DOES IT STACK UP?

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Apart from deciding where to locate girders, a truss detailer does not normally have to worry about door and window openings.

It's usually the responsibility of the wall frame to support the truss. But a growing popularity of corner stacker doors adds another dimension to the detailer's considerations.

Corner stacker doors are sliding doors that meet or join at a corner without the presence of any corner post.

When the doors are slid and stacked away, it fully opens up the living areas to the outer spaces and makes them appear as one (Photo1).

This highlights several points of difference to standard ranch sliders.

Instead of supporting the trusses, the lintel above the stacker doors is itself supported by the roof trusses above.

They can sometimes be quite large timber lintels or steel beams or a myriad of heavy framing members specified by the building designer.

If the run of roof trusses are all fixed to the lintel, the truss designer has to treat the truss deflections or cambers as if they were the lintel deflection.

If there is too much displacement, the sliding door movement could be inhibited. The owner and builder will not be impressed with a door that keeps getting jammed.

My recommendation is to locate a web panel point in the truss bottom chord above the stacker doors to positively support the lintel.

However, if the lintel is not fixed to every truss to share its weight, a large point load will be imposed at the corner.

The truss directly above the corner should then be designed for the full weight of the header beam and it is advisable for a decent sized vertical web to be located here to accommodate the fixing.

Over and above the consideration of vertical load and movement, there is also lateral load and movement to take into account.

Each stacker door panel spans vertically between the ceiling and floor, unlike normal doors and windows which are able to shed some face load sideways as well.

These horizontal face loads come from wind pressures on the door or from daily use. Too much movement causes cracks to develop around the ceiling framing.

It is therefore a good idea to install nogging and speedbrace to the bottom chord to give it additional strength and rigidity. (Fig 1)

So far I have dealt only with stacker doors supported by rails on the floor.

If the door panels are instead suspended from tracks on the lintel and trusses above, the moving design loadings will become much more substantial and should be checked by your truss engineer on a case by case basis.

For more details, please contact your nailplate supplier. TTN

Photo 1 - Corner stacker doors, courtesy of A&L Windows

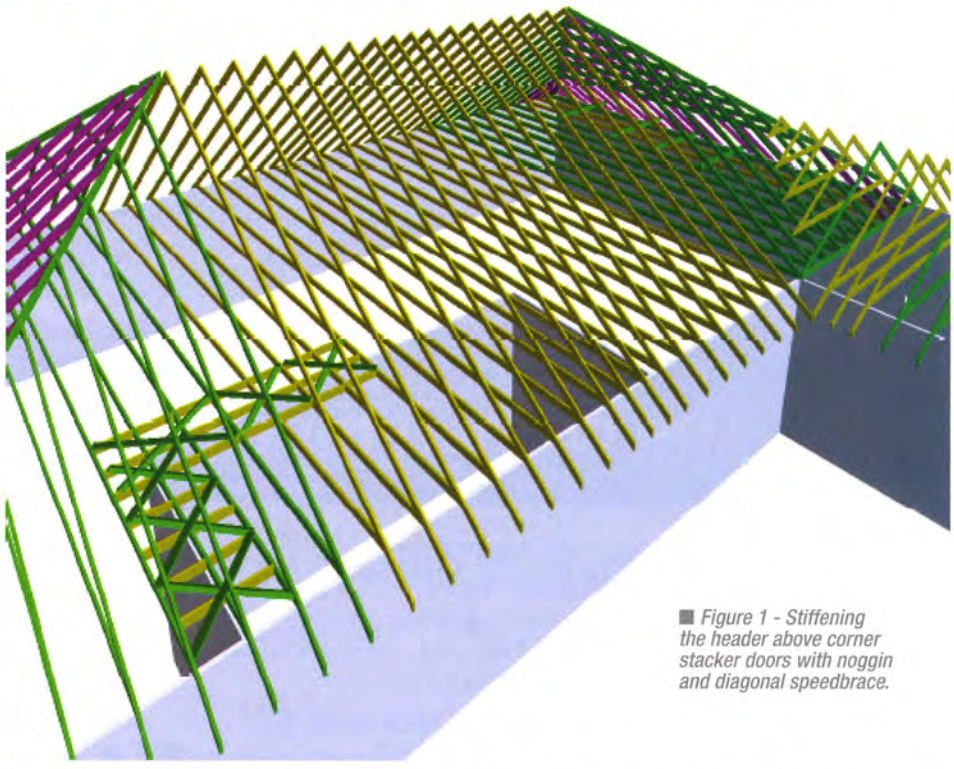

Figure 1 - Stiffening the header above corner stacker doors with noggin and diagonal speedbrace.