Model Content Requirements (MCR) “How to Guide for Revit”

Version 2.0, May 2025

Introduction

The BCA team, through a joint collaborative effort with JTC, MOHH, HDB, LTA and Lendlease, has engaged with Autodesk to build tools and content for Autodesk Revit to enable design and construction teams to deliver projects that meet the Model Content Requirements (MCR).

It has been defined with five typologies:

- Industrial
- Healthcare
- Public Residential
- Commercial / Residential
- Infrastructure (Rail / Road)

This guide describes those MCR tools and content for Revit as well as provides a step-by-step process for how to use them.

Resources

The following software tools and content for Revit are provided to assist with MCR compliance.

Tools

- Autodesk Shared Parameters Tool for Revit (SPT)
- Autodesk Model Checker for Revit (MCX)

All of these tools come standard with the Autodesk Interoperability Tools (formerly the BIM Interoperability Tools). They are free to all Revit users and can be downloaded from: https://manage.autodesk.com/

Content

- 1 SPT Configuration File ("MCR_Healthcare_SPTConfiguration.xml")
- 1 MCX Checkset File ("MCR Healthcare Checkset - Construction.xml")
- 1 Shared Parameters File, with the parameters in groups based on their discipline "MCR_Healthcare_Shared Parameter.txt"

These files can be downloaded from the dedicated content page for MCR:

https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/model-content-requirements

Process

The process to follow includes the following five steps, each of which is described in more detail below.

- Step 1 – Add Parameters to Your Model
- Step 2 – Populate the MCR Parameters
- Step 3 – Validate the Parameters

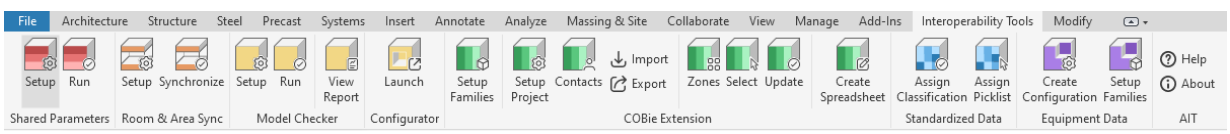
Unless otherwise noted, all steps shown in this guide are for Revit 2023. The MCR tools and content work on all currently supported versions of Revit (2021 through 2024). The steps below will be the same for the other supported versions of Revit, with the exception of possible variations in user interface elements.

Step 1 – Add Parameters to Your Model

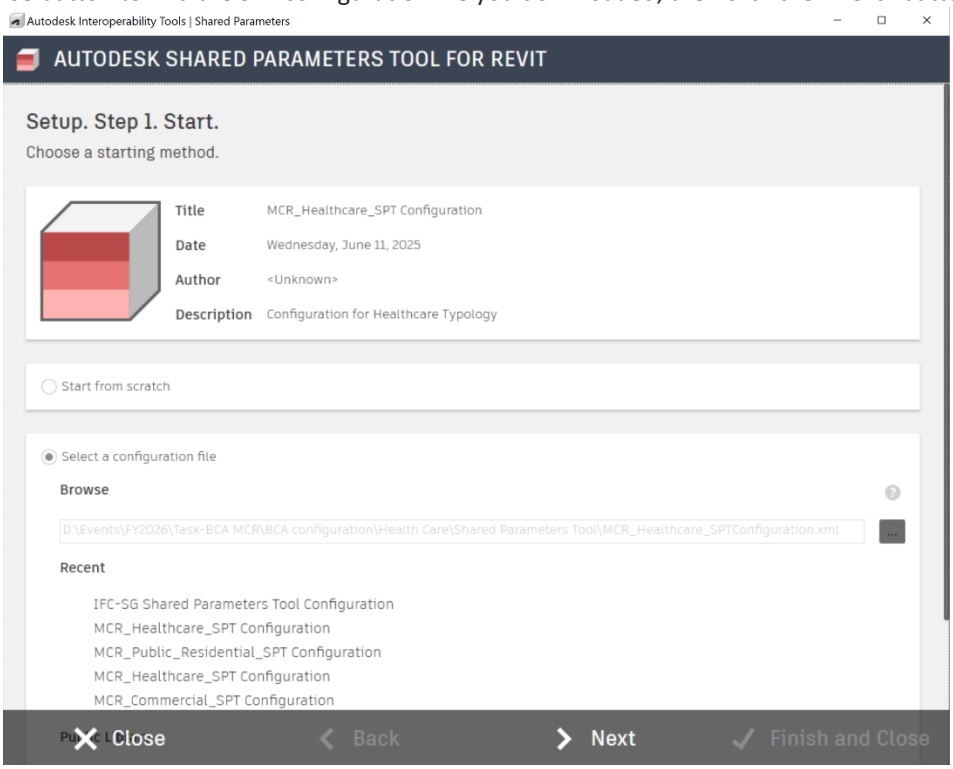
The first step is to add all the MCR parameters to your model.

1.1 Download the Shared Parameters Tool configuration file and Shared Parameters File for MCR from the dedicated Web page at:https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/model-content-requirements

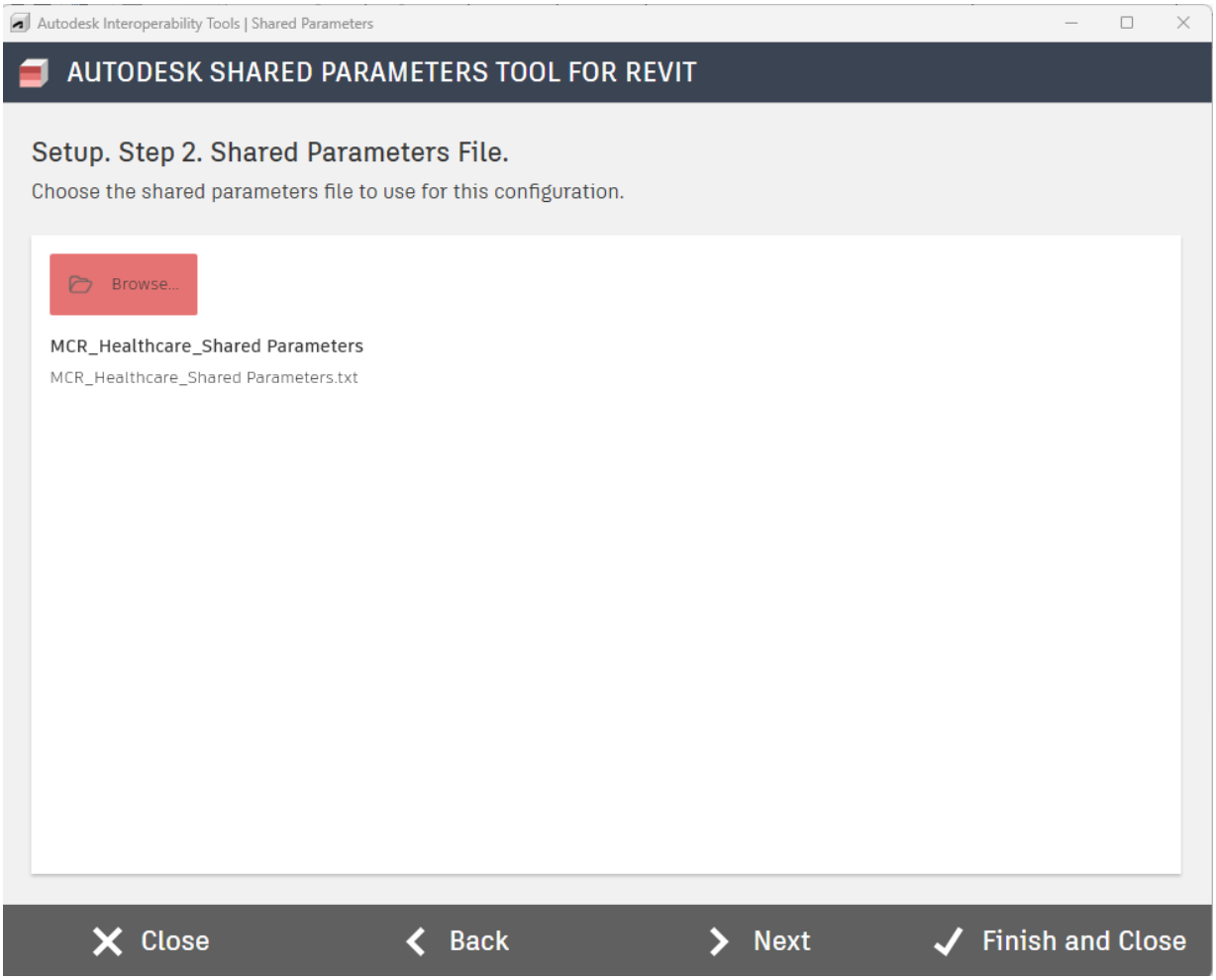
1.2 Open your Revit model, click on the "Interoperability Tools" ribbon tab, and click the "Setup" button on the "Shared Parameters" panel:



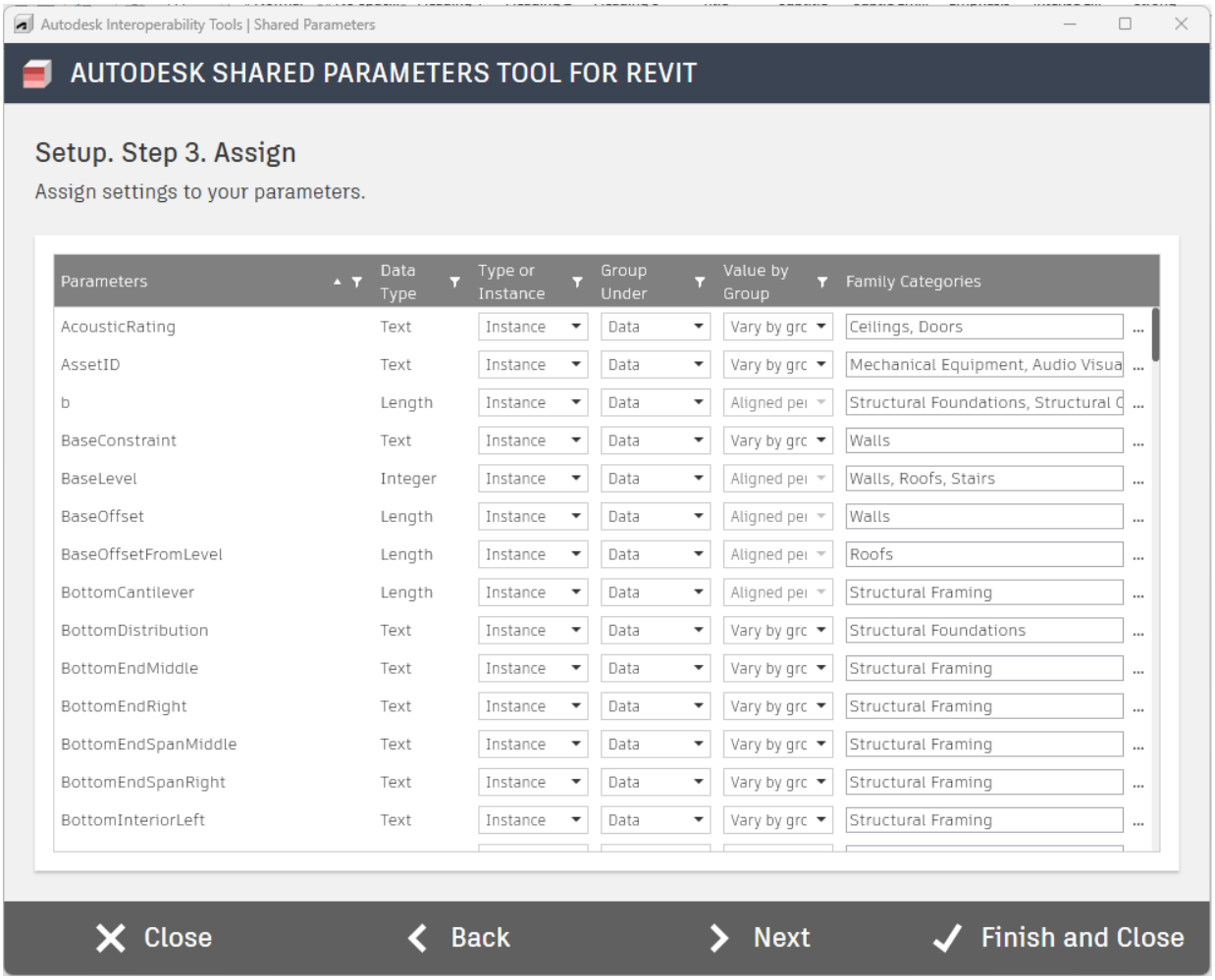
1.3 Use the browse button to find the SPT configuration file you downloaded, then click the "Next" button:



1.4 In the next dialog use the browse button to find the “Shared Parameter” file you downloaded, from the dedicated web page at: https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/model-content-requirements then click the “Next” button.

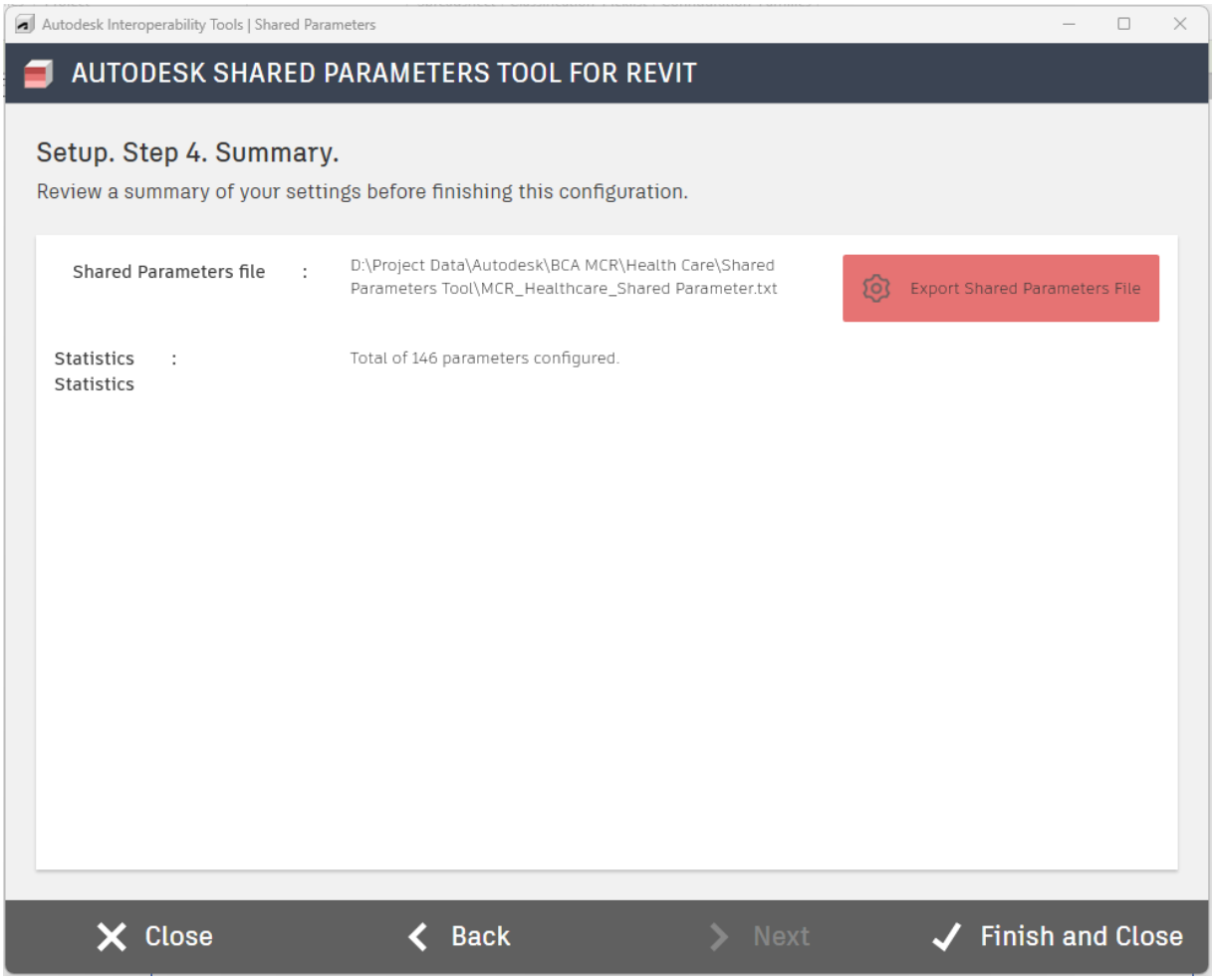


1.5 In this dialog verify the parameters details and click on “Next” Button.

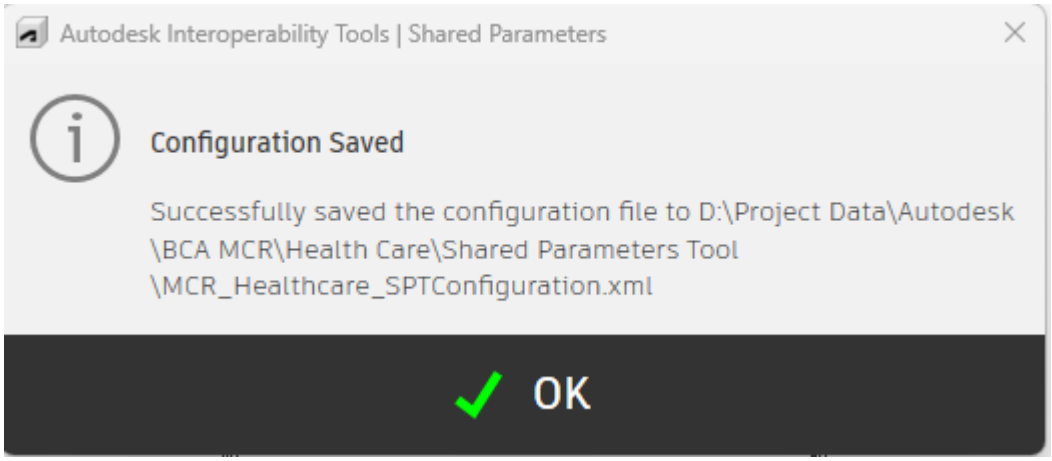


Parameters	Data Type	Type or Instance	Group Under	Value by Group	Family Categories
AcousticRating	Text	Instance	Data	Vary by grc	Ceilings, Doors
AssetID	Text	Instance	Data	Vary by grc	Mechanical Equipment, Audio Visua
b	Length	Instance	Data	Aligned pei	Structural Foundations, Structural C
BaseConstraint	Text	Instance	Data	Vary by grc	Walls
BaseLevel	Integer	Instance	Data	Aligned pei	Walls, Roofs, Stairs
BaseOffset	Length	Instance	Data	Aligned pei	Walls
BaseOffsetFromLevel	Length	Instance	Data	Aligned pei	Roofs
BottomCantilever	Length	Instance	Data	Aligned pei	Structural Framing
BottomDistribution	Text	Instance	Data	Vary by grc	Structural Foundations
BottomEndMiddle	Text	Instance	Data	Vary by grc	Structural Framing
BottomEndRight	Text	Instance	Data	Vary by grc	Structural Framing
BottomEndSpanMiddle	Text	Instance	Data	Vary by grc	Structural Framing
BottomEndSpanRight	Text	Instance	Data	Vary by grc	Structural Framing
BottomInteriorLeft	Text	Instance	Data	Vary by grc	Structural Framing

1.6 Here you will see the summary of your settings before finishing this configuration. and click on “Finish and Close” button to complete the setup.

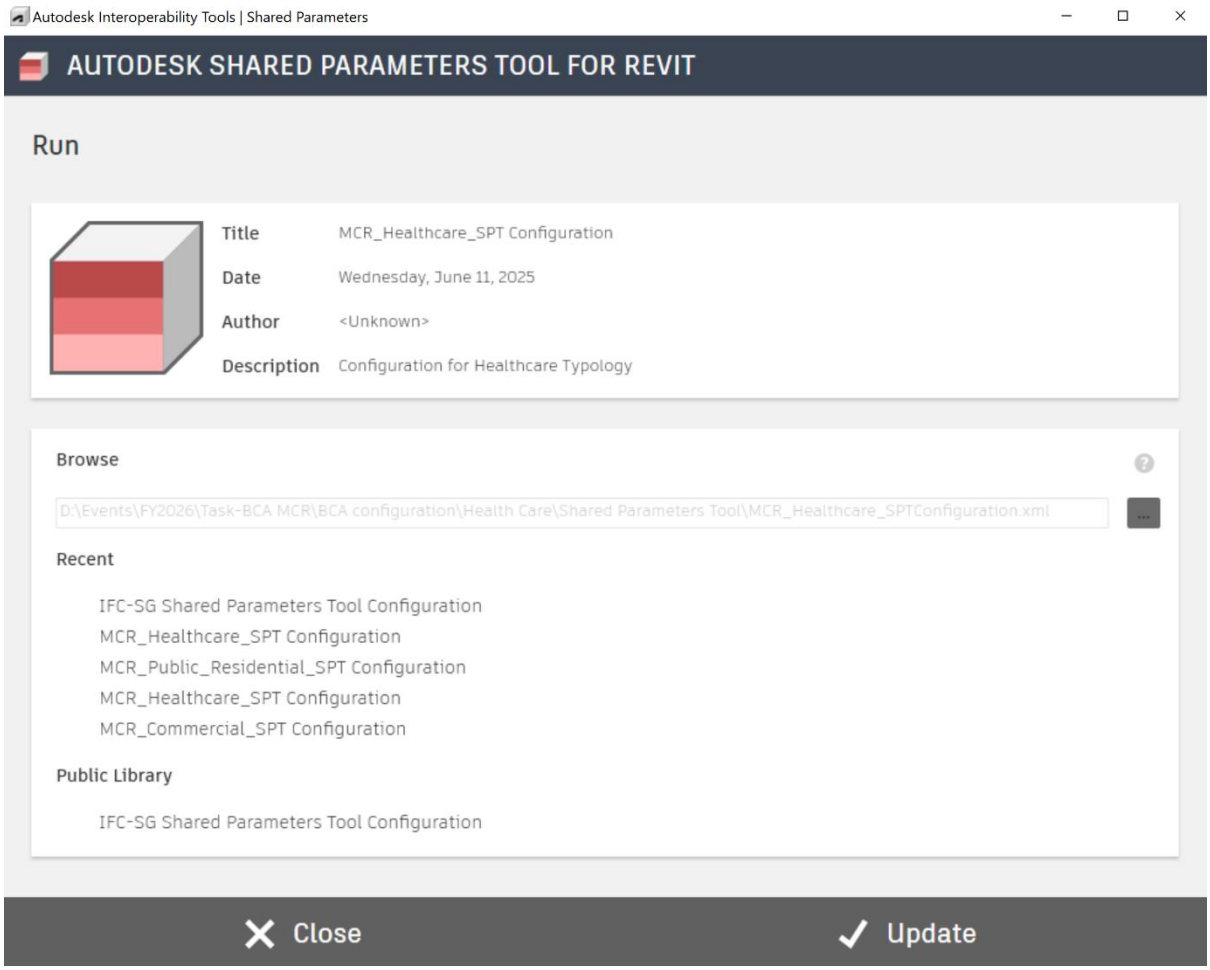


1.7 It will complete the setup and save the configuration

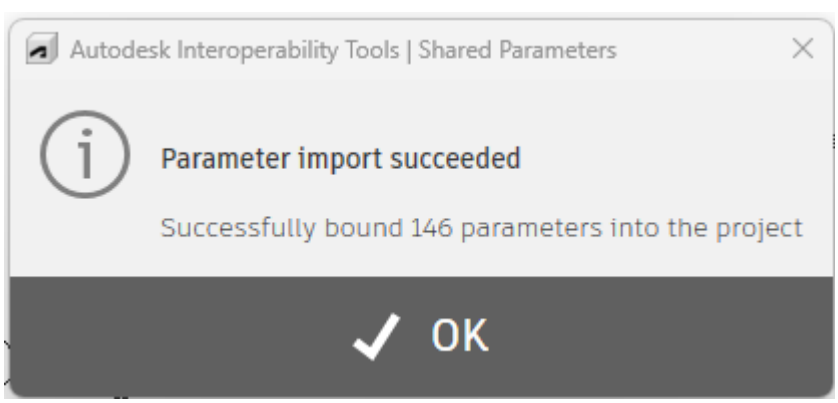


1.8 Click the “Run” button on the “Shared Parameters” panel.

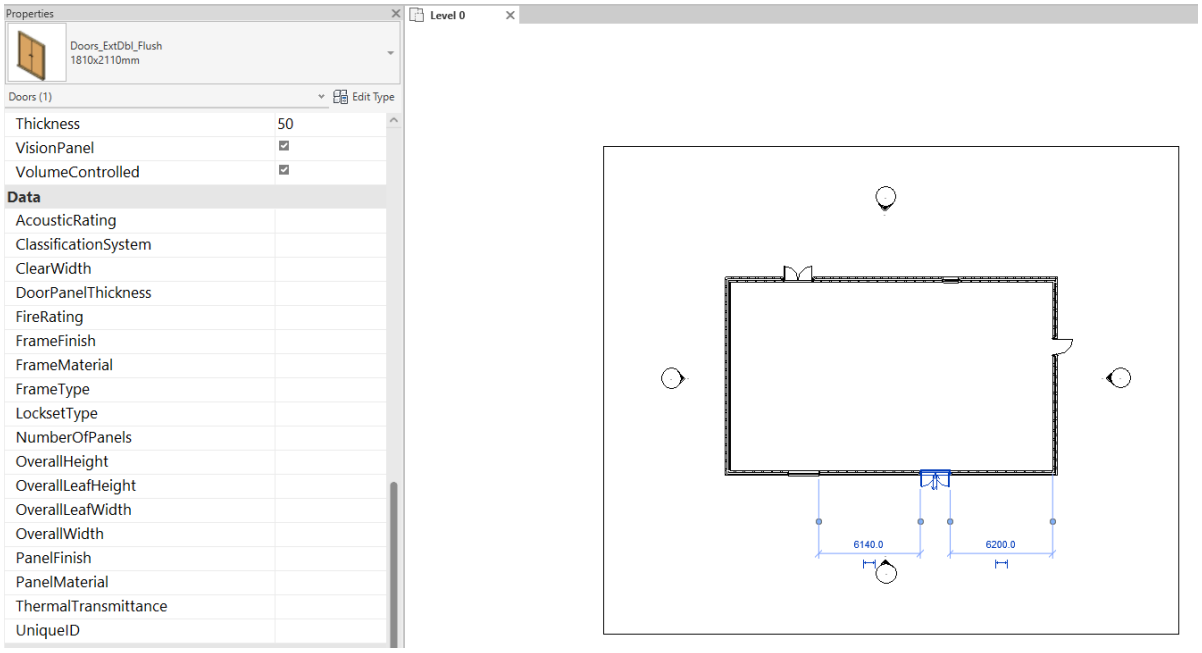
1.9 Use the browse button to find the SPT configuration file you downloaded, then click the “Update” button:



1.10 “OK” out of the confirmation dialog box when complete:



1.11 Here you can see that MCR parameters are added to the elements in Data parameter group.



Step 2 – Populate the MCR Parameters

For this step, use the Revit tools and techniques you know to populate the MCR parameters with the appropriate and necessary data. All MCR parameters are grouped under the "Data" data header:

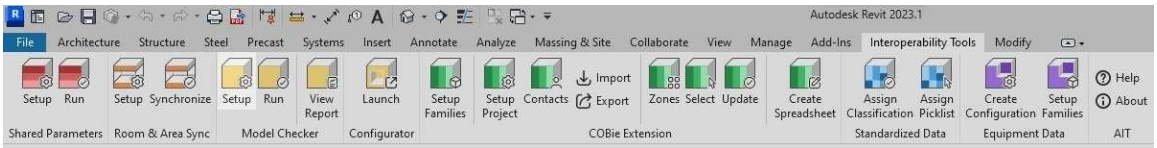
Data	
AcousticRating	25
ClassificationSystem	Arc
ClearWidth	1800
DoorPanelThickness	50
FireRating	50
FrameFinish	Wood
FrameMaterial	Wood
FrameType	A
LocksetType	L1
NumberOfPanels	
OverallHeight	
OverallLeafHeight	
OverallLeafWidth	
OverallWidth	
PanelFinish	
PanelMaterial	
ThermalTransmittance	
UniqueID	

Step 3 – Validate the Parameters

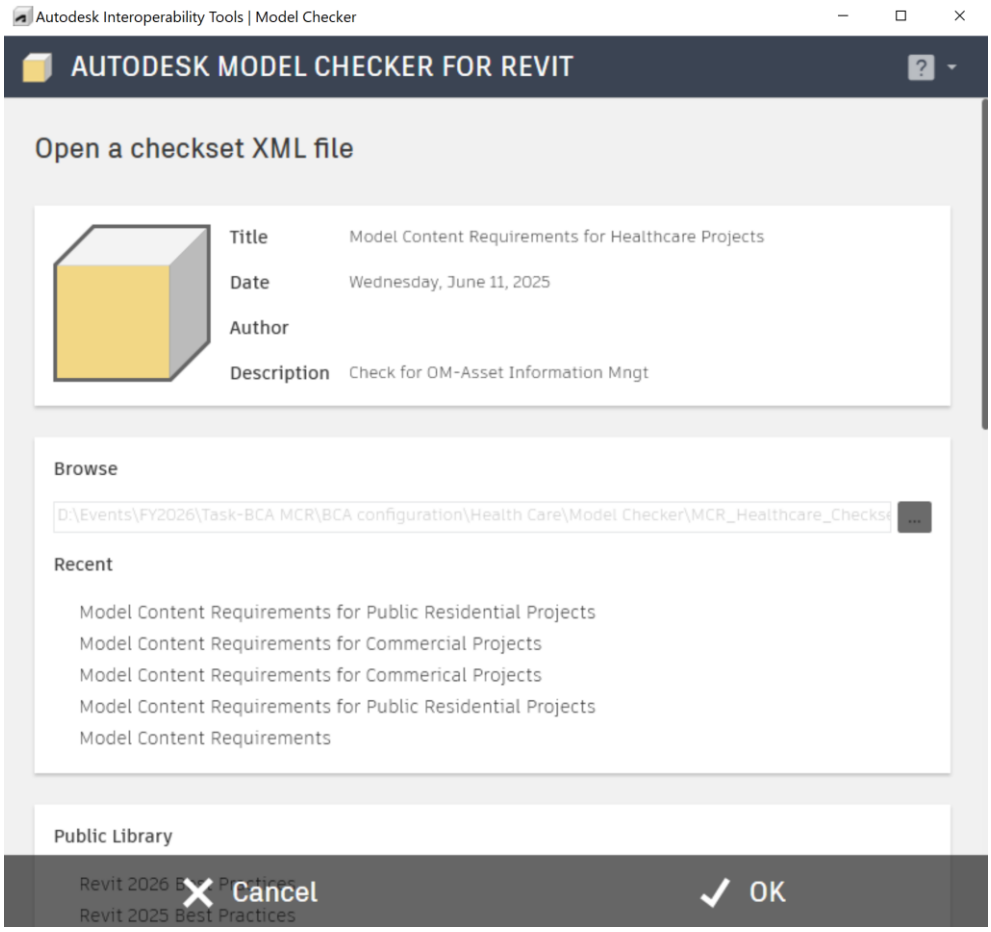
This step utilizes the Model Checker to validate that your model has the MCR parameters added to the appropriate family categories based on the IFC class you have assigned to them.

3.1 Download the model Checker checkset file for MCR from the dedicated web page at: https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/model-content-requirements

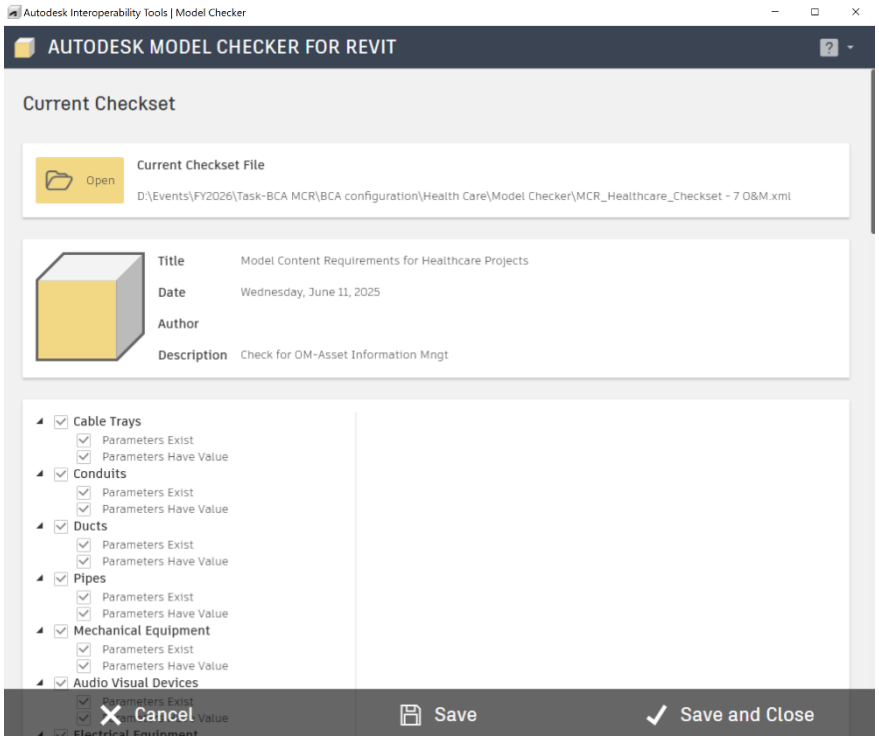
3.2 Click on the "Interoperability Tools" ribbon tab, and click the "Setup" button on the "Model Checker" panel:



3.3 Use the "Open" button to find the MCX check set file "ModelCheckerConfiguration.xml" from the dedicated web page at: https://www1.bca.gov.sg/buildsg/digitalisation/integrated-digital-delivery-idd/model-content-requirements

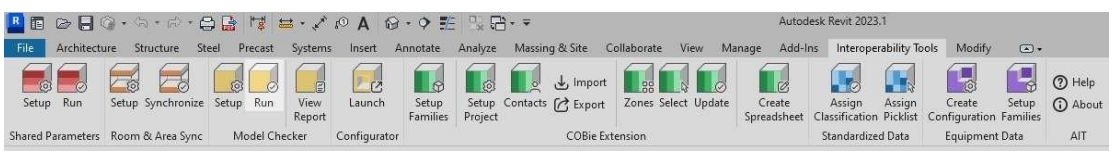


3.4 Check or uncheck any sections of the check set you need, then click the “OK” button:

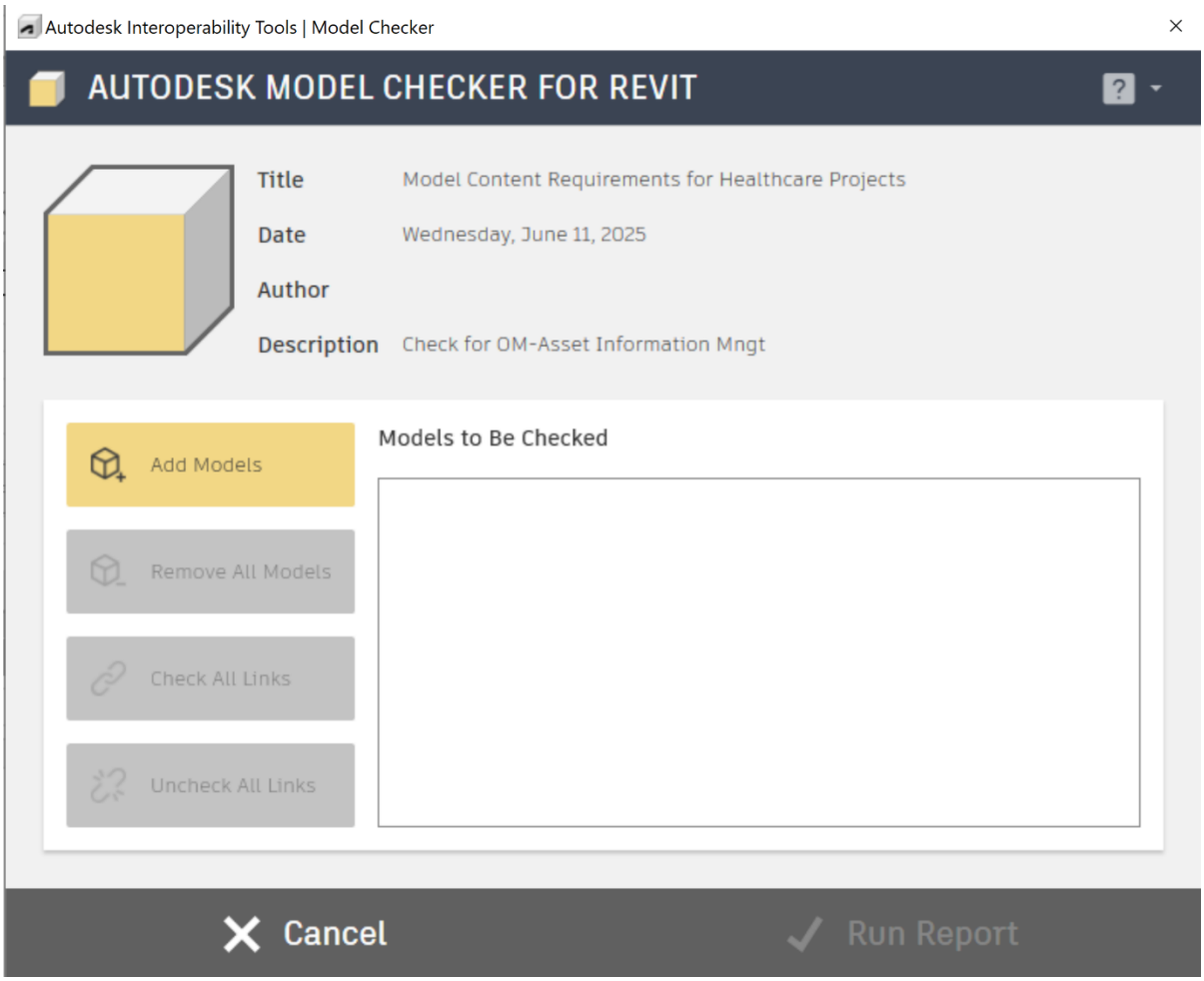
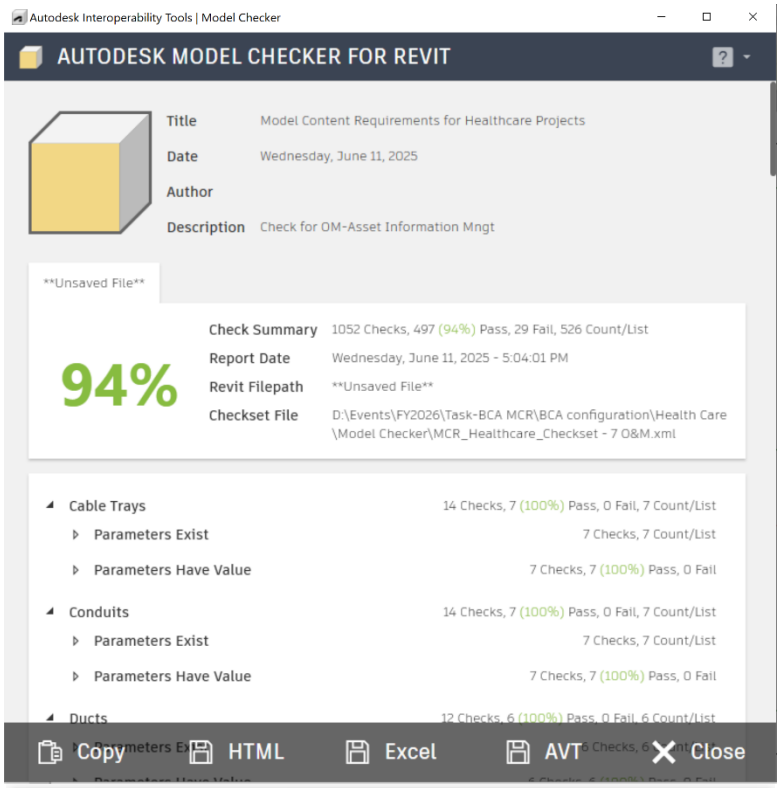
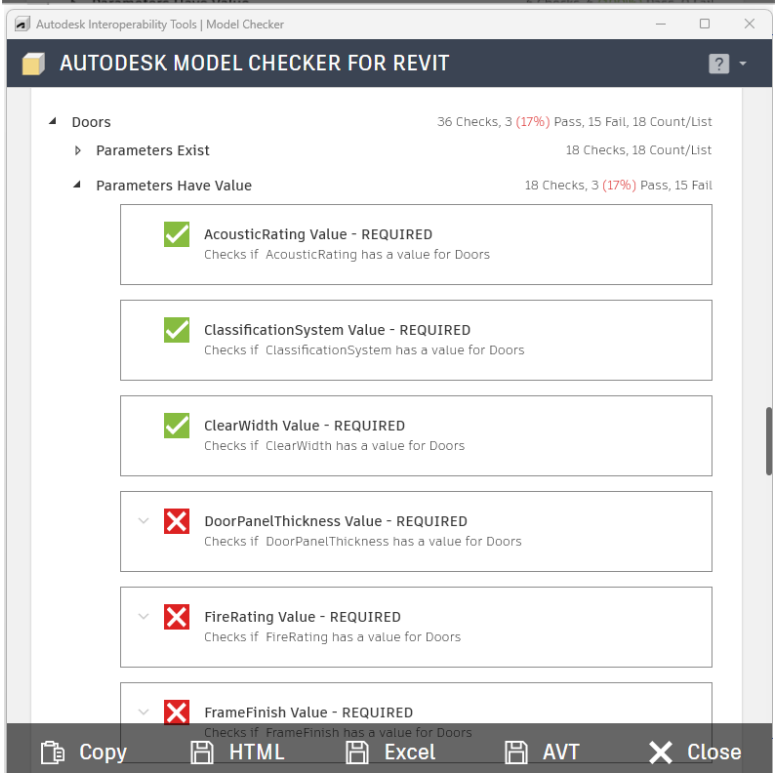


3.5 Click on “Save and Close” button

3.6 Click on the “Interoperability Tools” ribbon tab, and click the “Run” button on the “Model Checker” panel:



3.7 If you need to add any links or additional models, do so using the buttons on the left. When finished, click the "Run Report" button:



3.8 Once complete, review the report. Based on the findings, adjust your model as necessary.