

48-749 Parametric Modeling with BIM

Fall Semester • 6-12 units • R 01:30-04:20pm

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Parametric Modeling with BIM Assignment 2

Due 24 September 2009, 01:00pm

Following lectures 3 and 4, use Revit Architecture 2010

- a) Use Material Takeoff to do this task and the goal is to find the percentage of Certified Wood from the door components of the model you constructed in Assignment 1. Below is the example of the material takeoff schedule. Fields include **CertifiedWood**, **Material: Name**, **Material: Volume**, and **Percentage**.

Door Material Takeoff 3			
CertifiedWood	Material: Name	Material: Volume	Percentage
☐	Door - Frame	0.69 CF	7%
☐	Door - Panel	3.15 CF	32%
☒	Door - Frame	0.73 CF	7%
☒	Door - Panel	1.80 CF	18%
	Glass	0.04 CF	0%
	Door - Frame	0.71 CF	7%
	Door - Panel	2.77 CF	28%
Grand total: 7			

1. For field **Material: Name** and **Material: Volume**, simply choose them from the available fields.

2. **CertifiedWood** is a parameter that needs to be added into the Door Family and it should be a shared parameter that can appear in the schedule. Also, there should be at least two different types of doors in the project (For example, single flush and).

<i>Group Name</i>	<i>Parameter name</i>	<i>Type of parameter</i>
Certified	CertifiedWood	Yes/No

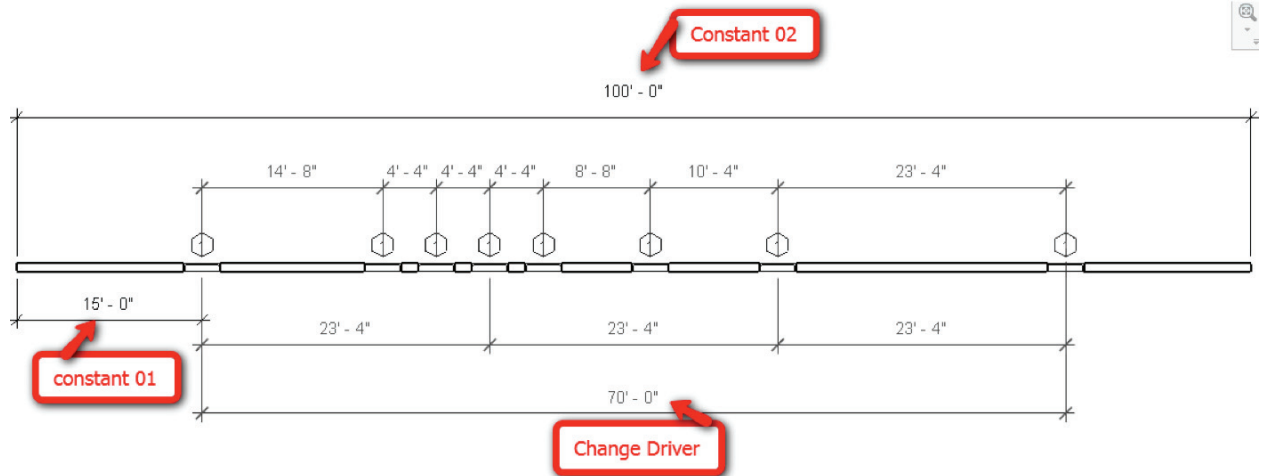
3. **Percentage** is a calculated value in the Material Takeoff and it should be the percentage of Material: Volume by Grand total.
(40%)

- b) Find the project solar north and show two lighting studies (Renderings) done in Revit for the same view. In this case use East Façade. (20%)
- c) Using the massing tools develop the corresponding mass and use the solar tool plug-in to show the solar radiation results. Make two renderings by changing locations. (20%)
- d) Constraining with Dimensions. (20%)

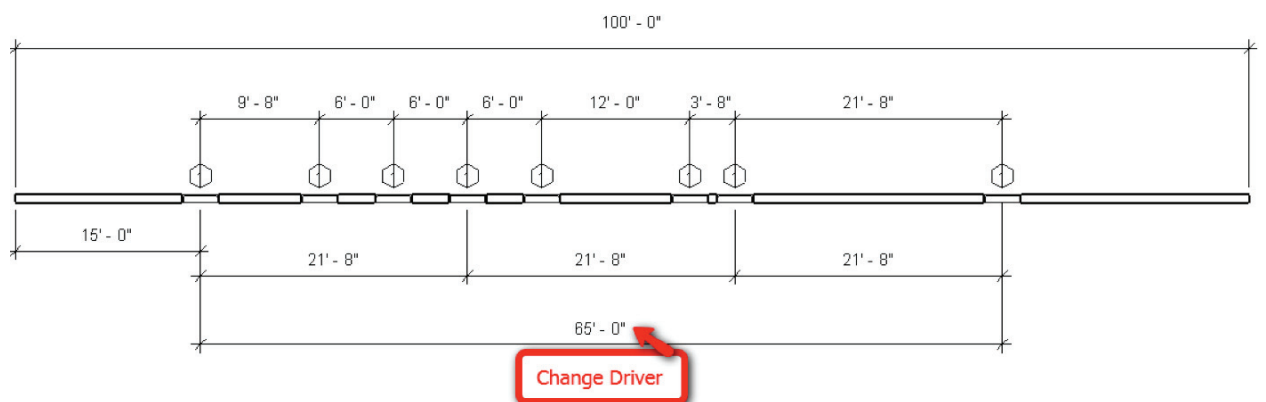
A wall with the length 100' has 8 windows and the type of the windows is **Fixed 36"x48"**. The task here is to use the dimension tool to constrain the distributions of these windows such that they will maintain certain relationships, as illustrated in the image **relation01** and **relation02**.

Hint: Use the equal and locked features of the dimension tool to finish this question.

relation01



relation02



The differences in these two images are mainly derived from the **Change Driver**, which has the value 70' in the relation01 and 65' in the relation02. Constant 01 and Constant 02, which are the distance from the first window to the left edge of the wall and the length of the wall, remain the same. All the rest dimensions change automatically as the change driver changes.