Unit 4): Modeling Indoor Environmental Quality Exercise: Design a Graphic for the Coverage of a Ventilated Window

Window Family: Ventilation

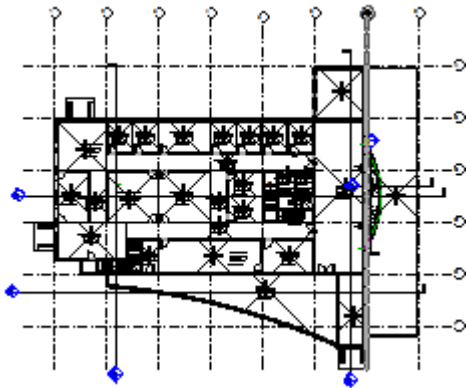| Analysis type:	Software required:	Starting Point Dataset:
👁 Visual Analysis	Revit® Architecture 2008	*Unit 4_i_Start.rvt*

Natural Ventilation provides many benefits to the occupants of a building.

This exercise shows you how to perform a visual analysis of the areas of a building that have access to natural ventilation. It is NOT an in-depth analysis of natural ventilation throughout the building, but rather a graphic aid to help you visualize access to natural ventilation. It is based on the general rule of thumb that an operable window provides natural ventilation to an area roughly 10' deep x 20' wide.
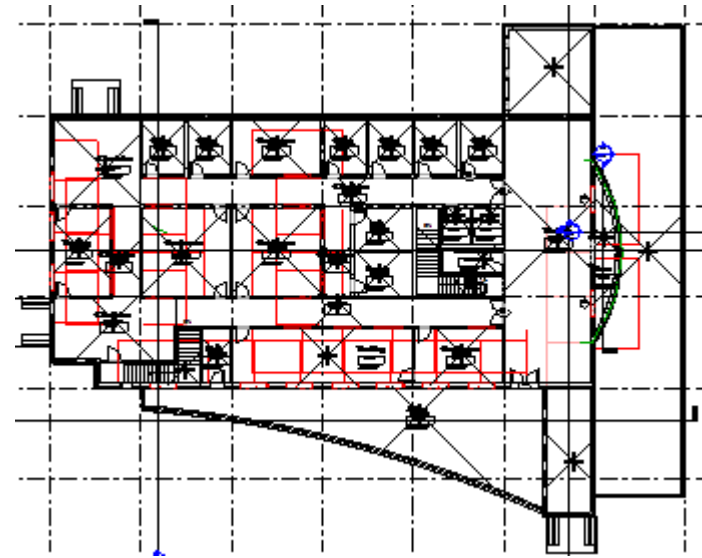
While this is a fairly minimal exercise, you can apply this method anywhere you need to associate a visible element with a Revit Architecture family. For example, you could also use this method to determine a window's ideal dimensions by applying a formula to a parameter to drive a line into the building 2.5 times the window height. As a result, you would see a graphical rough estimate of the window's daylight coverage and could modify it as needed.

This exercise consists of the following tasks:
- Editing one of the window families in the sample dataset.
- Adding the new subcategory "ventilation area."
- Adding symbolic lines to the family using this subcategory.
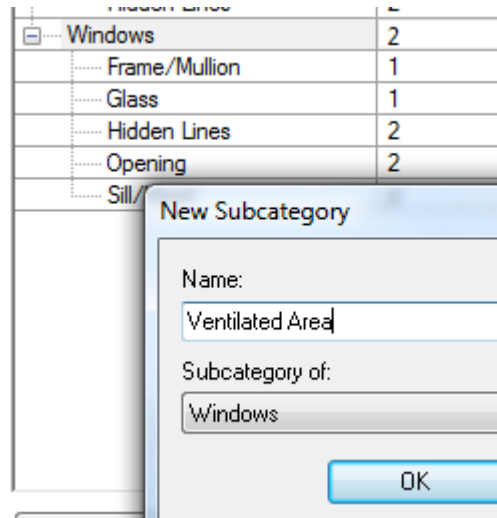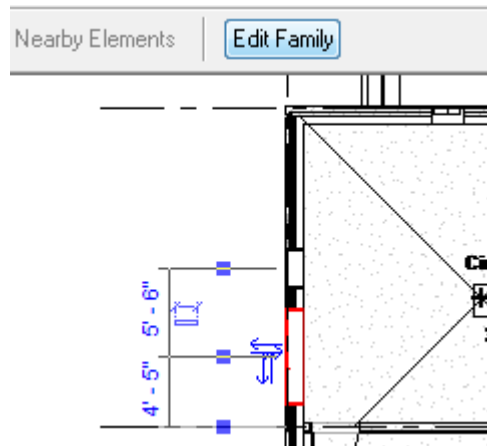- Loading the window back into the Revit Architecture project.

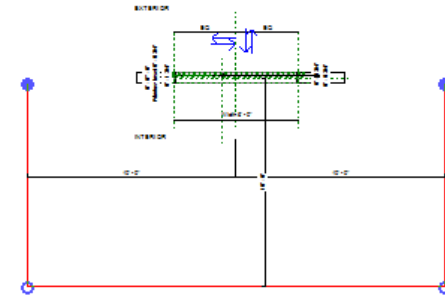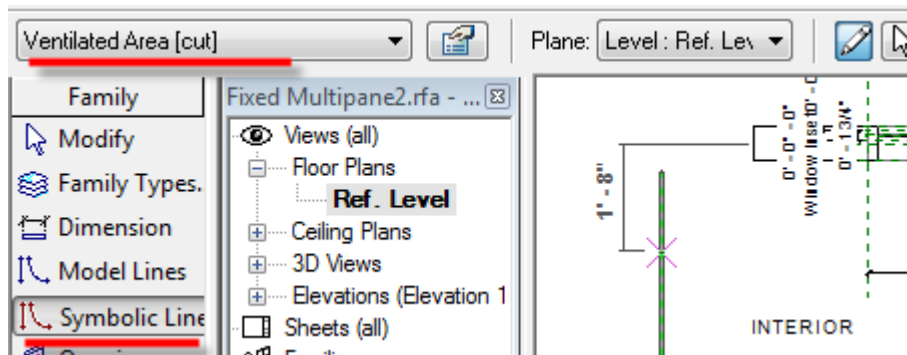Before: Sample dataset *Unit 4_i_start.rvt*

After: A single modified window that illustrates the rough guide of the natural ventilation areas

1   *Edit One of the Window Families from the Sample Project*

To open the family for editing, click one of the windows. Then, on the Options bar, click Edit Family. To add the new window subcategory, click Settings menu > Object Styles. Click the New button and enter "Ventilated Area" as the new subcategory name.

To outline the area covered by natural ventilation, click Symbolic Lines on the design bar. Set the type dropdown to Ventilated Area. Adjust the dimensions of the linework to approximate the ventilation provided by the window. As a rule of thumb, you can draw a 10'-radius from each open window to illustrate the ventilated area. Load the family into the project.

To complete the entire floor, edit all of the windows. Exercise complete.

TIP: If you wish to take this a step further, you can use the area tool discussed in Unit 2 to prepare a ventilation area plan that documents the occupied areas of the building that are covered by the ventilated regions of the windows.