



## WIND BEAM

A Wind Beam is a beam that is used to support horizontal wind loads. Generally they are fully supported and do not support vertical gravity loads but can also be designed to take these loads if required. Wind beams stop the walls being pushed in at critical locations like joints. See Fig 1 on right.

A common situation where they are used is in external walls in front of stair voids or entrance voids. Instead of having a 6m long stud which would normally require 140mm deep studs it is possible to put two 90mm frames on top of each other with a wind beam between.

In general there are 3 types of wind beams that can be used:

- Type 1 is a single deeper beam on flat. This is generally not used as it will protrude into the living space or be required to fit into a cavity.
- Type 2 uses multiple members like additional ribbon top plates of the lower frame. This is the most common application.
- Type 3 uses a beam on edge. This is generally used if required to carry vertical gravity loads as well as horizontal wind loads.

See Fig 2 below for details from Hyne Design.

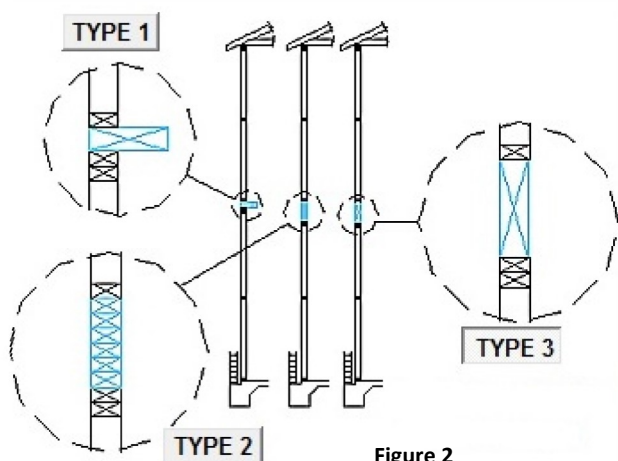


Figure 2

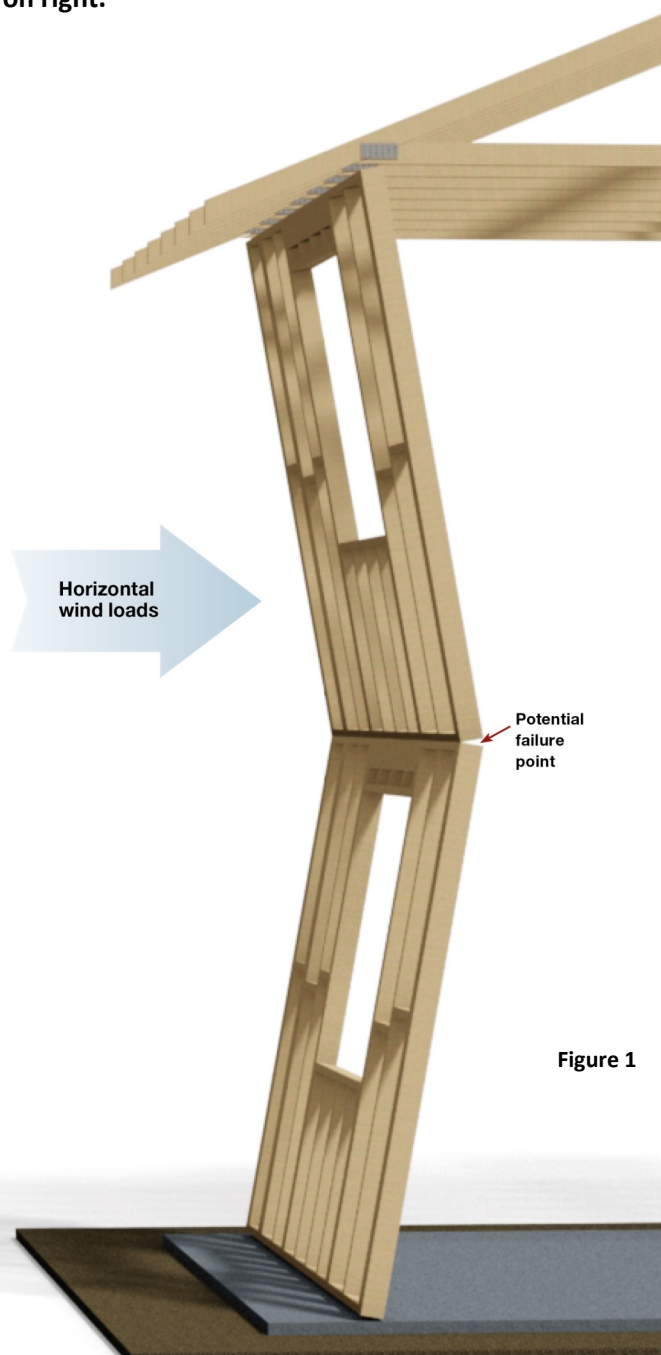


Figure 1



When designing wall and floor systems it is important to be aware of when wind beams are required. A design must never place an external wall on another wall or joist or ladder floor truss if there is a void behind it without checking the wind beam size. There must be a ceiling or floor diaphragm to brace an external wall junction or a wind beam will be required or the studs must be designed as full height studs.

Another example of when wind beams may be required is in gable ends of buildings when there is a raftered raked ceiling or scissor trusses behind the external gable wall. In this situation studs must be designed to the height of the ceiling diaphragm, if the studs are not full height a wind beam must be used. See Fig 3 below and Clause 6.3.2.5 of AS1684.2 for more details.



Images above and below show a typical 90x90 SHS steel wind beam and column that were installed to keep the wind beam size down when timber was not adequate.

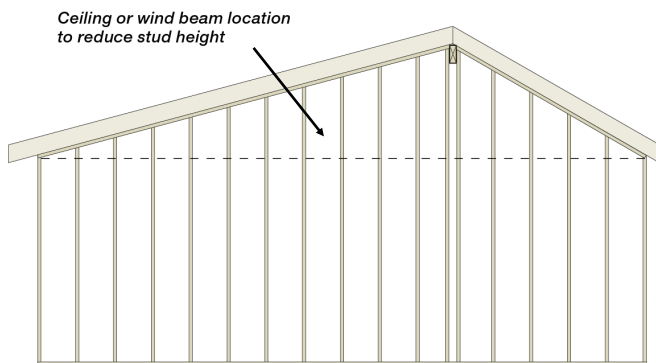


Figure 3



This edition of FTMA Tech Talk was written by Matthew Smith, Chief Engineer of our Gold Sponsor, Multinail.

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