

22.03.2024

PRYDA FLOOR TRUSS SUPPORTING BRACE WALL

INTRODUCTION

The action of a braced wall on floor trusses is basically the load from a stiffened wall. The characteristic loading / point load needs to be added to the truss to investigate the wind brace action on the floor truss system.

Please find a detailed description of point loads to be added manually on to floor trusses based on the brace length.

The floor truss system requires no additional stiffening when supporting non-load-bearing walls; however special consideration is required for non load-bearing walls acting as wind bracing walls and those carrying wall tiles and other heavy cladding materials. Specifiers should notify the Pryda licensed fabricator of wall bracing positions and capacities.

DESIGN CONSIDERATIONS

- Braced wall (1) Parallel to floor trusses and (2) Perpendicular to floor trusses
- Top Chord: Recommended 90x45 LVL11 member / 90x45 SG10 member
- Bottom Chord: Recommended 90x45 LVL11 member / 90x45 SG10 member
- Webs: Minimum 45mm thick webs
- Floor trusses shall be located directly under the braced wall.
- Allow for dead load of non-LBW.
- The top chord and bottom chord must not exceed critical ratio of 0.9

Load table for point load application on trusses supporting braced wall.

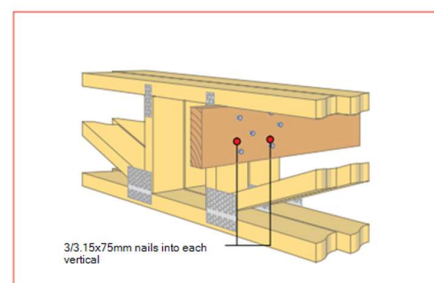
GS1
GS2
BL1

Wall height= 2.4m	Uplift force at the ends of bracing wall (kN)							
	Wall length in meters (m)							
Wind BU/m	0.5	1	1.5	2	2.5	3	3.5	4
50 (2.5 kN/m)	0.8	2.0	3.3	4.5	5.8	7.0	8.3	9.5
70 (3.5 kN/m)	1.3	3.0	4.8	6.5	8.3	10.0	11.8	13.5
90 (4.5 kN/m)	1.8	4.0	6.3	8.5	10.8	13.0	15.3	17.5

MULTIPLE TRUSS FIXING

Under concentrated loadings floor trusses may be required to be laminated together. In this case the web profiles of both laminations shall be identical and connections should be introduced at 2400mm centres maximum via vertical webs.

A **1/140x45 SG8** or better block (minimum 300mm long) should make the connection between both vertical webs with **3/3.15x75mm** nails into each vertical. Alternatively, Pryda Nail-On Plates or long screws may be used in lieu of the timber block.



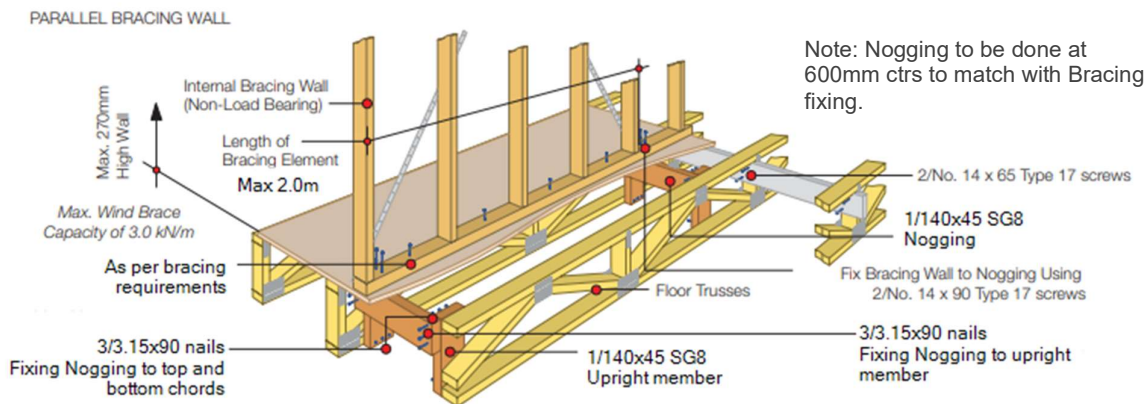
APPLICATION

- Braced wall supporting floor trusses shall be fixed to trimmer beam by using minimum of FB94152 using screws, upto a reaction force of less than 8kN.
- Braced wall supporting floor trusses shall be fixed to trimmer beam by using minimum of 2/NPA, upto a reaction force of equal to or greater than 8kN.
- Braced wall supporting floor trusses shall be fixed to LBW by using minimum of 2/NPPC8 using screws.
- Double floor truss fixing shall be as shown. →

Following detail can be used for bracing upto 3kN/m (50BU/m) for a wall length of less than 2.0m.

(1) Parallel to floor trusses

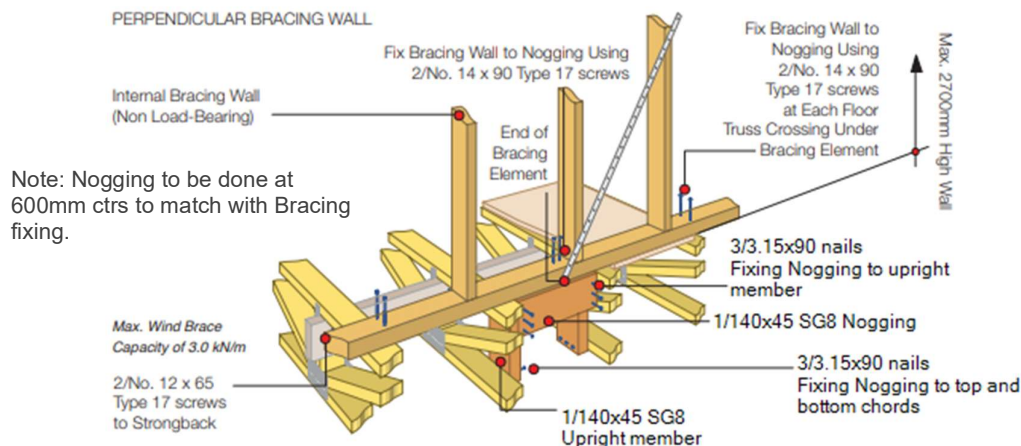
It is preferable to locate a floor truss directly under a non load-bearing bracing wall, and the supporting truss to be designed for reactions generated by these bracing walls. For this to happen, the truss designer requires sufficient information on wall bracing of the supporting upper level at the time of the design, in particular the exact locations of bracing walls and the resulting reactions at their anchor points. However, if the floor trusses were designed without any consideration for bracing walls that are supported on the floor above, then the installer is required to take remedial measures on site. For bracing walls having capacities up to 3.0 kN/m, the trusses are required to be upgraded as illustrated below for a likely situation where the bracing wall is positioned between two floor trusses.



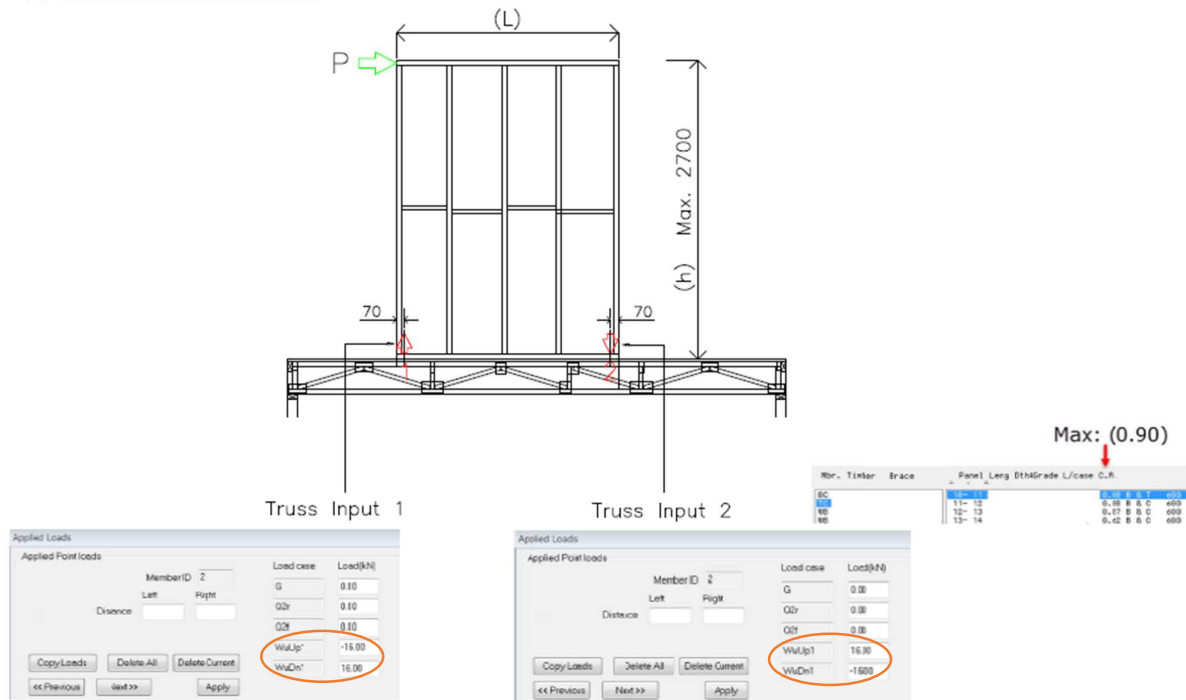
(2) Perpendicular to floor trusses

Again, it is preferable to incorporate the loading from bracing walls at the time of the floor design. Alternatively upgrade floor trusses as shown in the illustration below to resist bracing walls of capacities not greater than 3.0 kN/m.

Note on floor trusses supporting bracing walls having capacities greater than 3.0 kN/m: It is prudent to consider these bracing walls at the time of the design as it becomes almost impractical to adequately upgrade truss to suit on site. Contact a Pryda Design Office for further advice.



(1) Parallel to floor trusses



Note: The forces shall be alternated between Wup and Wdown as -ve and +ve to cater for the rocking action of the braced wall on the truss frame.

(2) Perpendicular to floor trusses

