Subject:	**Building Information Modelling with Revit MEP**
Course:	**BIM with Revit MEP**
Session:	**Spring 2019**
Lecturer:	**Paul Vesey** BEng, MIE, HDip

Assignment 4 Miscellaneous Tasks

Issue Date:	29th January 2019
Submission Date:	As stated on Moodle

Continuous Assessment Marks

This assignment will account for 25% of the 100% allocated for continuous assessment in this module

Assignment Outline

This assignment involves 5 parts, each representing 20% of the overall assignment. During the completion of this assignment you will create multiple Revit project files and multiple Revit Family parts.
The asset pack for this assignment contains the following items:

1. LIT Title-block
2. Revit Architectural Model
3. Furniture Images captured from Revit

Submission

All files should be kept in a single folder entitled Assignment4. Once you have completed the assignment, you should zip this folder into a single archive and upload to Moodle. Upload this single zip file to Moodle on or before the submission deadline.

Part 1- Fan Coil Unit

This section involves the creation of a simple fan coil unit Revit family. The family part will have an electrical connection, two duct connections, and two hydronic connections as shown in the table below. The geometry is a simple box shape with the connections applied to three reference planes in the configuration shown. You should use the Metric Mechanical Equipment family template to create this part. Do not use either of the hosted templates available in Revit. Your completed Revit Family should be named **FanCoilPart1.rfa** and included in your submission folder.

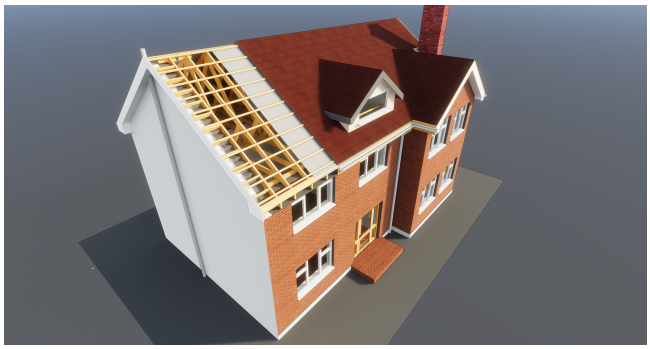

Figure 1: Fan Coil Unit

No.	Item	Details
1	Length	600 mm
2	Width	400 mm
3	Height	300 mm
4	Hydronic Supply	⌀25 mm
5	Hydronic Return	⌀25 mm
6	Single Pole Elec	230V, PF 1.0, 600 VA
7	Duct In (Other Air)	150 mm x 150 mm
8	Duct Out (Supply Air)	⌀150

Part 2 Generic Family Part

In this section you are going to create a simple box shape with adjustable height, length and width. Once this is created you are going to create 3 types of the family and insert an instance of each into a Revit project. The family part should have three (3) reference planes named Length, Width and Height. The family types should have the dimensions as shown in the table below. Your completed Revit Family should be named **ParaBoxPart2.rfa** and included in your submission folder. Your completed Revit Project should be named Part2.rvt and included in your submission folder.

Type Name	Length	Width	Height
Primo	500	400	150
Medio	750	600	250
Massimo	1000	700	400

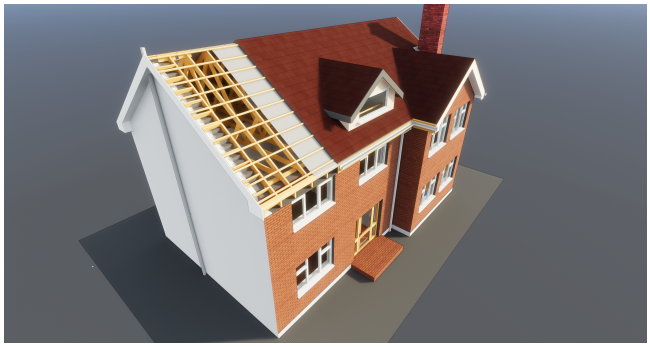

Figure 2: Generic Family Part

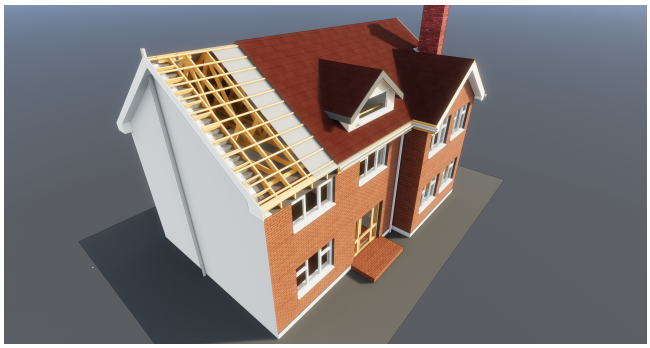

Figure 3: Generic Family Part

Part 3 Auto generate Duct and Pipe Layouts

Revit includes auto routing functionality for ducts and pipe. In this section you will create four (4) auto-routed duct layouts and two pipe layouts as shown below. Use the Revit Mechanical Template file to create your project. Your completed project file should be named **Part3.rvt** and included in your submission folder.

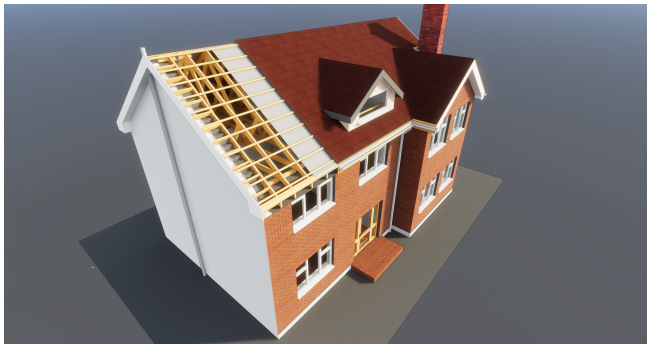

Figure 4: Revit Auto-routed Duct Layouts

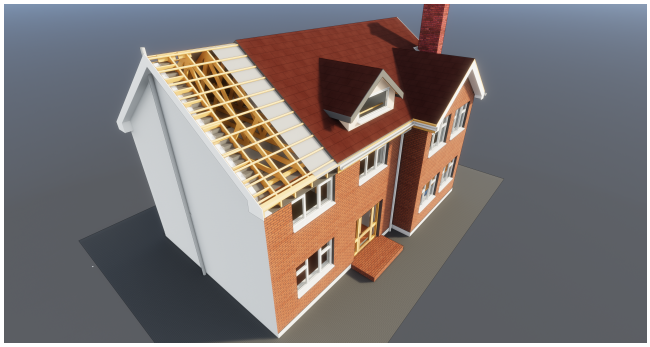

Figure 5: Revit Auto-routed Pipe Layouts

Part 4 (a) Schedules with Images

In this section you will create a furniture schedule that includes an image of the furniture item next to its information. You will use the architectural model provided for this section. Images to associate with each part have been provided in the asset pack for this assignment. You will need to apply the appropriate image to the Type Image parameter in the family editor. The completed table should be place on a Sheet view in the project file. Use the Save As function to create a new Revit project entitled **Part4a.rvt** and include this file in your assignment submission folder. Revit Schedule with Images

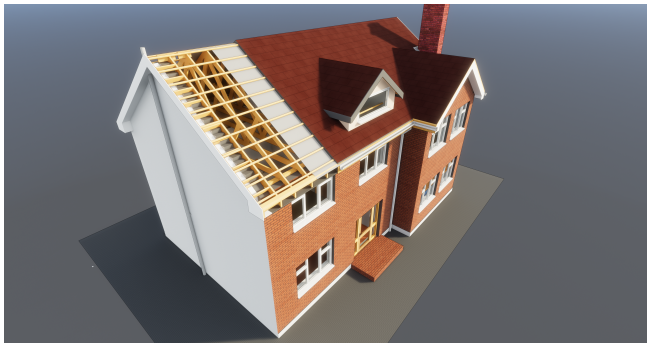

Figure 6: Revit Schedule with Images

Part 4 (b) Creating a Legend

In this section you will create a 1:50 legend for the furniture in the architectural model provided in the asset pack. The headings are set to 5mm and the descriptions are set to 3.5mm. Unlike schedules, legends can be placed in multiple views, however there are some limitations. You are also required to add some simple dimensions to the images as shown below. Use the 'Save As' function to create a new Revit project entitled **Part4b.rvt** and include this file in your assignment submission folder.

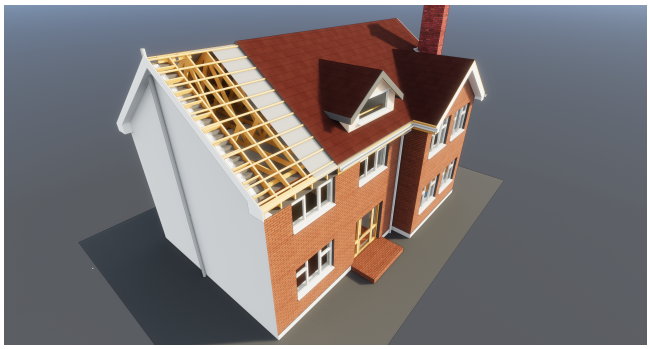

Figure 7: Revit Legend with Images

Part 5 Fabrication Parts

In this section you will use the fabrication parts functionality in Revit to create the simple duct layout below. Create a new Revit project using the Mechanical template. Save your project file as **Part5.rvt** and include it in your assignment submission.

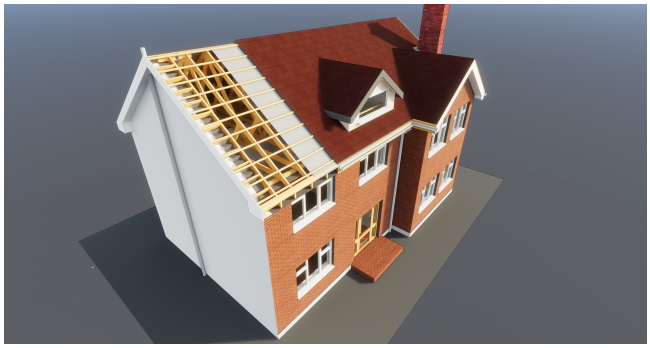

Figure 8: Duct Layout using Fabrication Parts

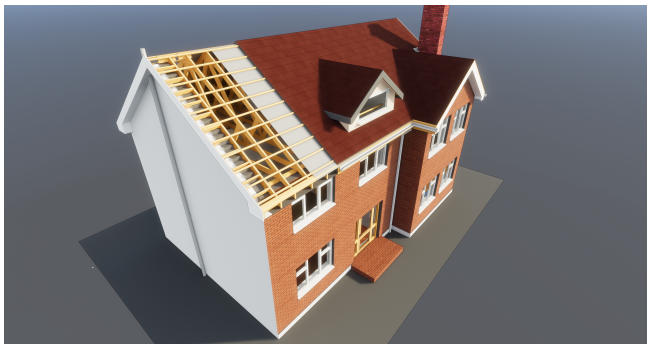

Figure 9: Duct Layout using Fabrication Parts (Reverse Angle)