BOXED EAVES AND PROPPED OVERHANGS

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The use of top chord overhang props to reduce overhang deflection or to avoid the need to increase top chord sizes seems to have become more common place - however not all is what it seems.

A boxed eave does not always provide overhang support.

For example in **Figure 1** where a hanger or dropper is used no additional overhang support is achieved.

For an overhang to be properly propped or strutted, there must be a firm connection between the overhang and the wall framing, typically through a soffit bearer or eave trimmer.

To be effective the trimmer should always be angled upwards where the top chord pitch drops below 18 degrees, as shown in **Figure 2 (c).**

(Note: Where the overhang distance is particularly large, the overhang should be supported by way of a structural fascia or beam supported by a line of posts.)

The soffit bearer may be fixed either directly to the wall stud, or more commonly onto a ribbon plate or ledger plate.

A soffit bearer that is not fixed to the wall framing will not provide any strutting resistance to the overhang.

It is not adequate to prop off the brick veneer or fix a ledger plate to the brickwork.

Propping is a popular and convenient mechanism to stiffen the overhang and thereby the way to optimise the top chord member's size.

This is especially useful for the hip rafters as they have a larger overhanging distance.

Furthermore, the hip rafter has an additional load imposed on it from the structural fascia which in turn supports creeper rafters adjacent to the hip.

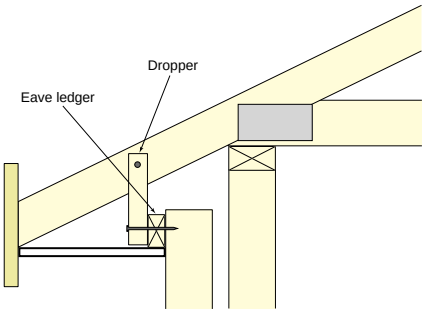
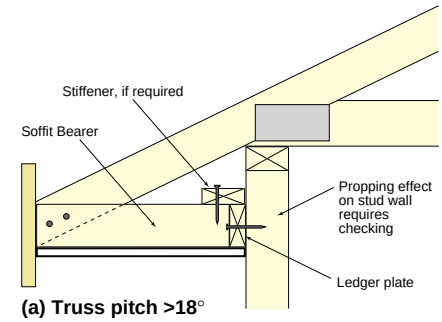
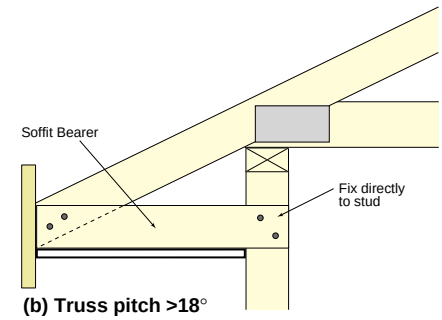


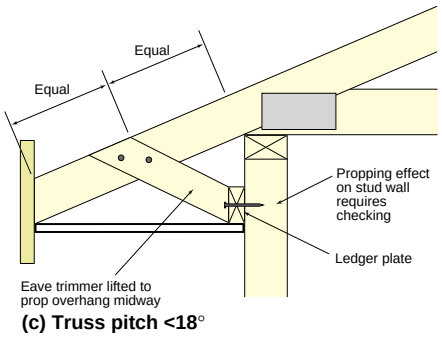
FIGURE 1.
Boxed-eave overhangs do not always provide overhang support



(a) Truss pitch >18°



(b) Truss pitch >18°



(c) Truss pitch <18°

FIGURE 2.
Standard Overhang - Propped

Where the soffit bearer is up against a lintel, its ability to prop the overhang becomes doubtful.

An appropriately sized stiffener should be incorporated above the ledger plate over such openings to transfer the horizontal thrust onto the jamb studs. Engineering advice should be sought in these circumstances.

A stiffener may also be required along the entire length of the wall where the soffit bearer is not adequate to support larger overhangs between common studs.

Top chord overhangs should not support other structures, such as verandah roofing, pergola and the like, without first being checked for adequacy by the truss designer.

The failure on site to adequately prop the overhang, where and when required, will naturally result in excessive deflection or an uneven fascia line and possibly failure in an extreme case.

When propped overhangs are required, clear documentation should be provided by the designer and carefully followed on site.

Additional general information could be obtained from section six in AS4440 - *Installation of nailplated timber trusses.*