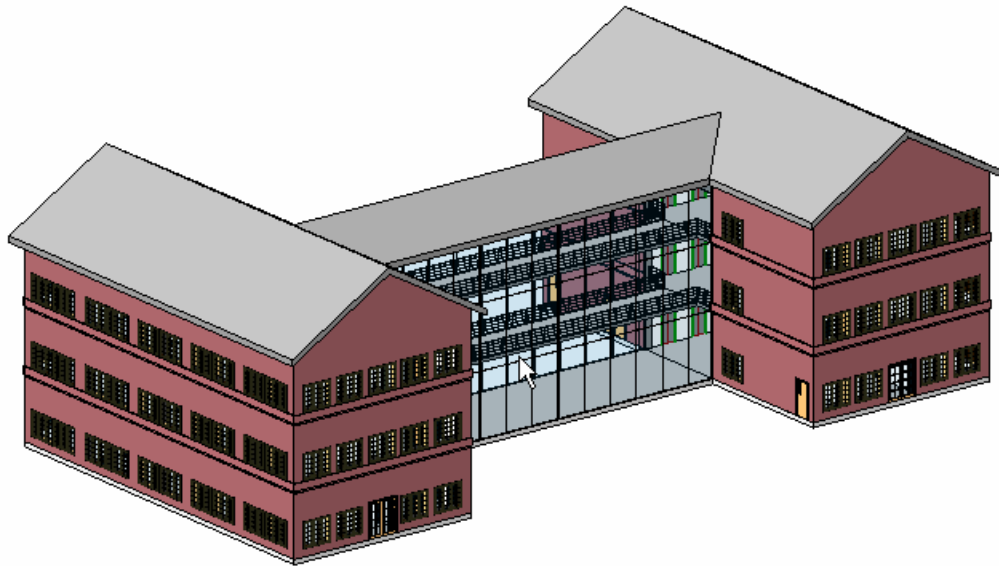


8 - Creating the East Wing and Passageway

In this exercise, you create the east wing of the building model by mirroring the west wing. You add a curtain wall passageway between the wings with a suspended walkway between each of the upper floors.



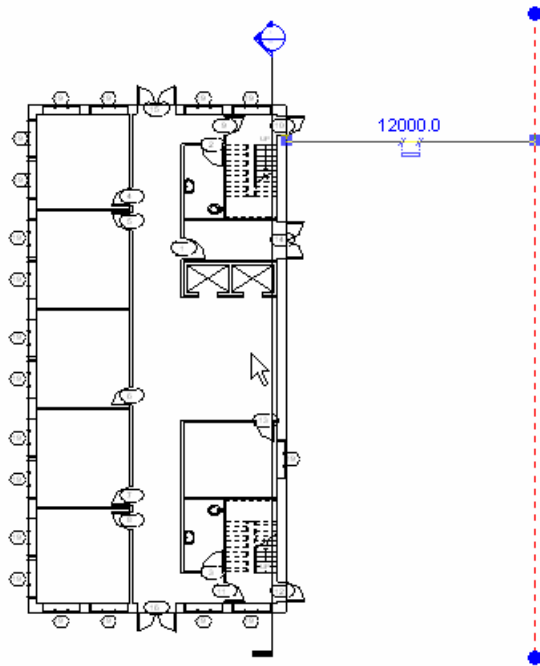
Dataset

- Should you not be at a stage where you can commence this exercise do not worry – a file has been created in preparation
- Open the *student ex3 phase 2* file located in the *REVIT* folder.

Mirror the west wing

1. In the Project Browser, expand Views (all), expand Floor Plans, and double-click Level 1.
2. On the Basics tab of the Design Bar, click Ref Plane.

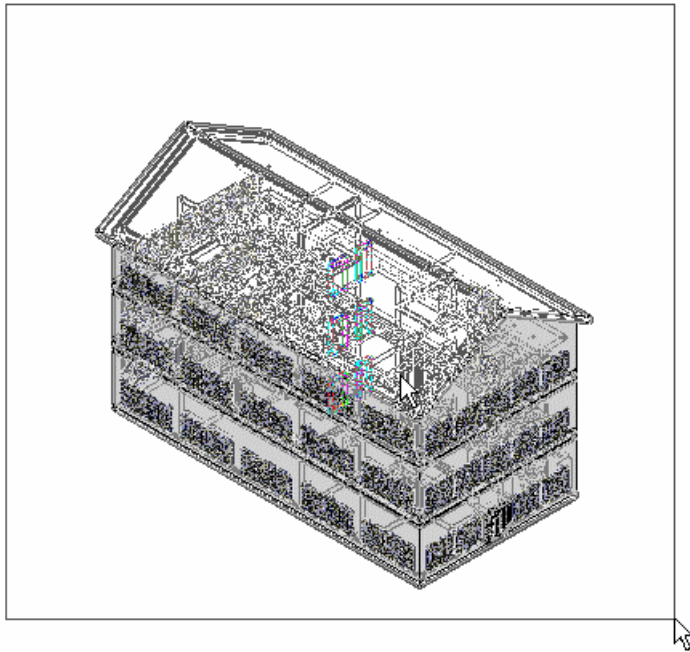
3. Draw a vertical reference plane 12000 mm from the exterior face of the east exterior wall.



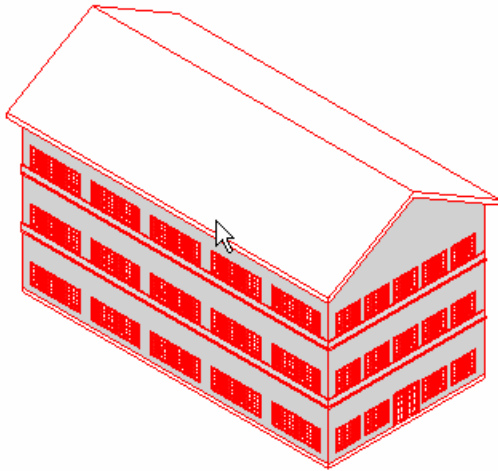
You use this plane later as the mirror axis.

4. On the View toolbar, click .
5. Right-click, and click Zoom To Fit.
6. On the Basics tab of the Design Bar, click Modify.

7. Draw a pick box around the entire building model.



The entire model displays as selected.



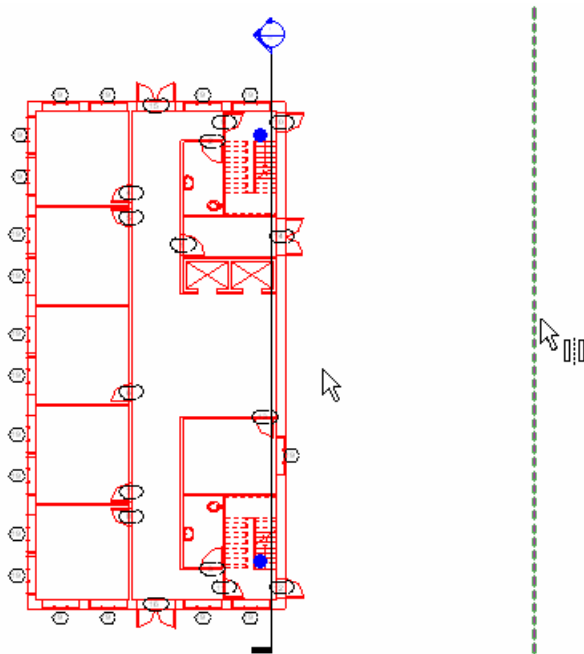
8. In the Project Browser under Floor Plans, double-click Level 1.

Components selected in one view remain selected when you switch views.

9. On the Edit menu, click Mirror.

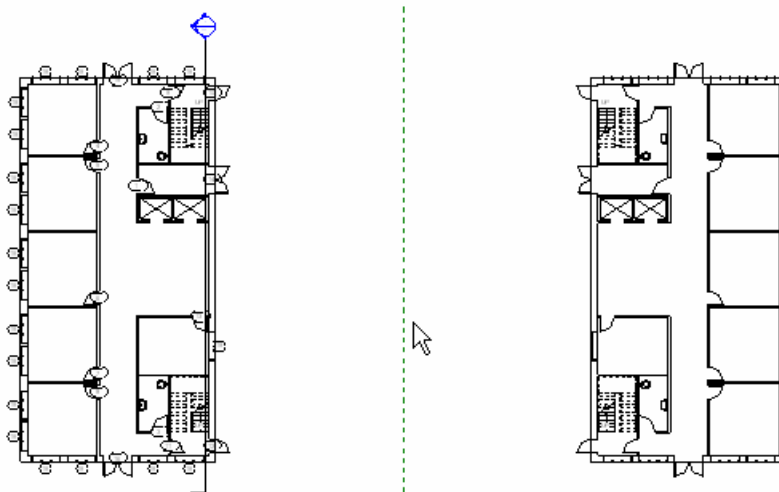
10. On the Options Bar, click  and Copy.

11. Select the vertical reference plane you added previously.



After you select the mirror axis, a progress bar displays as the mirrored copy is generated.

12. Zoom out to see both wings of the building model.



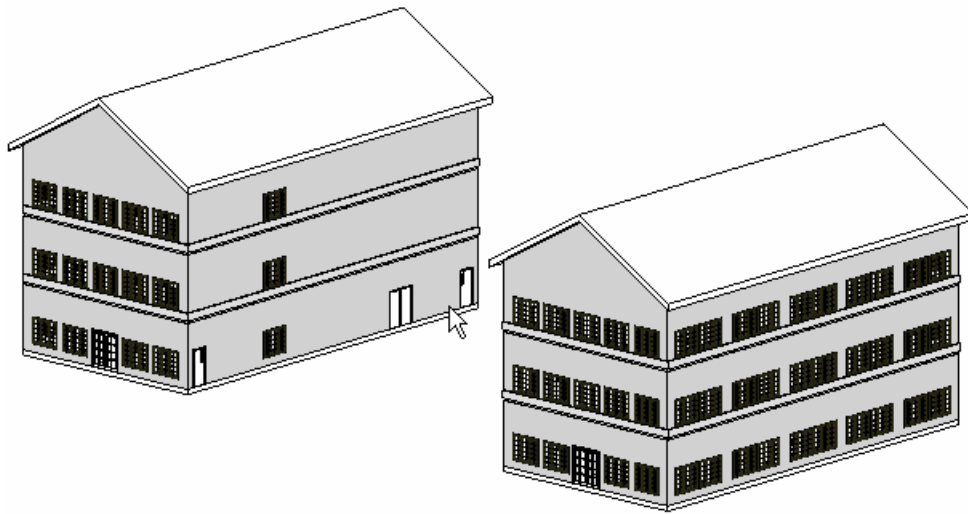
13. Select the reference plane.

14. On the Edit menu, click Delete.

15. On the View toolbar, click. 

16. On the View toolbar, click. 

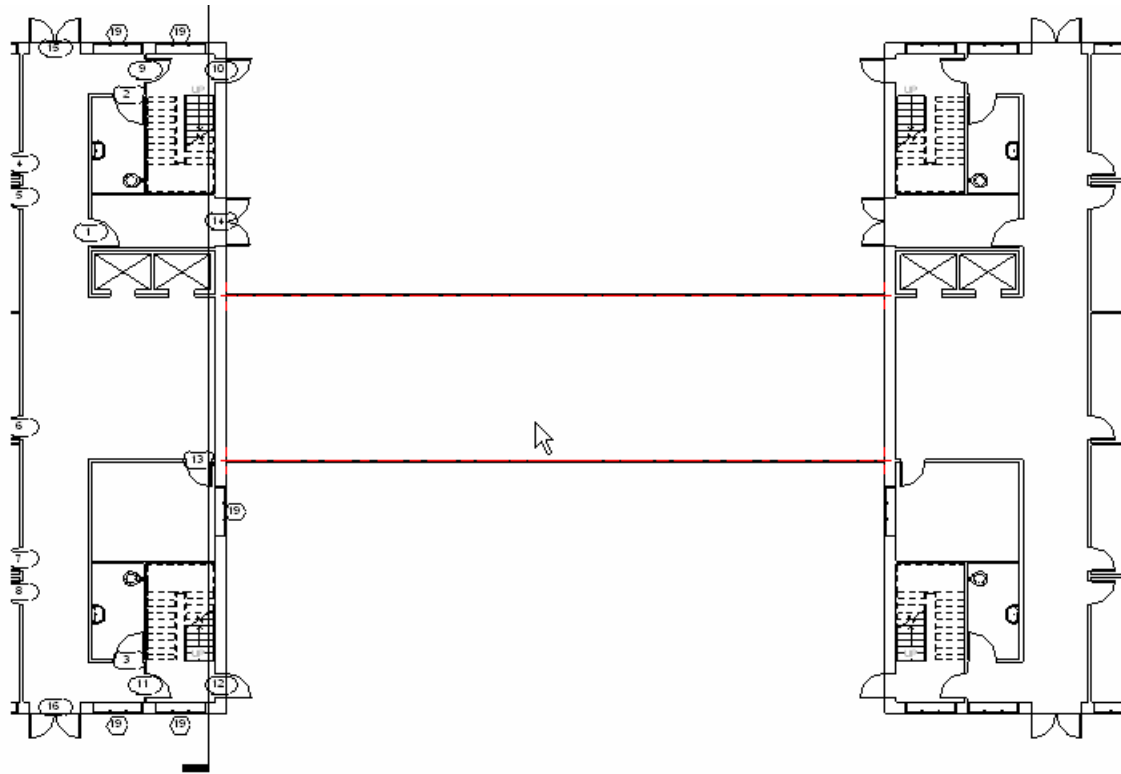
17. Spin and zoom the building model until it resembles the following illustration.



Add the passageway walls between wings

18. In the Project Browser under Floor Plans, double-click Level 1.
19. On the Basics tab of the Design Bar, click Wall.
20. In the Type Selector, select Curtain Wall: Exterior Glazing.
21. On the Options Bar, select Roof for Height.

22. Sketch the two curtain walls between the wings, as shown. If necessary, click the flip arrows to ensure the exterior face of the wall is facing the outside.

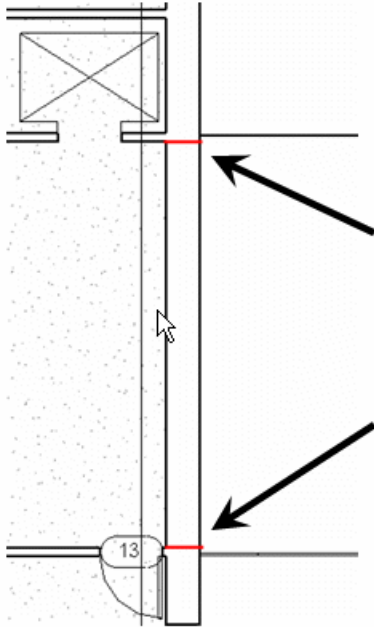


Split and delete exterior wall faces of each wing

23. Zoom in to the intersection of the passageway and the west wing.
24. On the Tools menu, click Split Walls and Lines.
25. On the Options Bar, select Delete Inner Segment.

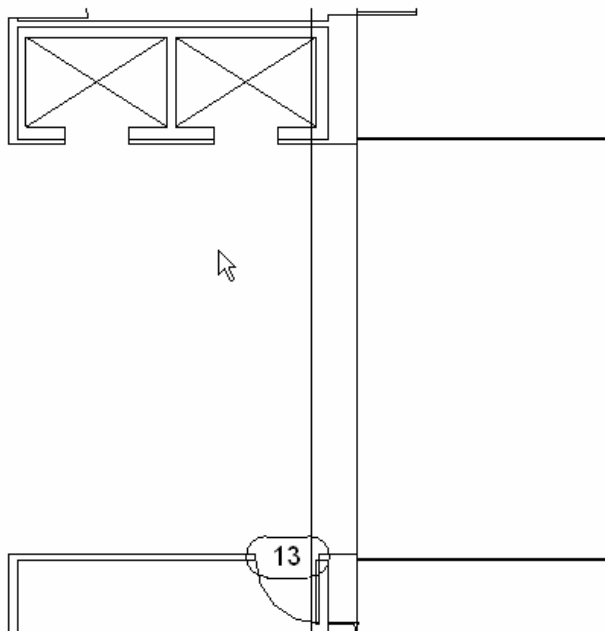
26. Split the face of the exterior brick wall at each intersection with the curtain wall, as shown.

Arrows refer to each split location.



Tip: For precise splits, you may find it useful to zoom in to each intersection before making the split.

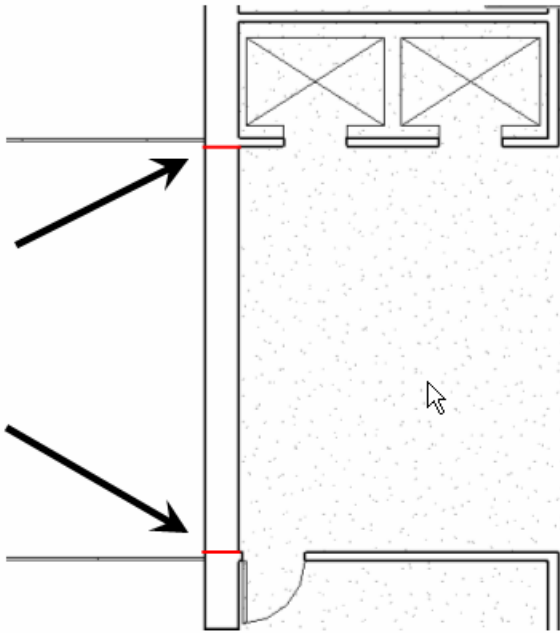
Notice the wall segment is deleted after the second split.



27. Zoom in to the intersection of the passageway and the exterior wall of the east wing.

28. On the Tools menu, click Split Walls and Lines.
29. On the Options Bar, select Delete Inner Segment.
30. Split the face of the exterior brick wall at each intersection with the curtain wall, as shown.

Arrows refer to each split location.

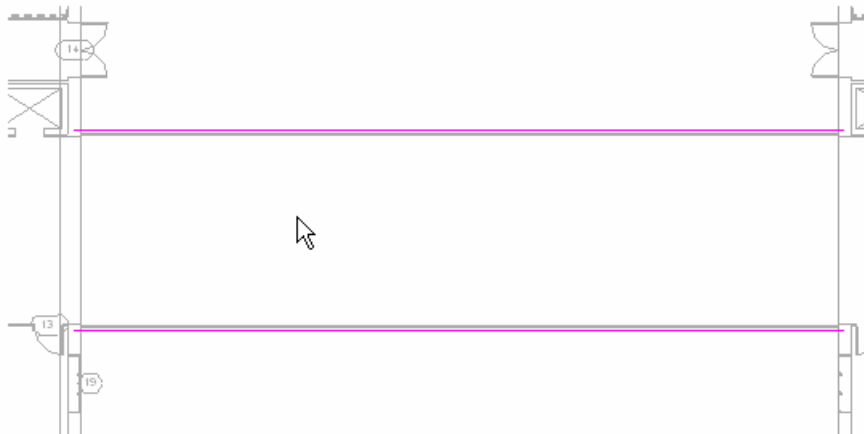


Tip: For precise splits, you may find it useful to zoom in to each intersection before making the split.

Add floor to Level 1 passageway

31. Adjust your zoom settings until you can see the perimeter of the entire passageway.
32. On the Basics tab of the Design Bar, click Floor.
33. On the Options Bar, enter 150 for Offset, and clear Extend into wall (to core).

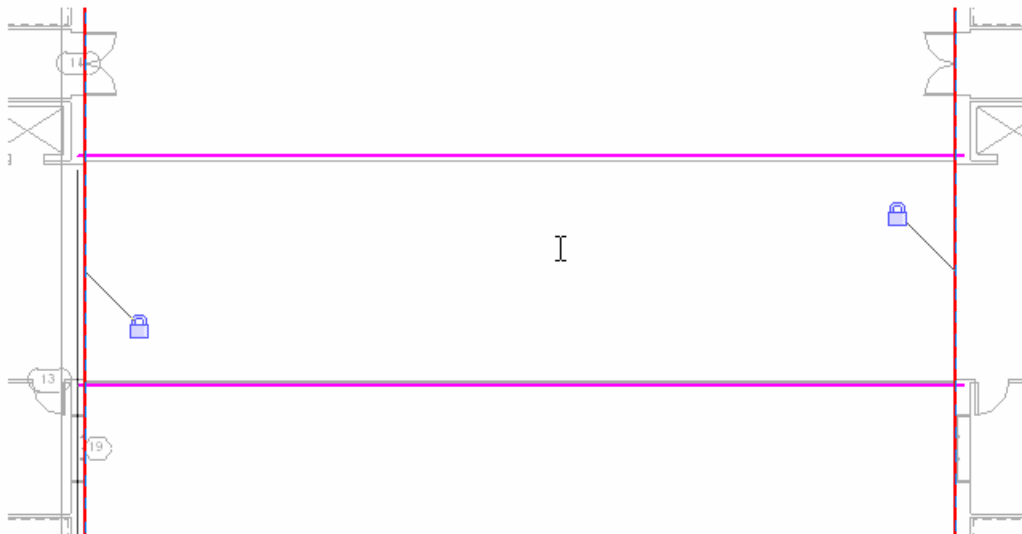
34. Select both curtain walls so that the floor offset is on the exterior side of each wall.



35. On the Design Bar, click Lines.

36. On the Options Bar, click  and Lock.

37. Select the edge of the floor on both the west and east wings.

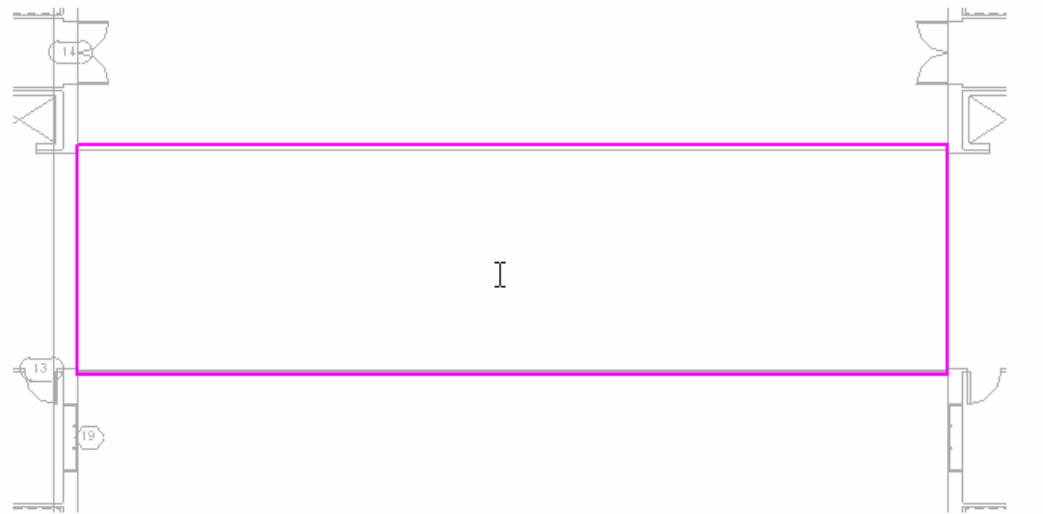


38. On the Tools menu, click Trim/Extend.

39. Select the centre of the left vertical line, and then select the centre of the top horizontal line.

40. Continue cleaning up the intersections using this method.

Floor sketches must be a closed loop with no intersections.



41. On the Design Bar, click Floor Properties.

42. Select Concrete 300 mm for Type, and click OK.

43. Click Finish Sketch.

Add a walkway to Level 2

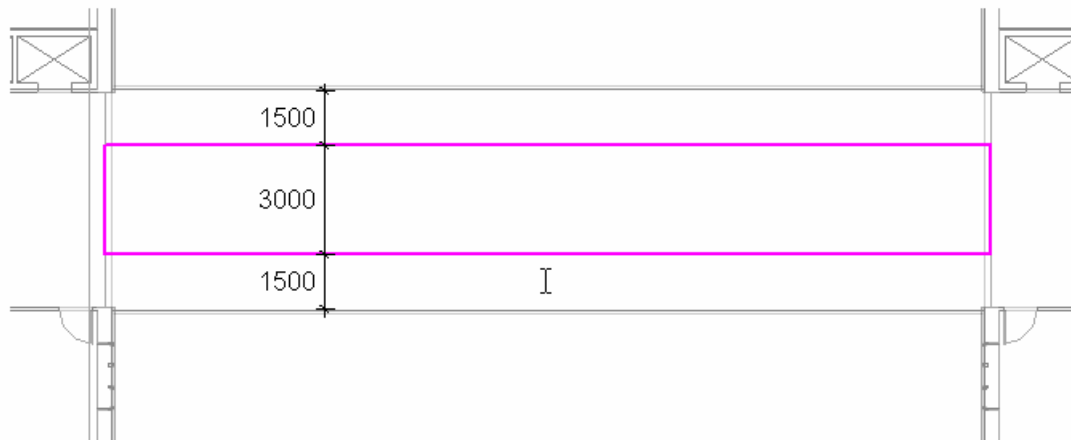
44. In the Project Browser, under Views (all), under Floor Plans, double-click Level 2.

45. On the Basics tab of the Design Bar, click Floor.

46. On the Design Bar, click Lines.

47. On the Options Bar, click. 

48. Sketch a rectangle with the vertical lines attached to the level 2 floor of each wing and each horizontal line 1500 mm from the inner face of the curtain wall. In the following illustration, dimensions have been added for training purposes.



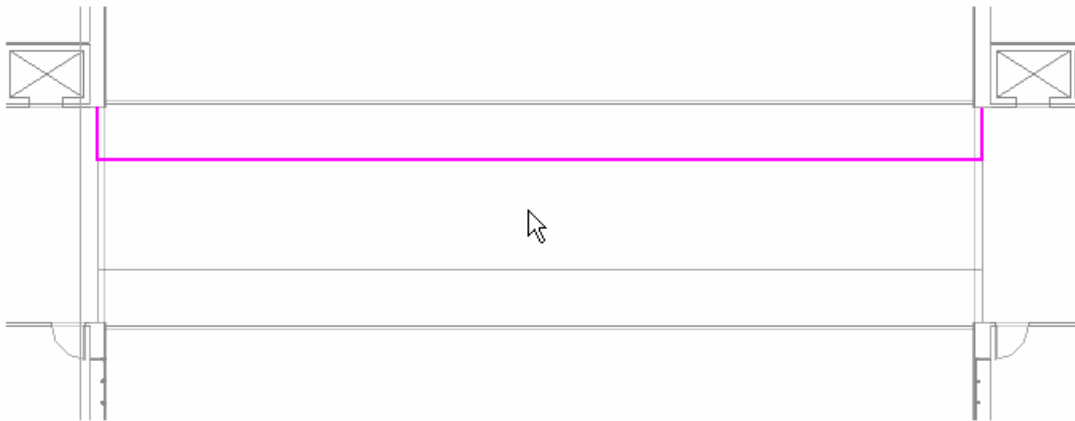
49. On the Design Bar, click Floor Properties.
50. Select Beam and Block 200 mm for Type, and click OK.
51. Click Finish Sketch.

Add a railing to Level 2 walkway

52. On the Modelling tab of the Design Bar, click Railing.
53. On the Design Bar, click Lines.
54. On the Options Bar, do the following:

- Click. 
- Click. 
- Select Chain.

55. Draw the chain on the north side of the walkway, as shown.



56. On the Design Bar, click Railing Properties.

57. Select 900 mm Pipe for Type, and click OK.

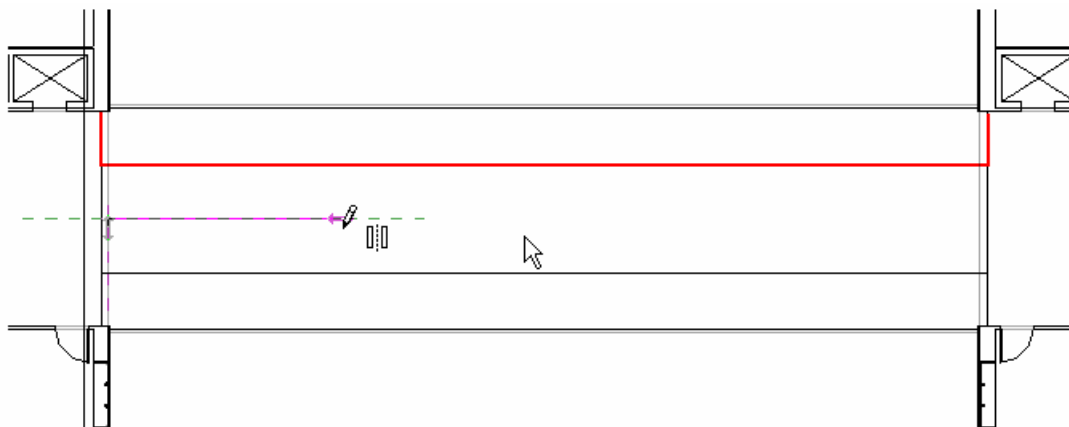
58. On the Design Bar, click Finish Sketch.

59. Select the railing.

60. On the Edit menu, click Mirror.

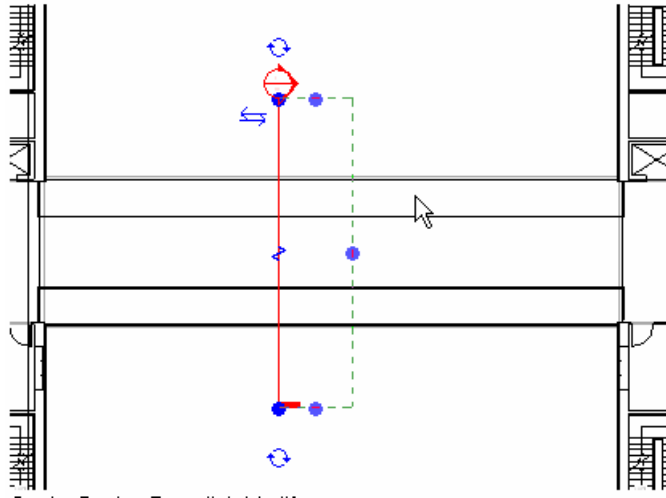
61. On the Options Bar, click  and Copy.

62. Click at the midpoint of the walkway for the mirror axis start point, move the cursor to the right, and click to specify the second point of the mirror axis.



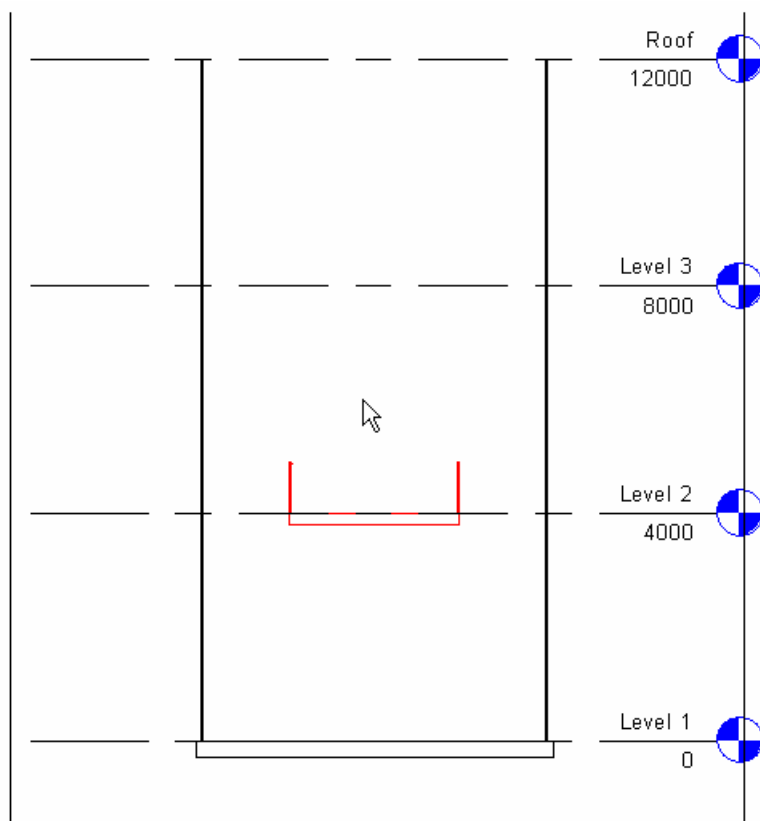
63. On the Basic tab of the Design Bar, click Section.

64. Add a section view to the center of the passageway, and modify the direction and shape handles, as shown.



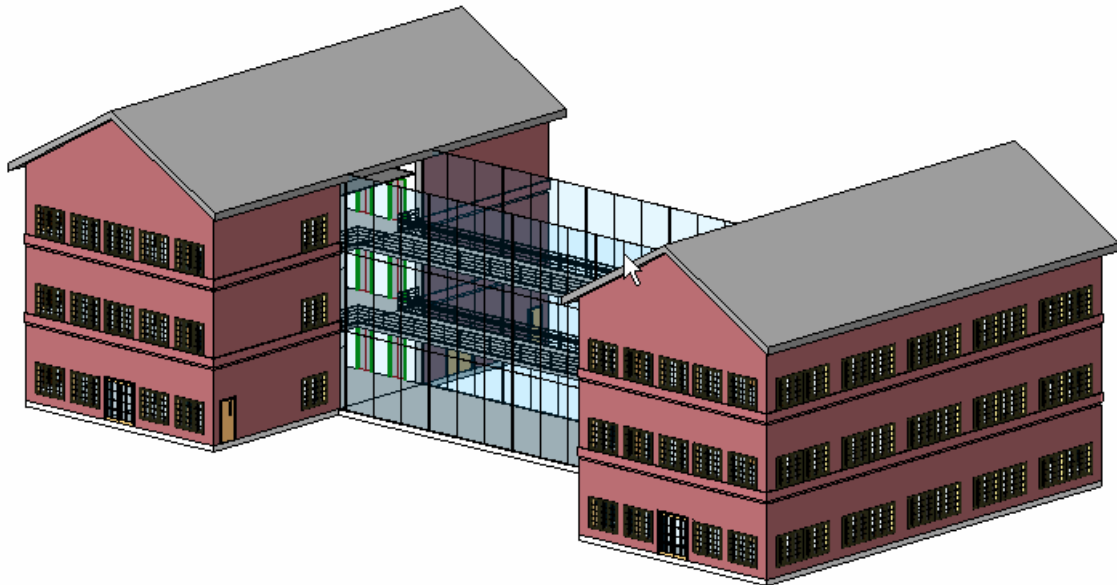
65. On the Design Bar, click Modify.
66. Double-click the section head you created in the previous step.
67. In the section view, select both railings and the walkway on Level 2.

Tip: Press and hold CTRL while making multiple selections.



68. On the Edit menu, click Copy to Clipboard.
69. On the Edit menu, click Paste Aligned - Select Levels by Name.
70. Select Level 3, and click OK.
71. On the View toolbar, click. 

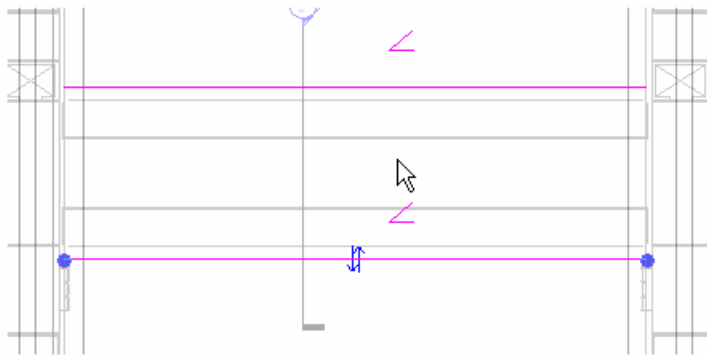
The only remaining task is to add a roof to the passageway.



Add roof to passageway

72. In the Project Browser, expand Views (all), expand Floor Plans, and double-click Roof.
73. Using the zoom commands, adjust the view so you can see the entire passageway.
74. On the Basics tab of the Design Bar, click Roof - Roof by Footprint.
75. On the Options Bar, select Defines slope, and verify that Overhang is 600.

76. Select each curtain wall.

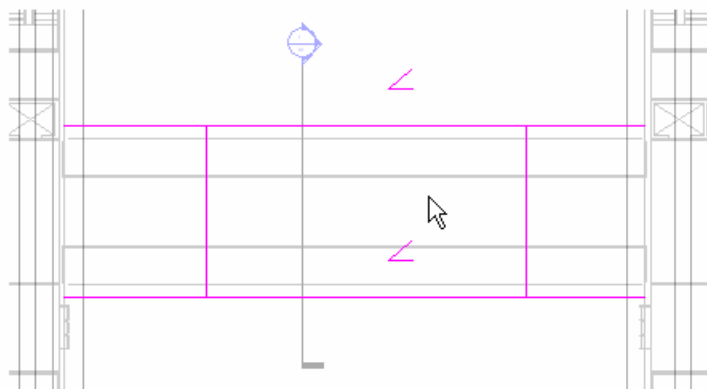


77. On the Design Bar, click Lines.

78. On the Options Bar, clear Defines slope.

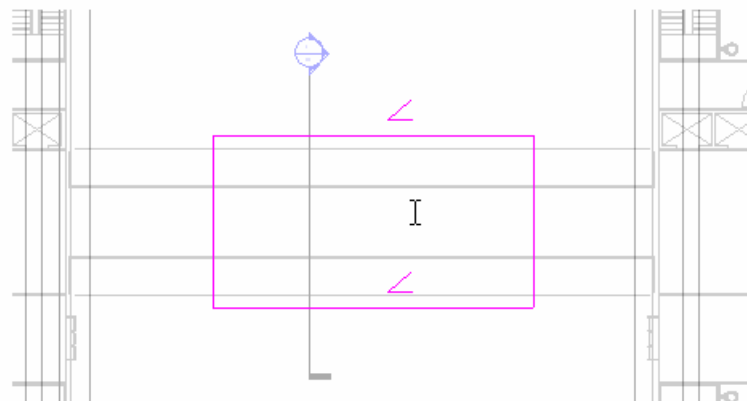
79. Sketch two vertical lines, as shown.

Exact dimensions are not important.



80. On the Tools menu, click Trim/Extend.

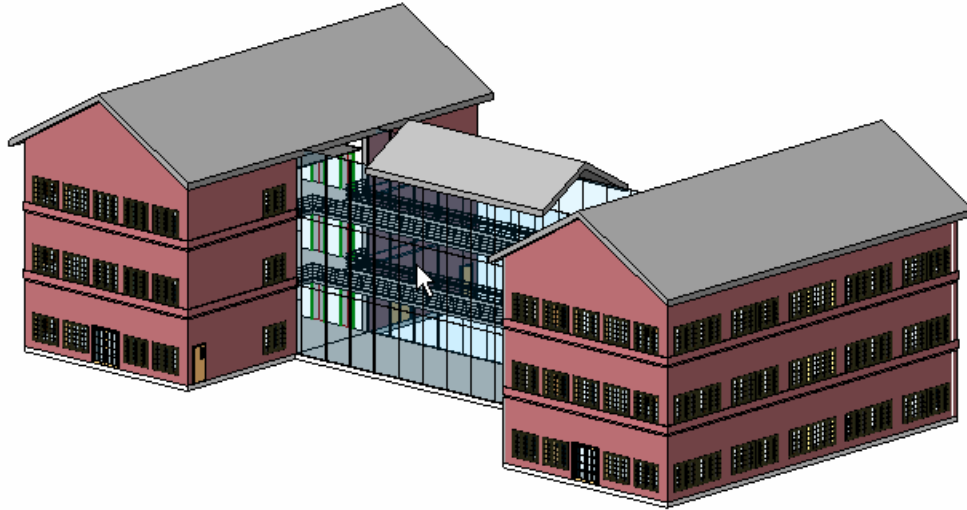
81. Click the centre of each roof line to clean up each corner.



82. On the Design Bar, click Finish Roof.

83. On the View toolbar, click. 

84. On the View menu, click Shading with Edges.



Notice that the passageway roof needs to be joined to each wing.

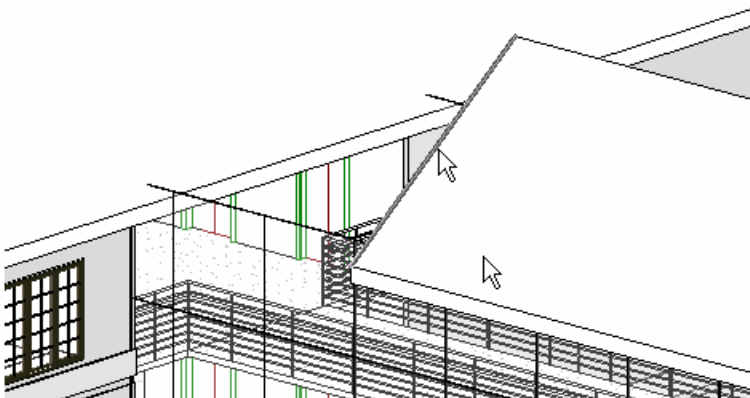
85. On the View menu, click Hidden Line.

For training purposes, it is easier to demonstrate the roof joins in hidden line mode.

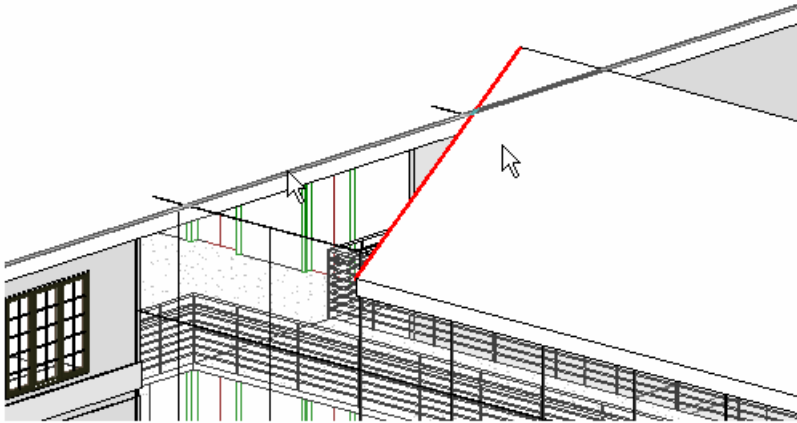
86. On the Tools menu, click Join/Unjoin Roof.

Joining a roof is a two-click procedure. First, you click the edge of the roof that you want to join. Second, you select the edge of the roof or wall that you want it joined to. In this case, you select the edge of the passageway roof, and then the outer edge of the corresponding wing roof.

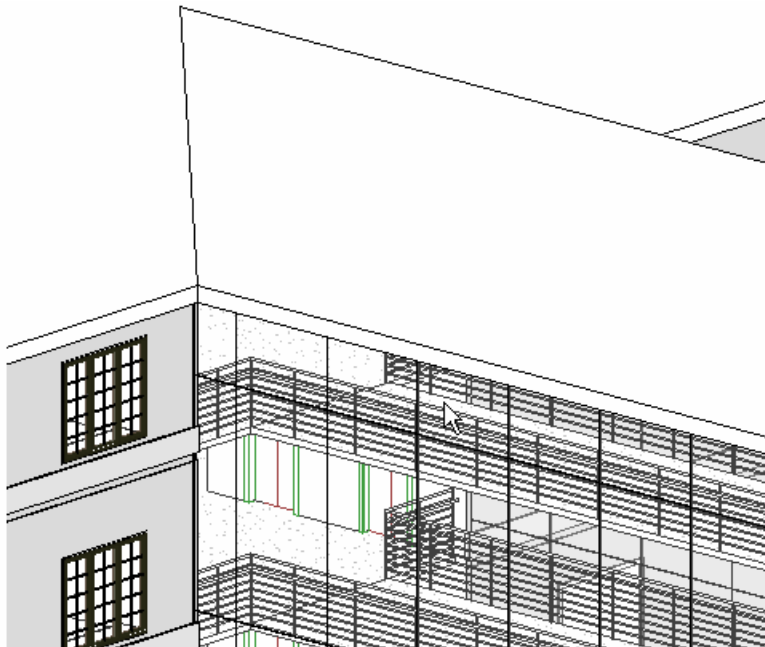
87. Click the left edge of the passageway roof.



88. Click the upper edge of the west wing roof.

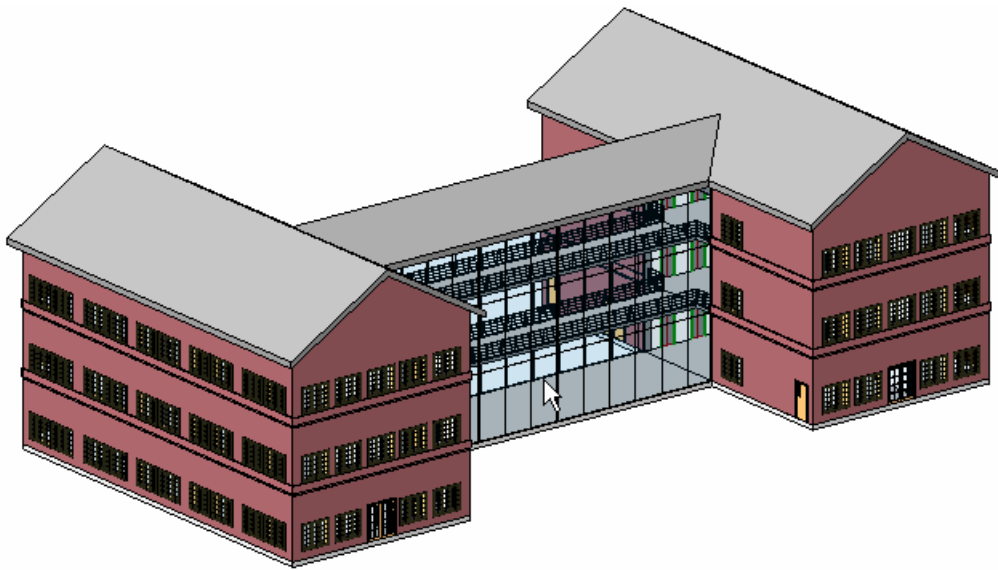


The two roofs are joined.



89. On the View toolbar, click. 
90. Spin the model so that you have access to the unjoined end of the passageway roof and the east wing roof.
91. On the Tools menu, click Join/Unjoin Roof.
92. Join the passageway roof and the roof of the east wing using the same technique learned when joining the west wing roof.

93. On the View menu, click Shading with Edges.



94. On the File menu, click Save.

The following exercise requires this project saved at this point.

In this exercise, you mirrored an entire wing of the building model and saved design time by reducing repetitive tasks. You then added the passageway between the two wings, split and deleted the exterior walls, and added floors and a roof to the passageway.

In the following exercise, you create a door schedule for the building model.