

Basic Design Principles

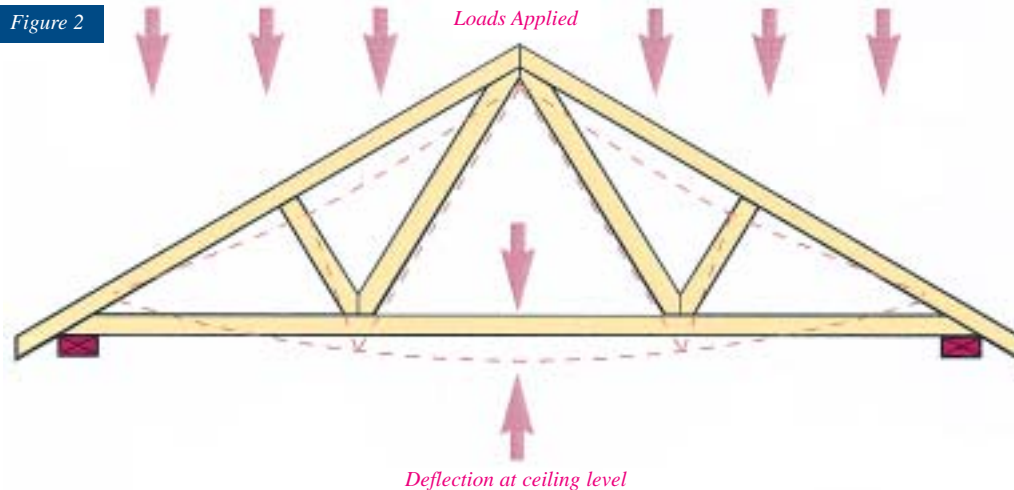
Deflection

Another important criterion in the design of trussed rafters, which must be considered, is the amount of deflection, or movement of the truss when loading is applied to it.

BS.5268-3 section 6.5.7 defines the amount of

movement permitted under the differing load conditions (also see section 2.4).

Additionally, The Trussed Rafter Designer should be aware of the problems which may arise due to ***DIFFERENTIAL DEFLECTION***.



Differential deflection may occur between two adjacent trusses within a roof when either the support conditions or the loading conditions change. For example, in a hip end or corner condition (see sections 2.9 & 3.5), the heavily loaded girder truss may deflect more than the truss immediately behind it in the hip sequence. Or, where a bobtail, (stub) truss is used adjacent to a full span truss, the deflection of the standard truss may be substantially greater than that for the bobtail.

This problem of differential deflection between adjacent units is one of the most common causes of site problems and, once the roof is erected, one of the most difficult to rectify. The remedy is for the Designer to be full ware of the potential problem at the design stage.

In this situation, the Designer should ensure that the difference in anticipated deflection between the two trusses is kept within limits, to avoid problems in producing a smooth line for the ceiling construction underneath.

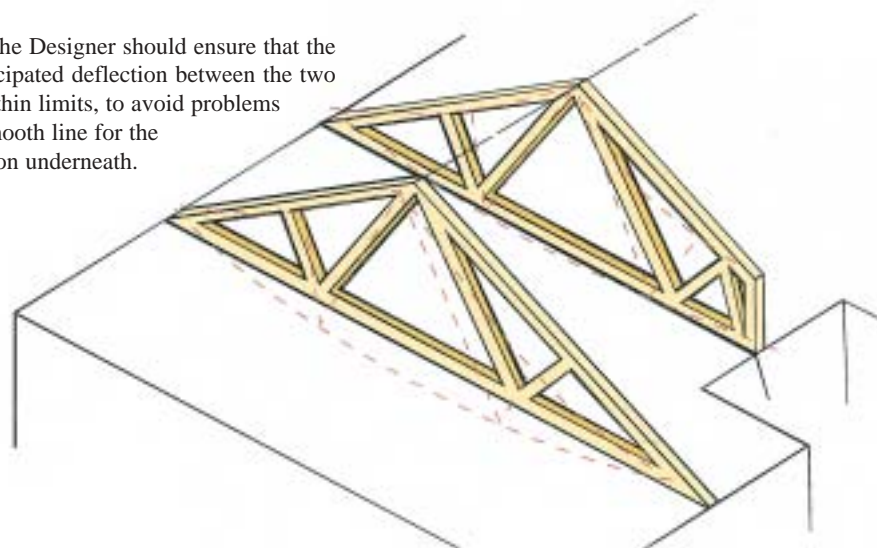


Figure 3