19 April 2024

RevitWorks HVAC Premium: View Templates and Schedules

Documentation for the RevitWorks Premium HVAC view templates and schedules provided.

As part of the RevitWorks HVAC Premium package, RevitWorks provides several color-filled view templates and HVAC schedules for your use and modification.

View Templates:

Revit view templates are used to standardize and control the appearance and properties of views in your projects, ensuring efficiency and consistency within and between projects. They also streamline the process of managing view settings.
When you start a project with a Revit out-of-the-box template, there are no color-filled view templates ready-to-go.

Schedules:

While the Revit database is often viewed graphically in 3D or 2D, the data within the model can be viewed, analysed, and used in schedule form. These are extremely useful for calculations, data entry, verifying the model data, error checking and for ordering purposes.

Like all Revit schedules, it is up to the user to ensure that the schedules are filled in, filtered correctly and are fit for the project's purposes.

RevitWorks takes no responsibility for any incomplete or incorrect information contained within these schedules and/or view templates.

Table of Contents

View Templates provided.

Within the RevitWorks HVAC Premium package we provide three view templates that are a great starting point for your visual design validation, ready for transfer into your Revit project:

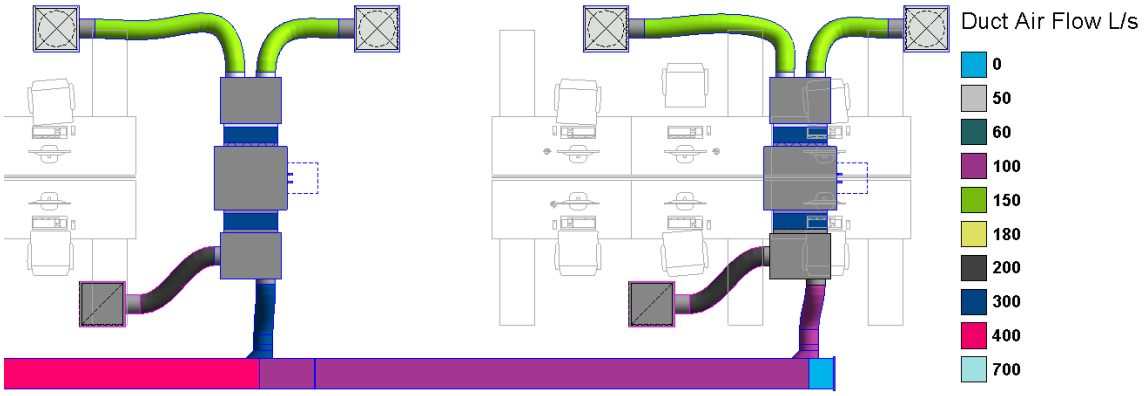
Color Fill Plans

Our strategy with color fill plans is simple. Red (or magenta) require attention.

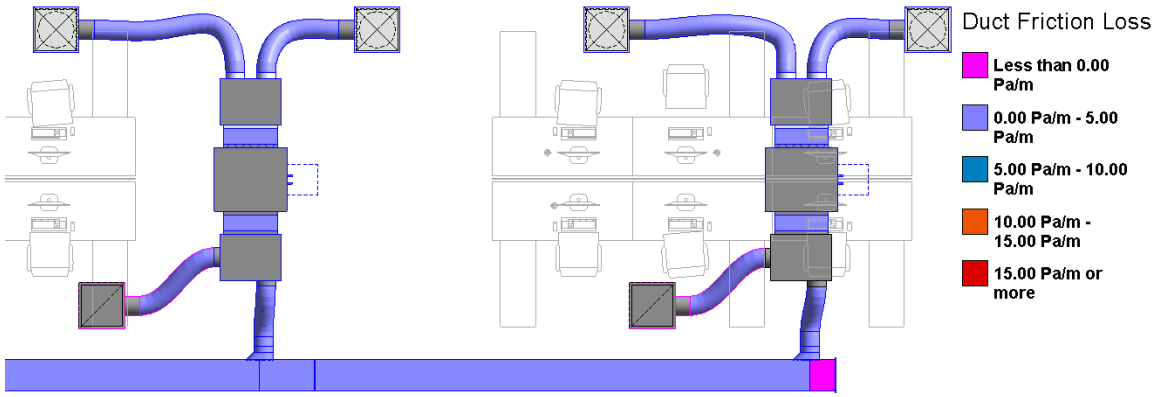
If the duct is red, the pre-set design parameters are exceeded and the duct should be made larger.

If the duct is magenta it is reporting zero flow. Sometimes this will be on purpose, but usually it means your duct system is broken, and you should trouble-shoot it until there are no more magenta ducts.

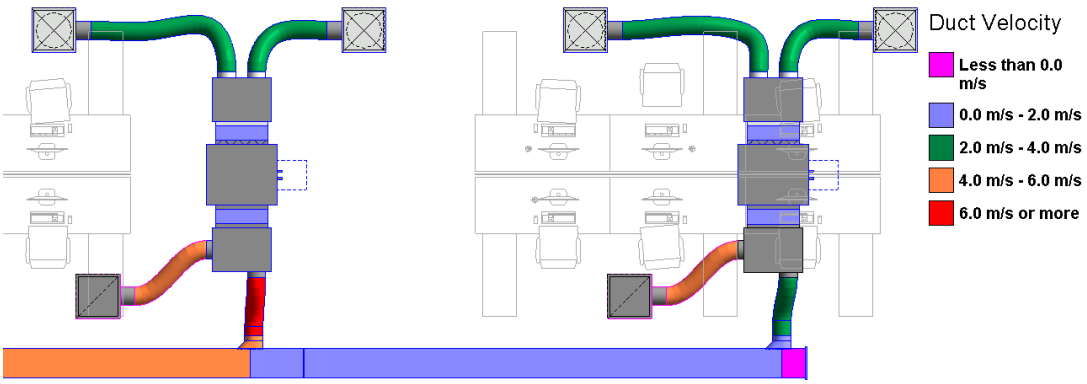
1. RevitWorks Duct Air Flow



2. RevitWorks Duct Friction Loss

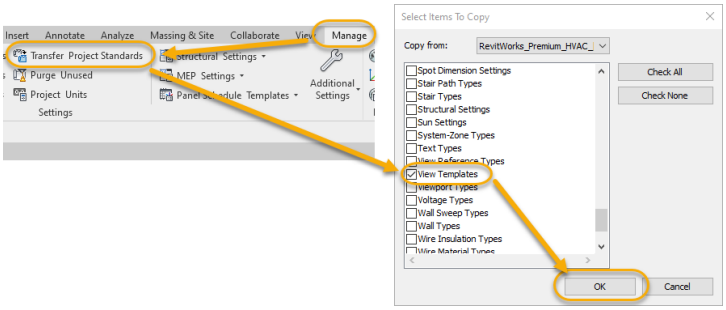


3. RevitWorks Duct Velocity



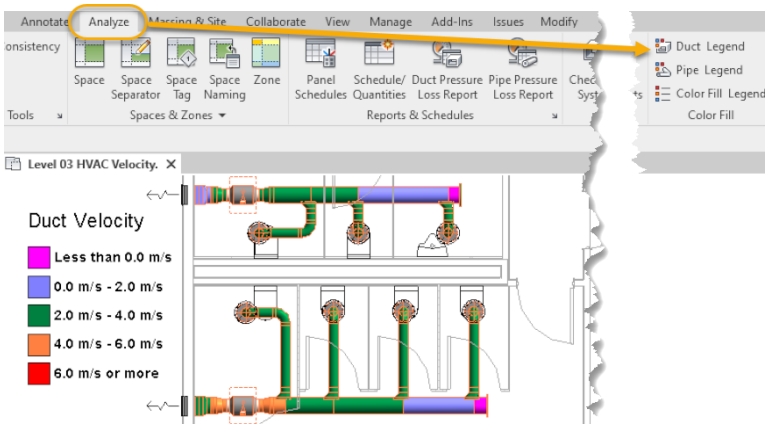
How to transfer view templates into your project:

1. Within the same session of Revit, open both the provided RevitWorks HVAC Revit project file and your Revit project.
2. Within your Revit project file, use the Manage/Transfer Project Standards tool and select “View Templates” only.

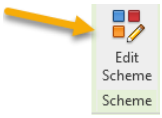


The RevitWorks view templates are now available from within your project. Please refer to the Autodesk help system on how to apply these view templates to your project views.

Once the view template has been applied to your view, just add a duct legend to your view and your ductwork will be colored to suit.



You can then edit the color scheme if changes to the colors and ranges are required, just select the duct legend and click “Edit Scheme”:



Hint: By transferring into your company Revit template file instead, all future projects started with your template will have these view templates within them

Schedules provided.

Like all Revit schedules, it is up to the user to ensure that the schedules are filled in, filtered correctly and are fit for the project’s purposes.
RevitWorks takes no responsibility for any incomplete or incorrect information contained within these schedules.

Hint: These schedules are typically filtered by the Revit family name, so if you have changed the names of the RevitWorks families (to meet your own company standards, or for other purposes) ensure that the filter name is changed as well.

Within the RevitWorks HVAC Premium repository, there are several schedules set-up ready for transfer into your project:

1. **RevitWorks Air Terminal Schedule_Calculation**
   Intended use: ***Design validation*****.**
   a. This schedule answers the following questions:
      i. Is the actual airflow within the minimum and maximum range for the selected product?
      ii. Is the spigot sized correctly?

iii. Is the neck sized correctly?

iv. Is the spigot size calculated or manually overridden?

v. Is the Air Terminal in a space?

b. Can identify the actual family that is incorrect and enables the user to fix it by editing the schedule, or to investigate the individual placements by using the "Highlight in model" button.

Special Feature: *This schedule has conditional formats applied to highlight incorrect spigot sizes and to ensure airflows are within the defined ranges.*

System	Space: Number	Space: Name	Type Mark	Mark	Air Flow	Min Flow	Max Flow	Actual Spigot Area	Nom. Spigot Area Required	Actual vrs Nominal
Exhaust Air										
EA	L03-00	Lobby	E1	564	60	150	250	0.03 m²	0.03 m²	0.00 m²
EA	L03-03	Office - West	R1	333	200	150	250	0.05 m²	0.07 m²	-0.02 m²
EA	L03-03	Office - West	R1	338	100	150	250	0.05 m²	0.03 m²	0.02 m²
EA	L03-03	Office - West	R1	343	100	150	250	0.05 m²	0.03 m²	0.02 m²

2. RevitWorks Air Terminal Schedule_by Mark

Intended use: ***Checking.***

a. Lists every individual air terminal placed in the project (i.e. every instance). It is grouped by system and the main purpose is to check that each family is used correctly.

b. Can identify the actual family that is incorrect and enables the user to fix it by editing the schedule, or to investigate the individual placements by using the "Highlight in model" button.
Example: Air Terminals of type E1 should be the same family, size, and other details. If there are two different types of "E1" Air Terminals in the project, the wrong one could be ordered and placed.

c. Is provided to inform the user what kind of information can be scheduled. The user can then add or remove parameters as needed to suit the project's needs.

System	Type Mark	Mark	Air Flow	Family	Type	Diffuser Length	Diffuser Width	Spigot Size	Manufacturer	Model
Return Air										
RA	R1	276	200	HVAC_Air Terminal RA Rect	600x600mm R1	600	600	250ø		
RA	R1	281	200	HVAC_Air Terminal RA Rect	600x600mm R1	600	600	250ø		
RA	R1	286	200	HVAC_Air Terminal RA Rect	600x600mm R1	600	600	250ø		
RA	R1	445	250	HVAC_Air Terminal RA Rect	600x600mm R1	600	600	250ø		

3. RevitWorks Air Terminal Schedule_by Type

Intended use: ***Checking and ordering.***

a. This schedule is aligned with the "by Mark" schedule above and is grouped by the Type Mark.

b. Can be used as a QA check. If any field is blank, it is possible that the data in the project is inconsistent, and the "by Mark" schedule should be investigated to identify where the error may have occurred.

c. Can be used for ordering the air terminals so that the ordered items are the same as the modelled items.

d. Has a count field setup for ordering purposes.

e. Is provided to inform the user what kind of information can be scheduled. The user can then add or remove parameters as needed to suit the project's needs.

System	Type Mark	Air Flow	Family	Type	Diffuser Diameter	Diffuser Length	Diffuser Width	Manufacturer	Size	Count
Return Air										
RA	R1	<varies>	HVAC_Air Terminal RA Rect	600x600mm R1		600	600		<varies>	11
Supply Air										
SA	S1	<varies>	HVAC_Air Terminal SA Rect	600x600mm Swirl Slotted		600	600		250ø	10
Toilet Exhaust										
TE	E1	50	HVAC_Air Terminal RA Roun	300mm Grille without Plenum	350				150ø	7

4. RevitWorks Air Terminal Schedule_Count

Intended use: ***For reference.***

a. Use to keep track of which families & types have been used in the model, without being distracted by other information

Type Mark	Family	Type	Type Comments	Count
E1	HVAC_Air Terminal RA Round (1 Round Spigot)	300mm Grille without Plenum		11
E2	HVAC_Air Terminal RA Rect (1 Round Spigot)	600x600mm E2		2
R1	HVAC_Air Terminal RA Rect (1 Round Spigot)	600x600mm R1		18
S1	HVAC_Air Terminal SA Rect (1 Round Spigot)	600x600mm Swirl Slotted		13
SC1	HVAC_FCU Cassette (2 Pipe_1 Oval Spigot)	720x720mm		14
Total Air Terminals: 58				

5. **RevitWorks Fan Schedule_Calculation**

Intended use: ***Design validation*****.**

a. This schedule answers the following questions:

i. Is the actual airflow within the minimum and maximum range for the selected product?

ii. Is the fan in a space?

b. Can identify the actual family that is incorrect and enables the user to fix it by editing the schedule, or to investigate the individual placements by using the "Highlight in model" button.

Special Feature: *This schedule has conditional formats applied to ensure airflows are within the defined ranges.*

Space: Number	Space: Name	Mark	Flow Out	Flow In	Min Flow	Max Flow	H
Level 03							
L03-14	Washroom 2	TEF-03.1	150.0 L/s	150.0 L/s	50	150	
L03-13	Washroom 1	TEF-03.2	200.0 L/s	200.0 L/s	50	150	
L03-13	Washroom 1	TEF-03.3	0.0 L/s	0.0 L/s	50	150	
L03-103	Space	TEF-03.4	0.0 L/s	0.0 L/s	50	150	

6. **RevitWorks Fan Coil Unit, Fan and HRU Schedules**

Intended use: ***Examples and as starting points.***

a. There are many kinds of mechanical equipment that may be included in a project. Instead of a complete set of schedules, we offer examples for duplication and customization based on your specific needs. We recommend you create standard schedules for your commonly used equipment types and incorporate them into your company's template.

b. The amount of information included in these schedules varies markedly between engineers and companies. These schedules serve as initial guides and should be adjusted according to your companies requirements.

Space: Number	Space: Name	Mark	Family	Type	Elevation from Level	Body Length	Body Width	Body Depth	Flow Supply Air	Damper Supply Air
Level 03										
L03-00	Lobby	FCU-03.01	HVAC_FCU (4 Pipe)	830x950x350mmh	3200	830	950	350	400	☑
L03-09	Office - North	FCU-03.02	HVAC_FCU (4 Pipe)	830x950x350mmh	3220	830	950	350	300	☑
L03-09	Office - North	FCU-03.03	HVAC_FCU (4 Pipe)	830x950x350mmh	3220	830	950	350	300	☑
L03-09	Office - North	FCU-03.04	HVAC_FCU (4 Pipe)	830x950x350mmh	3220	830	950	350	300	☑

7. **RevitWorks Mechanical Equipment Schedule_Overview**

Intended use: ***Checking and troubleshooting.***

a. If an expected item is not showing on another schedule, such as a fan missing from the fan schedule, it can be found on this schedule and then corrected to enable each equipment to show on the correct schedule.

b. This should be used as a working schedule & modified as needed.

Type Mark	Space: Number	Space: Name	Family	Type	Mark	Elevation from Level	System Name	Body Length
Level 03								
F01	L03-13	Washroom 1	HVAC_Fan Inline (Breaks into Pipe)	200mmØ Duct	TEF-03.3	3200	TE 3	400
F01	L03-13	Washroom 1	HVAC_Fan Inline (Breaks into Pipe)	200mmØ Duct	TEF-03.2	3325	TE 2	400
F01	L03-14	Washroom 2	HVAC_Fan Inline (Breaks into Pipe)	200mmØ Duct	TEF-03.1	3325	TE 1	400
F01	L03-103	Space	HVAC_Fan Inline (Breaks into Pipe)	200mmØ Duct	TEF-03.4	3200	TE 4	400

8. **RevitWorks Space Air Balance Schedule**

Intended use: ***Design validation.***

a. This can be used to check that airflow into each space is equal to or higher than the airflow out of each space and also reports the amount of positive pressure as a percentage.

Special Feature: *This schedule has conditional formats applied to highlight the space's positive and negative air balances as well as to highlight standard pressurisation ranges.*

Space Number	Space Name	Actual Supply Airflow	Actual Return Airflow	Actual Exhaust Air	Actual SA-RA-EA	Pressurisation
Level 03						
L03-00	Lobby	400	420	0	-20	-5%
L03-01	Office - Central	600	570	0	30	5%
L03-02	Office - South	600	700	0	-100	-17%
L03-03	Office - West	800	650	0	150	19%
L03-04	Pantry	400	0	0	400	100%

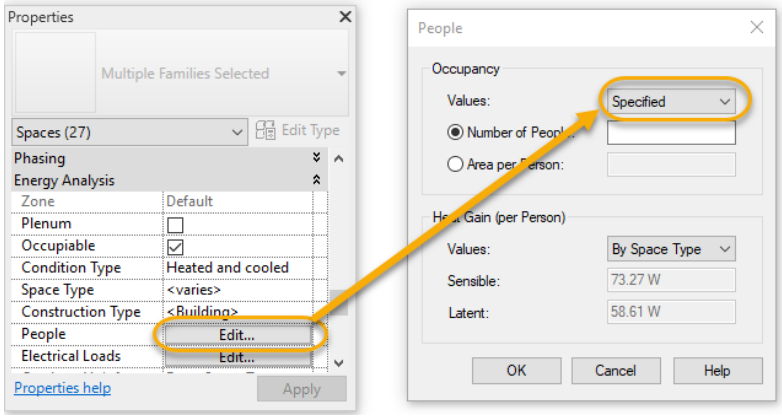
9. **RevitWorks Space Outdoor Air Schedule.**

   Intended use: ***Design validation.***

   a. Can be used to check the area and number of people in different spaces and the outdoor air requirements for the different spaces within the project. ***The requirements should be checked against local regulations.***

Space Number	Space Name	Outdoor Air Method	Outdoor Air per Area (Ra)	Area (Az)	Outdoor Air per Person (Rp)	Number of People	Required Outdoor Airflow (Vbz)
Level 03							
L03-00	Lobby	by People and by Area	0.30 L/(s·m²)	68 m²	10	1	31
L03-01	Office - Central	by People and by Area	0.30 L/(s·m²)	271 m²	10	22	303
L03-02	Office - South	by People and by Area	0.30 L/(s·m²)	148 m²	10	10	145
L03-03	Office - West	by People and by Area	0.30 L/(s·m²)	281 m²	10	20	286

Hint: By default, Revit uses the "people per area" values to establish the number of people within a defined space which is a broad-brush approach. If required to be more exact, these numbers can be adjusted manually by selecting all your spaces and changing the "People" occupancy values to "Specified" as per the image below:



This allows you to manually calculate the number of people within each space and enter the values into your schedules.

The requirements should be checked against local regulations.

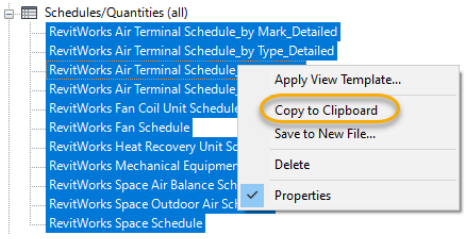
How to transfer schedules into your project:

There are two different methods of transferring schedules from one project to another:

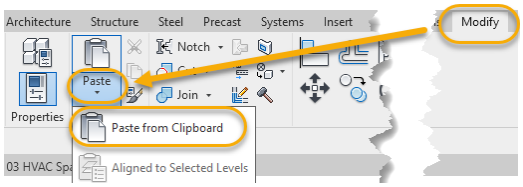
1. Copy-Paste method:

   a. Within the same session of Revit, open both the provided RevitWorks HVAC project file and your Revit project. (this can be done at the same time as transferring the view templates).

   b. Select the schedules within the RevitWorks HVAC project file, and right-click, "Copy to Clipboard".



   c. Within your project file, use the Modify/ Paste/ Paste from Clipboard command.

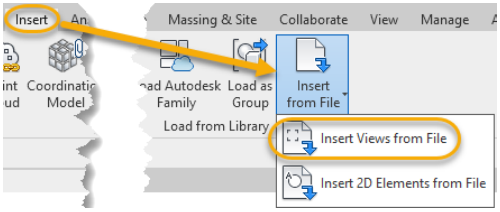


2. Insert from file method:

   a. Open your Revit project.

   b. Use the Insert/ Insert from File/ Insert Views from File tool.

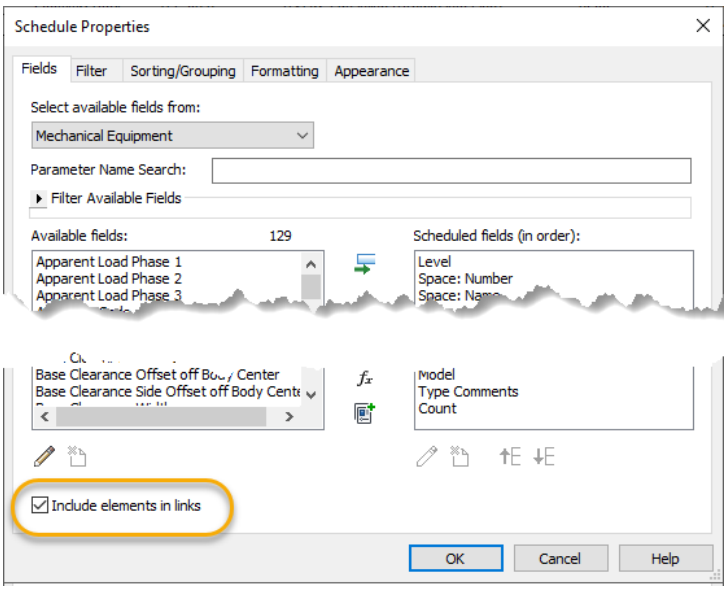
c. Browse to find the RevitWorks HVAC project file and select the relevant schedules.



The RevitWorks schedules are now available from within your project and will populate when modelled elements and spaces are added to your project.

Hint #1: By transferring into your company Revit template file instead, all future projects started with your template will have these schedules within them, ready to go.

Hint #2: If the project has more than one mechanical model, the models can be linked together into a federated model where these schedules can be used as overall project HVAC schedules to ensure that the data is aligned across the whole project correctly. Just ensure that the "include elements in links" option is ticked within the schedules.



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