

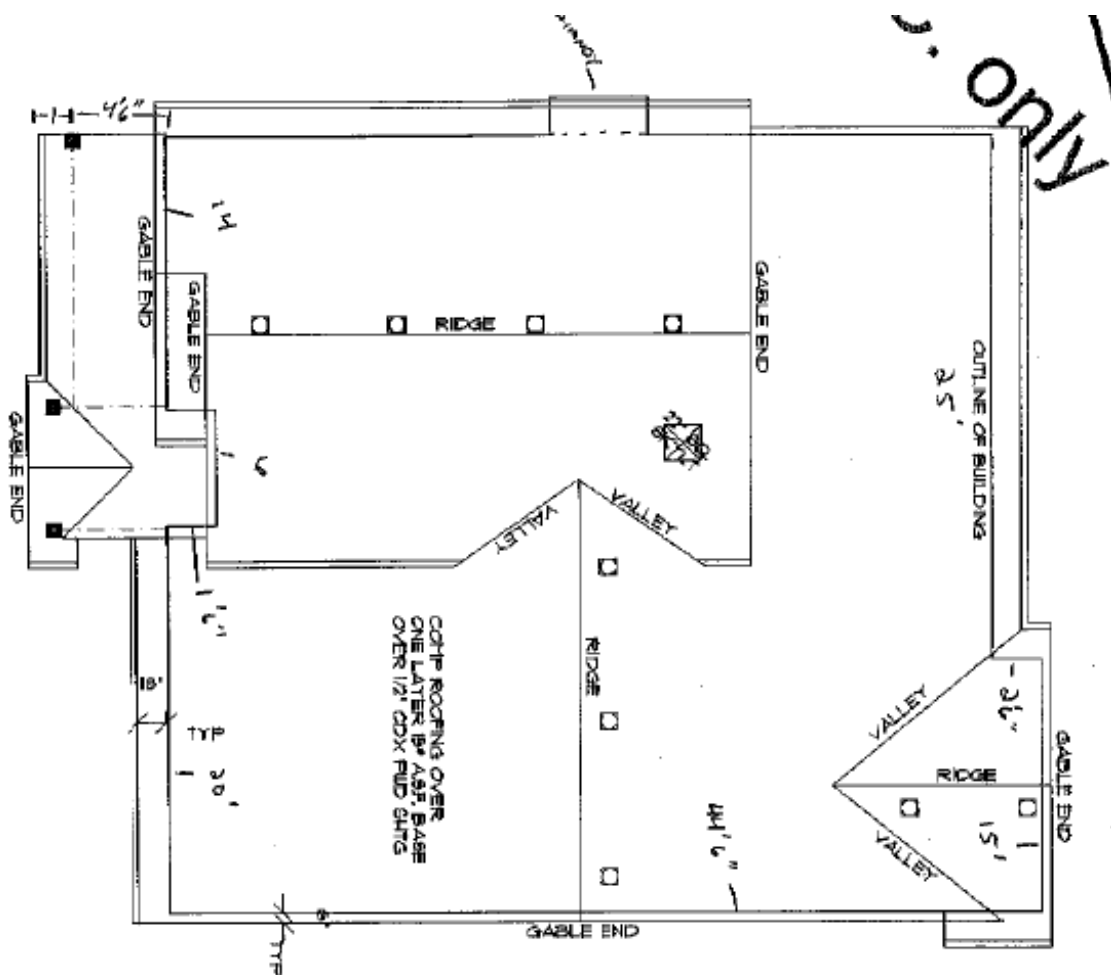
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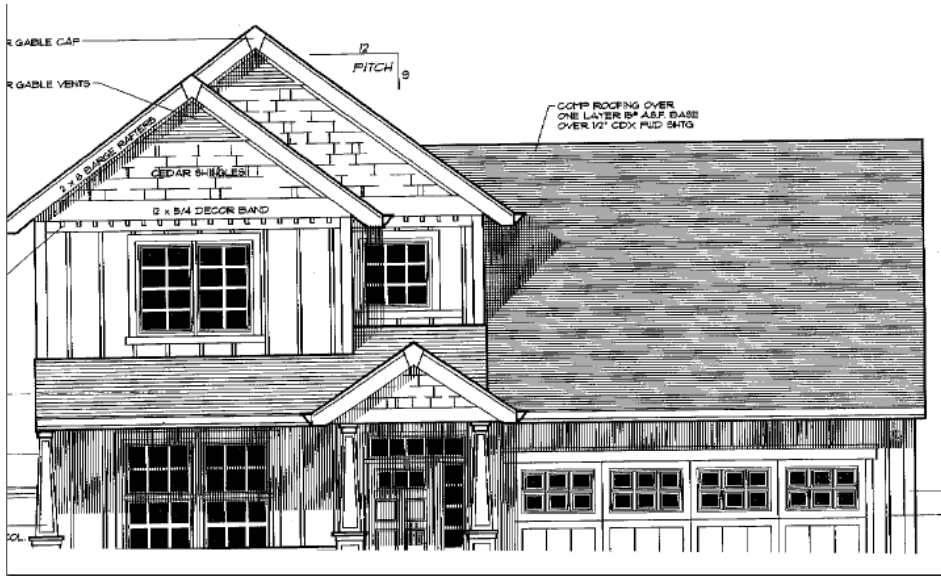
Number: 33

Objective: Complex roof built step by step.

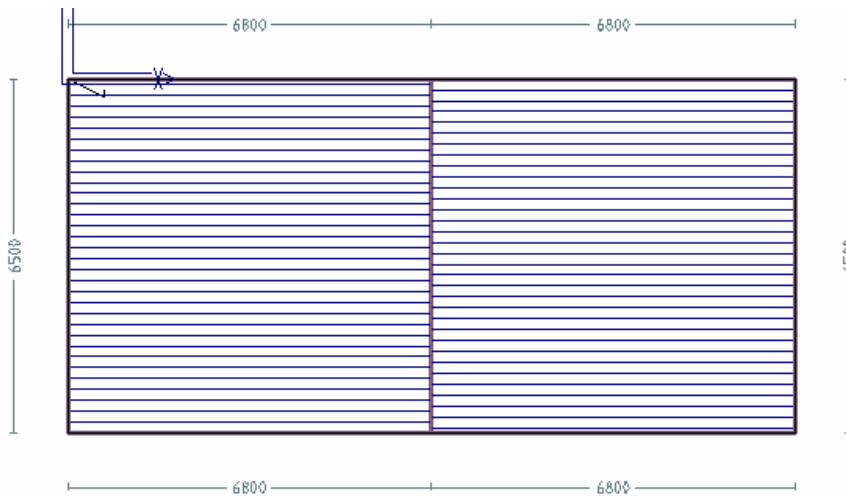
The object of this exercise is to create a roof shape that seems complex at first glance by carefully analysing the roof and breaking it into a series of simple roofs.

(You should be aware that these exercises do assume that you have acquired considerable experience with the AppliCad software.)

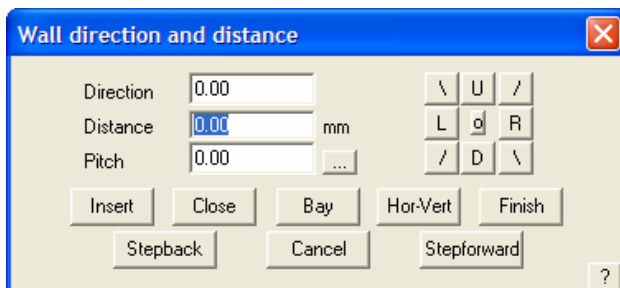




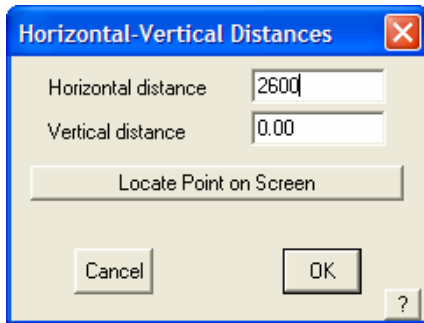
Draw the first part of the first story. **Construct Roof > Track AutoRoof- Hip Roof**
 Track right 13600 down 6500 then close square. 30 degree pitch, 0 overhang, 3000 eave height and vertical planes or gable ends top and bottom to get the following roof.



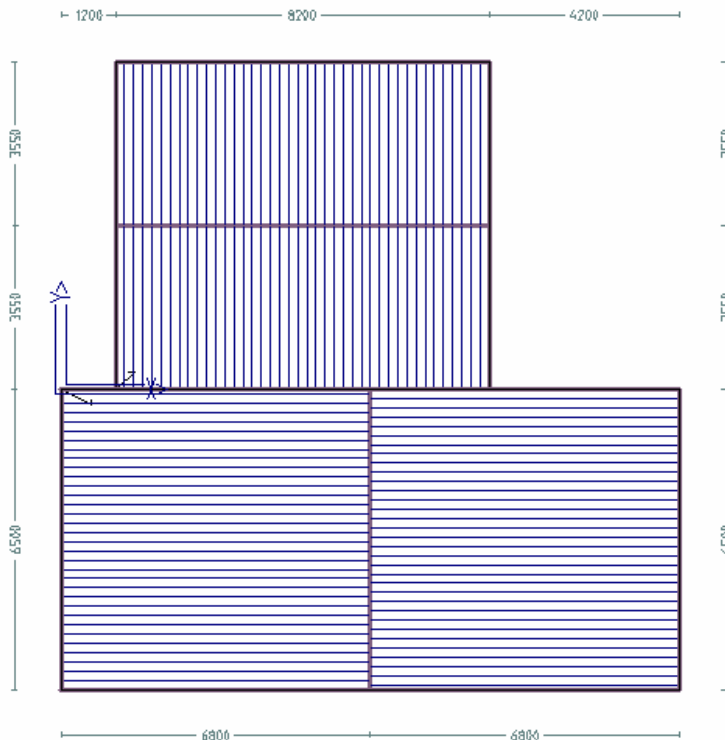
Draw the second story, **Construct Roof > Track AutoRoof - Hip Roof** but start the second story by selecting the “o” button in the middle of the accelerator button’s to select a starting point.



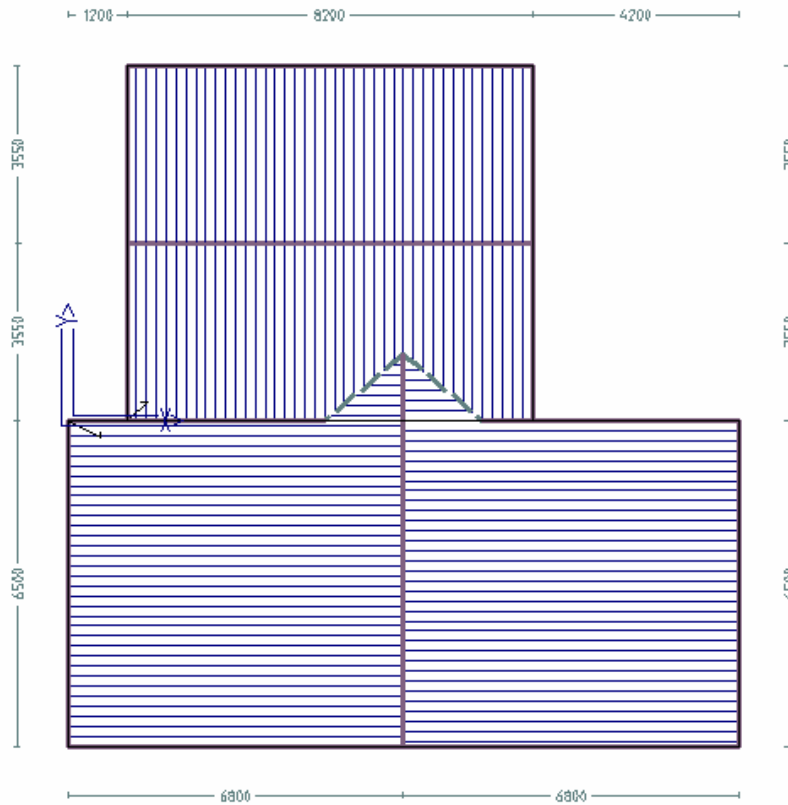
Middle button snap to the top apex point of our first story ridge and set a horizontal distance of 2600 to start our second story 2600 to the right of the ridge apex.



Track the second story as up 7100 and left 8200 then close square. 2nd story, 35 degree pitch, 0 overhang and 6000 eave height. Vertical walls or gable ends left and right.

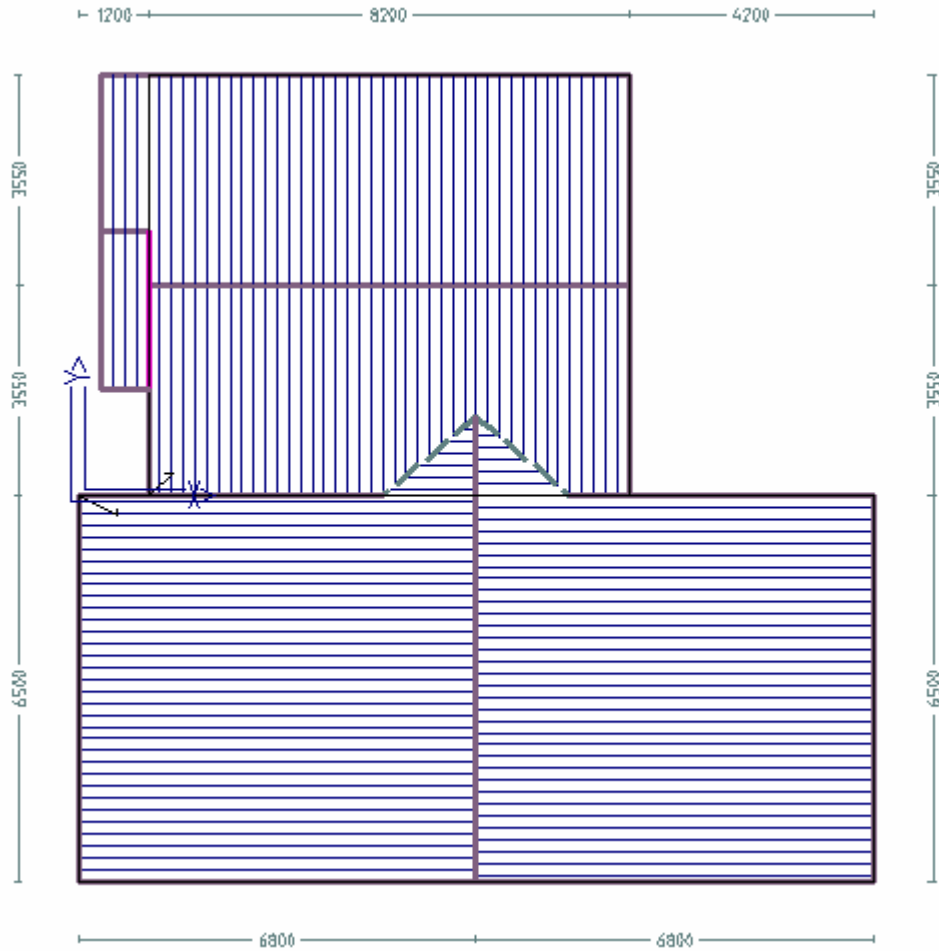


Select **Modify Roof > Project Gable** and project the ridge line of our bottom story into the plane of our second story above it. 0 tuck under.



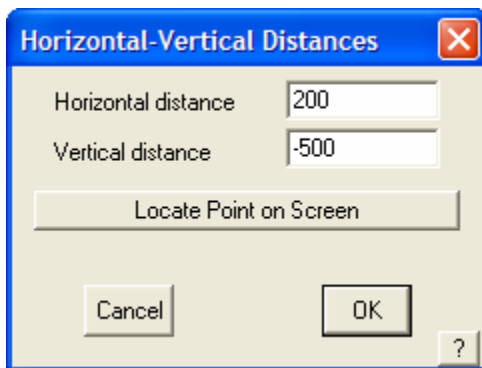
Add a split gable to the left side of our second story. (**Modify Roof > Split Gable**). Select fixed side, left, 900 ridge offset also left and 800 deep with a 0 tuck under.



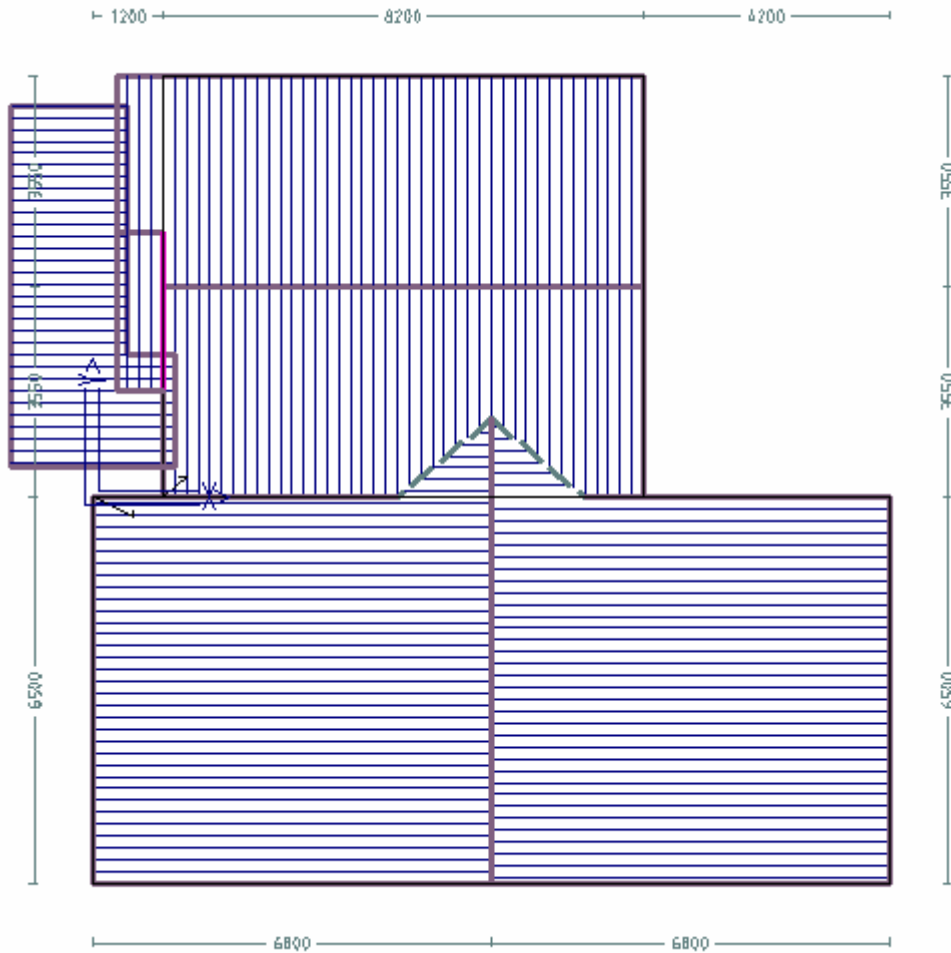


We need to draw a flat roof in front of our split gable. Select **Construct Roof - Track Outline - Plane Roof**.

Snap to top left corner of our split gable and set a starting point of:

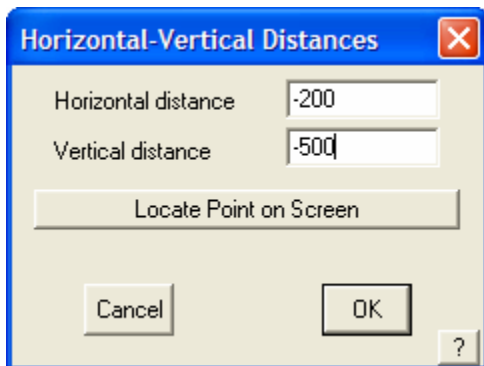


Track left 2000, down 6100, right 2800, up 1900 then close square. 30 degree pitch, 3000 eave height. Select the left hand side of our flat roof as the pitching line.

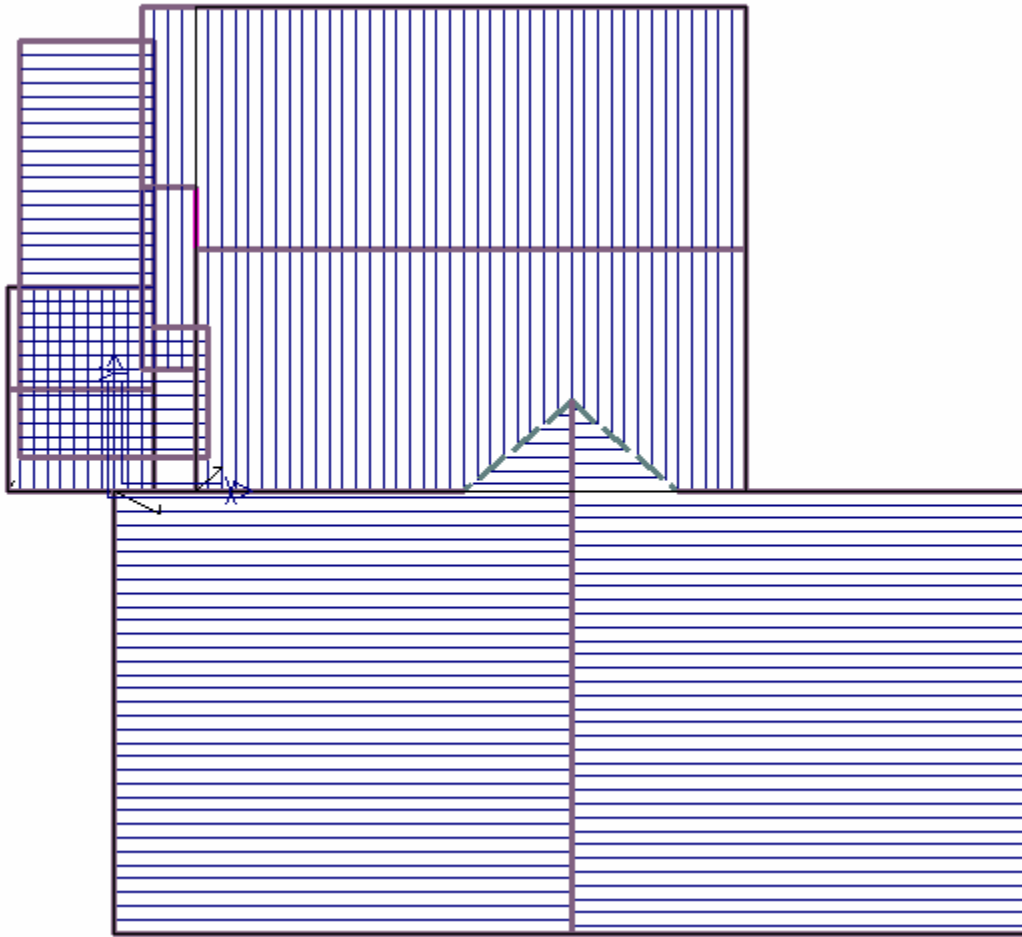


As the dormers on this model wrap around the eave, we will draw them as gable roofs and intersect them into the main roof. Select **Construct Roof > Track AutoRoof - Hip Roof**

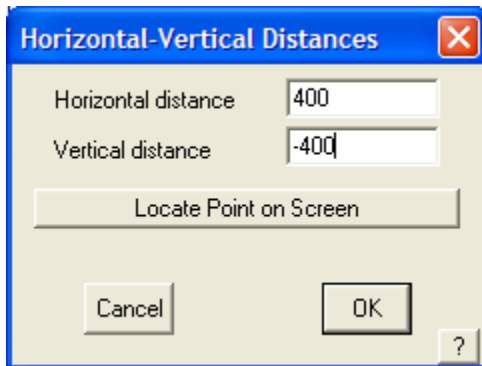
Snap to the bottom left corner of our newly added flat roof.



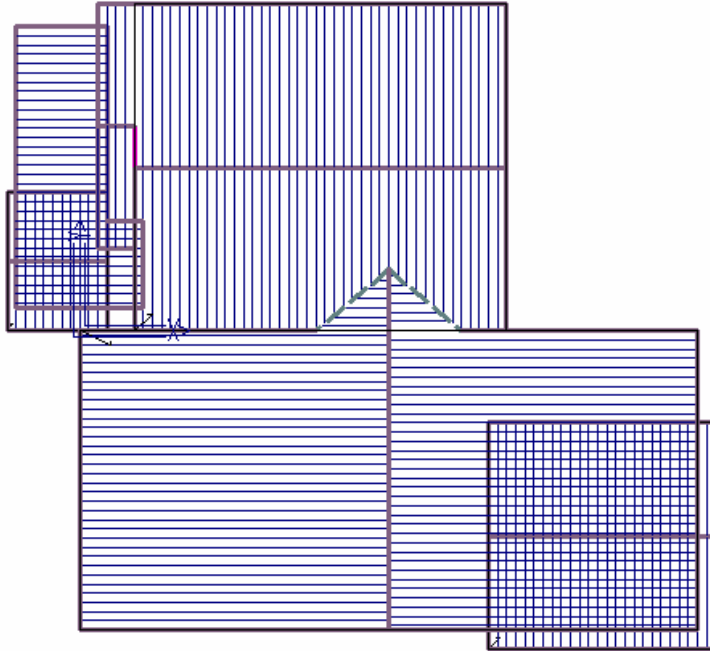
Track up 3000, right 2200 then close square. 3000 eave height, 35 degree pitch and vertical planes left and right ends.



Now for our second dormer. Snap to the bottom right hand corner of our first story.

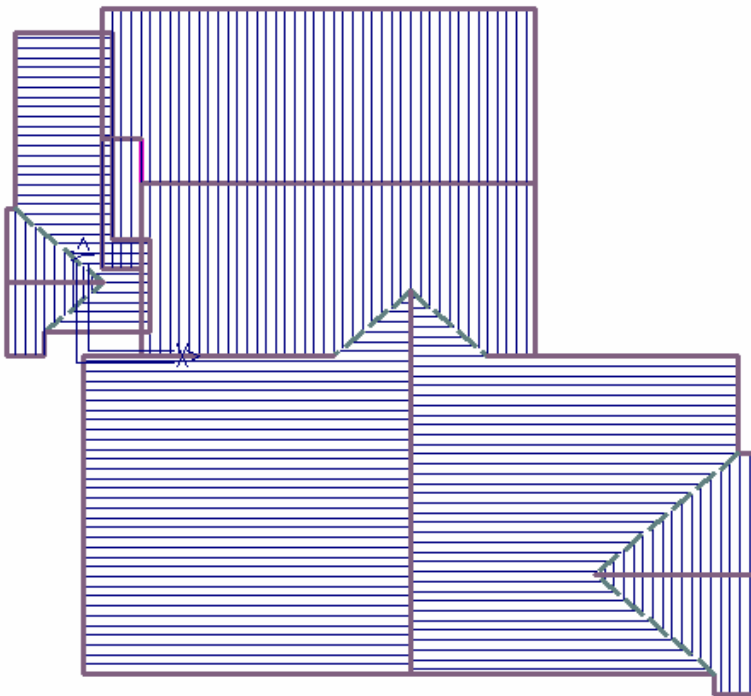


Track up 4900, left 5000 then close square. 3000 eave, 35 degree pitch and vertical planes left and right ends.



Your two added roofs should look like above. Now select **Modify Roof > Advanced > Intersect planes**.

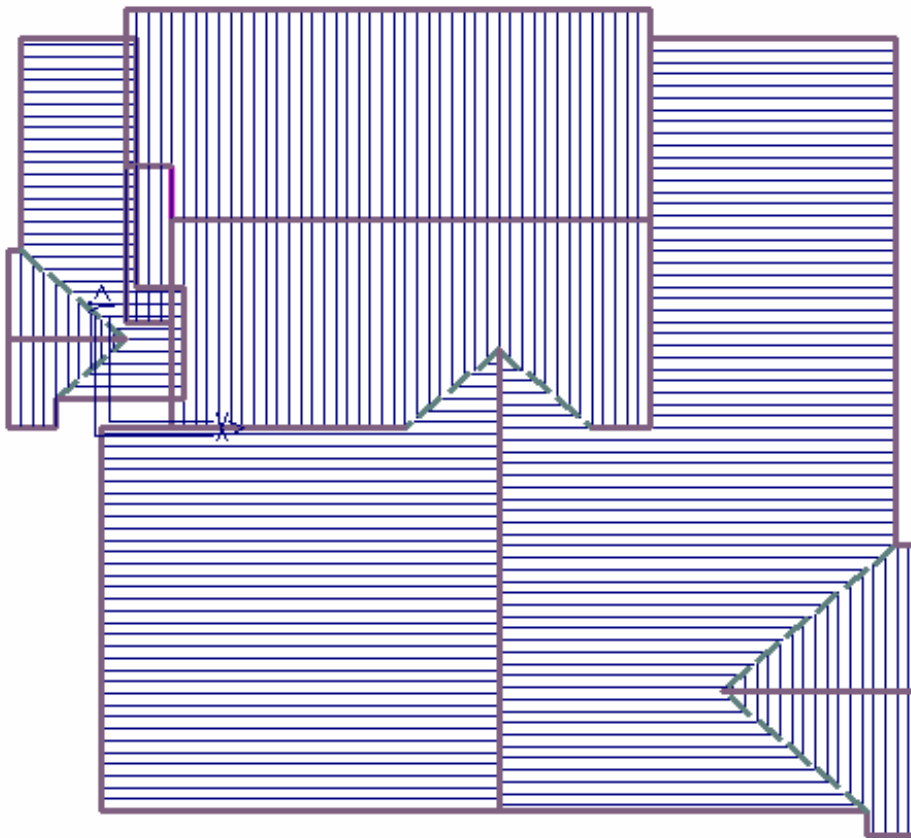
Your roof should now look similar to the following. You may need to delete any remaining gable ends remaining after the intersection. Select **Delete** and draw a box around each gable end not required and delete them. Walls can be turned of by selecting **Tools > Set display** and turning of the walls on the first and second story.



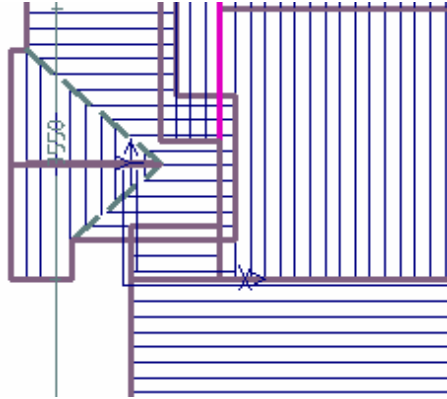
We then need to draw the remaining parts of our first story by tracking plane roofs. Select **Construct Roof > Digitise Outline – Plane Roof**. Constrain angles to 90 as we are drawing square roofs with no non 90 degree corners.

Snap to the top right hand corner of our first story roof then snap on the next corner at the wall of our second corner. Then type iy6600 on the keyboard. This draws a line up 6600. Right click and close square. Select OK on the select outline scaling. 3000 eave height, 30 degree pitch and select the right side as the pitching line.

Select **Modify roof > Advanced > Merge Planes** and merge the newly created plane with the plane below it.



A small section of roof needs to be added to the left side of our first story. **Construct Roof > Digitise Outline – Plane Roof**. Snap to the top left corner of our first story under our veranda etc then snap to the right corner beside it that joins the wall of our second story. Type on keyboard iy700 and press enter. Right click and close square. 3000 eave height and 30 degree pitch and select your pitching line on left side.



Select **Modify roof > Advanced > Merge Planes** and merge this plane with the one under it like you did with the plane on the other side of the roof.

We need to use **Smart Lines** to create our extended gable on the two dormers that extend back. It is probably better to do this in isometric view (**View > Isometric**)

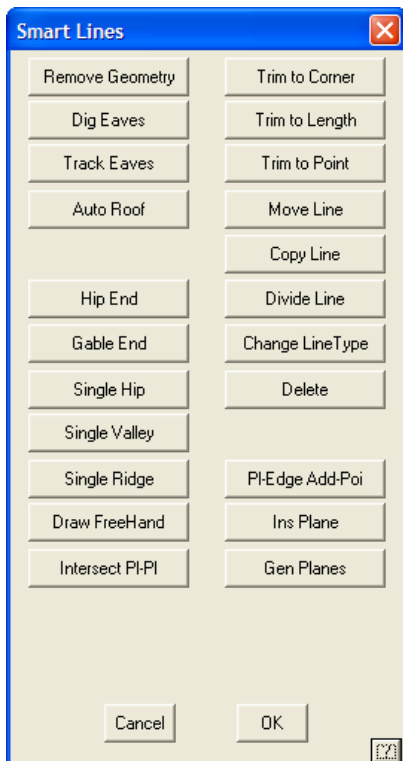
You may also need to spin the roof around to modify each dormer.



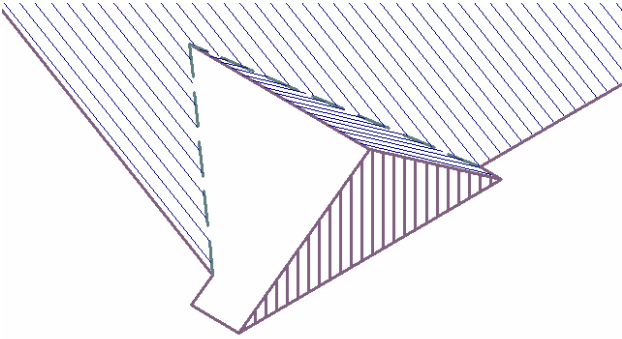
Also zoom in to each dormer to perform the modification.



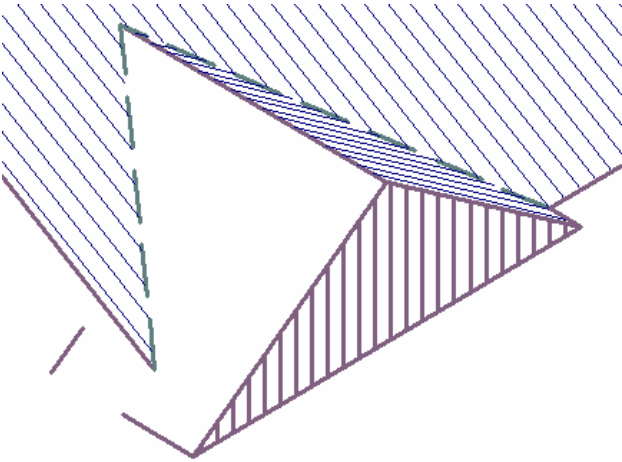
We will work on the largest dormer of the first story roof first located in the bottom right corner of our model. Select **Construct Roof > Smart-Lines 3D Manual Design**. To see the following menu.



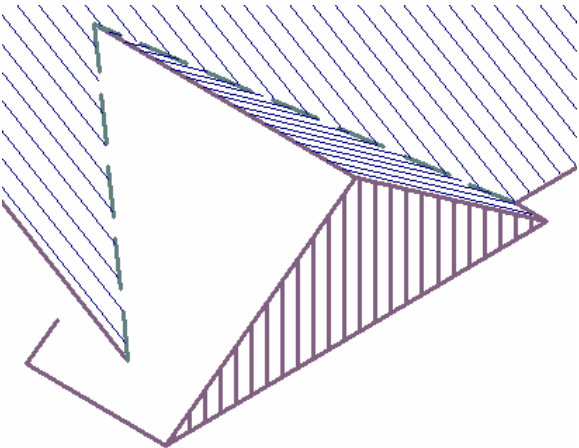
Select **Delete** and delete the plane which is affected by the extension.



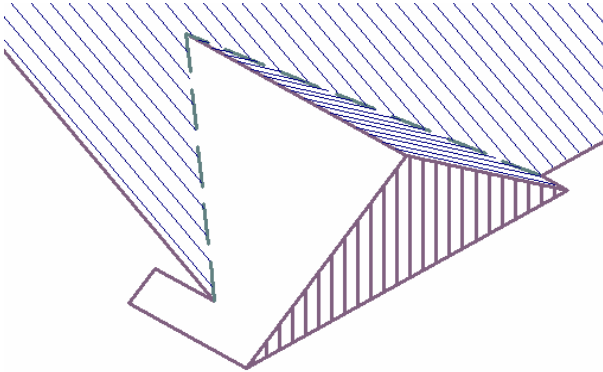
Select **Move** and select the small gable end we wish to move. Type on keyboard ix-900 and press **Enter**. This moves our gable end back 900mm.



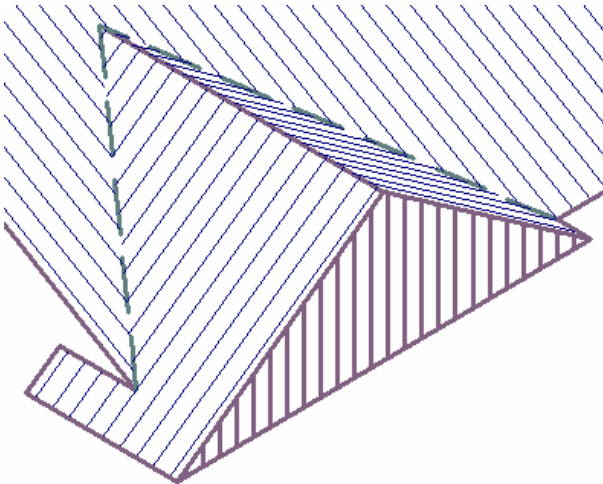
Select **Trim to Corner** and then trim the bottom fascia line of our dormer with the bottom of our moved gable line.




Select **Draw Freehand** and snap to top of our moved gable line then the bottom of the dormer valley. Select **Apron** for line type

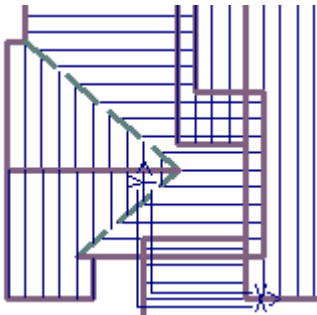


Select **Insert Plane** and then re-insert the plane on the dormer.



Rotate the roof  and then repeat the process on the dormer on our veranda.

This time, the gable line needs to be moved 200 to the right. **Move** (ix200), **Trim to Corner** the bottom fascia line to the bottom of the moved gable and then **Draw Freehand** again to insert an apron between our moved gable line and to the bottom of the dormer valley and then **re-insert** the plane.



Your model should now look like this and you are done.

