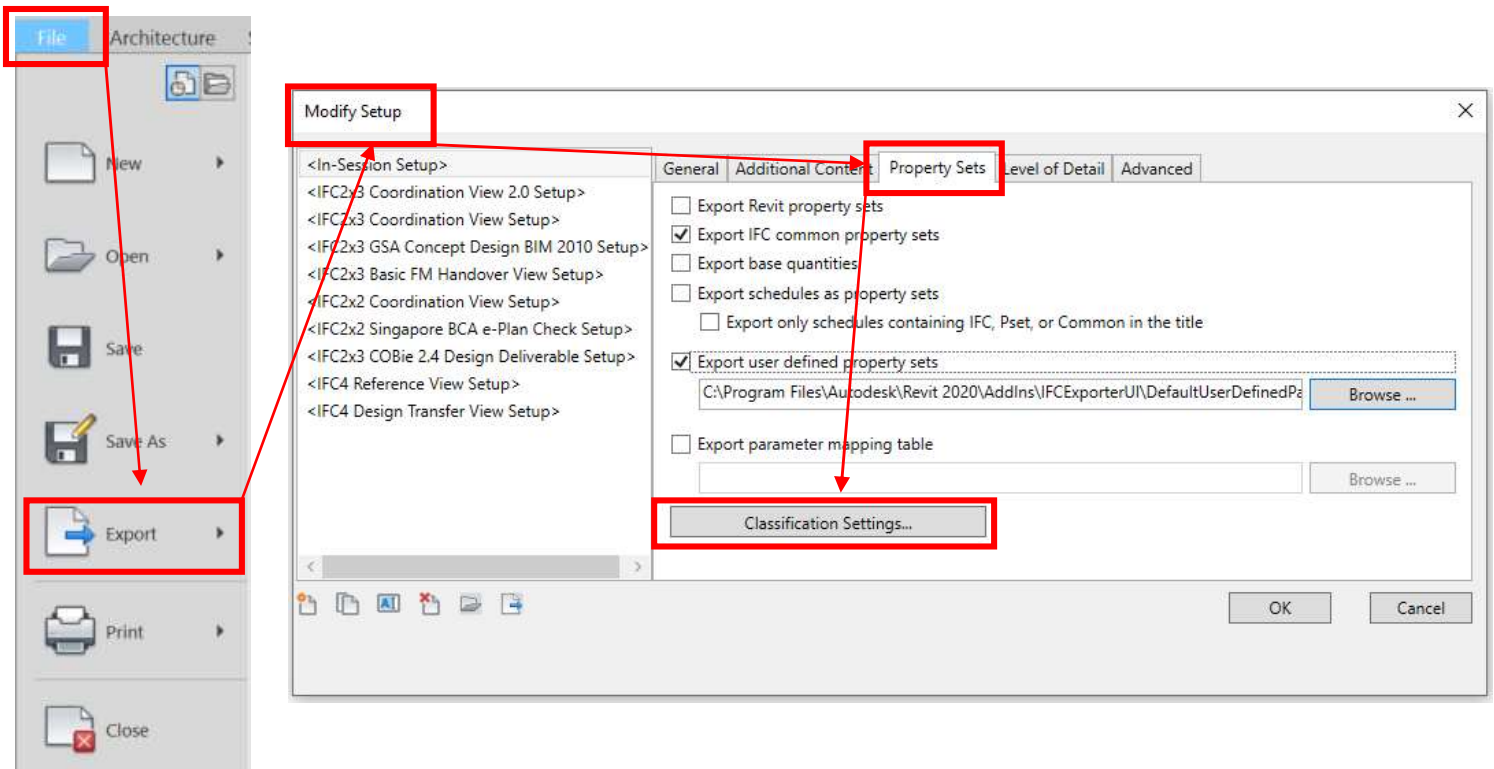


Figure 4 - Ifc Modify Setup Property Sets

6. Select Classification Setting per figure 6 and fill in the fields per figure 7 after agreement with the project BIM/ information manager.

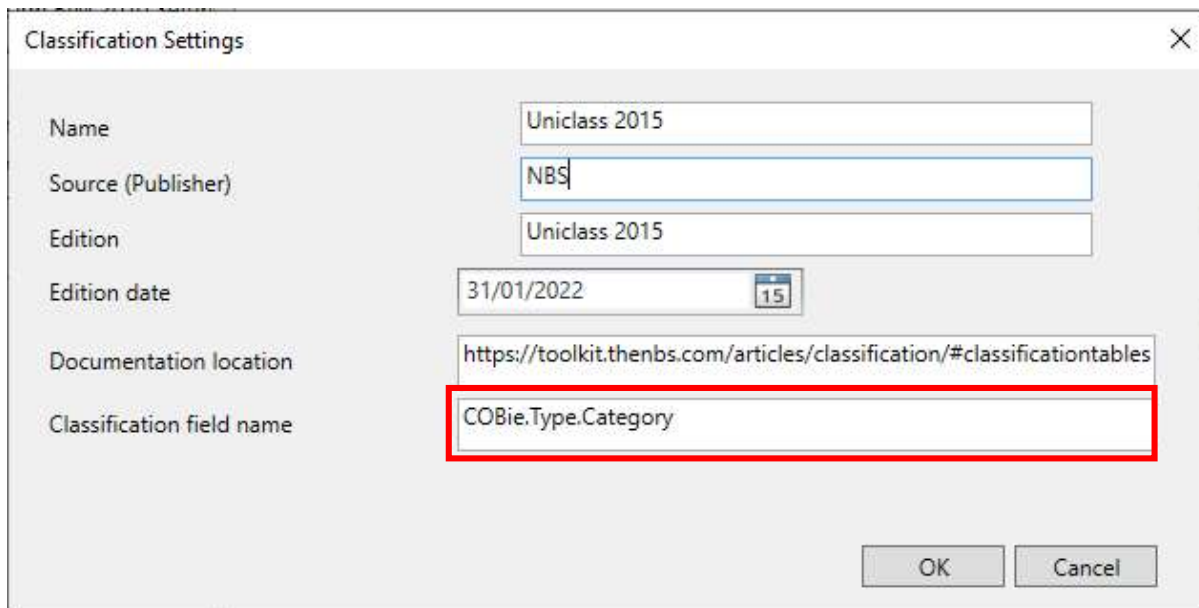


Figure 5 - Ifc Modify Setup Classification Exports

[<https://toolkit.thenbs.com/articles/classification/#classificationtables>]

Note 10: Dependant on which excel set up you are using will determine what shared parameters value you will add to the Classification field name. When using the SFT master asset classification file, you will need to add COBie.Type.Category to Classification field name box.

Note 11: Due to the Autodesk Revit Ifc exporter only being able to export one classification per element, any additional classification data will not be exported unless you use the ClassificationCode(n) series of parameters. If required, please consult the BIM/ project information manager for further advice on this.

Note 12: Unless the above note is actioned, the following shared parameters will not be exported to IFC - Classification.Uniclass.Pr.Number, Classification.Uniclass.Pr.Description, Classification.Uniclass.Ss.Number, Classification.Uniclass.Ss.Description, Classification.NRM.Number, Classification.NRM.Description.

Note 13: Please be aware the Classification.Uniclass.Pr.Number, Classification.Uniclass.Pr.Description are added to COBie.Type.Category as long Set COBie parameters (*per note 3*) is ticked at time of assigning the Pr code or *Classification Manager "Uniclass Pr"* parameter value is set to *First Priority* under COBie Extension Setup Project, Type, Category (*Figure 6*) and you run the COBie Extension Update with Type Category set to All.

Figure 6 - COBie Extension Setup Project - Types – Category

Note 14: IfcElementType[Type] (*see IFCElementType (SFT) tab*) has been set to use the Uniclass Pr description as the Element Type (*figure 9*) where we have noted the Ifc Enumeration as USERDEFINED, this will be exported to Ifc automatically through the Autodesk Revit Ifc Exporter .

Identification	Location	Quantities	Material	Profile	Relations	Classification	Hyperlinks
Classification	Source	Reference	Name				
Building Elements - Ge...	From Classification R...	Electrical System					
Federated Model Align...	From Classification R...	Architectural					
Uniclass 2015 Classific...	From IFC	Pr_75_80_30_29	Fire alarm panels				

Figure 9 – Example IFC Element Type source reference in Solibri

Identification	Location	Quantities	Material	Profile	Relations	Classification	Hyperlinks
Property				Value			
Model				SFT IFC Export			
Discipline				Architectural			
Name				FAP01-1			
Type				400x475			
Type Name				FAP01			
Predefined Type				USERDEFINED			
Object Type				Fire Alarm Panel:400x475			
Element Type				FIREALARMPANELS			
Description							
Layer				Z-Pr7580M-FireAlarmPanels			
System							
Geometry				Extrusion			
Application				Autodesk Revit 2020 (ENG)			
IFC Entity				IfcFlowTerminal			
IFC Type				IfcElectricApplianceType			
GUID				2JVz58wRX3bApLg5kh85i			
BATID				322578			
Model Categories							

Figure 10 – Example IFC exported data structure in Solibri

RED – COBie.Type.Category – exported to IFC, Figure 5

CYAN – Type Name – exported to Ifc using Type Mark via IFC2x3 COBie 2.4 Design Deliverable View MVD, Figure 3

ORANGE – Predefined Type – exported to Ifc via IfcExportAs, Figure 3

GREEN - Element Type – exported to Ifc via IfcElementType[Type], Figure 3

PURPLE – Layer name exported via IfcPresentationType – see Airtable for recommendations in accordance with ISO13567-2:2019, Figure 3

Note 15: The industry support was provided by the below organisations. If you would like to contribute or be informed of the ongoing development of this resource, please contact the SFT BIM delivery group via bimdeliverygroup@scottishfuturetrust.org.uk



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SFT Standard Information Management Plan

Disclaimer

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