

## Example 1 – Using a System Wall

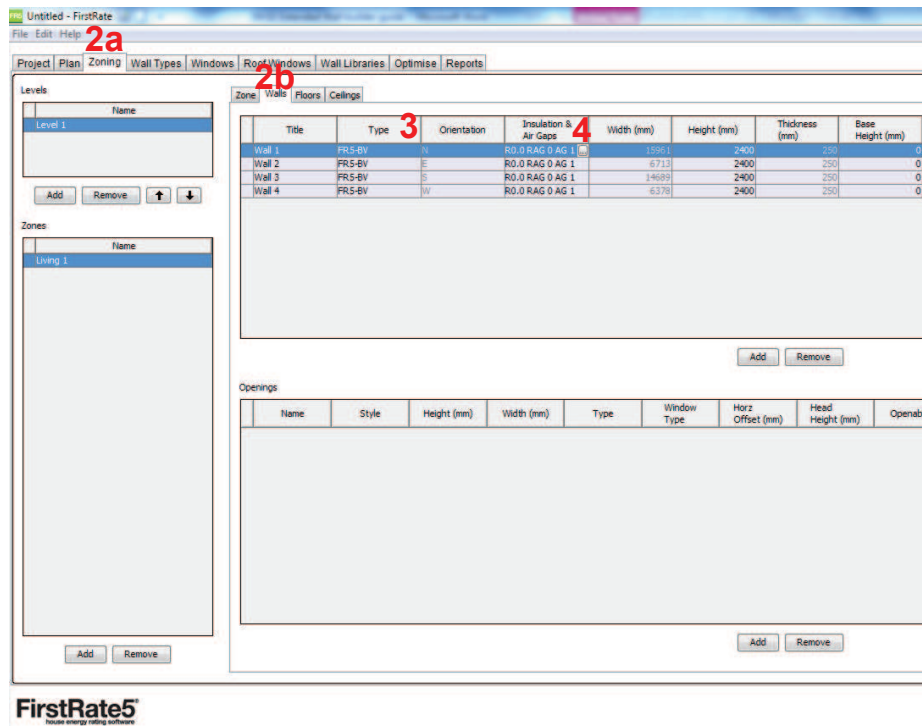
We want to create a wall with the following build-up:

### Outside

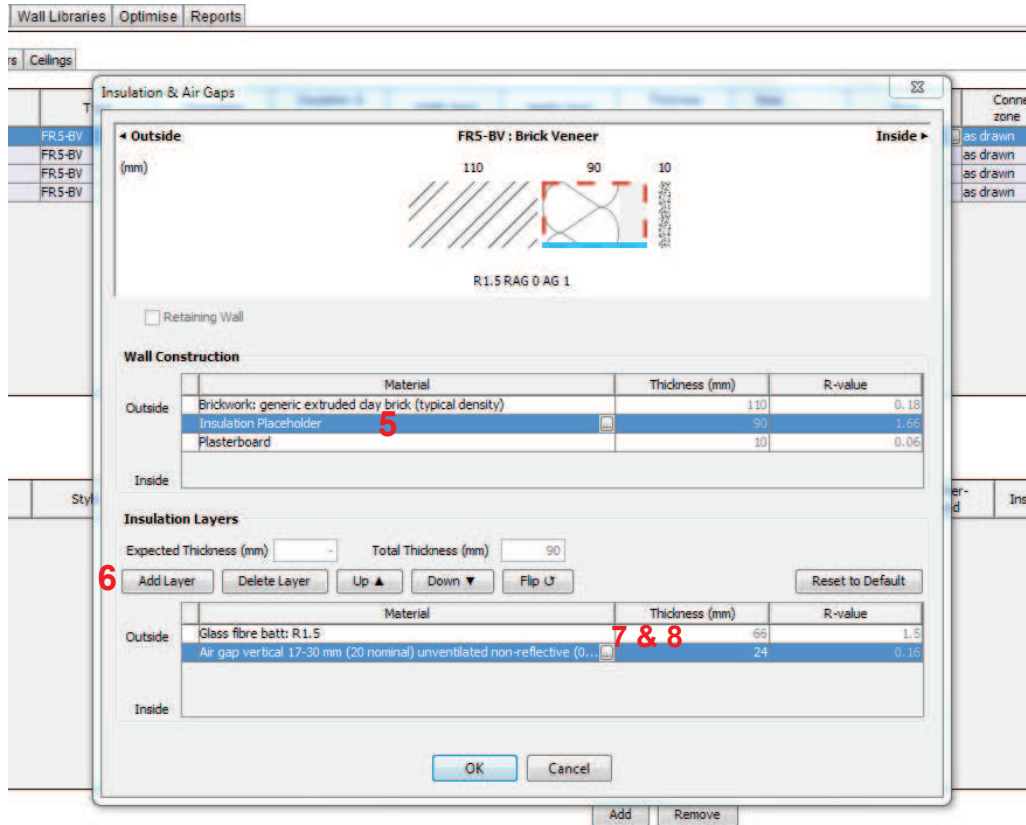
|      |  |
|------|--|
| 12mm | Timber (softwood)  |
| 90mm | Air Gap (ventilated with no foils) to fill remainder of void after bulk insulation |
| void | added (see below)  |
|      | Glass fibre batt R1.5  |
| 10mm | Plasterboard   |

### Inside

This build-up is identical to the Weatherboard System wall, with the exception of the added insulation. We can use System wall *FR5-WB* and add the appropriate bulk insulation and air gap details.



1. Draw the building's walls. In this case we'll draw a simple four wall room.
2. Click on the Zoning tab and then on the Wall tab. You'll notice that all four walls have been drawn in the default System wall type, *FR5-BV* (brick veneer).
3. In the *Type* column click the first wall and change it to *FR5-WB* from the drop down menu.
4. In the *Insulation & Air Gaps* column click on the edit button to open the *Insulation & Air Gaps* editor.  
(Note: Alternatively we could have reached this point by selecting the wall in the Plan tab and editing the *Type* and *Insulation & Air Gaps* fields in the Properties Pane).



5. Click on the insulation placeholder. By default you will see an insulation placeholder containing a non-reflective air gap.
6. In addition to the non-reflective air gap we want to add a layer of bulk insulation. So click *Add Layer* to add a second layer to the placeholder.
7. Click on the edit button on the innermost insulation layer (the bottom layer in the table). Specify the type and R-value of the insulation from the *Specified resistance* list (*Glass fibre batt R1.5*) and click *OK*. Note that the thickness displayed is 66mm. This means the remaining air gap in the void will be 24mm (90mm-66mm = 24mm).
8. Now click on the edit button on the outermost insulation layer (the top layer in the table). Select the *Air gaps (ventilated 17-30mm; 20 nominal) > Vertical > Air gap vertical 17-30mm (20 nominal) ventilated non-reflective (0.9/0.9; E = 0.82)* and click *OK*. General building materials are considered to have an emissivity of 0.9, reflective foils have a lower emissivity value. Note that the thickness displayed will be the nominal thickness (ie 20mm). Manually change this to 24mm. The graphic changes at the top of the dialogue box to 90mm total for the insulation placeholder. If necessary use the *Up*, *Down*, or *Flip* buttons to arrange the order of the insulation layers. When you're satisfied, click *OK*.
9. We have changed the wall type and insulation specification of just one wall. We want the remaining three to match. Highlight all four walls. In the *Type* column, change any of the *FR5-BV* entries to *FR5-WB*. All selected walls change to *FR5-WB*. Finally, with all four walls still selected, click on the edit button of the completed wall (the top wall in the table) in the *Insulation & Air Gaps* column to open the editor and then click *OK*. You will notice all walls have now inherited the insulation properties of the completed wall.
10. You have just specified the insulation properties of a standard weatherboard wall using a System wall. These insulation properties will be saved to this project only.