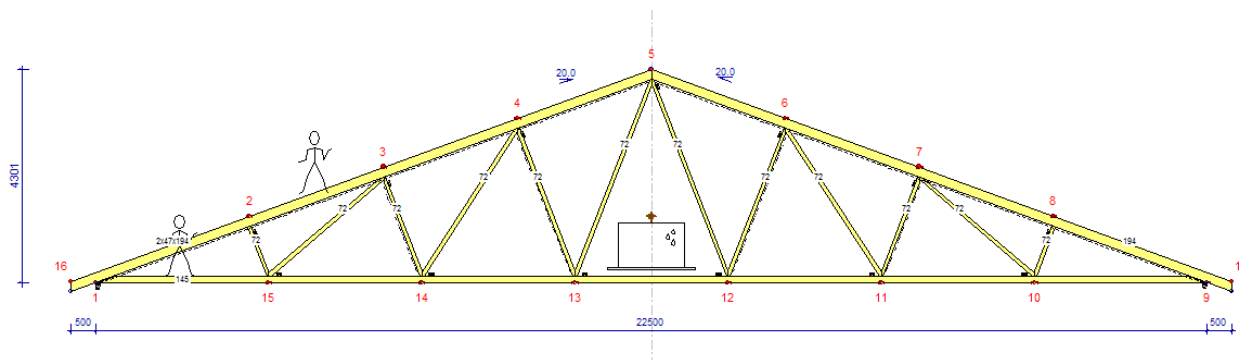


## Overview

Within the UK and Ireland, truss spans are common up to around 20m but there are now growing demands for shallower pitches and longer spans in excess of 25m; there are a number of leading supermarket chains in the UK and Germany incorporating this into their common store designs. This system of use requires a specific bracing system to assist in the load transfer between the truss components and the.

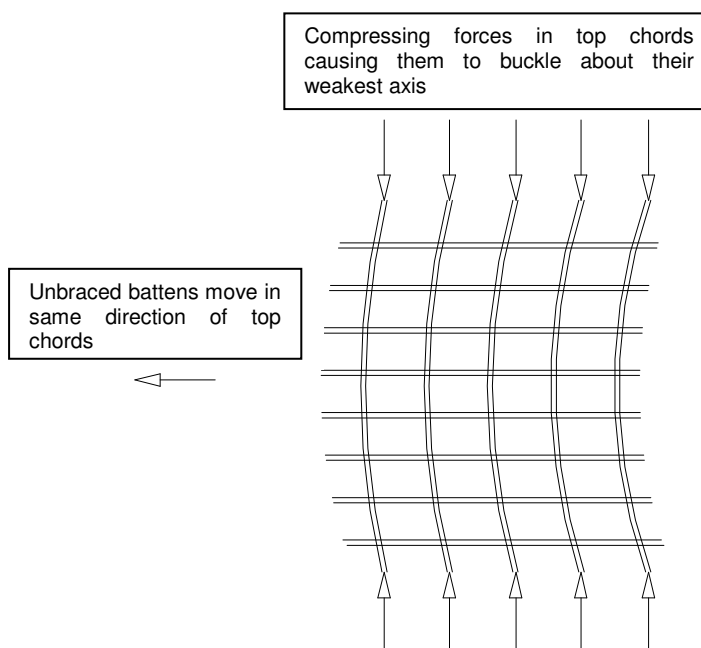
With their experience and guidance, we have now included within this overview document an outline of the bracing's use; the CD enclosed also shows the site installation of the system and the design aspects of the long span truss. Dave Goode, Technical Director of Gang-Nail and his design team are available to provide more details on its application usage.

### Typical Large Span Timber Roof Truss



Any compression member, such as the top chord of a trussed rafter, when subject to load, will deflect in both the vertical and horizontal planes. When the deflection is about the minor axis it is usually referred to as buckling.

To resist this buckling the effective length of the member is reduced by the purlins or battens which are attached to the top chord.



## Overview

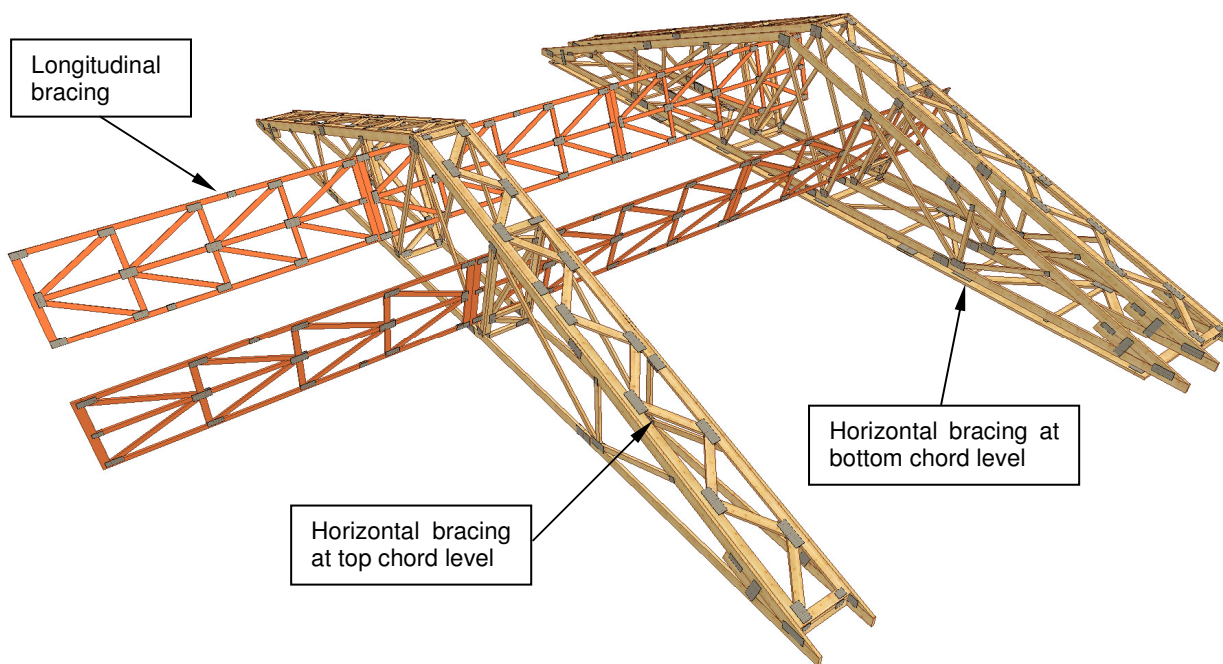
These purlins or battens must be prevented from moving in the same direction by the installation of a bracing system that will transfer these buckling forces to the walls. As the span of these trusses is much greater than those used in domestic applications, a different form of bracing must be employed.

Various systems have been used in the past with limited success. In particular the use of pre punched steel strapping has been shown to be ineffective as a result of insufficient connection surfaces, no facility to apply tension to the straps during installation and the stretching and shrinking which can occur during temperature cycles, some of which can be as great as  $-10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ .

A prefabricated bracing system has been developed by our colleagues in Germany which has been verified by the production of scale models and peer reviewed by leading universities.

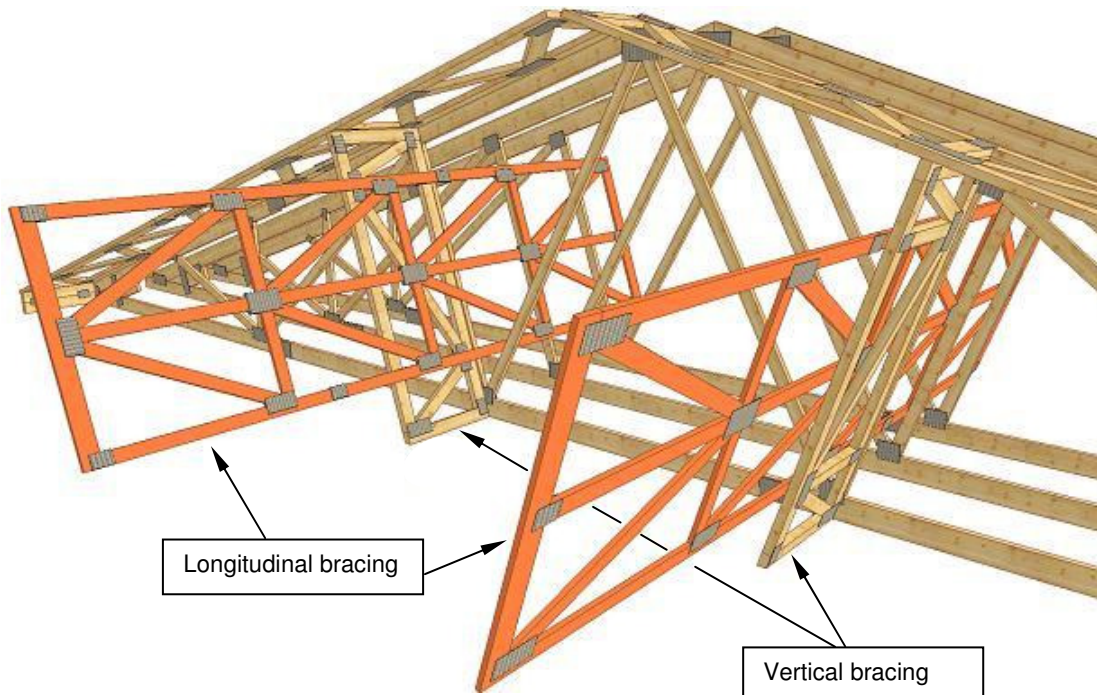
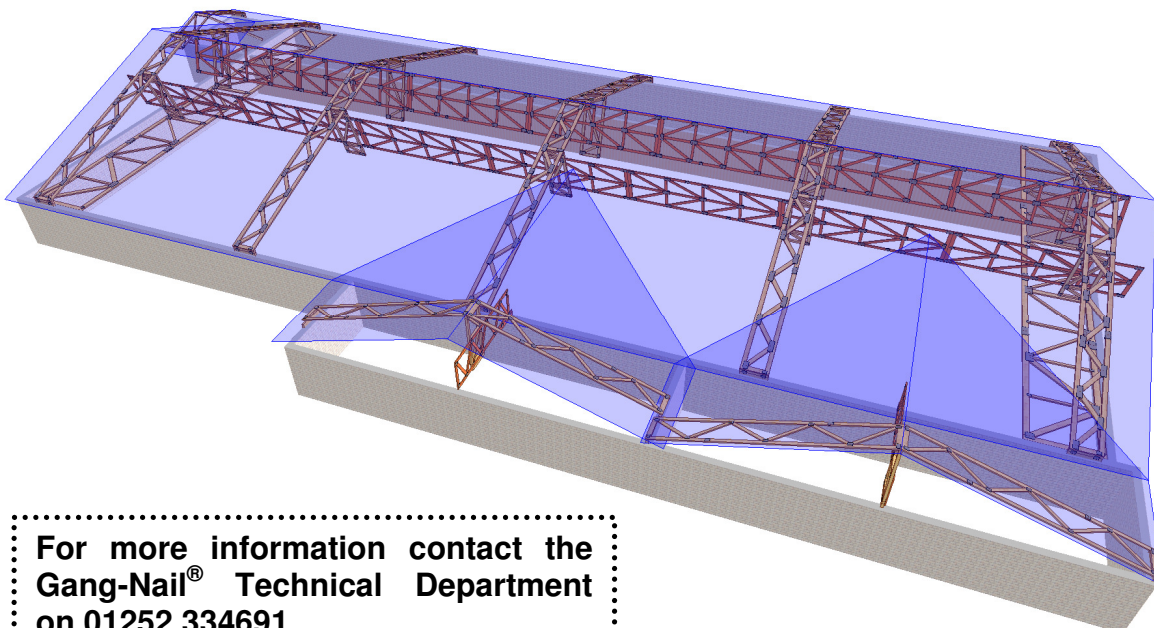


## Bracing Placement in Roof Structure



**Overview**

The system comprises of four prefabricated components which transfer the buckling forces from the top chord down to the bottom chord level and eventually to the support walls. These bracing components also assist in ensuring that the trusses are erected vertically as they coincide with and are attached to the webs of the trusses.

**Detail of Vertical and Longitudinal Bracing****Interaction of Bracing in Overall Roof Structure**

For more information contact the  
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