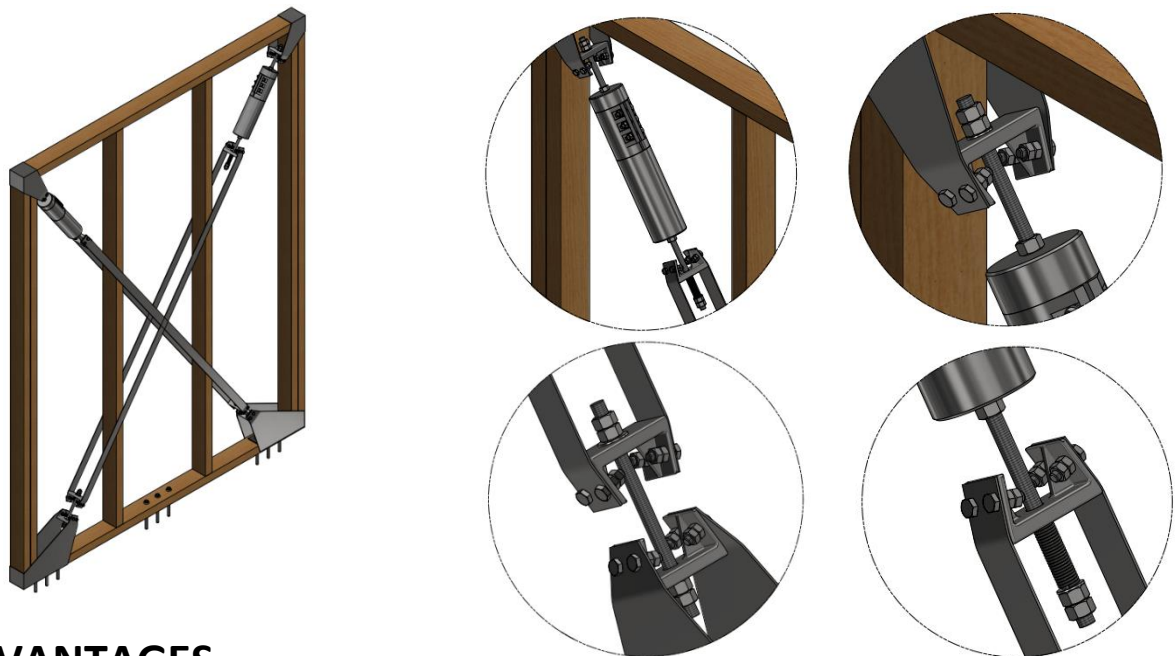


## TECTONUS Resilient X-Brace (RXB)

### *Residential Applications*

Residential houses are mostly constructed using light timber framing. The common seismic solutions available in the market for such low-rise buildings are based on yielding of sacrificial elements which will get damaged during an event. As a result, after a severe earthquake, repairs or replacement of parts will be needed to the lateral load resisting system of the building which incurs costly post-event repairs as well as the vulnerability of the occupants given the risk of the aftershocks. In addition, due to the damage in the system, there could potentially be a residual drift in the building.

The Tectonus Resilient X-Brace (RXB) is specially designed for the residential applications offering a unique seismic technology, addressing the shortcomings of the current solutions. The system incorporates a new damage-free friction damper with self-centring capacity which is combined with tension-only straps.



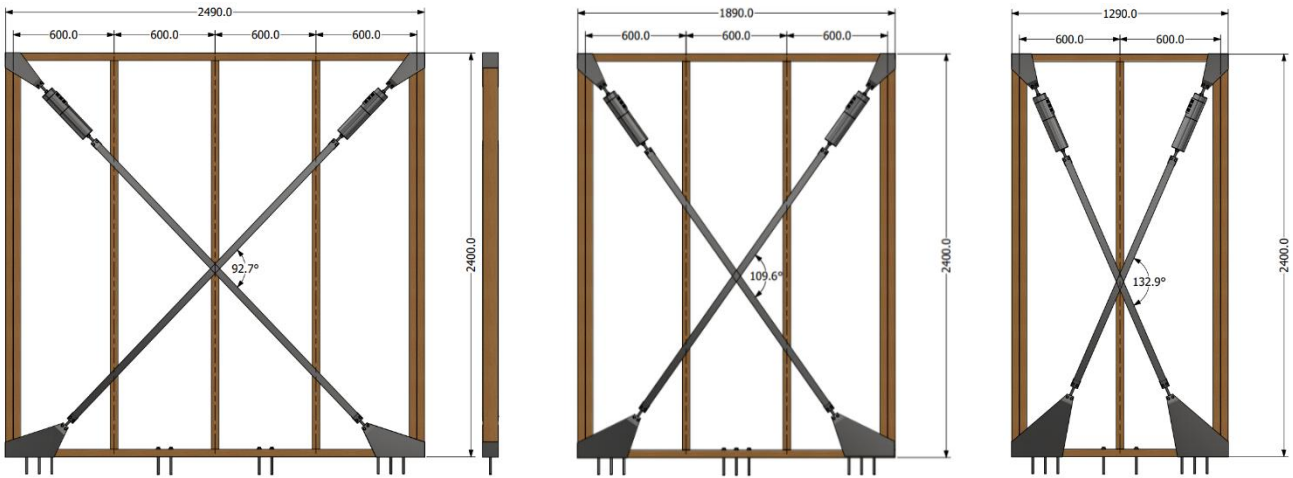
### ADVANTAGES

- Efficient damping of earthquake energy with high resistance capacity
- No post-event maintenance
- Full self-centring of the building with no residual drift
- Quick re-occupancy, minimising the interruption
- Easy installation on-site or off-site for prefabricated frames
- Each unit is performance tested
- Can be part of a new build or installed to retrofit houses

### CAPACITY OF THE RXB

The Tectonus RXB has the advantage of providing a high lateral load capacity. The seismic performance of the RXB is determined by the equivalent viscous damping of the system and is comparable to a system with a  $R_d R_o$  of 4.2. Using the Tectonus system, we recommend that the maximum drift in the building is

limited to 1.5% in order to minimise the damage to the plasterboards (to be installed vertically at a maximum width of 1.2m with no nailing to the top/bottom plates and to any blocking). The different configurations provided cover the range of 2 to 4 bays (each spanning 600 mm).



**Note:** The connection between the studs and the top/bottom plates is following the conventional timber frame nailing (2/90x3.15 nails). Also, the external double studs need to be nailed together along the length with 1/90x3.15 nails) at a spacing of 200mm (to be driven alternately from either face).

## DESIGN AND PERFORMANCE TEST CERTIFICATES

Complying with design standards, the design of Tectonus devices has been verified and certified by accredited engineers as an acceptable alternate solution through the issuance of a peer review. Each damper unit undergoes performance testing within our facilities to ensure it performs to required specifications. The performance test certificates are part of the manufacturers guarantee being issued by Tectonus. Units are serial numbered before being shipped.

