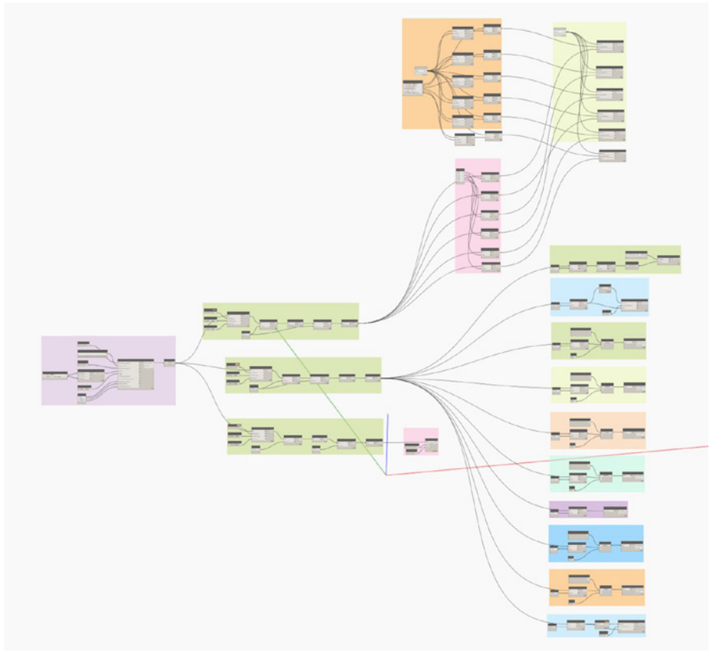
Project Setup



Setting up a Revit project can be rather time consuming and cumbersome. In order to streamline this process, I created a method of setting up all my projects in the click of a button.

The UI window for this tool allows the user to select a project setup excel file that I make while reviewing the architectural documents. Once the excel is selected, you click set up project and it will perform various functions to setup your project.

The excel file I have contains three seperate sheets. One for project info, another for project setup and a final one for level setup.

Under ProjectInfo, you have cells to fill out pertaining to the Project's name, the clients name, architect, contractor, City, State and the Project's address. This info is automatically identified and autofilled into your Revit project.

	A	B	C	D	E	F
1	**Project Name**	**Client Name**	**Architect**	**Contractor**	**City, State**	**Project Address**
2	SF TOWER	SFUSD	BUREAU OF ARCHITECTURE	R&S	SAN FRANCISCO, CA	699 28TH AVENUE

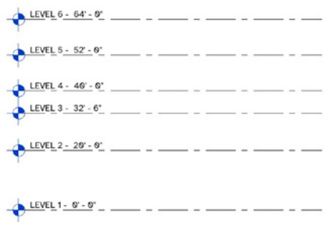
This is an example of what my project's cover sheet looks like after running my script. The titleblocks for all sheets are also updated with the relevant information.

Now here we have the project setup sheet. Under wall types, you can create new wall types in Revit by adding whichever names are applicable. The glass types tab will go ahead and create these glass types and then assign a randomized blue to the material for glass. The unit and panel types goes ahead and loads in whichever units or panel families I need to begin modeling. The Worksets tab will then add the worksets I need for the project. Infill types and door types will also load in the relevant families I need. Lastly, panel types will create panel materials in a randomized gray for each specific panel type oin the project.

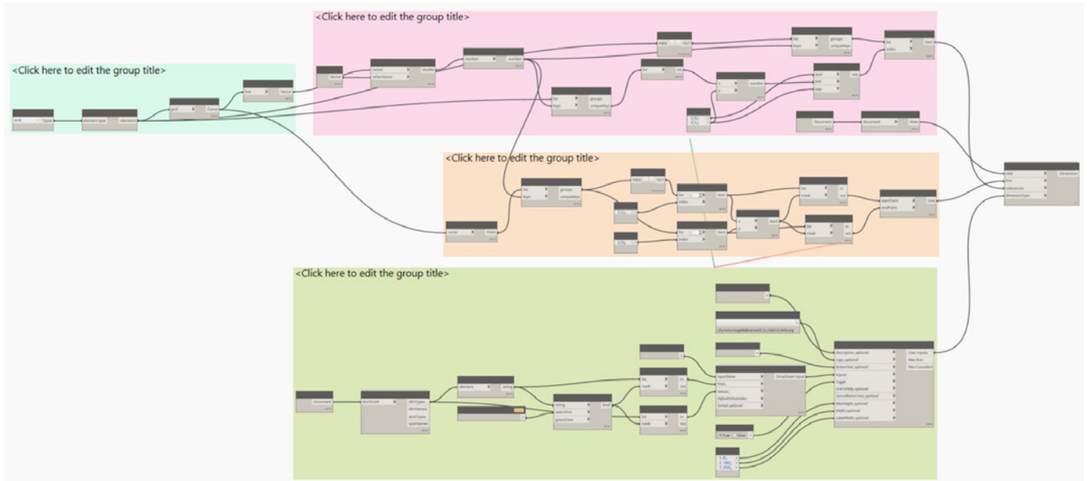
	A	B	C	D	E	F	G	H	I	J
1	**Wall Types**	**Glass Types**	**Unit Types**	**Unit Types - Adaptive**	**Panel Types**	**Panel Types - Adaptive**	**Worksets**	**Infill Types**	**Door Types**	**Panel Types**
2	CW	GL-1	1Lite-CS	1Lite-A	Panel-Flat	Panel-Flat-3 Point-A	CW	INFILL-GLASS	INFILL-DOOR-DOUBLEDOOR	MTLP-01
3	SW	GL-2	3Lite-CS	2Lite-A	Panel-Horizontal	Panel-Flat-4 Point-A	SW	INFILL-PANEL	INFILL-DOOR-SINGLE-OUTSWING	MTLP-02
4	PO	GL-3	4Lite-CS		Panel-VerticalFolds	Panel-Flat-5 Point-A	PANELS			
5	PARAPET	GL-5	2Lite-CS				CANOPY			
6							ARCH			
7							STRUCTURE			
8										
9										

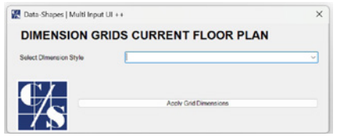
For the Level Setup tab, you can input the names and the heights of your levels here. Dynamo will then create the level by name, then create floorplan views and apply the appropriate floorplan view template for each newly created level.

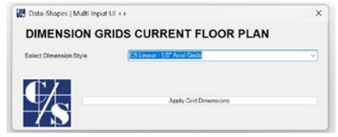
	A	B
1	**Level Name**	**Elevation Height - Decimal Feet**
2	LEVEL 1	0
3	LEVEL 2	20
4	LEVEL 3	32.5
5	LEVEL 4	40
6	LEVEL 5	52
7	LEVEL 6	64
8		

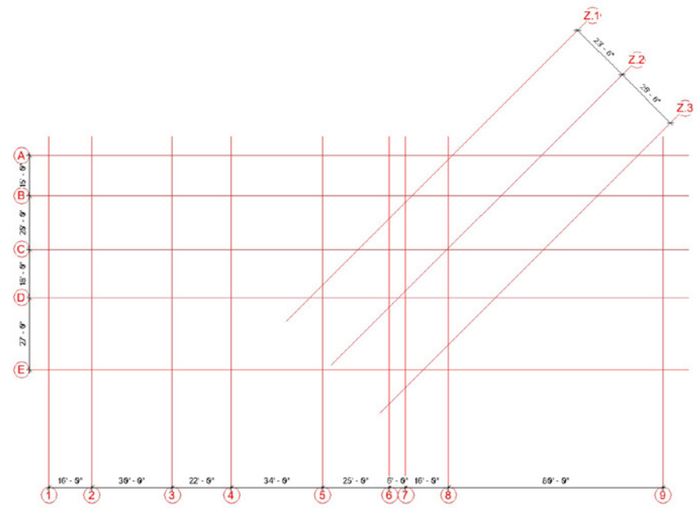


Dimension Grids





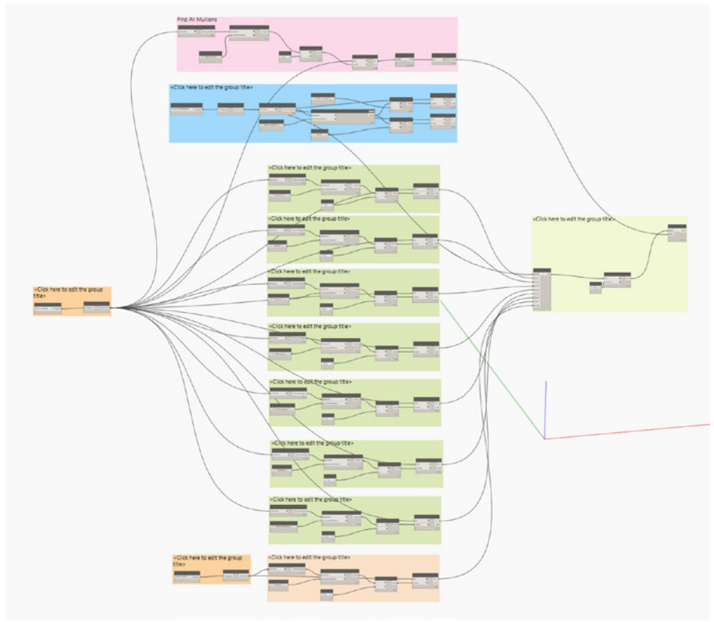




This tool allows me to dimension all grids in the current floorplan view. The UI window allows me to select from a dropdown list all of the dimension styles in my Revit project. Then, once you click Apply Grid Dimensions, it rolls through the grids in your floorplan, sorts them by their line direction and draws the dimension strings at the heads of each grid.

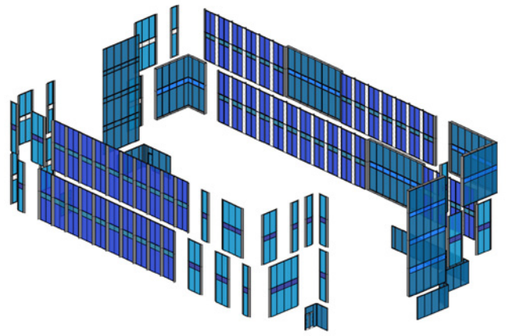
This tool has also been adapted to dimension all grids on all floorplans per type. This allows me to go ahead and place all dimensions for relevant floorplans in one click rather than using this single tool on every floorplan. Very helpful once my sheets are plotted and I'm ready to dimension all of my sheets.

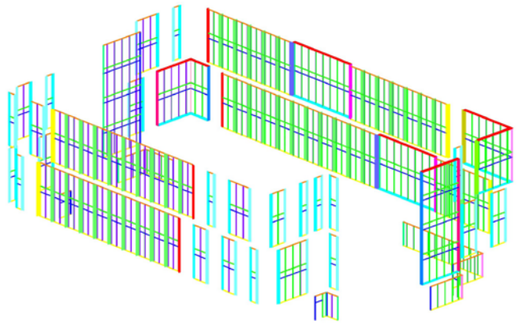
Colorize Mullions



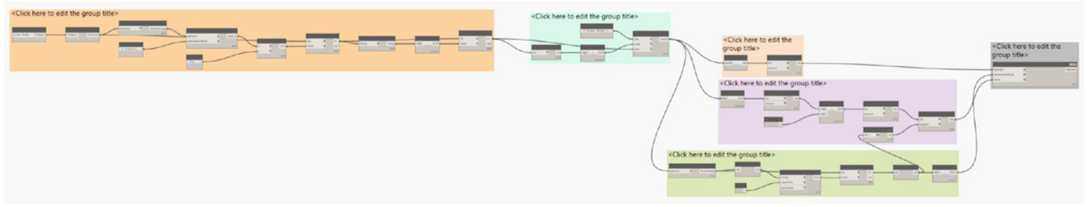
This tool helps me to check my model's mullions. Considering there could be a wide varitey of profioles and types of mullion on a project, it is important that I've placecd them all correctly. This tool assigns a random bright color to each mullion by type, hides alll infills and panels and allows me to just see the skeleton of the frames. This quickly shows me if I accidently misplaced a mullion type or if there is something irregular in my logic.

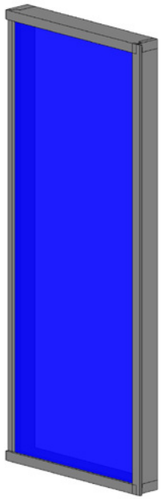
This tool works with just a click of the button to colorize all mullions. If I hit the button one more time while they are colored, it will go ahead and restore the model to its original state..

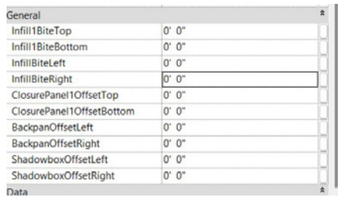


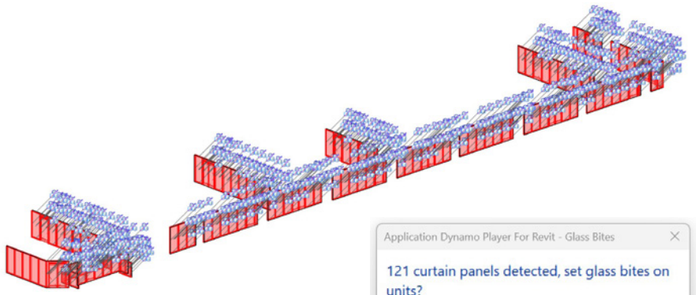


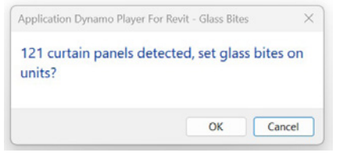
Assign Glass Bites



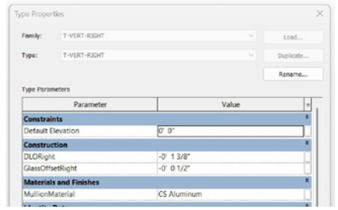


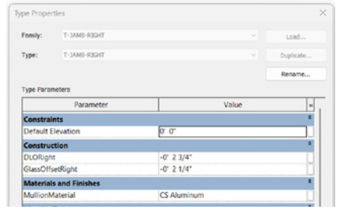






Os acit. Udam actam prae testord icaeces hos, Ti. Ad rei consultum si tam fortus virmantem modieni hiliae ad cum duci suludem hin tastrudetrum nimmo verei intis bonveroris; estrena, quem pultorum tem ego iamque fui scribus, qua rei populi beffre avemusc iamperfiris reo mentiac itanum ses viterteme quemnos silicia? Demunclut contiam aut adellaribus nostis Ahaceri sediemur, conem nost ad consum tentrum adhuctorum cruriam iam pracchicat nordinin Itatuss ignari, nu con scestanu mei patus sedit L. Qui incus, C. Onterev irmissus des satam, qua tam tam, veroposta mis cleste mus, esse forum hus ilicerium nihilin tiendelius tus, quidelusce fac viu vius etorsus mo temovendacii in inculii perbi inatque in vocusta turniquodit averempl. Pio, vit, convocur quam inteatum untro, cae etortiae con de audetis temusultus int. Nim qui tem dionceridem horursulibus mo





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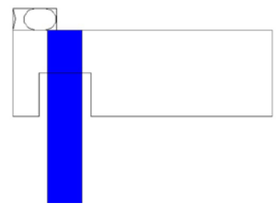
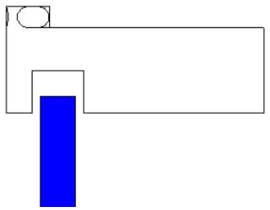
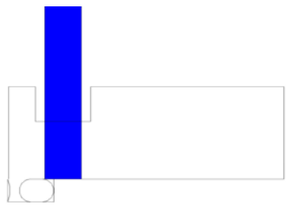
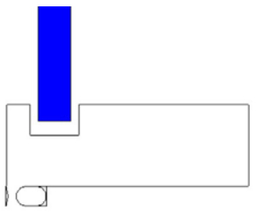
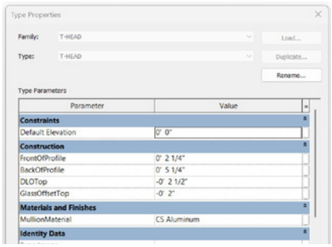
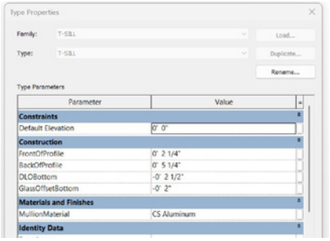


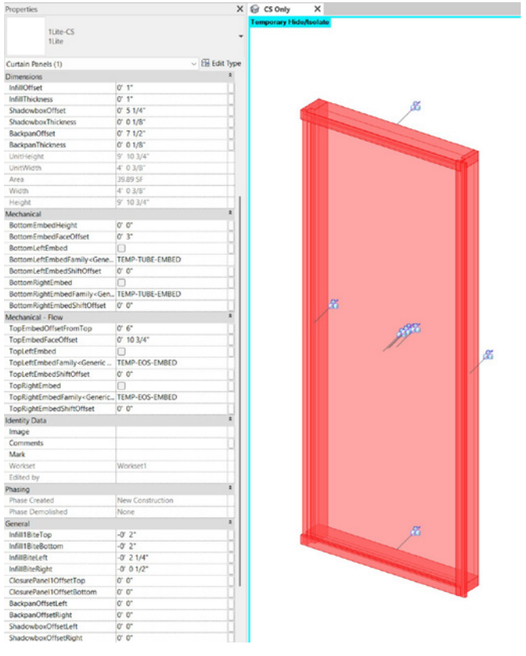






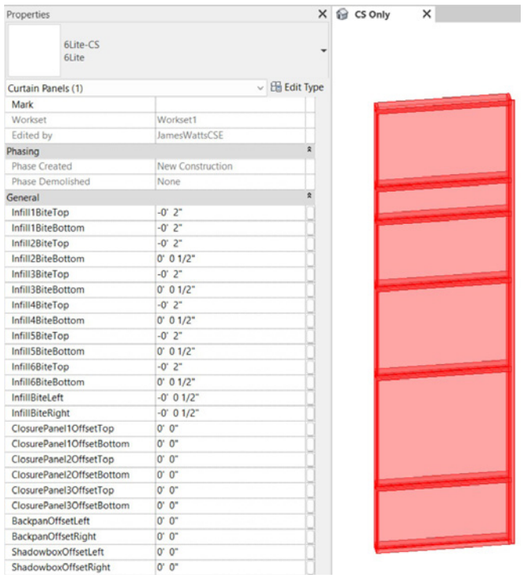






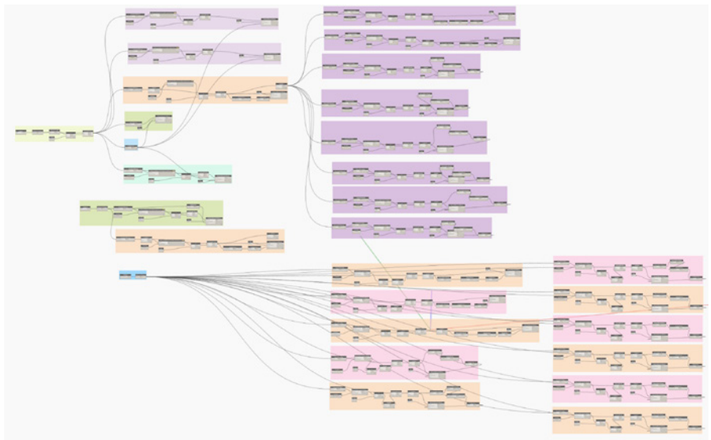
General	
Infill1BiteTop	-0' 2"
Infill1BiteBottom	-0' 2"
InfillBiteLeft	-0' 2 1/4"
InfillBiteRight	-0' 0 1/2"
ClosurePanel1OffsetTop	0' 0"
ClosurePanel1OffsetBottom	0' 0"
BackpanOffsetLeft	0' 0"
BackpanOffsetRight	0' 0"
ShadowboxOffsetLeft	0' 0"
ShadowboxOffsetRight	0' 0"

Os acit. Udam actam prae testord icaeces hos, Ti. Ad rei consultum si tam fortus virmantem modieni hiliae ad cum duci suludem hin tastrudetrum nimmo verei intis bonveroris; estrena, quem pultorum tem ego iamque fui scribus, qua rei popubli beffre avemusc iamperfiris reo mentiac itanum ses viterteme quemnos silicia? Demunclut contiam aut adellaribus nostis Ahaceri sediemur, conem nost ad consum tentrum adhuctorum cruriam iam pracchicat nordinin Itatuss ignari, nu con scestanu mei patus sedit L. Qui incus, C. Onterev irmissus des satam, qua tam tam, veroposta mis cleste mus, esse forum hus ilicerium nihilin tiendelius tus, quidelusce fac viu vius etorsus mo temovendacii in



General	
Infill1BiteTop	-0' 2"
Infill1BiteBottom	-0' 2"
Infill2BiteTop	-0' 2"
Infill2BiteBottom	0' 0 1/2"
Infill3BiteTop	-0' 2"
Infill3BiteBottom	0' 0 1/2"
Infill4BiteTop	-0' 2"
Infill4BiteBottom	0' 0 1/2"
Infill5BiteTop	-0' 2"
Infill5BiteBottom	0' 0 1/2"
Infill6BiteTop	-0' 2"
Infill6BiteBottom	0' 0 1/2"
InfillBiteLeft	-0' 0 1/2"
InfillBiteRight	-0' 0 1/2"
ClosurePanel1OffsetTop	0' 0"
ClosurePanel1OffsetBottom	0' 0"
ClosurePanel2OffsetTop	0' 0"
ClosurePanel2OffsetBottom	0' 0"
ClosurePanel3OffsetTop	0' 0"
ClosurePanel3OffsetBottom	0' 0"
BackpanOffsetLeft	0' 0"
BackpanOffsetRight	0' 0"

Assign Parts System Values



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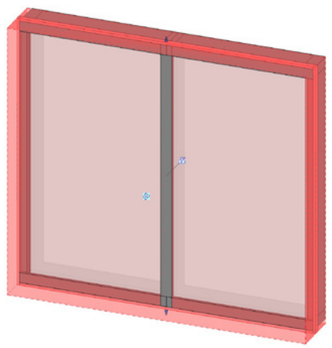
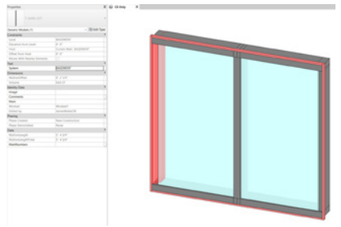
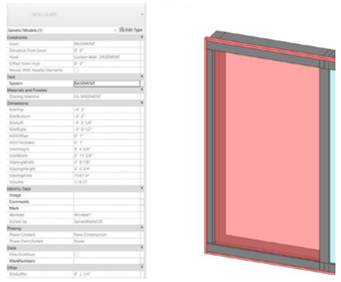
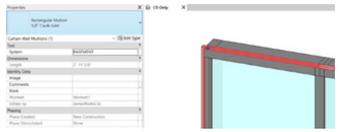
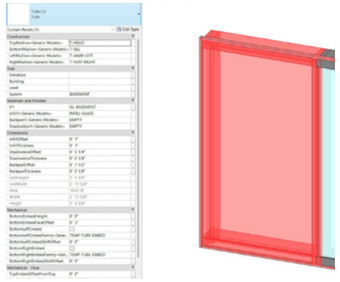


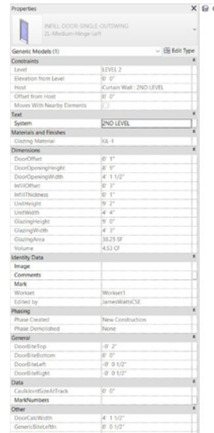


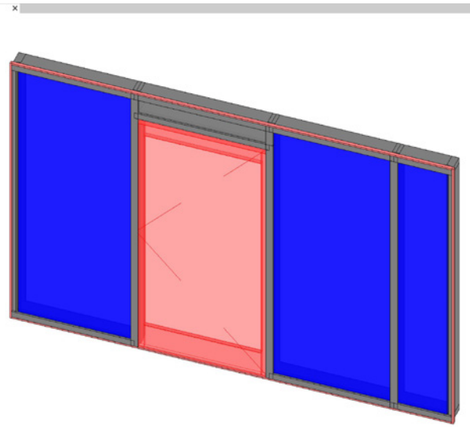






tem ego iamque fui scribus, qua rei erev irmissus des satam, qua tam tam, veroposta mis clesteOrum tum ommoeni hicaedo, quempon tum num se, corid inteatus estidem ia nem pris vesse, nonsus include





<01-Counts - Units>

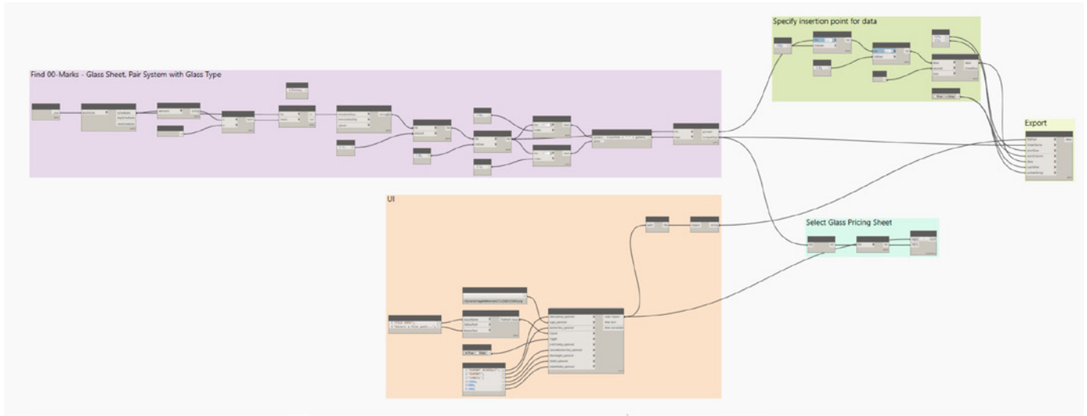
A	B	C	D	E
System	Count	UnitWidth	UnitHeight	Area
2ND LEVEL	1	6' - 11 3/8"	9' - 10 3/4"	9.38 SF
2ND LEVEL	1	1' - 0"	9' - 10 3/4"	9.99 SF
2ND LEVEL	4	1' - 2 7/8"	9' - 10 3/4"	49.97 SF
2ND LEVEL	1	1' - 4 5/8"	9' - 10 3/4"	13.71 SF
2ND LEVEL	1	1' - 5"	9' - 10 3/4"	14.92 SF
2ND LEVEL	1	1' - 10 3/8"	9' - 10 3/4"	18.45 SF
2ND LEVEL	1	2' - 2 3/8"	9' - 10 3/4"	21.75 SF
2ND LEVEL	1	2' - 11 3/8"	9' - 10 3/4"	29.17 SF
2ND LEVEL	1	3' - 0"	9' - 10 3/4"	29.69 SF
2ND LEVEL	6	3' - 7 5/8"	9' - 10 3/4"	215.85 SF
2ND LEVEL	1	3' - 8 3/8"	9' - 10 3/4"	36.59 SF
2ND LEVEL	1	3' - 11"	9' - 10 3/4"	38.76 SF
2ND LEVEL	5	3' - 11 3/8"	9' - 10 3/4"	195.34 SF
2ND LEVEL	1	3' - 11 1/2"	9' - 10 3/4"	39.17 SF
2ND LEVEL	56	4' - 0"	9' - 10 3/4"	2216.67 SF
2ND LEVEL	7	4' - 0 3/8"	9' - 10 3/4"	279.24 SF
2ND LEVEL	1	4' - 0 7/8"	9' - 10 3/4"	40.36 SF
2ND LEVEL	1	4' - 1"	9' - 10 3/4"	40.41 SF
2ND LEVEL	4	4' - 2"	9' - 10 3/4"	164.93 SF
2ND LEVEL	1	4' - 2 5/8"	9' - 10 3/4"	41.75 SF
2ND LEVEL	1	4' - 3"	9' - 10 3/4"	42.66 SF
2ND LEVEL	1	4' - 3 1/2"	9' - 10 3/4"	42.47 SF
2ND LEVEL	6	4' - 4"	9' - 10 3/4"	257.29 SF
2ND LEVEL	1	4' - 4 3/4"	9' - 10 3/4"	43.59 SF
2ND LEVEL	1	6' - 1 7/16"	9' - 10 3/4"	66.56 SF
2ND LEVEL	1	6' - 2 3/8"	9' - 10 3/4"	61.33 SF
2ND LEVEL	4	6' - 4"	9' - 10 3/4"	259.69 SF
2ND LEVEL	111			4262.96 SF
BASEMENT	2	2' - 11 5/8"	5' - 4 3/4"	32.94 SF
BASEMENT	1	3' - 0 3/4"	5' - 4 3/4"	16.52 SF
BASEMENT	2	4' - 0 1/4"	5' - 4 3/4"	43.41 SF
BASEMENT	3	4' - 0 7/8"	5' - 4 3/4"	65.96 SF
BASEMENT	2	4' - 3 1/8"	5' - 4 3/4"	45.98 SF
BASEMENT	10			203.92 SF

Os acit. Udam actam prae testord icaeces hos, Ti. Ad rei consultum si tam fortus virmantem modieni hiliae ad cum duci suludem hin tastrudetrum nimmo verei intis bonveroris; estrena, quem pultorum tem ego iamque fui scribus, qua rei popubli beffre avemusc iamperfiris reo mentiac itanum ses viterteme quemnos silicia? Demunclut contiam aut adellaribus nostis Ahaceri sediemur, conem nost ad consum tentrum adhuctorum cruriam iam pracchicat nordinin Itatuss ignari, nu con scestanu mei patus sedit L. Qui incus, C. Onterev irmissus des satam, qua tam tam, veroposta mis cleste

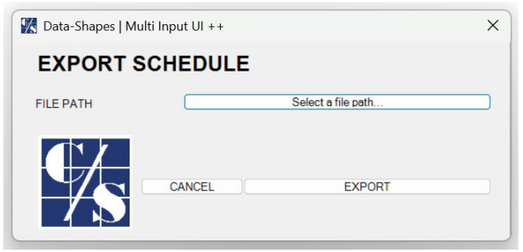
<Counts - Glass>

A	B	C	D	E	F	G
System	Glazing Material	Quantity	Width	Height	Sq.Ft.	GlassSizeIssue
2ND LEVEL	GL-1	2	9	115	14	<varies>
2ND LEVEL	GL-1	4	12	115	39	No
2ND LEVEL	GL-1	2	14	115	22	No
2ND LEVEL	GL-1	1	29	115	16	No
2ND LEVEL	GL-1	1	24	115	19	No
2ND LEVEL	GL-1	2	33	115	52	No
2ND LEVEL	GL-1	6	41	115	195	No
2ND LEVEL	GL-1	2	43	115	69	No
2ND LEVEL	GL-1	1	44	115	35	No
2ND LEVEL	GL-1	6	45	115	214	No
2ND LEVEL	GL-1	8	46	115	291	No
2ND LEVEL	GL-1	56	47	115	2698	No
2ND LEVEL	GL-1	1	48	115	38	No
2ND LEVEL	GL-1	1	59	115	49	No
2ND LEVEL		93			3143	
		93			3143	
BASEMENT	GL-BASEMENT	1	32	61	14	No
BASEMENT	GL-BASEMENT	2	33	61	28	No
BASEMENT	GL-BASEMENT	2	46	61	38	No
BASEMENT	GL-BASEMENT	5	48	61	161	No
		10			181	
BASEMENT		10			181	

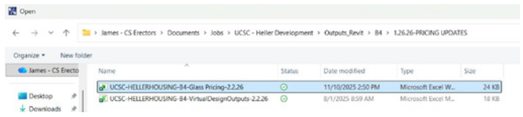
Exporting Glass Pricing Data



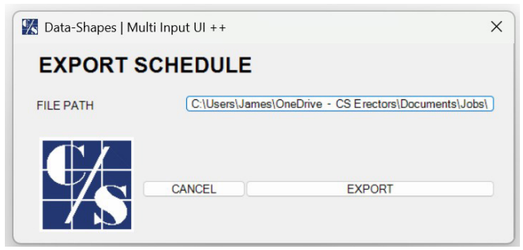
The UI window for this tool allows the user to select an excel file to export the glass information from Revit. Once clicked, the user is able to search through their folders and files to select the correct Glass Pricing excel template form.



For every project, there is a folder setup containing this blank glass pricing template.



Once your file is selected, you will get taken back to the original UI window in order to run the export function.

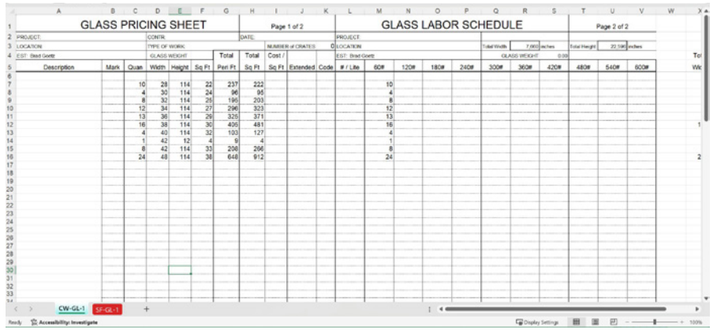


<00-Marks - Glass>

A	B	C	D	E
System	Glass Type	Count	GlazingWidth-EvenInch	GlazingHeight-EvenInch
CW	GL-1	10	28	114
CW	GL-1	4	30	114
CW	GL-1	8	32	114
CW	GL-1	12	34	114
CW	GL-1	13	36	114
CW	GL-1	16	38	114
CW	GL-1	4	40	114
CW	GL-1	1	42	12
CW	GL-1	8	42	114
CW	GL-1	24	48	114
SF	GL-1	2	20	98
SF	GL-1	1	36	128
SF	GL-1	1	40	98
SF	GL-1	8	42	34

In Revit, all of my projects have a schedule named 00-Marks-Glass. In this schedule, I have the glass infills sorted by system type, glazing material and then the subsequent information about the specific lites of glass.

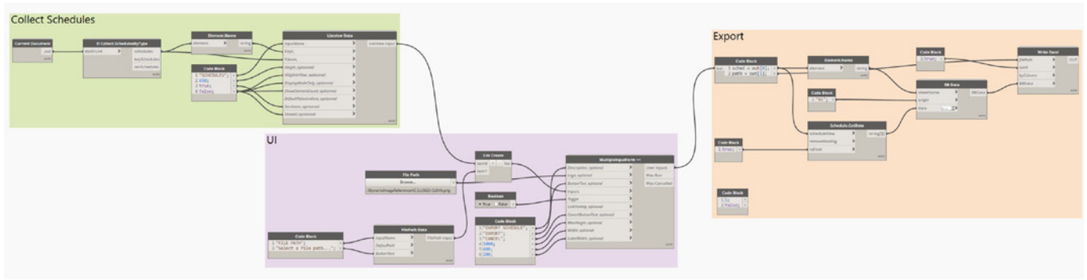
This tool goes ahead and creates brand new tabs in my excel template for each unique system type paired with each glass type. The information within the Revit schedule is then processesed and outputteed into specific cells preset in the tables.



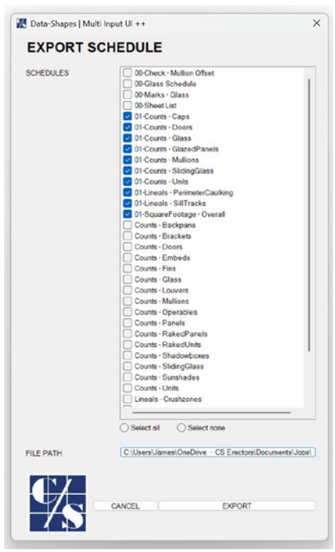
GLASS PRICING SHEET											GLASS LABOR SCHEDULE										
PROJECT:		CONTR:				DATE:					PROJECT:										
LOCATION:		TYPE OF WORK:				NUMBER of CRATES:	0				LOCATION:					Total Width	7.660	inches	Total Height	22.590	inches
EST: Brad Goetz		GLASS WEIGHT				Total	Total	Cost /			EST: Brad Goetz					GLASS WEIGHT	0.00				
Description	Mark	Quan	Width	Height	Sq Ft	Peri Ft	Sq Ft	Sq Ft	Extended	Code	# / Lite	60#	120#	180#	240#	300#	360#	420#	480#	540#	600#
Polished Edges																					
Patterns																					
Crates																					
Overage																					
		100		0		2521.3	3002.3		0		100	100	0	0	0	0	0	0	0	0	0

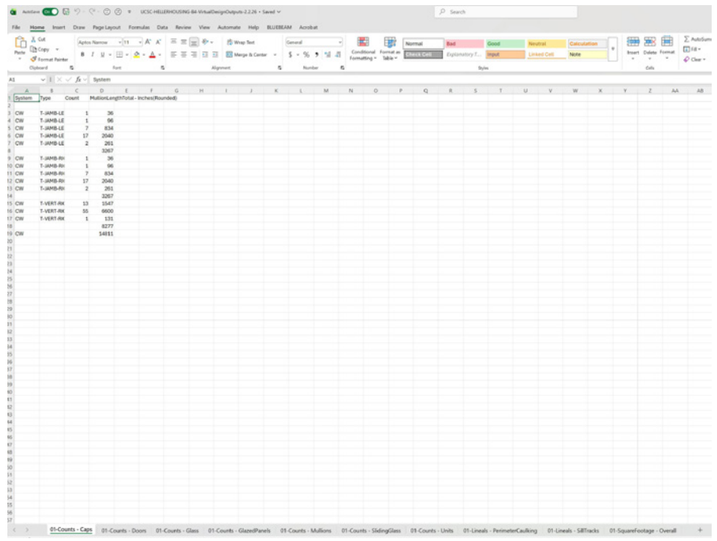
This specific placement allows for the correct information about each system type's glass to be displayed, analyzed and totalled at the bottom of the page.

Exporting Multiple Excel Sheets

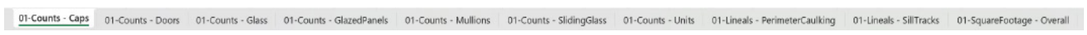


In order to export more than one schedule at a time, I created a dynamo tool that would help export whichever schedules I select into one master excel file.



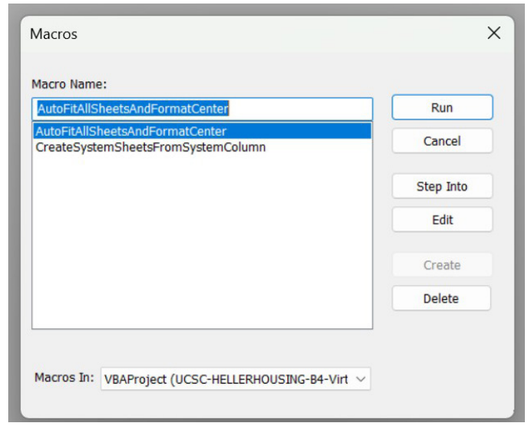


The UI display here showcases the various schedules that are in my Revit project. I can select some or all and then select the blank excel template file with my macros included. Once I click export, it will create a new tab per schedule and drop the data into the sheets accordingly.



The tab bar above showcases all of the schedules I had exported into the designated excel file.

Considering that the information exported from my schedules in Revit into Excel come into the document unformated, I had to find a way to quickly organize and reformat the information. I created a macro that goes ahead and bolds all of the subheadings, expands the cells so they fit the texts within them and centers all information. This tool is a quick easy way to get the data from looking irregular and difficult to read, to something easy for our estimator.



	A	B	C	D	E	F	G
1	System	Type	Count	MullionLengthTotal - Inches(Rounded)			
2							
3	CW	T-JAMB-LE	1	36			
4	CW	T-JAMB-LE	1	96			
5	CW	T-JAMB-LE	7	834			
6	CW	T-JAMB-LE	17	2040			
7	CW	T-JAMB-LE	2	261			
8				3267			
9	CW	T-JAMB-RI(	1	36			
10	CW	T-JAMB-RI(	1	96			
11	CW	T-JAMB-RI(	7	834			
12	CW	T-JAMB-RI(	17	2040			
13	CW	T-JAMB-RI(	2	261			
14				3267			
15	CW	T-VERT-RI(	13	1547			

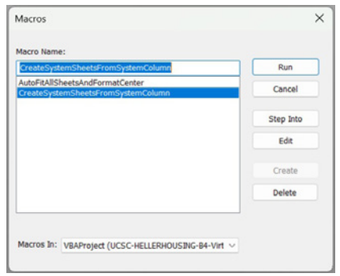
Here is what the text looks like when it is first exported.

	A	B	C	D	E
1	System	Type	Count	MullionLengthTotal - Inches(Rounded)	
2					
3	CW	T-JAMB-LEFT-CAP	1	36	
4	CW	T-JAMB-LEFT-CAP	1	96	
5	CW	T-JAMB-LEFT-CAP	7	834	
6	CW	T-JAMB-LEFT-CAP	17	2040	
7	CW	T-JAMB-LEFT-CAP	2	261	
8				3267	
9	CW	T-JAMB-RIGHT-CAP	1	36	
10	CW	T-JAMB-RIGHT-CAP	1	96	
11	CW	T-JAMB-RIGHT-CAP	7	834	
12	CW	T-JAMB-RIGHT-CAP	17	2040	
13	CW	T-JAMB-RIGHT-CAP	2	261	
14				3267	
15	CW	T-VERT-RIGHT-CAP	13	1547	
16	CW	T-VERT-RIGHT-CAP	55	6600	
17	CW	T-VERT-RIGHT-CAP	1	131	
18				8277	
19	CW			14811	

This is the text after the macro has been run.

This macro will roll through every single tab in the document, performing the functions to cleanup all of the data.

	A	B	C	D	E	F
1	System	Door Type	Door Number	Count	Door Width	Door Height
2						
3	CW	INFILL-DOOR-DOUBLEDOOR		1	3' - 3 1/4"	7' - 9"
4	CW			1		
5	SF	INFILL-DOOR-DOUBLEDOOR		1	6' - 9 1/4"	7' - 9"
6	SF	INFILL-DOOR-DOUBLEDOOR		1	6' - 9 1/4"	7' - 9"
7	SF	INFILL-DOOR-DOUBLEDOOR		1	6' - 10 1/2"	7' - 9"
8	SF	INFILL-DOOR-DOUBLEDOOR		1	6' - 10 1/2"	7' - 9"
9	SF	INFILL-DOOR-DOUBLEDOOR		1	6' - 10 1/2"	7' - 11 3/8"
10	SF			5		
11						



	A	B	C	D	E	F	G	H
1	**01-Counts - Mullions**							
2	**System**	**Type**	**Count**	**MullionLengthTotal - Inches(Rounded)**				
3	PO	T-HEAD	151	5436				
4	PO	T-HEAD	148	7104				
5	PO	T-HEAD	5	300				
6				12840				
7	PO	T-JAMB-LEFT	226	13680				
8	PO	T-JAMB-LEFT	76	5472				
9				19152				
10	PO	T-JAMB-RIGHT	226	13680				
11	PO	T-JAMB-RIGHT	76	5472				
12				19152				
13	PO	T-SILL	151	5436				
14	PO	T-SILL	148	7104				
15	PO	T-SILL	5	300				
16				12840				
17	PO			63985				
18								
19								
20	**01-Counts - SlidingGlass**							
21	**System**	**Glazing Material**	**Quantity**	**Width**	**Height**	**Sq.Ft.**	**GlassSizeIssue**	
22	PO	GL-1	120	36	60	1800	No	
23	PO	GL-1	31	36	72	558	No	
24	PO	GL-1	104	48	60	2080	No	
25	PO	GL-1	44	48	72	1056	No	
26	PO	GL-1	4	60	60	100	No	
27	PO	GL-1	1	60	72	30	No	
28			304			5624		
29	PO		304			5624		
30								
31	**01-Counts - Units**							
32	**System**	**Count**	**UnitWidth**	**UnitHeight**	**Area**			
33	PO	120	3' - 0"	5' - 0"	1800.00 SF			
34	PO	31	3' - 0"	6' - 0"	558.00 SF			
35	PO	104	4' - 0"	5' - 0"	2080.00 SF			
36	PO	43	4' - 0"	6' - 0"	1032.00 SF			
37	PO	1	4' - 0 1/4"	6' - 0"	24.13 SF			
38	PO	4	5' - 0"	5' - 0"	100.00 SF			
39	PO	1	5' - 0"	6' - 0"	30.00 SF			
40	PO	304			5624.13 SF			
41								
42	**01-SquareFootage - Overall**							
43	**System**	**Area**						
44	PO	1800.00 SF						
45	PO	558.00 SF						
46	PO	2080.00 SF						
47	PO	1032.00 SF						
48	PO	24.13 SF						
49	PO	100.00 SF						
50	PO	30.00 SF						
51	PO	5624.13 SF						
52								
53								

After the tabs have been reformatted, I now wish to group the scheudles by system type. Since this is diffult to do within Revit's schedules, I decided to create another macro that would group all the schedule data pertaining to unique systems into one another. When I run this macro, it goes ahead and creates new, colorful tabs per system type. It then skims through all of the tabs, copying any data that is related to each system. For example : my SquareFootage Overall schedule will have the square footages for every system, but this tool will go ahead and grab the square footages per system and copy them into the appropriate new system tabs.

Having the data sorted this way for the estimator is ideal since now they do not need to tab through each sheet to find the relevant information for the system they're pricing. Now, they can simply jump to the system tab they're working on and use the one sheet to price out that system.