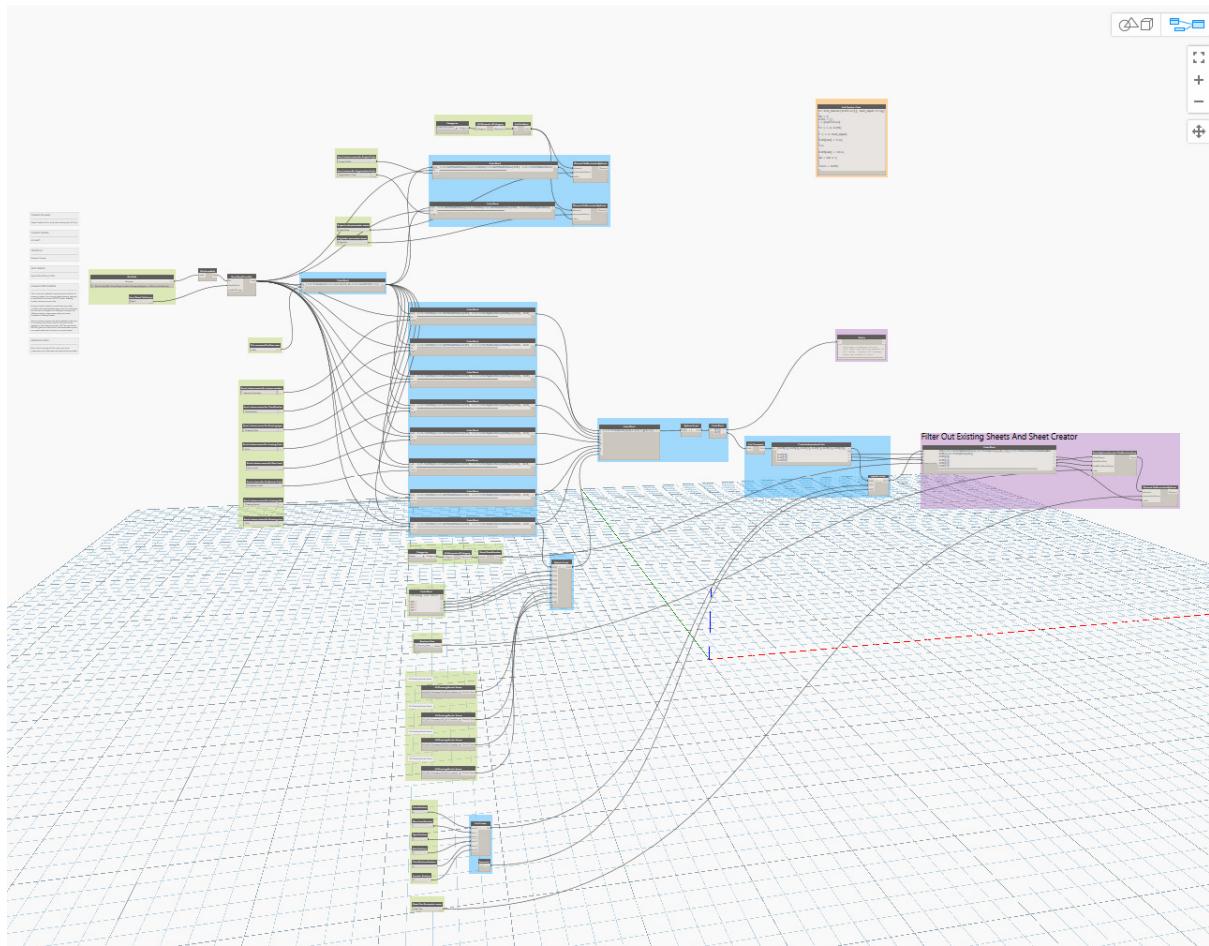


Readme guide for running the automatic revit sheets creation from excel via a dynamo script



Created By: Brendan Cassidy

Rev: v0.5

Table of Contents

1.	Introduction	1
2.	Why the script was created	1
3.	Possible Future Updates	2
4.	Setup	2
4.1.	Excel setup	2
4.2.	Revit setup	3
4.2.1.	Revit Drawing sheet setup	3
4.2.2.	Revit project/template file setup.....	6
4.3.	Dynamo Setup.....	8
4.3.1.	Excel sheet	10
4.3.2.	Row trimming.....	10
4.3.3.	BS1192 project codes – Excel column name and revit parameter	11
4.3.4.	BS1192 project codes – Excel column name and revit parameter	12
4.3.5.	Project wide category	12
4.3.6.	BS1192 Sheet codes – Excel columns names.....	13
4.3.7.	Sheet category	14
4.3.8.	Code block for drawing sheets sizes	14
4.3.9.	A random view	14
4.3.10.	Drawing border family names.....	15
4.3.11.	BS1192 Revit parameters.....	16
4.3.12.	Drawing Number Arrangement	17
4.3.13.	Error Checker	18
5.	Running the script and possible error.....	20
6.	Typical things that can cause errors	20

Rev	Section	Amendment	Date
n/a	Script	Alpha Testing	10/10/14
0.1	Script/Doc	Initial Release(Finally out of Alpha)	29/04/15
0.2	Script/Doc	Screencast link updated (2.0). Yellow warning box explanation added(5.0). Script Revised to dynamo 0.8.1. All images updated in line with changes to script	15/07/15
0.3	Script/doc	Removed 4 individual sheet creation areas, this also eliminates area of errors. Code block IF statement replaced with python coded version. All code block inputs have been replaced with string replacements, to eliminate possible errors when people change input parameter	07/12/15 (not released into the wild)
0.4	Script/Doc	Added a second script option that joins BS1192 codes together. Updated document to include script option addition.	19/05/16
0.5	Script/Doc	Added Null checker with visual que to both scripts(cheers Kieran for drawing register example). Sorted sheet number to correct place in script for code joiner script. Updated doc to show new overall script and null checker	05/06/16

1. Introduction

I would like to start off this by giving my thanks to the members of the dynamo forum/bloggers for the wealth of information/knowledge that has been posted which has helped me guide me through getting to grips with dynamo at a fairly rapid pace.

This script was created to automate the creation of drawing sheets from an excel sheet(drawing register) to revit with the correct BS1192 codes, drawing border size and correct title.

It has an inbuilt checker to eliminate any sheet numbers that have already been used, this will allow for re-use on a project as it develops through the different design stages where there can be an increase of drawing sheets.

And an inbuilt checker that will hopefully make sure it is pushing the correct section into the correct section on the drawing borders. EG The role under BS1192 goes into the correct role parameter in revit no matter where this column is on excel sheet.

There is also a traffic system to help indicate any issues with the script as well as removing any null values/sections.

Important Note:

- This script should be utilised in a test environment prior to being used on a live project.
- This script is currently based on the sheet number being unique for each drawing.

2. Why the script was created

This script was created to help show that dynamo can help to do more in revit than just create fancy/complex geometry. It is also released under free usage and I do not want any donations for this script, but if anyone/company does feel they want to I would suggest that they donate towards some sort of user group to help keep things like knowledge sharing going.

You can contact me via these details if needed.

Twitter: @bencass86

Video of Script in Action: <https://knowledge.autodesk.com/support/revit-products/learn-explore/caas/screencast/Main/Details/b35f97f3-0df4-4077-81bb-38e08cda584c.html>

Note: Once I have created a new video to go with this release I will update the description within the above video to give a link to this video.

3. Possible Future Updates

Possible things that could be added in a future release

- Ability to modify drawing sheet information if already in use, replace drawing name if BS1192 code, title or border size has changed.

Any other areas of improvements please contact me and I will get these things changed or if you have already done the change send me it and I will update the original.

4. Setup

The setup is added to help you fill in relevant areas and also have the correct elements setup to eliminate any chance of errors appearing when running the script.

Dependant on which script you will be using will depend on if you need to follow every part of the setups, and particular attention to be made to all highlighted notes.

This script has been updated to take advantage of group within Dynamo 0.8.1 therefore it would be wise for you to have this installed so you will see all the group colours and titles for each group.

4.1.Excel setup

The excel setup is probably the easiest part to setup and only has one set requirement at the moment for it to work properly within the dynamo script. This is that each drawing number sub-section(each BS1192 section), drawing name and size has to have its own column, refer to image below as a guide and they can be in any order for the script to work.

	A	B	C	D	E	F	G	H	I	J
1	XYZ PROJECT									
2										
3	Drawing Number									
4	Project Prefix	Organisation Code	Zone	Floor Level	Drawing Type	Profession Code	Classification	Sequence Number	Drawing Name	Size
5	XY	XYZ	01	B3	P	S	16	001	FOUNDATION REFURBISHMENT PLAN	A1
6	XY	XYZ	01	B2	P	S	28	002	LOWER GROUND REFURBISHMENT PLAN	A1

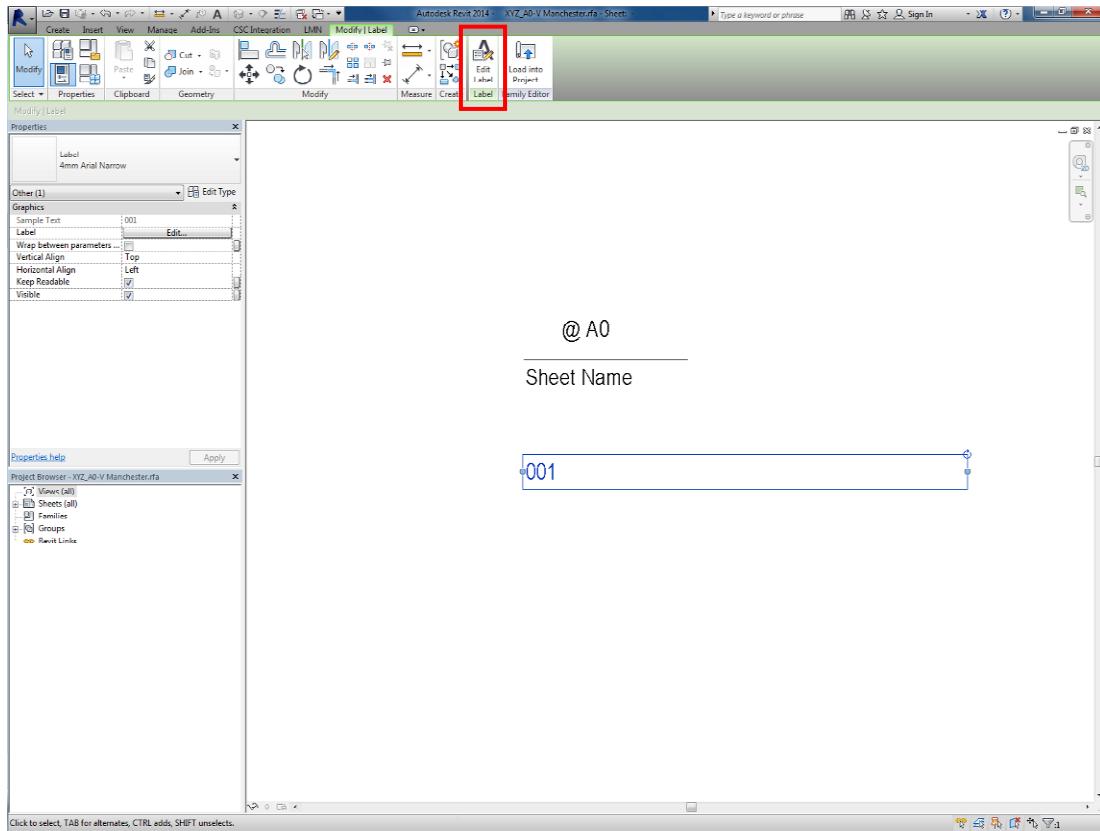
4.2.Revit setup

I have added the revit setup to help anyone that may not have the correct parameters added into a project template or drawing borders.

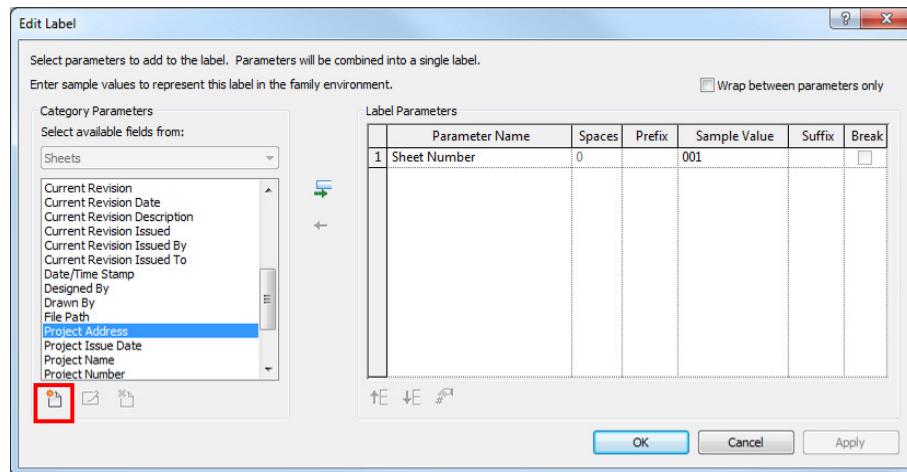
Note: Only the project code, originator code and sheet number will need to be added at the drawing sheet number label if you are combining all of the codes together as one.

4.2.1. Revit Drawing sheet setup

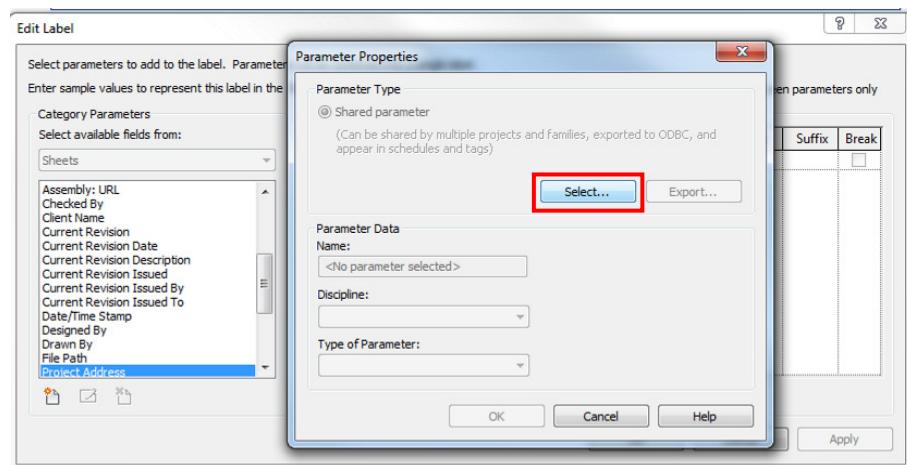
- 1- First stage is to open a revit sheet family file then select the sheet number text and click on edit label button that will appear.



- 2- Once a new box appears you will need to select the new parameter button at the bottom left.

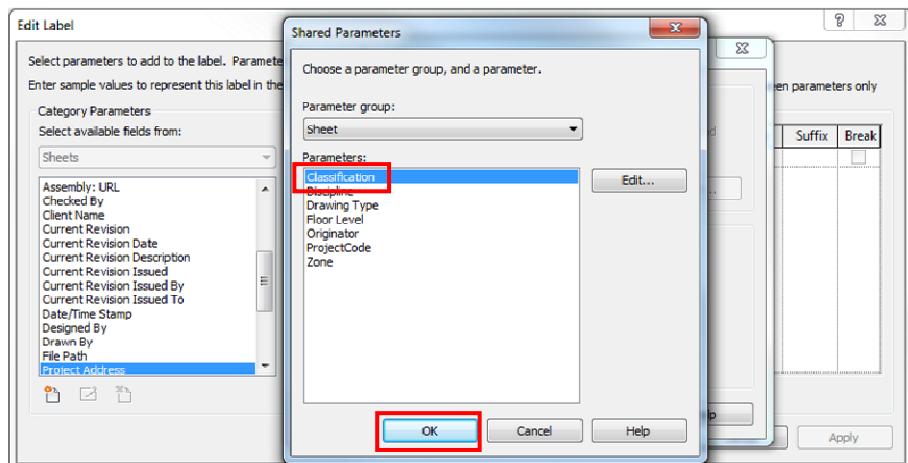


- 3- Then select the select button.

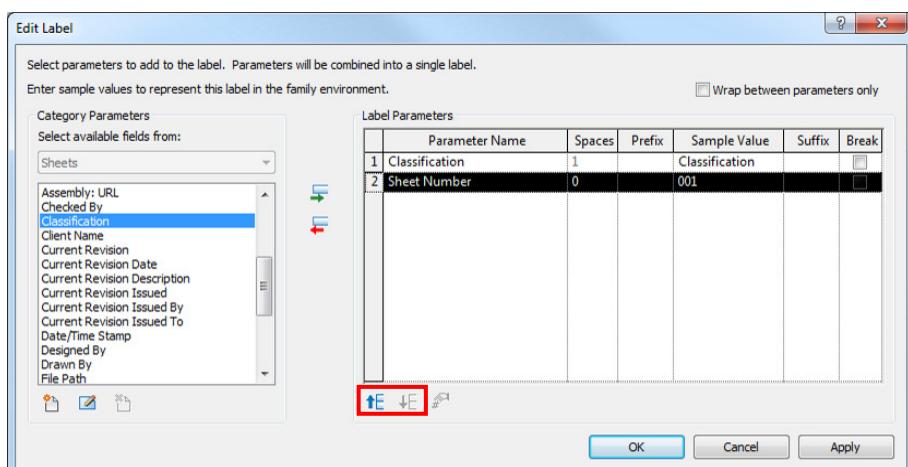
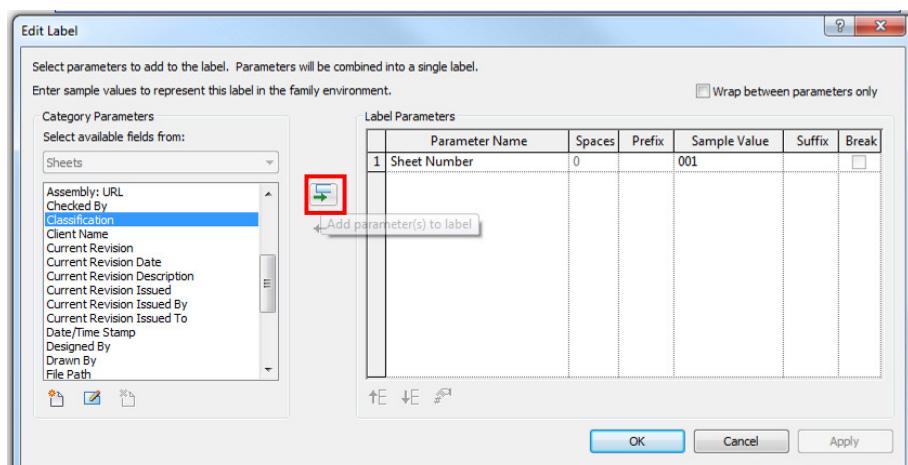


4- Then select the sheet shared parameter, I selected classification then click on.

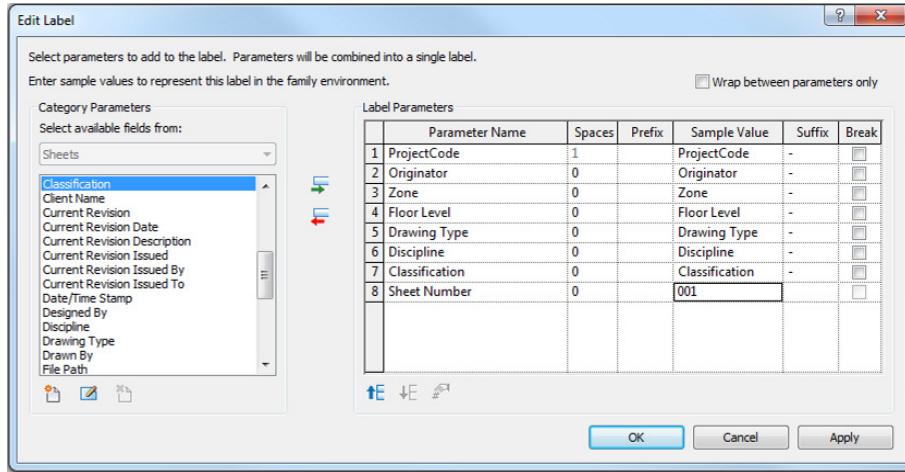
Note: you may need to create these shared parameters if you do not have them already.



5- Now select the added parameter and click the green arrow button to add it, then click the relevant arrow at the bottom to position it accordingly.



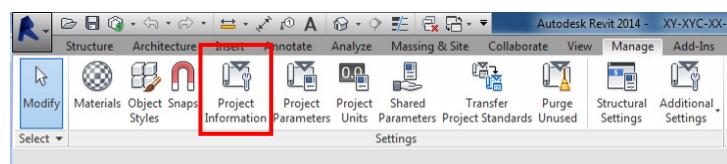
- 6- Then repeat the steps 2-5 until all the parameters are added. Then once all the parameters are added, you will then need to add a suffix to the parameter and change spaces to 0. Then they will look like the following picture



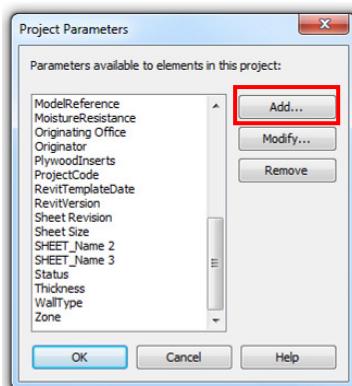
4.2.2. Revit project/template file setup

Project wide parameters

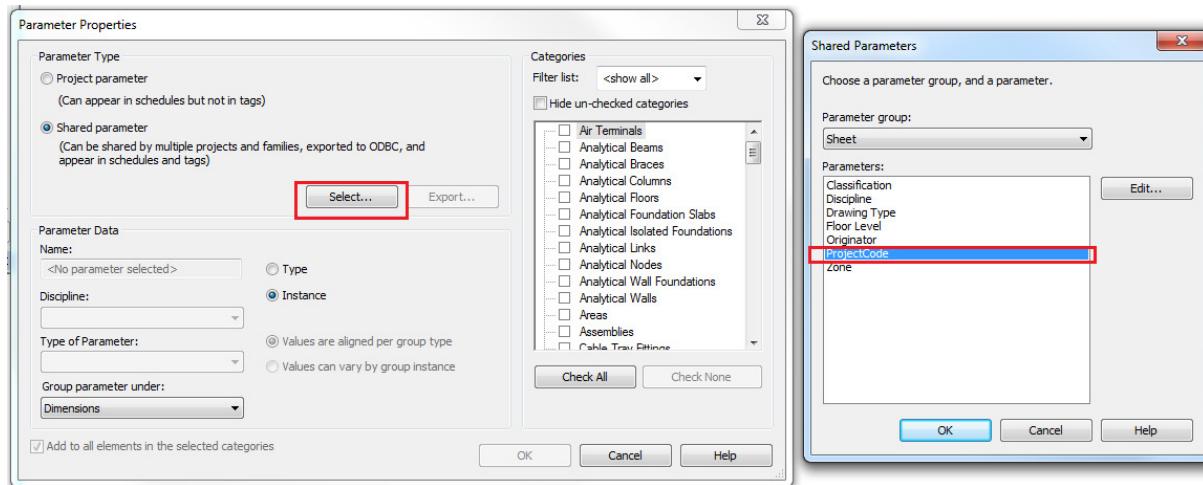
- 1- Firstly a shared parameter needs to be added to via clicking project information under manage tab



- 2- Then select add from the project parameters box

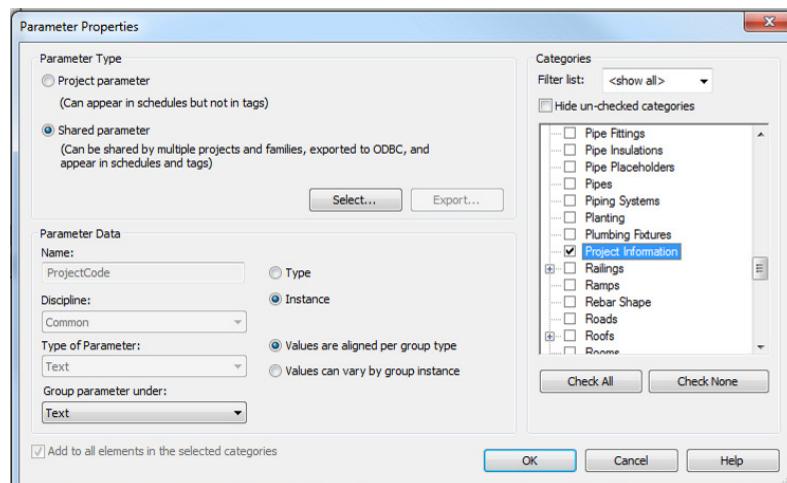


- 3- Once at the parameter properties box click select under the shared parameter to get the right hand box open. Then select your project code/originator/discipline shared parameter.



- 4- Select “Project Information” from the categories list, then click ok and the parameter is added. Once done repeat steps 3-4 for the other 2 project wide parameters required.

Optional: You could change the group parameter via the drop down under “group parameter under”.



Per sheet parameters

- 7- Repeat steps 1 and 2 from project information parameters.
- 8- Once at the parameter properties box click select under the shared parameter to get the right hand box open. Then select your either Classification/drawing type/Zone/Level/Size shared parameter.

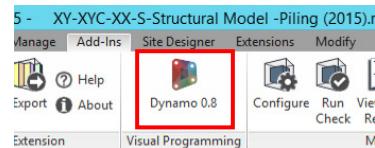
Note: Size is only added so it can be added to a revit schedule.

9- Select “Sheets” from the categories list, then click ok and the parameter is added. Once done repeat steps 1-2 for the other 4 sheet parameters required.

Optional: You could change the group parameter via the drop down under “group parameter under”.

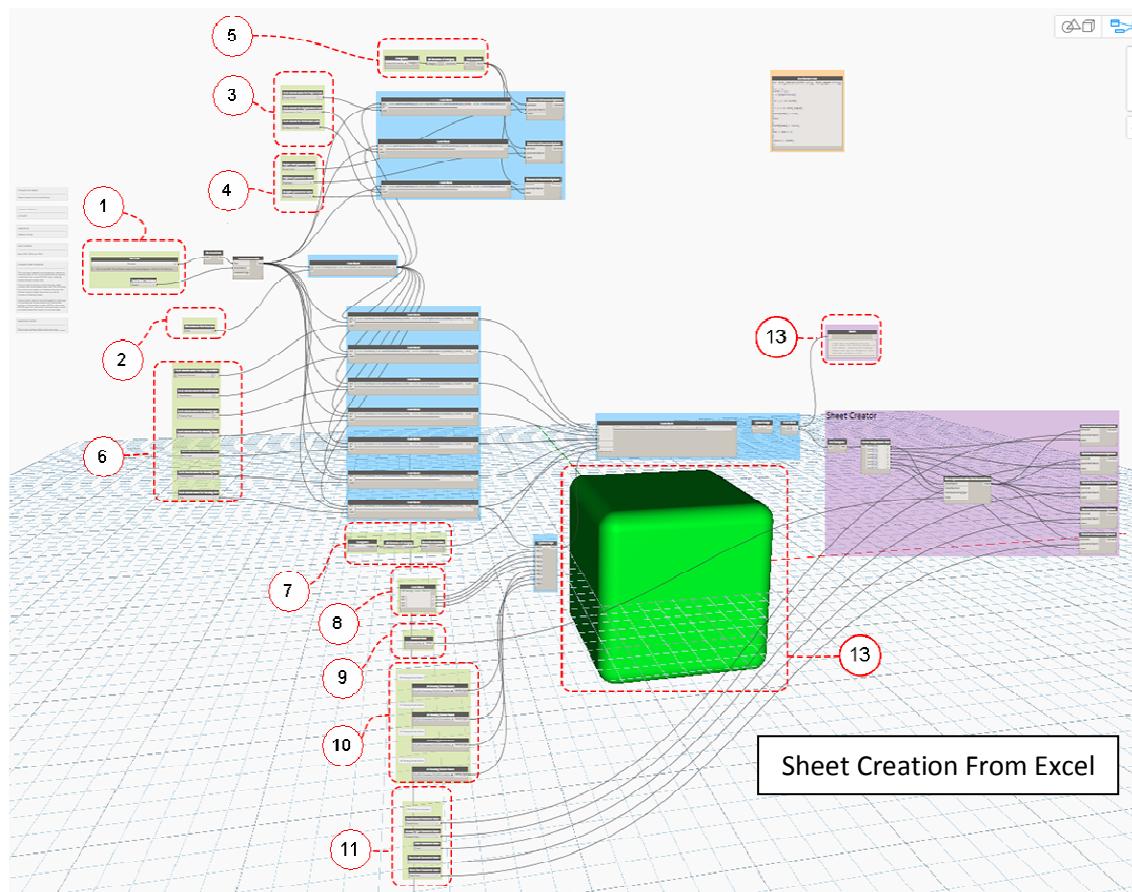
4.3.Dynamo Setup

Dynamo version 0.9.2 needs to be installed with the addon to revit, then you can just run dynamo from within revit via the following ribbon button under the addon tab.



Note: Your dynamo version may be different.

Below is a quick overview image of both script to help you navigate around the dynamo script



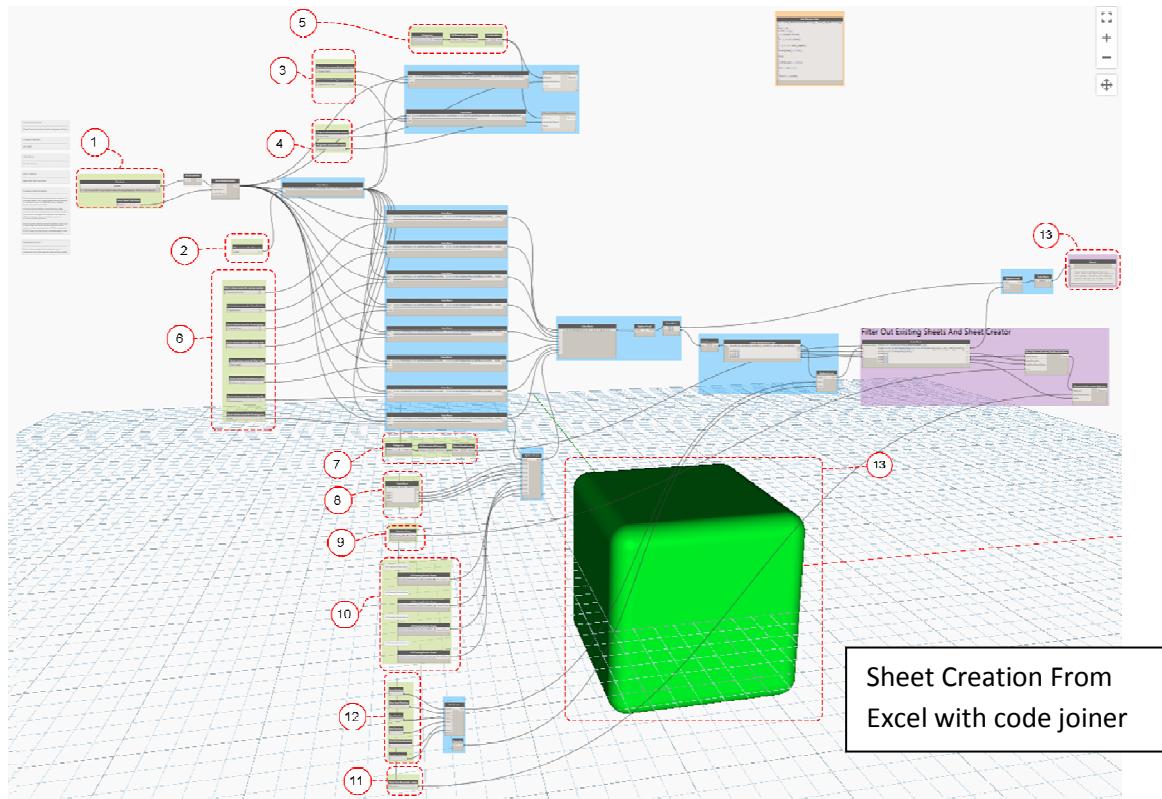


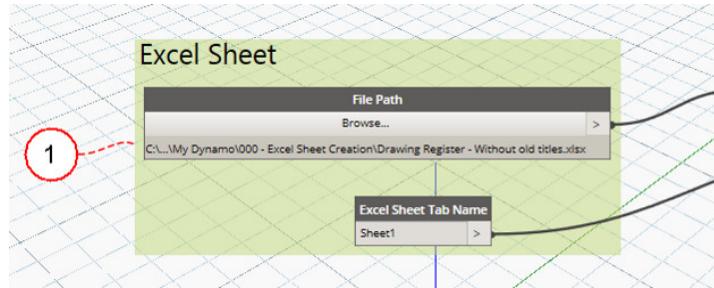
Image Key:

1. Excel sheet
2. Row trimming
3. BS1192 project codes – Excel column name
4. BS1192 project codes – Revit parameter
5. Project wide category
6. BS1192 Sheet codes – Excel columns names
7. Sheet category
8. Code block for drawing sheets sizes
9. A random view
10. Drawing border family names
11. BS1192 Revit parameters
12. Drawing Number Arrangement
13. Error Indicator

Note: Everything you have to change is case sensitive and has to match, otherwise it will not work.

4.3.1. Excel sheet

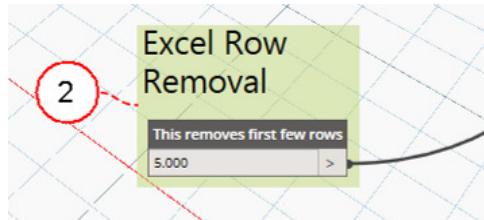
This one is fairly self explanatory, just change the location to where your excel sheet is located.



Note: the string box at bottom of the above image, should be changed to the title of the sheet within the excel file.

4.3.2. Row trimming

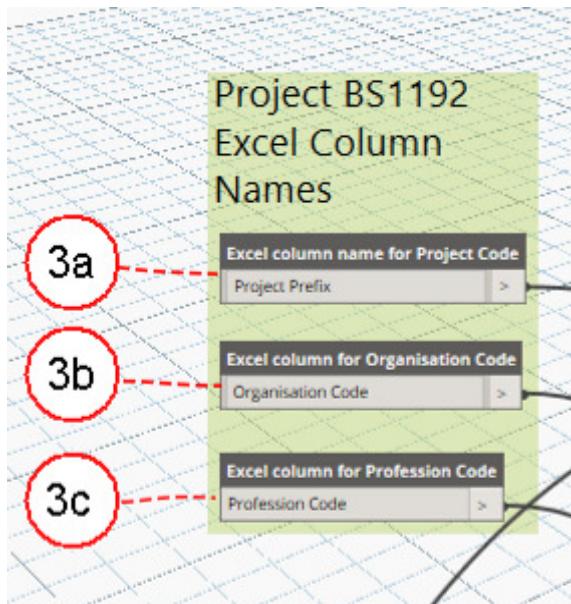
This area trims out data that is not required, like column names via two options



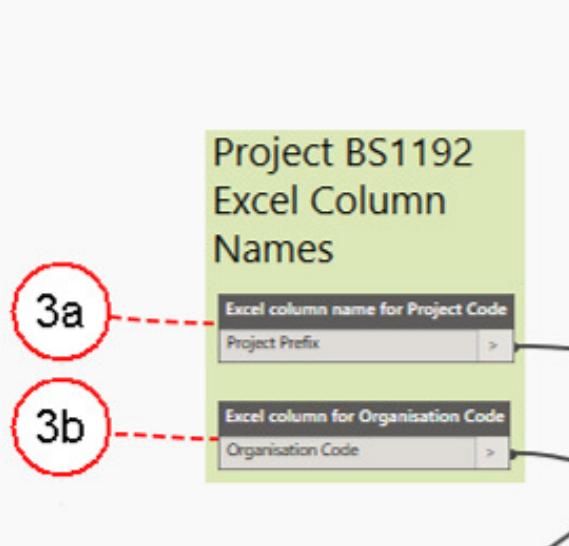
Just change the number to the correct amount of top rows from excel sheet you want to trim out.

4.3.3. BS1192 project codes – Excel column name and revit parameter

This is the area for project wide codes under BS1192 is checked for the Excel sheet.



Sheet Creation From Excel



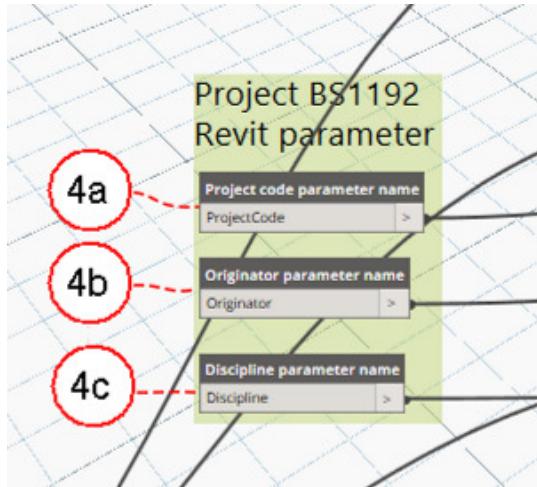
Sheet Creation From Excel with code joiner

1. Rename the parameter to the Excel column name for project code
2. Rename the parameter to the Excel column name for Organisation code
3. Rename the parameter to the Excel column name for Profession/Discipline code

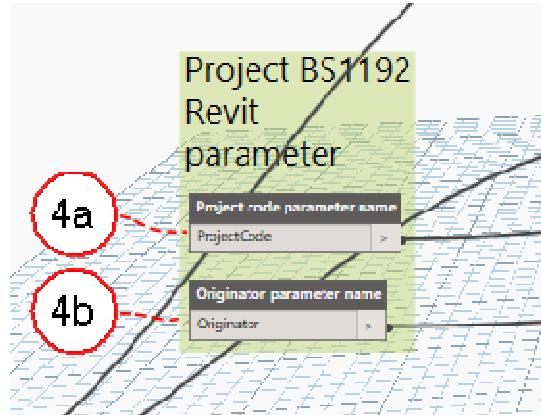
Note: Everything is case sensitive and has to match, otherwise it will not work.

4.3.4. BS1192 project codes – Excel column name and revit parameter

This is the area for project wide codes under BS1192 is applied for revit.



Sheet Creation From Excel



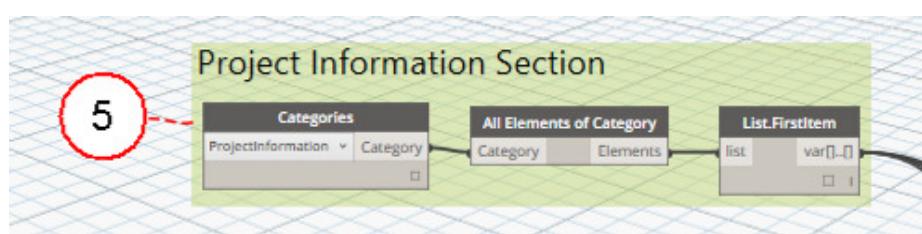
Sheet Creation From Excel with code joiner

1. Rename the text to match your Revit parameter for Project Code
2. Rename the text to match your Revit parameter for Organisation Code
3. Rename the text to match your Revit parameter for Profession/Discipline Code

Note: Everything is case sensitive and has to match, otherwise it will not work.

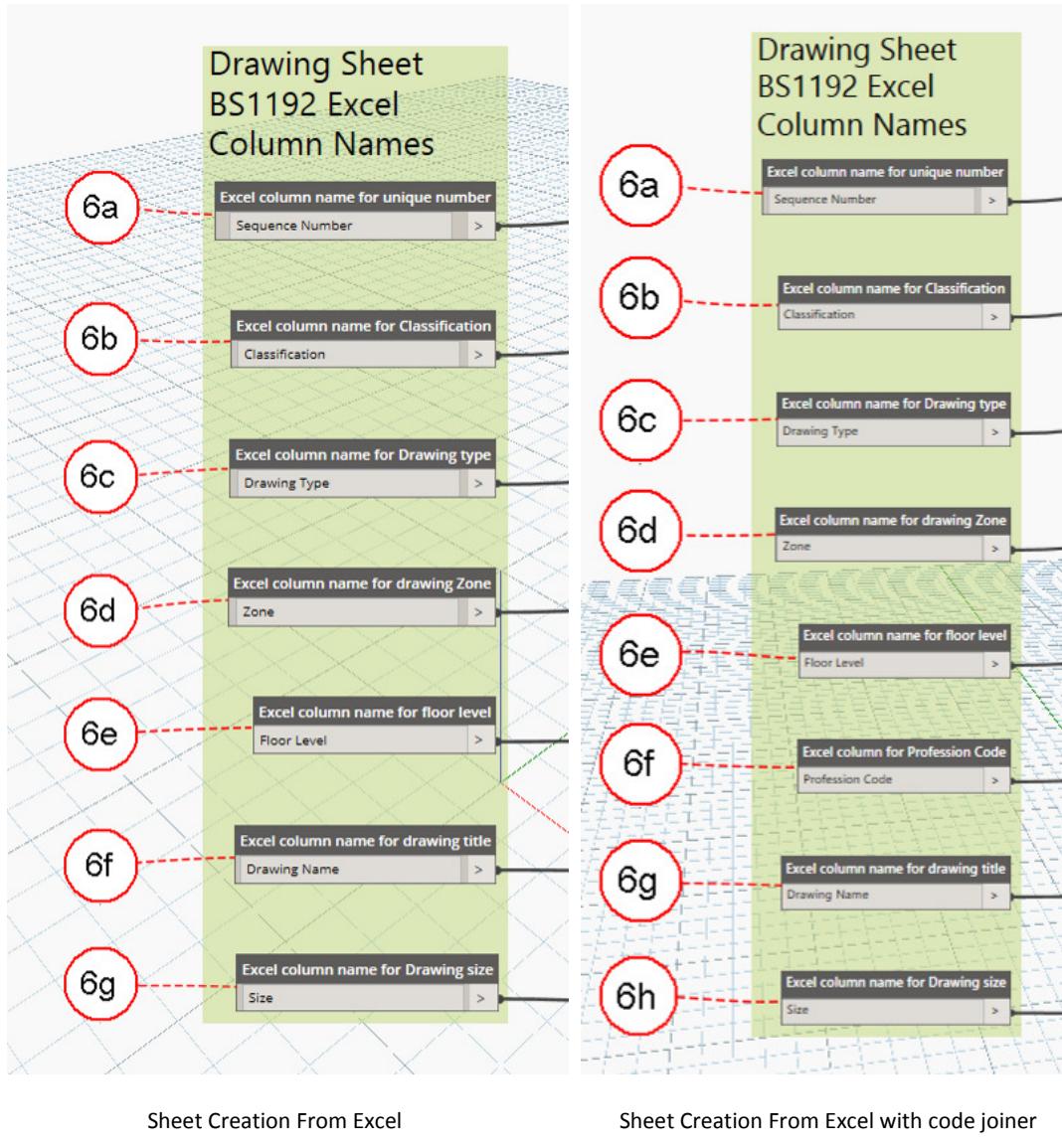
4.3.5. Project wide category

Just make sure this element is selected as “projectinformation”



4.3.6. BS1192 Sheet codes – Excel columns names

This is the area for sheet codes under BS1192 is checked from the excel sheet so from here on wards the correct list for each section is sorted accordingly.



- 6a. This is for the sheet sequential number excel column name.
- 6b. This is for the sheet classification excel column name.
Note: I would advise that this stays as classification for if you ever need to switch between Uniclass 1.4, Uniclass 2015, CISfB and NRM on different projects.
- 6c. This is for the sheet drawing type excel column name.
- 6d. This is for the sheet zone excel column name.
- 6e. This is for the sheet floor level excel column name.
- 6f. This is for the sheet Profession/Discipline Code excel column name.
- 6g. This is for the drawing sheet name excel column name.
- 6h. This is for the drawing sheet size excel column name.

Note: Everything is case sensitive and has to match, otherwise it will not work.

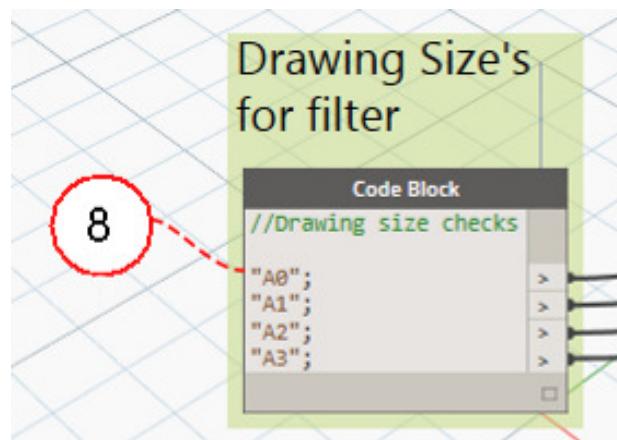
4.3.7. Sheet category

Just make sure this element is selected as “Sheets”



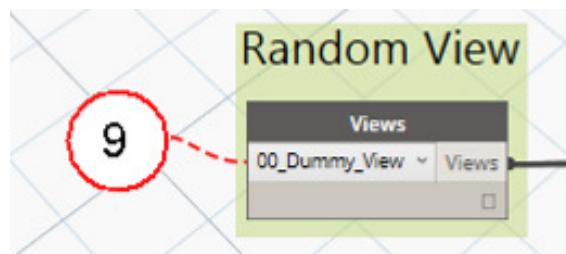
4.3.8. Code block for drawing sheets sizes

Probably will not need to modify this area but referenced here for your information



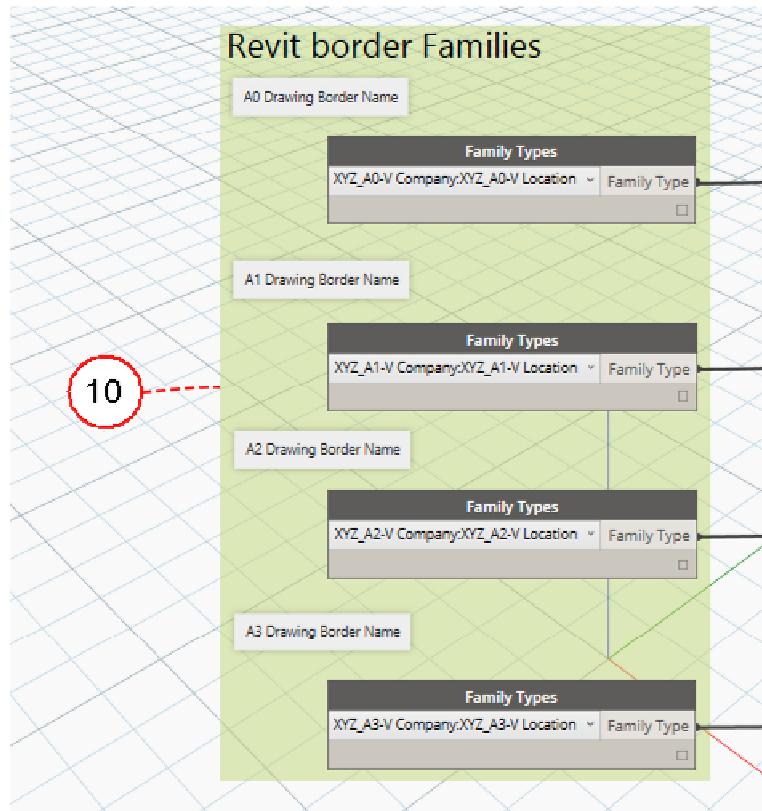
4.3.9. A random view

Just make sure this element has a view selected, otherwise the script will not work. It doesn't have to be a specific view as long as the view has nothing on it because it will not actually add it to any of the sheets.



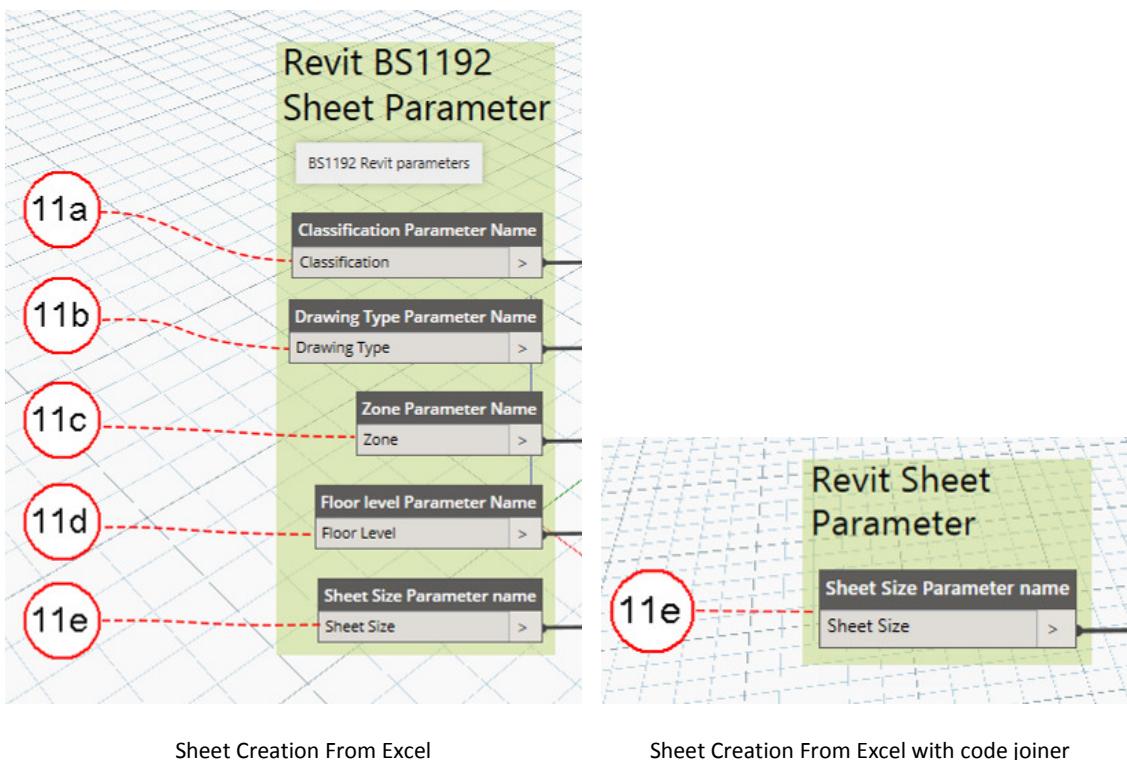
4.3.10.Drawing border family names

This area is where you will need to select your project/company borders for the relevant drawing sheet size.



4.3.11.BS1192 Revit parameters

This is the area for the revit parameters for sheet codes under BS1192.



- 11a. This is for the sheet classification revit parameter name.

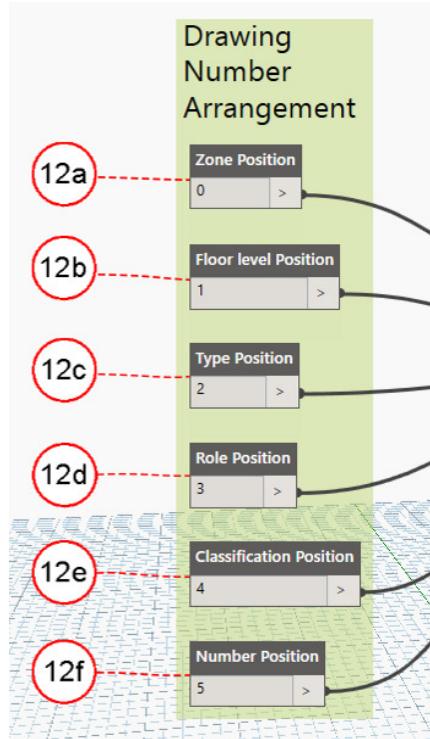
Note: I would advise that this stays as classification for if you ever need to switch between Uniclass 1.4, Uniclass 2015, CISfB and NRM on different projects.

- 11b. This is for the sheet drawing type revit parameter name.
11c. This is for the sheet zone revit parameter name.
11d. This is for the sheet floor level revit parameter name.
11e. This is for the drawing sheet size revit parameter name.

Note: Everything is case sensitive and has to match, otherwise it will not work.

4.3.12.Drawing Number Arrangement

This is the area that is only relevant to the “Sheet Creation From Excel with code joiner” script version. It requires you to put the relevant order of each drawing code section in sequence order(see below examples).



- 12a. This is for the zone position within the drawing sheet numbering
- 12b. This is for the floor Level position within the drawing sheet numbering
- 12c. This is for the type position within the drawing sheet numbering
- 12d. This is for the role position within the drawing sheet numbering
- 12e. This is for the classification position within the drawing sheet numbering
- 12f. This is for the number position within the drawing sheet numbering

Example 1 - For a drawing number that has the following arrangement “Zone-Floor Level-Type-Role-Classification-Number” will have the following numbers within each box:

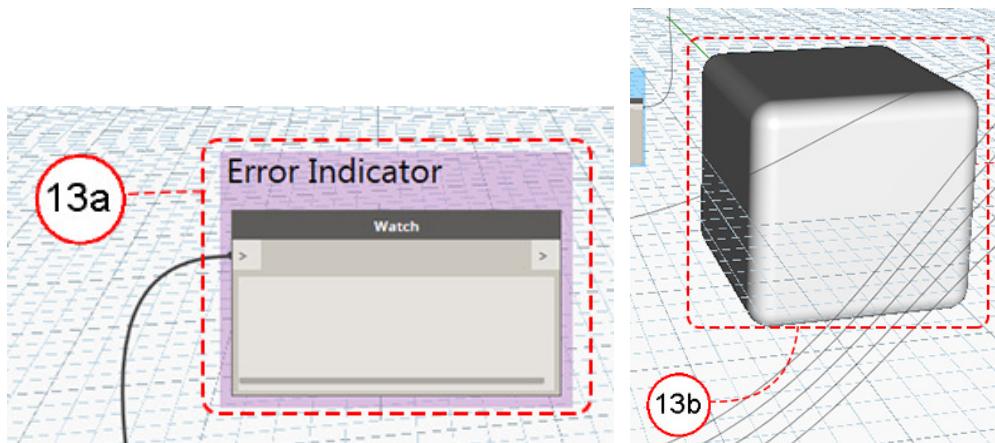
Zone Position – 0
Floor Level Position - 1
Type Position - 2
Role Position - 3
Classification Position - 4
Number Position - 5

Example 2 - For a drawing number that has the following arrangement “Role-Zone-Floor Level-Type- Classification-Number” will have the following numbers within each box:

Zone Position – 1
Floor Level Position - 2
Type Position - 3
Role Position - 0
Classification Position - 4
Number Position - 5

4.3.13.Error Checker

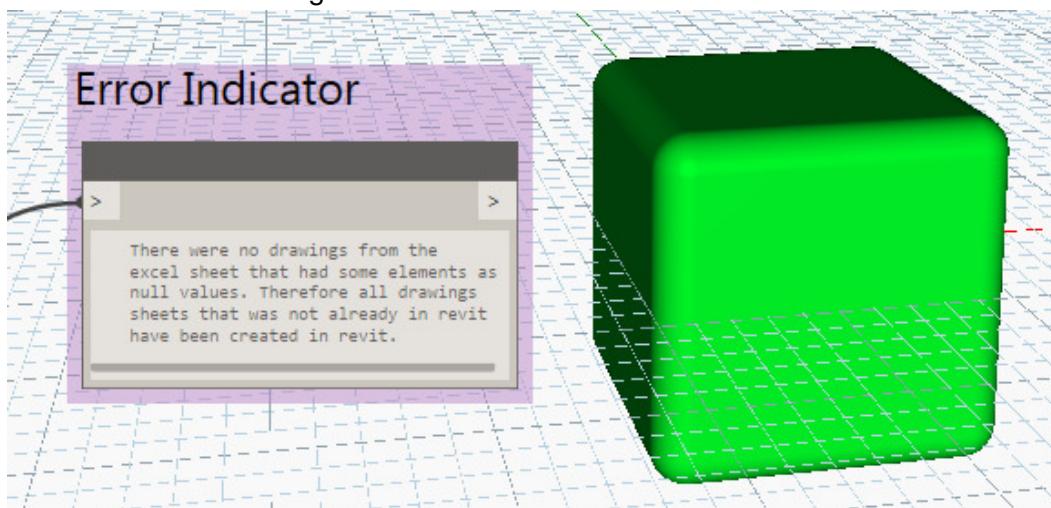
This is the area that will help to indicate a possible area of error relating to the data either via text or a visual cue.



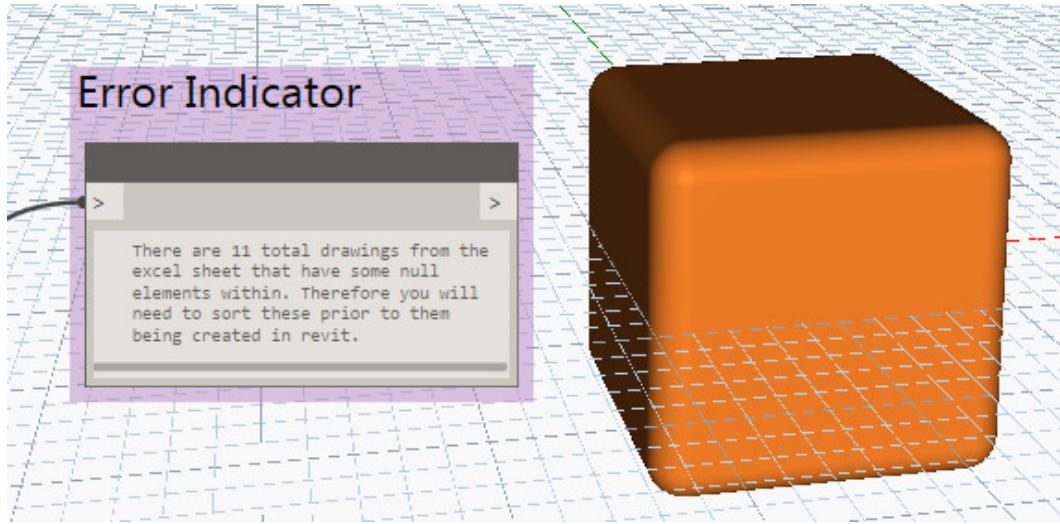
- 13a. This is the message relating to the error indicator visual cue.
- 13b. This is the visual cue for the error indicator, and it will change colour accordingly.

There are three stages that follow a traffic light system and are as follows:

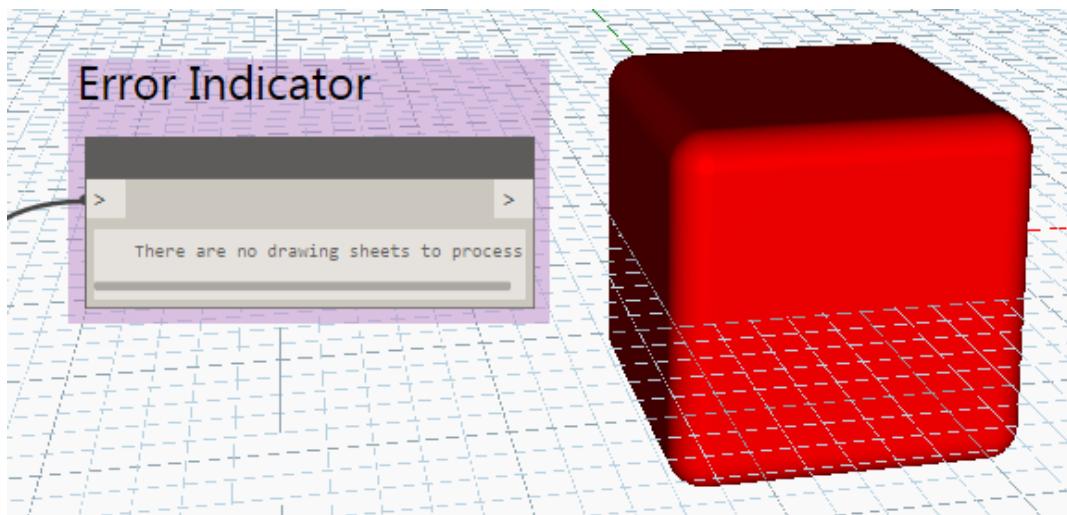
- Green – All drawings from the excel sheet was transferred and created within revit.



- Orange – Some drawings was added to Revit but some contained partial null sections and therefor these elements will need to be modified to suit prior to being created in Revit.



- Red – The excel sheet either contained no drawing sheets or the drawing sheets was already added within revit and therefor was not created.



5. Running the script and possible error

Once all of the above areas have been completed; the script has to be run via opening dynamo from revit addins ribbon tab, then opening the dynamo script then clicking run as I have set the script to be manually run.



I would hope soon enough that the opening of dynamo/script, then clicking run could be replaced via a button on the revit ribbon which would prompt you for the relevant input run the script for you.

6. Typical things that can cause errors

If there is an error at the “Excel.ReadFromFile” node then this is a dynamo issue and has been reported to dynamo developers and can be followed at the following link(<https://github.com/DynamoDS/Dynamo/issues/6505>)

Main areas of errors that can arise will be because of either empty excel document elements arriving from the excel document, or if say the excel column name indicated in dynamo does not match character to character. This will create an empty list further on and cause issues.

If you get an issue towards the end this could be because the revit parameter that is typed in dynamo does not match character to character in revit.