FTMA TECH Talk

APRIL 2019 - NO.11

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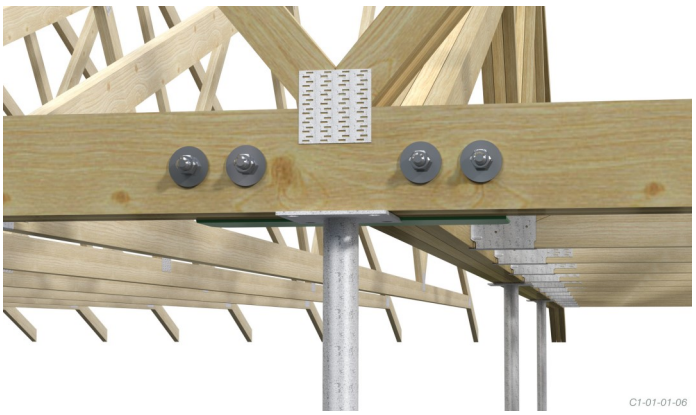
TEMPORARY SUPPORT OF THE GIRDER TRUSS DURING THE INSTALLATION COULD SAVE FUTURE PROBLEMS

When carpenters start a truss installation job, it is a common practice that they install the girder truss first and load the carried trusses on so that the carried trusses are supported. We all know that girder trusses normally have bigger size and higher grade timber and are stronger than standard trusses, however, the carpenter doesn't really know how strong they are, or the limitations of achieving their full capacities.

The photographs below show a Girder Truss spanning around 15m and carrying 8m span trusses. The girder is a triple truss, it is tall and appears to be a strong truss. But just look at the photo of the top chord buckling and you will realise that the word strong has its limitations.

Advanced software packages not only make trusses more accurate and cost effective designs but also kick in a lot of design assumptions and limitations such as truss to be installed straight and plumb, truss to be fully restrained at top chord and bottom chord and so on. Once all of these design assumptions and limitations are achieved, the designed trusses will performe to their full potential and will be fit for purpose.

But during installation, when some of the design assumptions cannot be achieved, like not being restrained by roof battens and bracing, what can we do? There is always something that we can do to prevent situations from getting worse. We can temporally prop the girder trusses or supported trusses at the load point to relieve the load off the girder, see picture below. When there is no load or less load applied, less stress will be in the girder trusses and of course less chances to buckle and rotate. Out of plumb issues can also lead to a reduction in the girder carrying capacity resulting in deflections.



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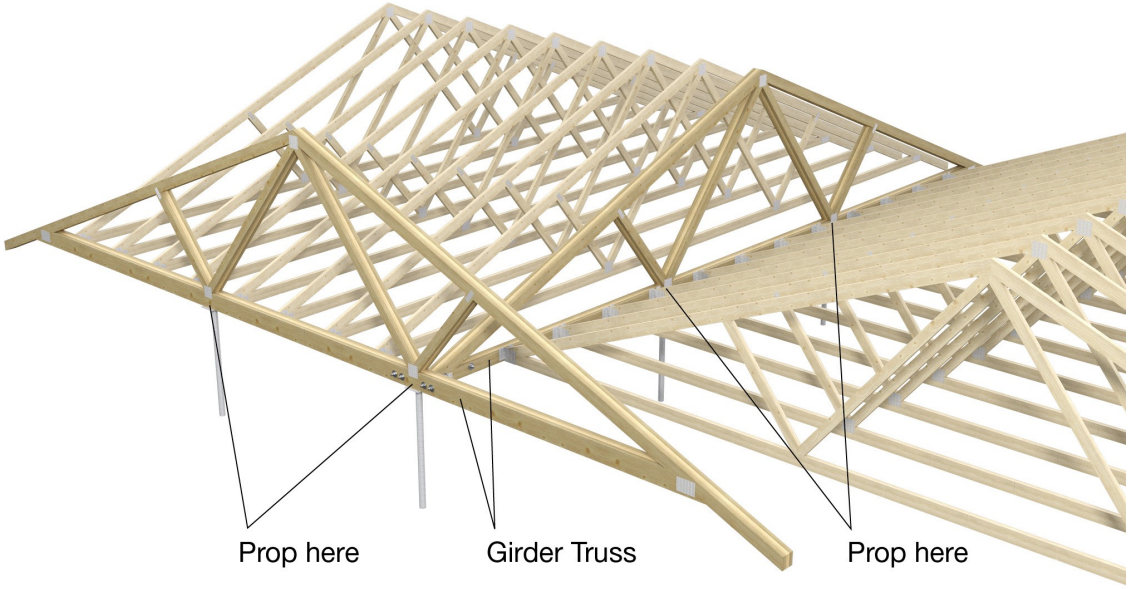
Finally, please always keep in mind the installation tolerances from Australian Standard AS 4440- Installation of nailplated timber roof trusses during truss installation and contact Multinail Engineering for any questions and uncertainties as we see these cases regularly.



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