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BIM GATHERING 2019

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Delivering **better outcomes** for Irish Construction

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Increasing efficiency in 5D BIM by Utilising '*BIM Interoperability Tools – Classification Manager'* to append ICMS cost codes

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TU Dublin

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Construction Measurement Standards

Measurement Standards

- Construction measurement standards refer to the way construction project costs are calculated, classified and reported.
- What is included in the 'cost' and what is not.
- Not about the units of measurement ($, £, €, ¥ etc.) but instead the 'line items' in the calculation such as labour, land purchase, design, materials and client costs.

Why are they important?

Knowing what is, and what is not included in the cost of a construction project is vital to:

- Understanding how it compares with other projects within or outside that market
- Accurately assessing value-for-money
- Assessing and benchmarking the 'footprint' of a construction project
- Reporting national and international construction statistics

How are they used today?

- The standards used today differ within countries and from one jurisdiction to the next.
- Depending on where the project is located the costs might include some or all of the following elements:
    - Labour and materials
    - Land acquisition
    - Professional Fees
    - Client costs

What are the Implications of Global Inconsistencies

- Implications:
  - Inability to accurately compare project costs
  - Investment risk
  - Lack of transparency
- Leading to:
  - Under-investment in construction projects
  - Time and cost overruns

What is ICMS

- Developed by a coalition of professional bodies from around the world.
- An independent Standards Setting Committee (SSC) was been established to write the international standard.
- The SSC is comprised, in total, of 27 experts from around the world.
- ICMS published in 2017, establishes a global standard for assessing project costs.
- It defines what should be included in the calculation of a construction project.
- It will enable global consistency.

How will ICMS be adopted?

- The non-profit standards organisations that make up the coalition have committed to implement the ICMS once it is published.
- Many organisations will incorporate ICMS within existing standards and guidance.
- Governments and businesses will lead adoption of ICMS in the marketplace

Who will benefit from ICMS?

- Any party that has a direct or indirect interest in construction projects will benefit.
- Those investing in or managing construction projects will benefit significantly.
- The public will benefit through enhanced, prudent assessments of public projects

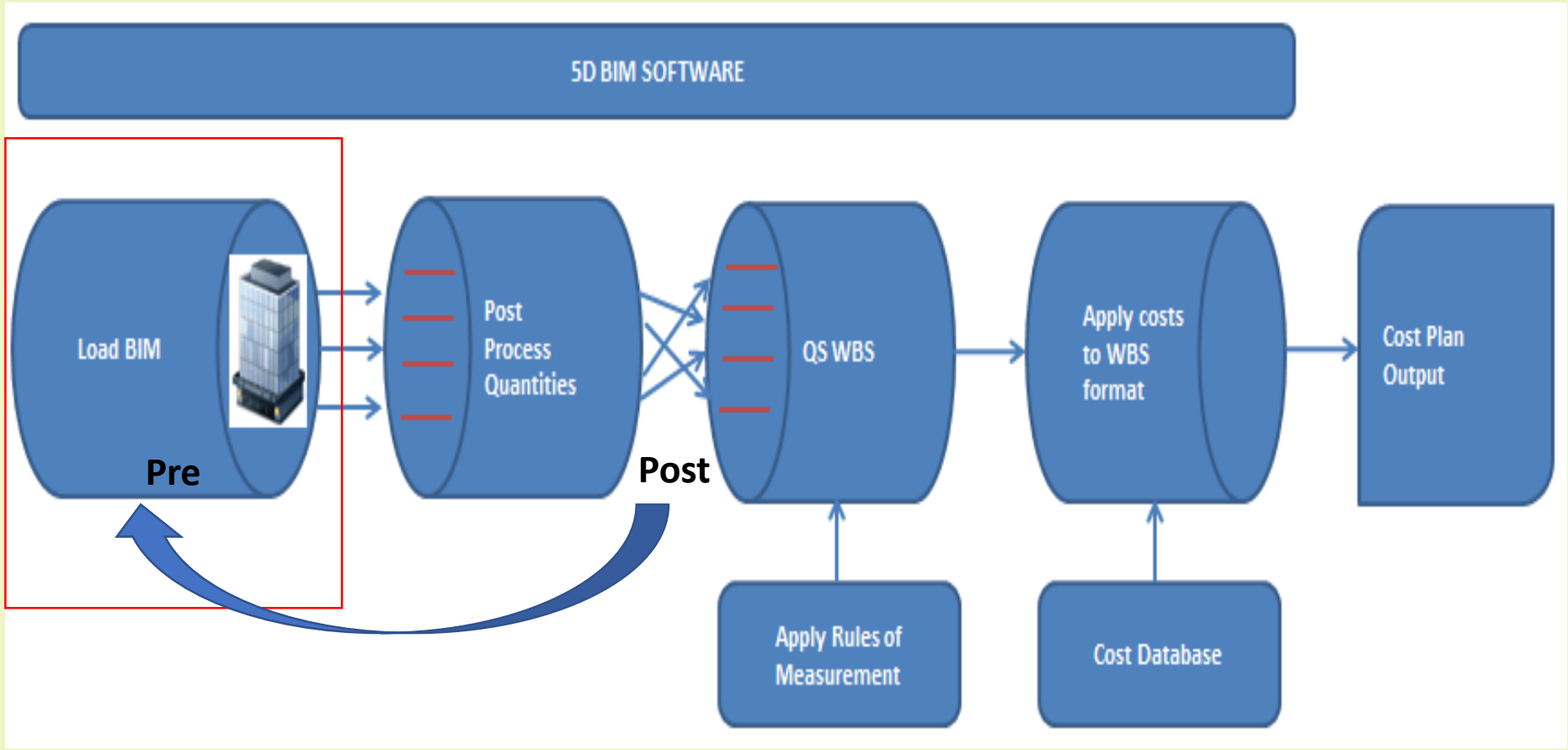
BIM / ICMS

BIM Offers an Opportunity (and even a blank canvass) for Consistency Moving Forward in Global Cost Management utilising the ICMS

There may be a time when ICMS is a default parameter(s) in object properties much like Assembly Code/Description in US (Uniformat)

But until then ….. How can we ADD this QSID to a Model?

Processing Qts



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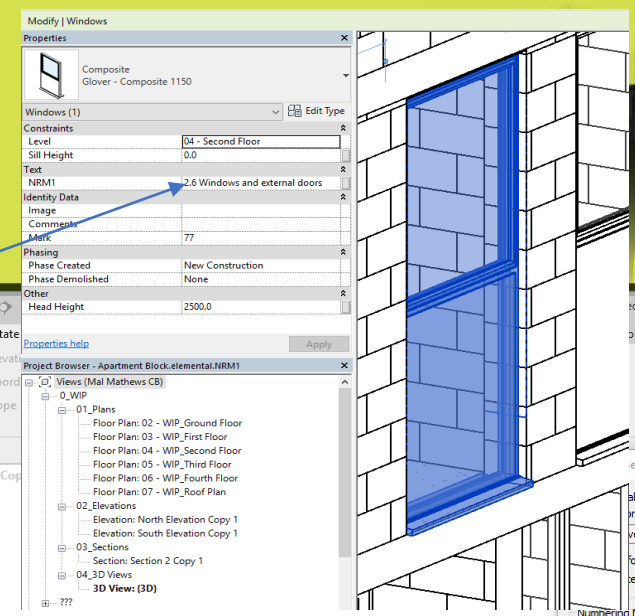
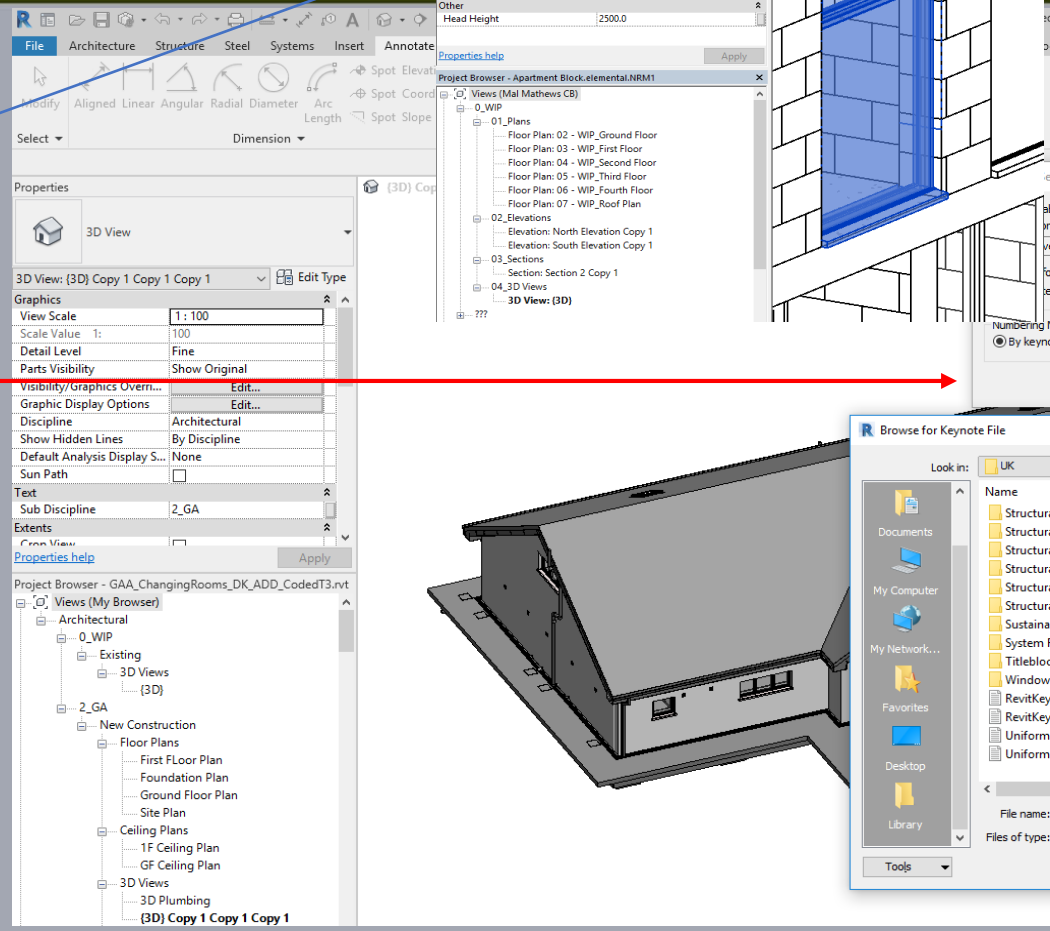
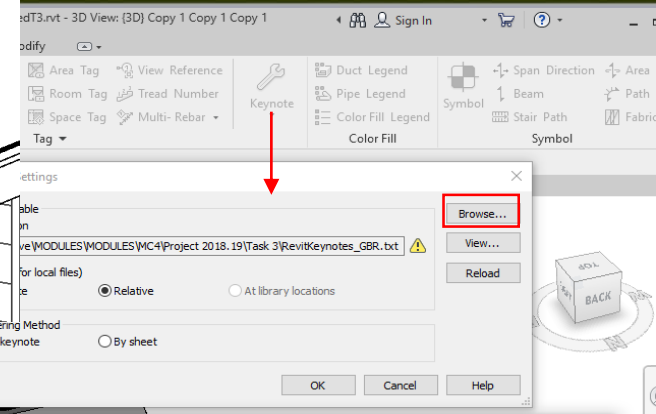
Different Ways to Add QSID

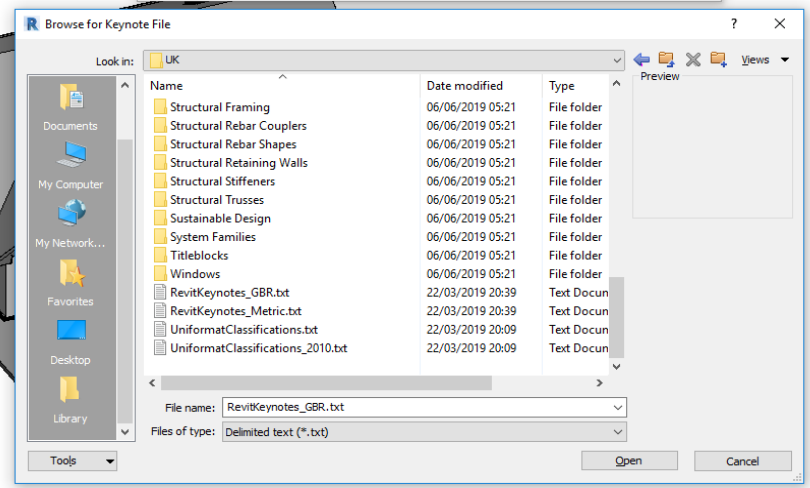
Add QSID/WBS

- Create a New Parameter (Shared/Project Parameters)
- Add QSID To the Keynote (Keynote Settings – txt file)
- Add QSID To Assembly Code/Description (Assembly Code Settings – txt file)
- **Use Autodesk Classification Manager – Revit Add In**
- Code with Schedule









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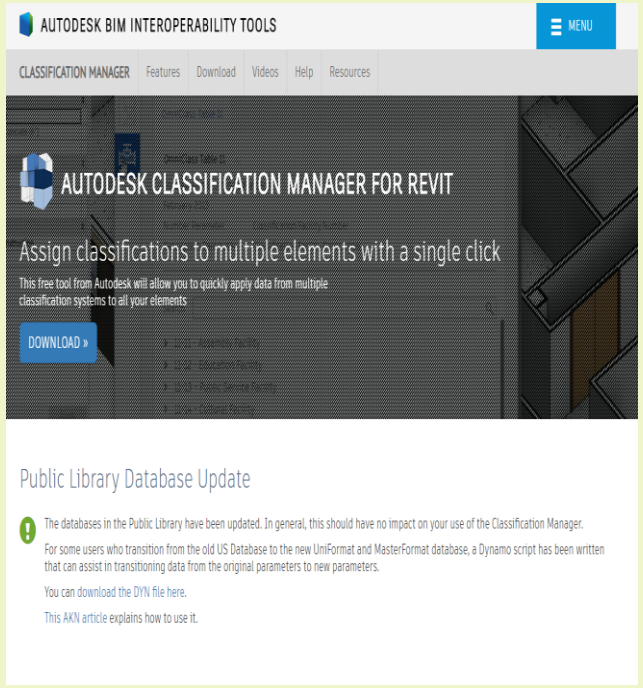
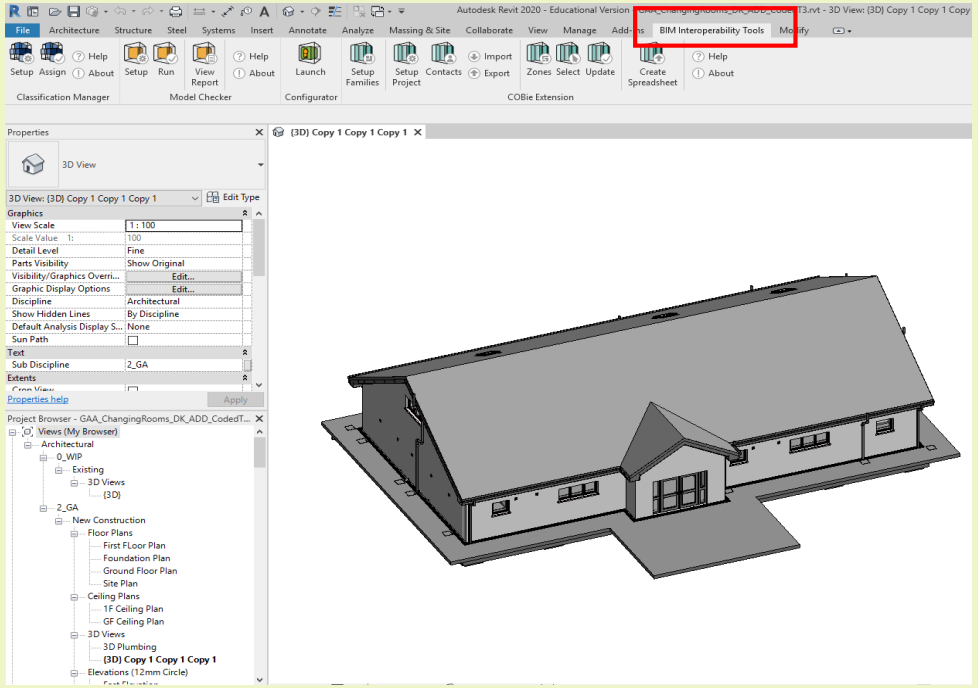
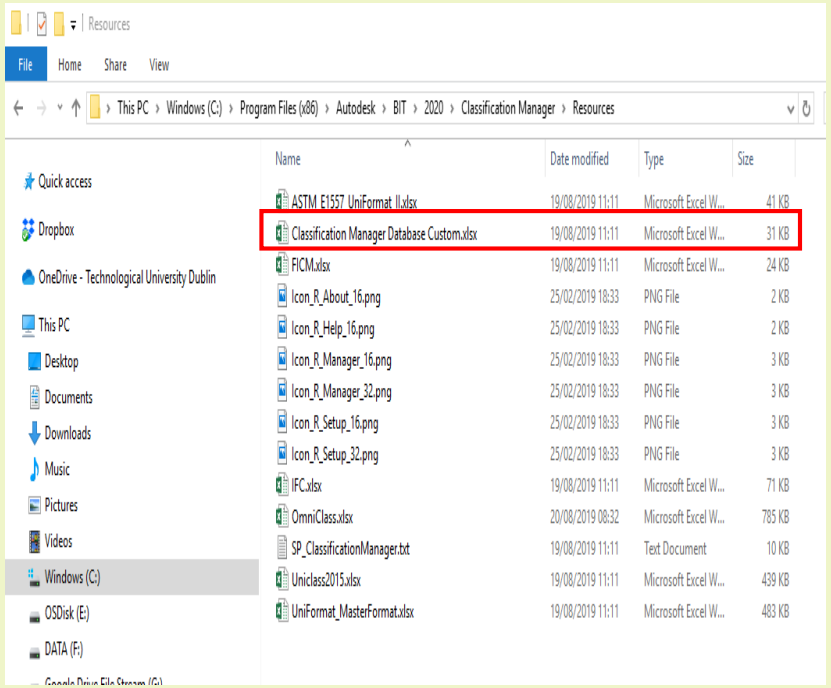
Download Classification Manager







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Build ICMS Database in Custom Excel

	A	B	C	D
1	TITLE	**ICMS Building**		
2	DESCRIPTION	**International Construction Measurement Standard - Building**		
3	VERSION	**Version 1**		
4	FUNCTION	**Element**		
5	NUMBER PARAMETER	**Classification.ICMS_B.Number**		
6	DESCRIPTION PARAMETEF	**Classification.ICMS_B.Description**		
7	**NUMBER**	**DESCRIPTION**	**LEVEL**	**REVIT CATEGORY**
8	**ICMS Building**	**International Construction Measurement Standard - Building (Version 1)**	**1**	
9	1	Capital Construction Costs	2	
10	1_01	Demolition, site preparation and formation	3	
11	1_01_010	Site survey and investigation	4	
12	1_01_020	Environmental treatment	4	
13	1_01_030	Sampling for construction, geophysical, geological or similar purposes	4	
14	1_01_040	Temporary fencing	4	
15	1_01_050	Demolition of existing buildings and support to adjacent structures	4	
16	1_01_060	Site surface clearance (clearing, grubbing, topsoil stripping, tree felling, minor earthwork, removal)	4	
17	1_01_070	Tree transplant	4	
18	1_01_080	Site formation and slope treatment	4	
19	1_01_090	Temporary surface drainage and dewatering	4	
20	1_01_100	Temporary protection, diversion and relocation of public utilities	4	
21	1_02	Substructure	3	
22	1_02_010	Foundation piling and underpinning:	4	
23	1_02_010_010	mobilisation and demobilisation	5	
24	1_02_010_020	trial piles and caisson	5	
25	1_02_010_030	permanent piles and caisson	5	
26	1_02_010_040	pile and caisson testing	5	
27	1_02_010_050	underpinning	5	
28	1_02_020	Foundations up to top of lowest floor slabs:	4	
29	1_02_020_010	excavation and disposal	5	
30	1_02_020_020	lateral supports	5	
31	1_02_020_030	raft footings, pile caps, column bases, wall footings, strap beams, tie beams	5	
32	1_02_020_040	substructure walls and columns	5	
33	1_02_020_050	lowest floor slabs and beams (excluding basement bottom slabs)	5	
34	1_02_020_060	lift pits	5	
35	1_02_030	Basement sides and bottom:	4	
36	1_02_030_010	excavation and disposal	5	
37	1_02_030_020	lateral supports	5	

ICMS

International Construction Measurement Standards: Global Consistency in Presenting Construction Costs

International Construction Measurement Standards Coalition

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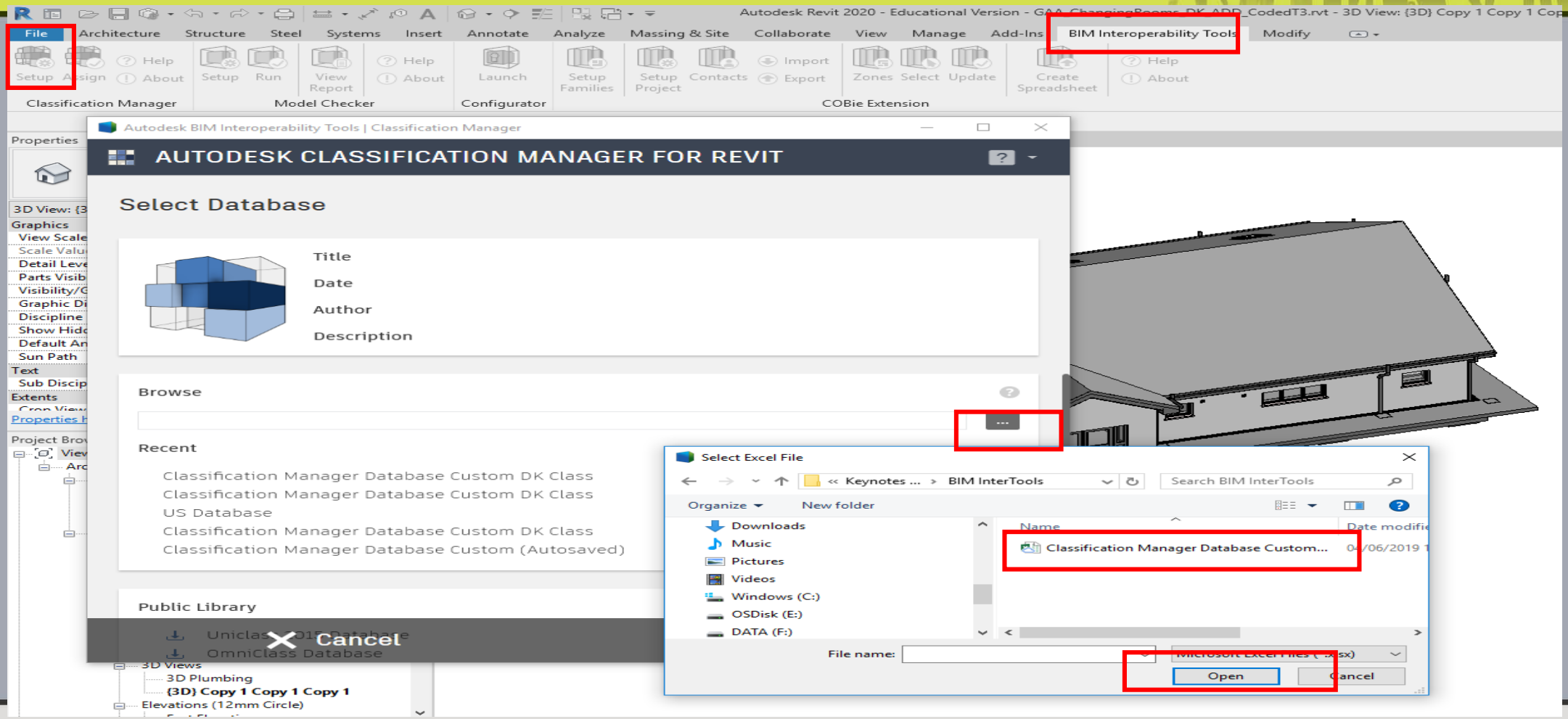
Setup ICMS Database



ADD Parameters for ICMS

Add Parameters

- Create a New Parameter (Shared/Project Parameters)
- Should be ‘Text’ Parameters
- Identical to Number & Description is Database

	A	B	C	D
1	TITLE	**ICMS Building**		
2	DESCRIPTION	**International Construction Measurement Standard - Building**		
3	VERSION	**Version 1**		
4	FUNCTION	**Element**		
5	NUMBER PARAMETER	**Classification.ICMS_B.Number**		
6	DESCRIPTION PARAMETER	**Classification.ICMS_B.Description**		
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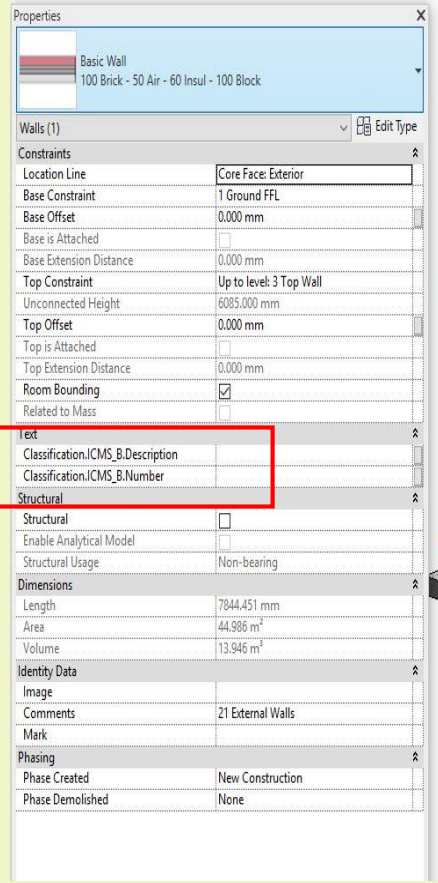

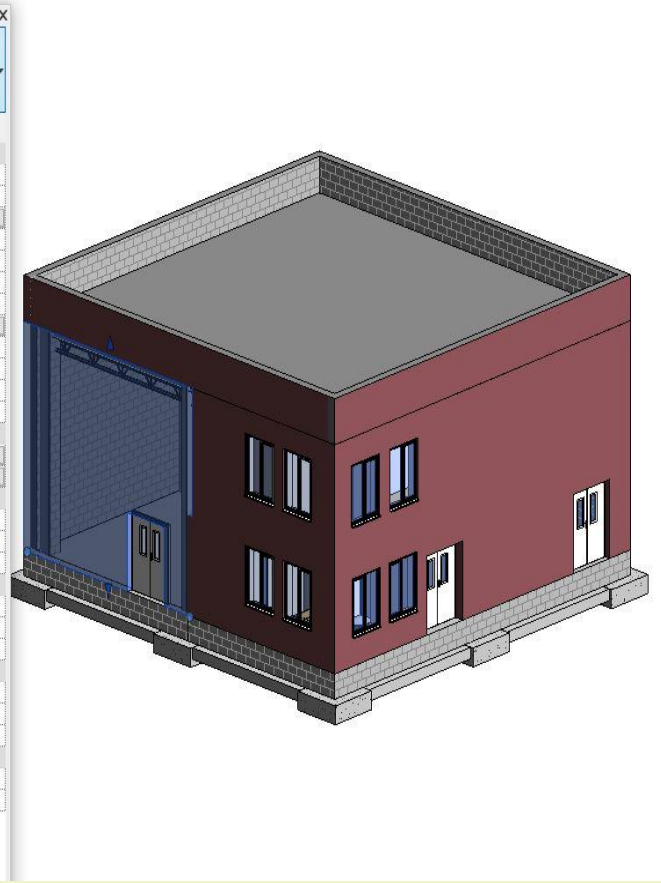

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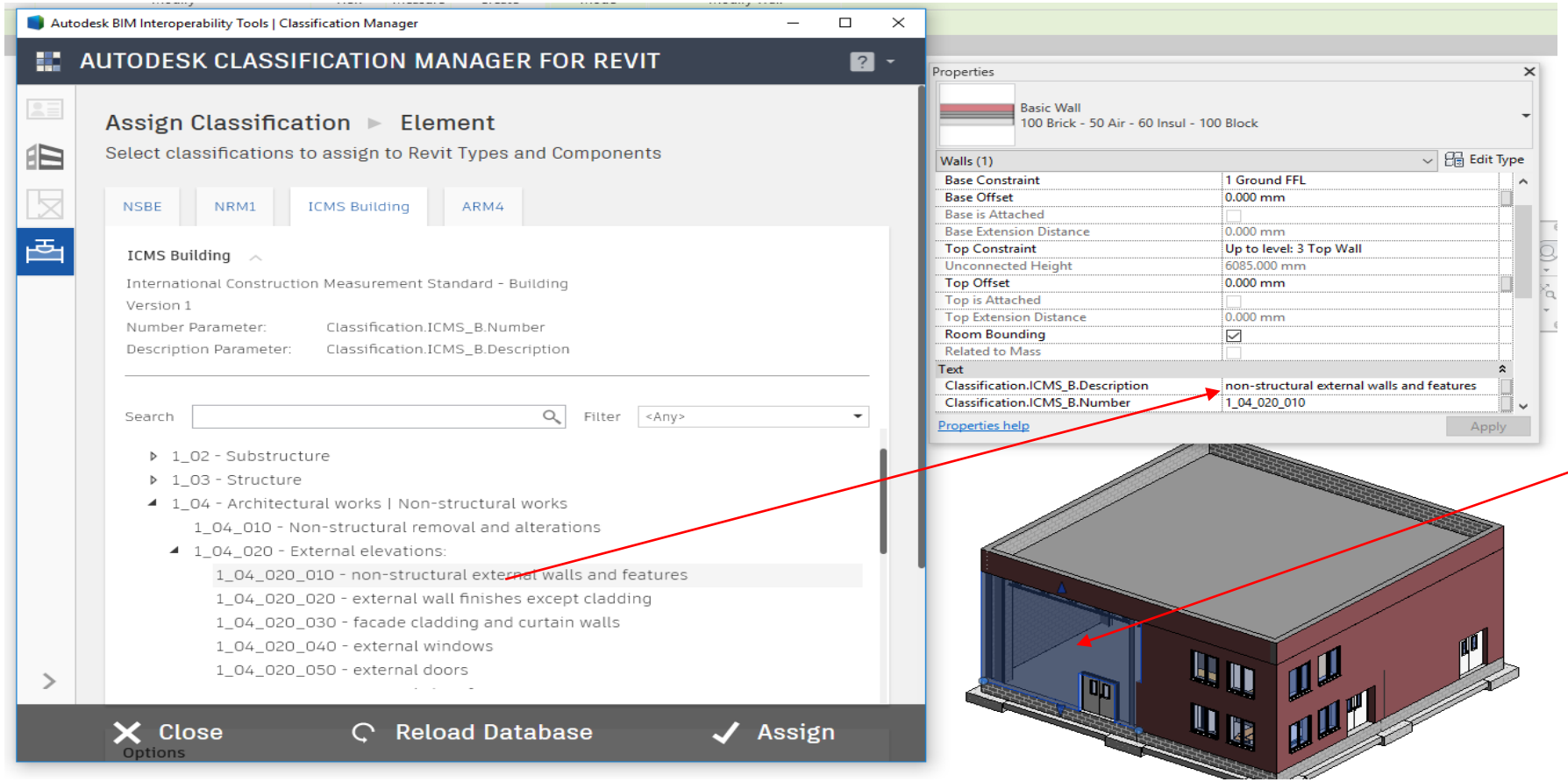
Assign Parameter



Code with Schedule in Revit

22 Internal Walls and Partitions	Basic Wall	Basic Wall: 12 Plasterbd - 100 Block - 12 Plaster	12 Plasterbd - 100 Block - 12 Plasterbd		
22 Internal Walls and Partitions	Basic Wall	Basic Wall: 12 Plasterbd - 100 Block - 12 Plaster	12 Plasterbd - 100 Block - 12 Plasterbd		
22 Internal Walls and Partitions	Basic Wall	Basic Wall: 12 Plasterbd - 100 Block - 12 Plaster	12 Plasterbd - 100 Block - 12 Plasterbd		
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22 Internal Walls and Partitions	Basic Wall	Basic Wall: 12 Plasterbd - 100 Block - 12 Plaster	12 Plasterbd - 100 Block - 12 Plasterbd		
22 Internal Walls and Partitions	Basic Wall	Basic Wall: 12 Plasterbd - 100 Block - 12 Plaster	12 Plasterbd - 100 Block - 12 Plasterbd		
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	nbl_Door_Int-Sgl-V	nbl_Door_Int-Sgl-Vsn-Pnl-01-2.0: Type1	Type1	1_04_040_060	internal doors
32 Internal Wall Completions	IntSgl (1)	IntSgl (1): 910 x 2110mm	910 x 2110mm		
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32 Internal Wall Completions	IntSgl (1)	IntSgl (1): 910 x 2110mm	910 x 2110mm		
31 External Wall Completions	NBS_SeniorArchite	NBS_SeniorArchitecturalSystems_ExtWindSyst	Factory Window ground		
31 External Wall Completions	NBS_SeniorArchite	NBS_SeniorArchitecturalSystems_ExtWindSyst	Factory Window ground		
31 External Wall Completions	NBS_SeniorArchite	NBS_SeniorArchitecturalSystems_ExtWindSyst	Factory Window ground		
31 External Wall Completions	NBS_SeniorArchite	NBS_SeniorArchitecturalSystems_ExtWindSyst	Factory Window ground		
31 External Wall Completions	NBS_HighPerforma	NBS_HighPerformanceDoorsLtd_DrsetSym_Mar	1800x2100mm_60minutes-Internal		
31 External Wall Completions	NBS_HighPerforma	NBS_HighPerformanceDoorsLtd_DrsetSym_Mar	1800x2100mm_60minutes-Internal		
31 External Wall Completions	NBS_HighPerforma	NBS_HighPerformanceDoorsLtd_DrsetSym_Mar	1800x2100mm_60minutes-Internal		
31 External Wall Completions	NBS_HighPerforma	NBS_HighPerformanceDoorsLtd_DrsetSym_Mar	1800x2100mm_60minutes-Internal		

:0 Main Model :0

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Thank you

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