Unit 9): Modeling Sustainable Construction Exercise: Tracking Reused Parts of a Remodel

Reuse Percentage: Revit Schedules with Phases

| Analysis type:	Software required:	Starting Point Dataset:
Tabular analysis report	Revit® MEP 2008 or Revit® Architecture 2008	**_Unit 9_i_Start.rvt_**

When remodeling or renovating a facility, the most challenging design task may be how you can incorporate the existing elements into the new model. In this exercise, you generate several Revit schedules and apply phasing filters to assess how many walls and doors you've incorporated from the existing design into the new one. You can also apply several other approaches, including the creation of project parameters to track object reuse. This exercise focuses only on the use of schedules to quantify existing and new walls and doors.

This exercise consists of the following tasks:
- Generating a schedule for the walls, making sure to set the sorting and grouping to show volume by wall type.
- Duplicating the schedule and setting the phase filter to see the corresponding volumes for the existing and new construction.
- Exporting the schedules for further formula manipulation in a spreadsheet program.
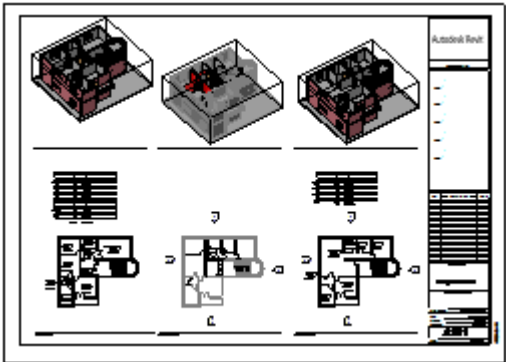
Before: **_Unit 9_i_ Start.rvt_**; this dataset already has a remodel of the second floor completed using phasing in Revit
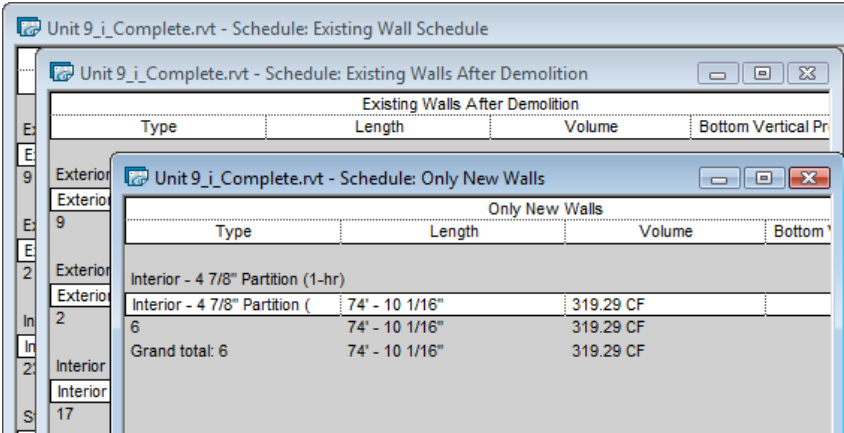
After: Revit schedules with phases and filters applied

1   _Generate a Wall Schedule using the Revit Platform_

On the View design bar, click Schedule/Quantity to generate a new wall schedule. (Note: if you are using Revit MEP software, enable categories from all disciplines to see the walls as a schedulable category when you're creating the new schedule)

On the Fields tab, add the Type, Length, and Volume.
On the Filter tab, click None.
On the Sorting/Grouping tab:
- Under Sort by, select Type from the list.
- Click Header. Click Footer. Select Count and Totals from the list.
- Click Blank line.
- At the bottom of the dialog box, click Grand totals. Clear the Itemize every instance check box.

On the Formatting tab, check Calculate Totals for Length. Check Calculate Totals for Volume.
Click OK.

Wall Schedule		
Type	Length	Volume
Exterior – Brick on Mtl. Stud		
Exterior – Brick on Mtl. St	194' – 10 31/32"	6095.06 CF
9	194' – 10 31/32"	6095.06 CF
Exterior Glazing		
Exterior Glazing	39' – 9 5/16"	0.00 CF
2	39' – 9 5/16"	0.00 CF
Interior – 4 7/8" Partition (1-hr)		
Interior – 4 7/8" Partition (	443' – 1 11/16"	1869.85 CF
29	443' – 1 11/16"	1869.85 CF
Storefront		
Storefront	13' – 6"	0.00 CF
1	13' – 6"	0.00 CF
Grand total: 41	691' – 3 31/32"	7964.91 CF

Instance Parameters - Control selected or to-be-created instance

Parameter	Value
Identity Data	
View Name	Existing Wall Schedule
Dependency	Independent
Default View Template	None
Phasing	
Phase Filter	Show Previous + Demo
Phase	New Construction
Other	

You should now see a schedule like the one above. Right-click anywhere in the schedule. Click View menu > Properties. Set the name to Existing Wall Schedule. Set the Phase Filter to Show Previous and Demo. You can now show all the walls that existed prior to this project's construction timeframe.

2   ***Duplicate the Schedule***
To show wall volumes at different project time frames, simply duplicate the schedule and assign different phase filters.

Instance Parameters - Control selected or to-be-created instance

Parameter	Value
Identity Data	
View Name	Existing Walls After Demolition
Dependency	Independent
Default View Template	None
Phasing	
Phase Filter	Show Previous Phase
Phase	New Construction

Instance Parameters - Control selected or to-be-created instance

Parameter	Value
Identity Data	
View Name	Only New Walls
Dependency	Independent
Default View Template	None
Phasing	
Phase Filter	Show New
Phase	New Construction
Other	

Here's how. Right-click in the project browser to duplicate the Existing Wall Schedule. Open the copy. Set View Name to Existing Walls After Demolition. Set Phase Filter to Show Previous Phase. This setting does not show the demolished walls because it corresponds only to the new construction. As a result, the demolished walls are not part of the wall set.
Duplicate the Existing Wall Schedule again. Open the copy. Set View Name to Only New Walls. Set Phase Filter to Show New. This setting will show only the new walls.

Exercise complete.

You now have three schedules that you can use to obtain the information for percentage of reused walls in the project by volume.
Existing walls prior to project = 7645 CF
Existing walls after demolition = 7306 CF
New Walls = 319 CF
Total at project completion = (Existing walls after demolition = 7306 CF) + (New Walls = 319 CF) = 7625 CF
Existing walls remaining/total = 7306 CF / 7625 = 95.8% of this project uses existing walls of the building by volume.