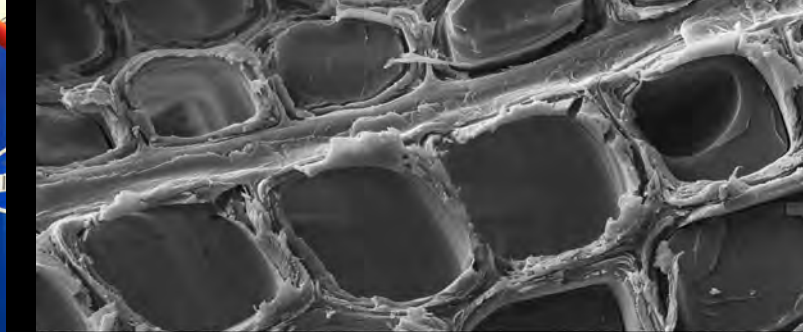
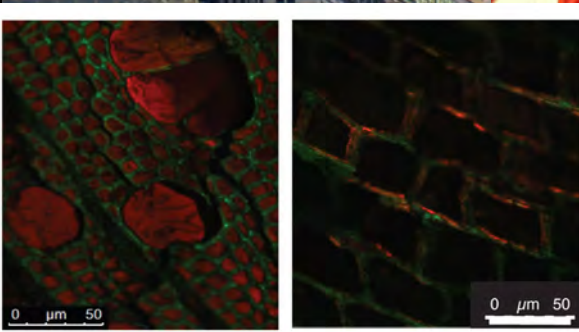
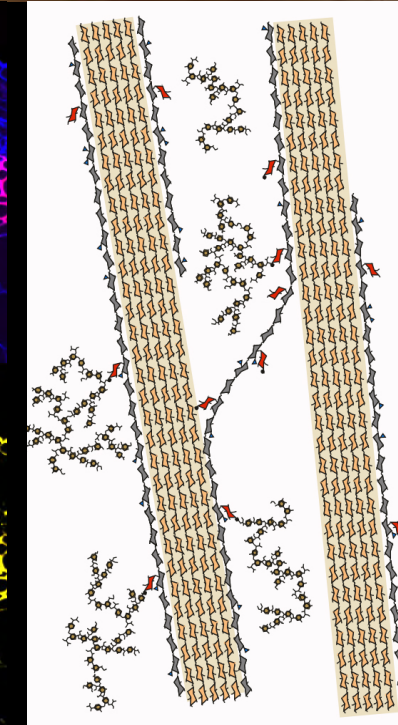
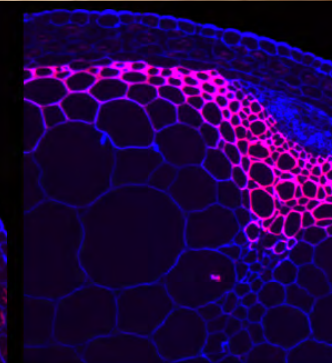
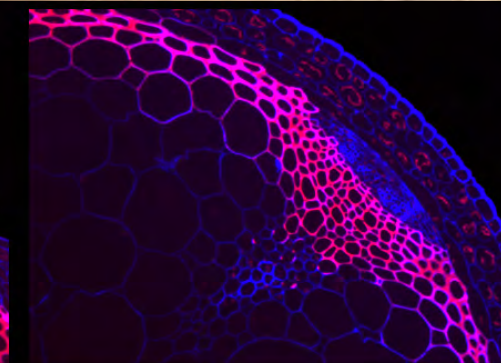
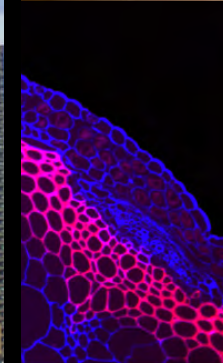


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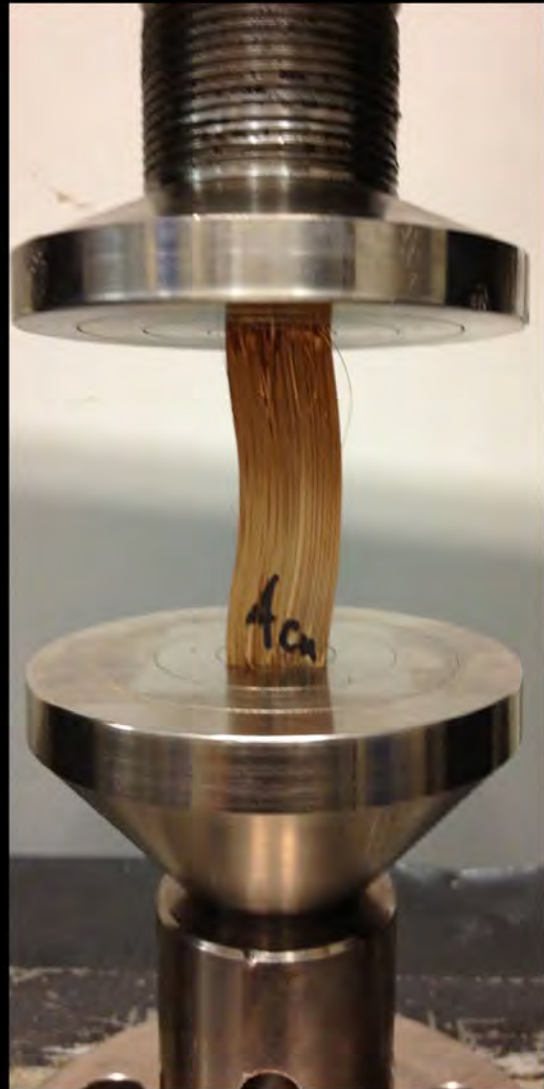
Michael H. Ramage

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TESTING METHODS

Evaluation of Structural Bamboo Products based on Timber Standards

BS 373-1954 (Small Specimens) and BS EN 408:2010 (Big Specimens)



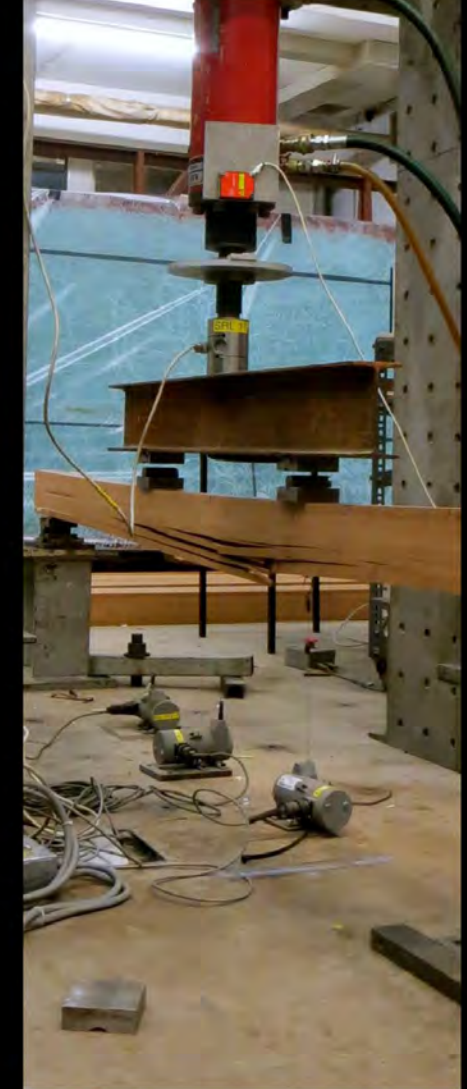
Compression parallel to grain



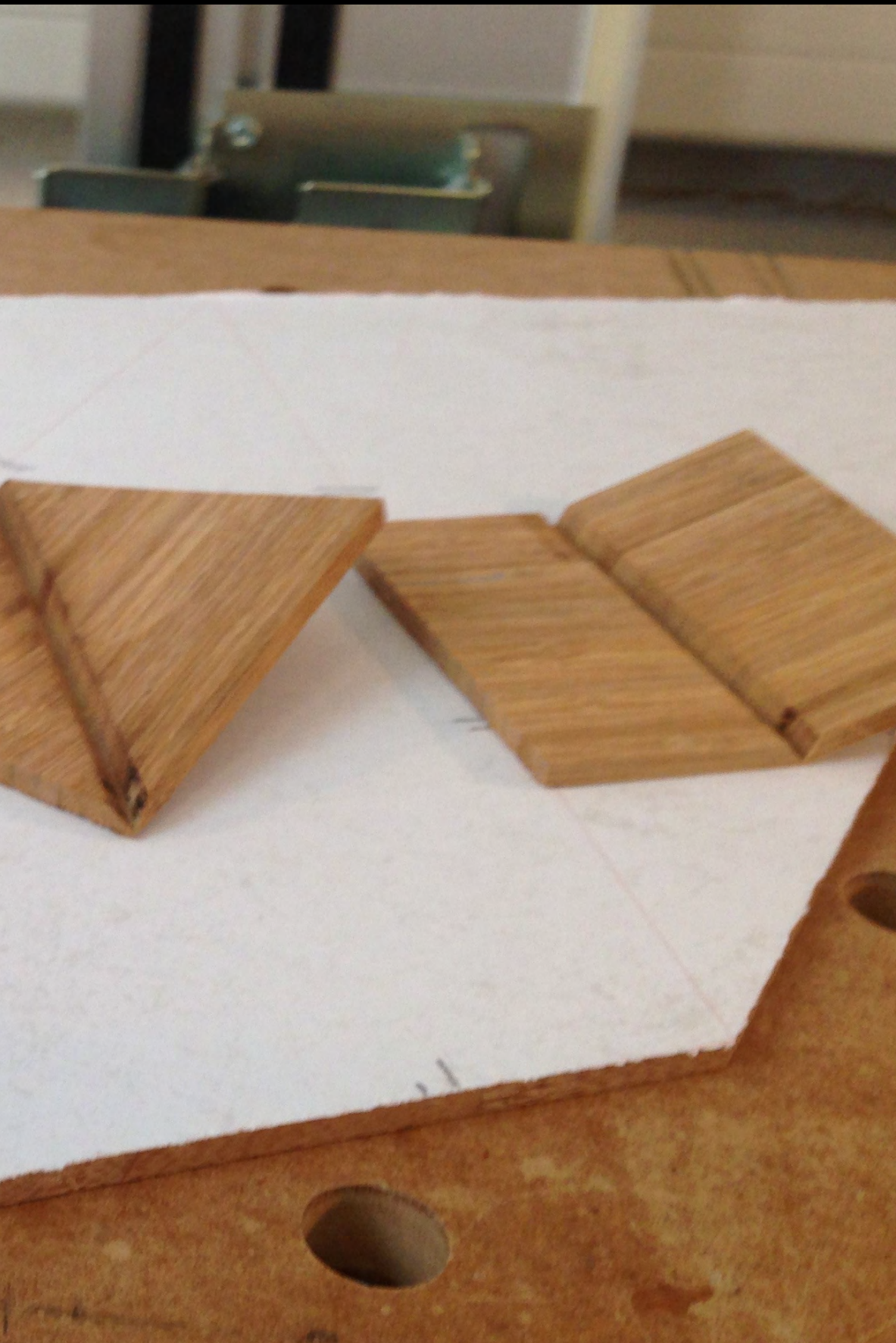
Tension parallel to grain

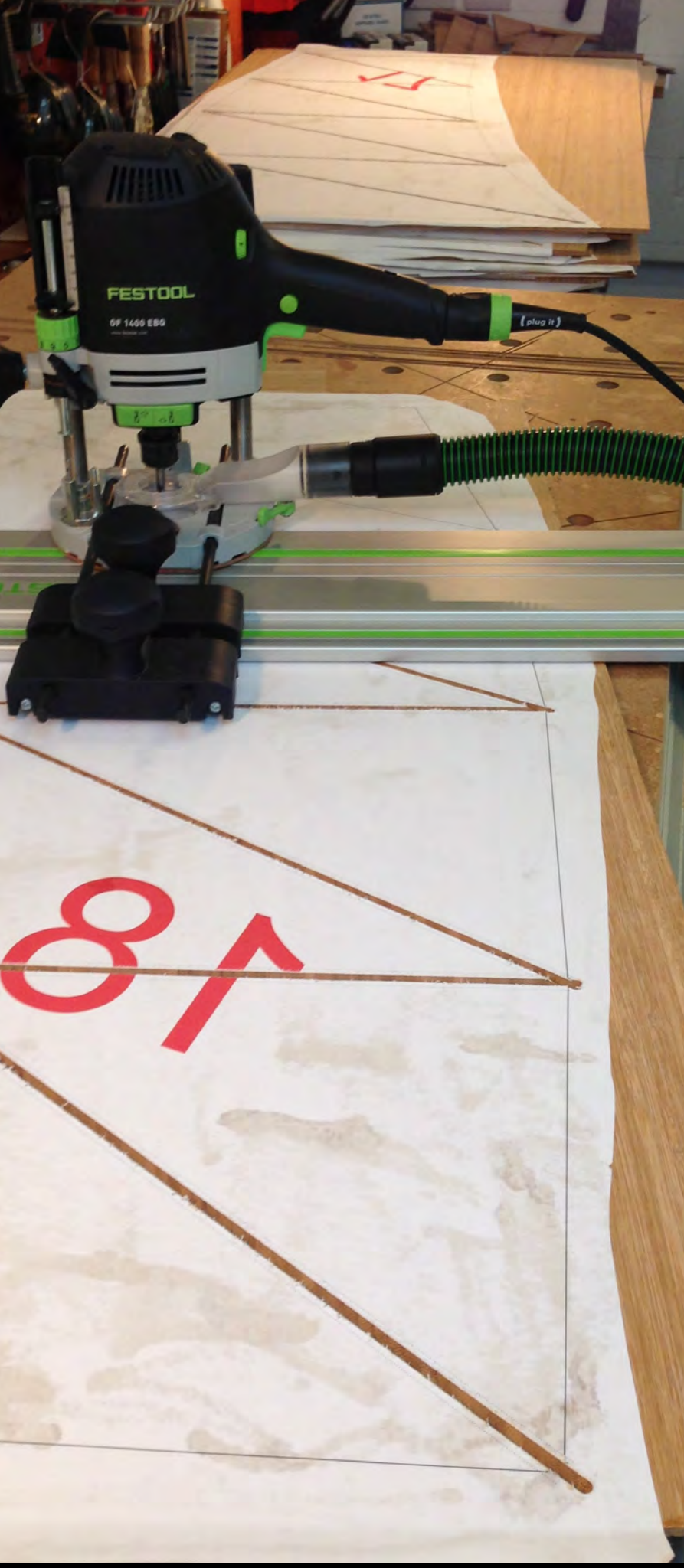


Shear Parallel to grain



Flexure









Murray Grove, London
Waugh Thistleton Architects
2007
<http://woodawards.com/portfolio/the-stadthaus/>



TREET, Bergen, Norway
SWECO
2015



Brock Commons, UBC
Acton Ostry Architects
2016

http://www.worldarchitecturenews.com/news_images/27086_160802_FII_018.jpg



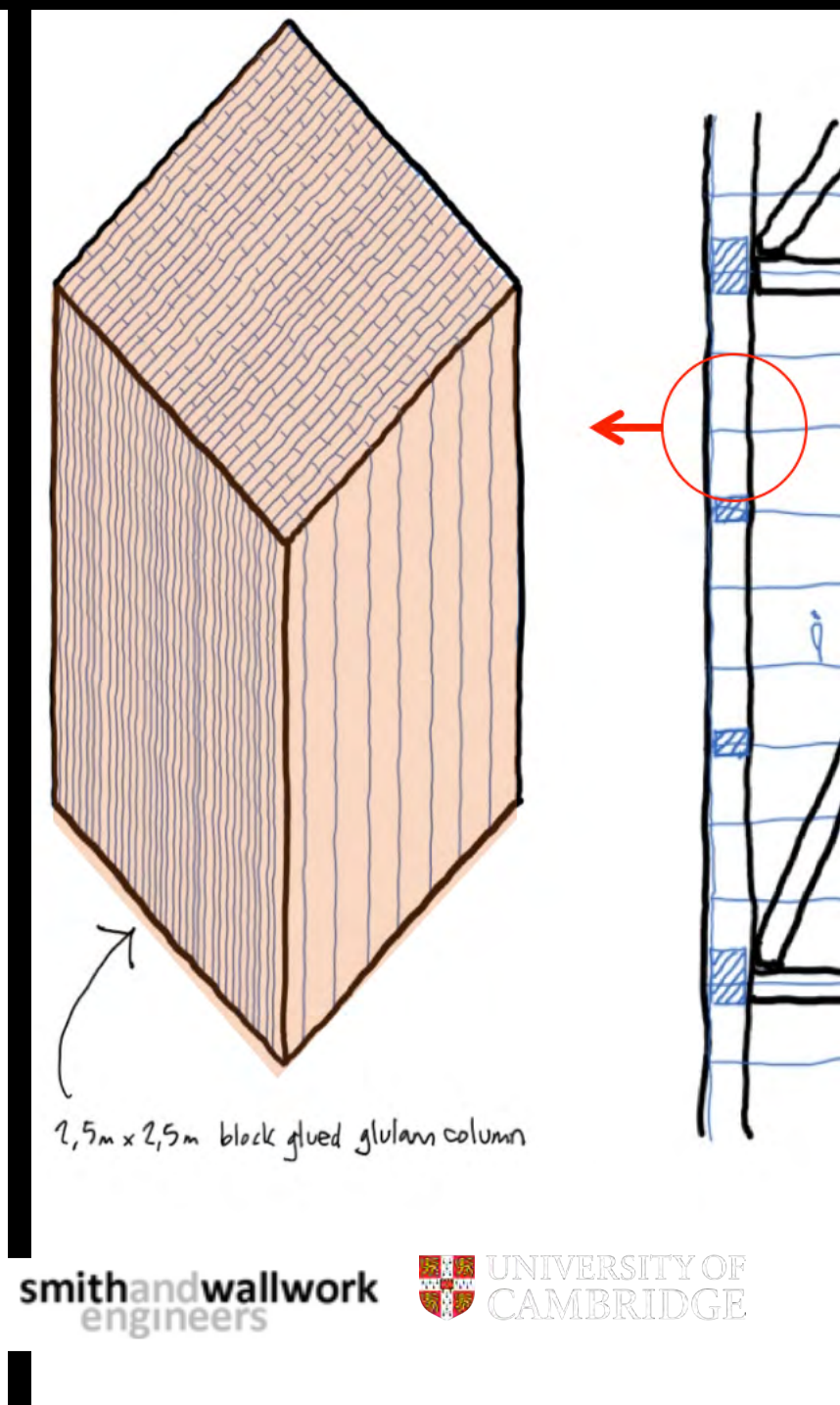
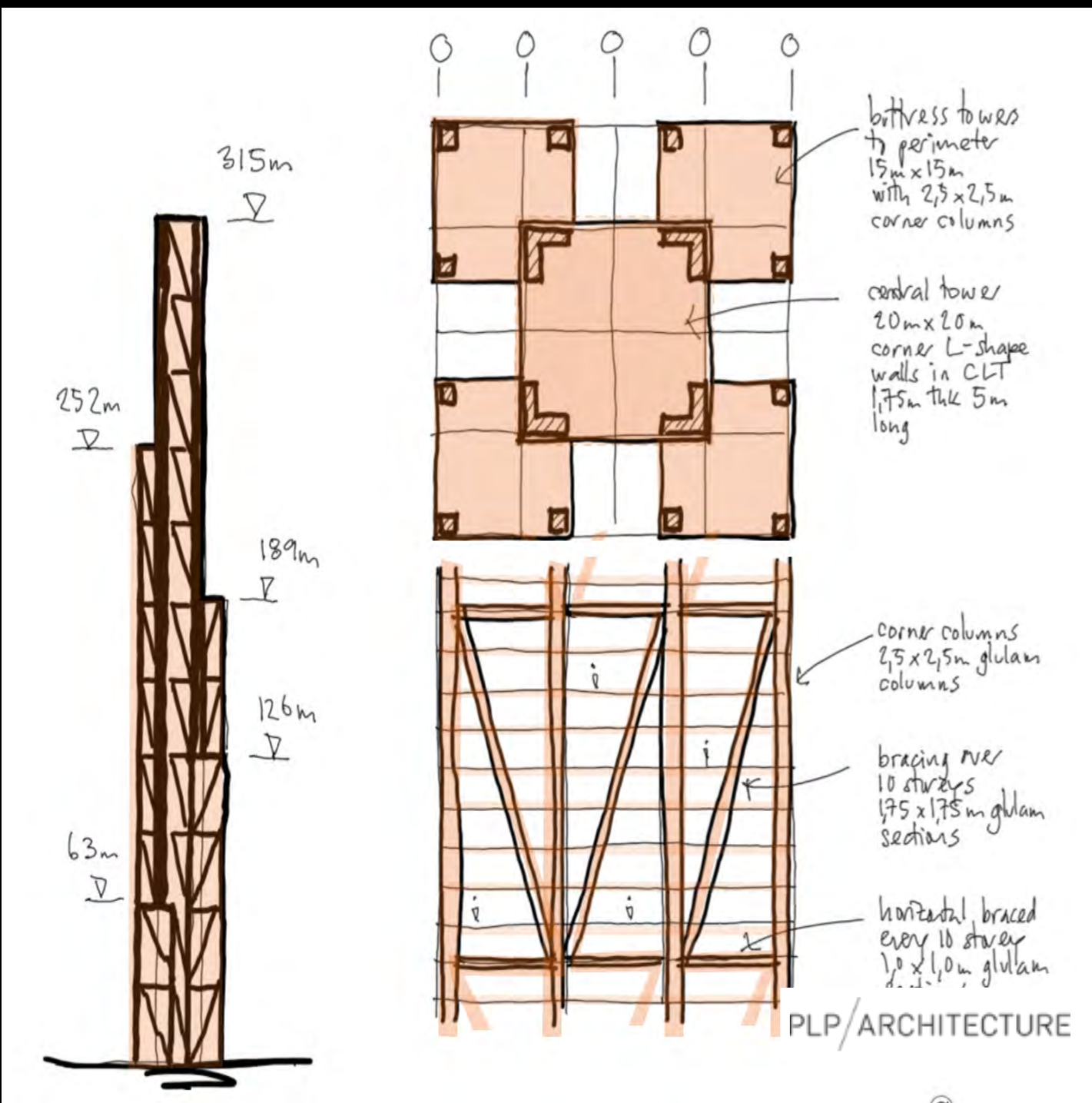
Home Insurance Bldg.,
Chicago.



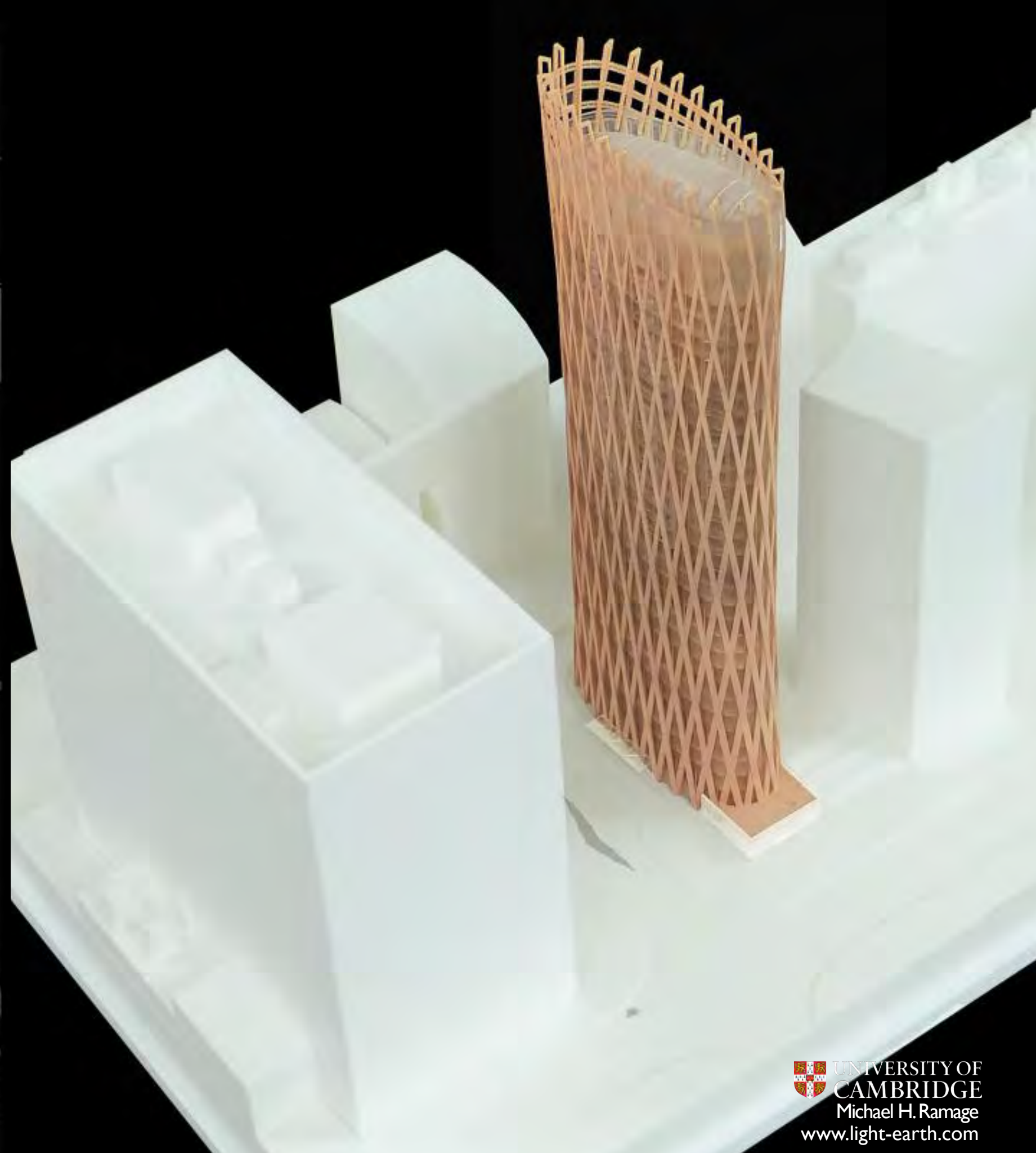
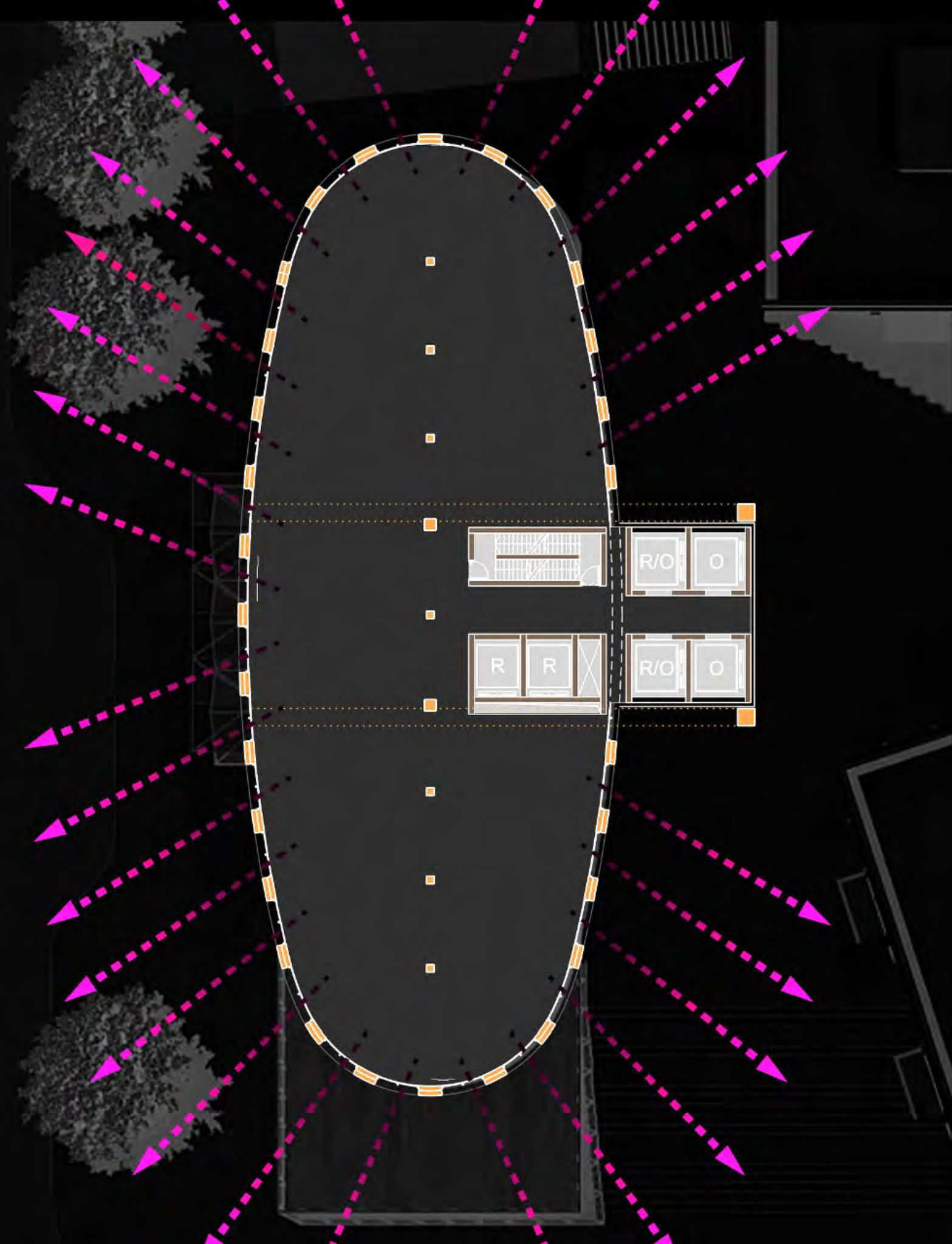
AngMoKio: https://en.wikipedia.org/wiki/File:EmpireStateBuilding_2007_amk_bw.jpg

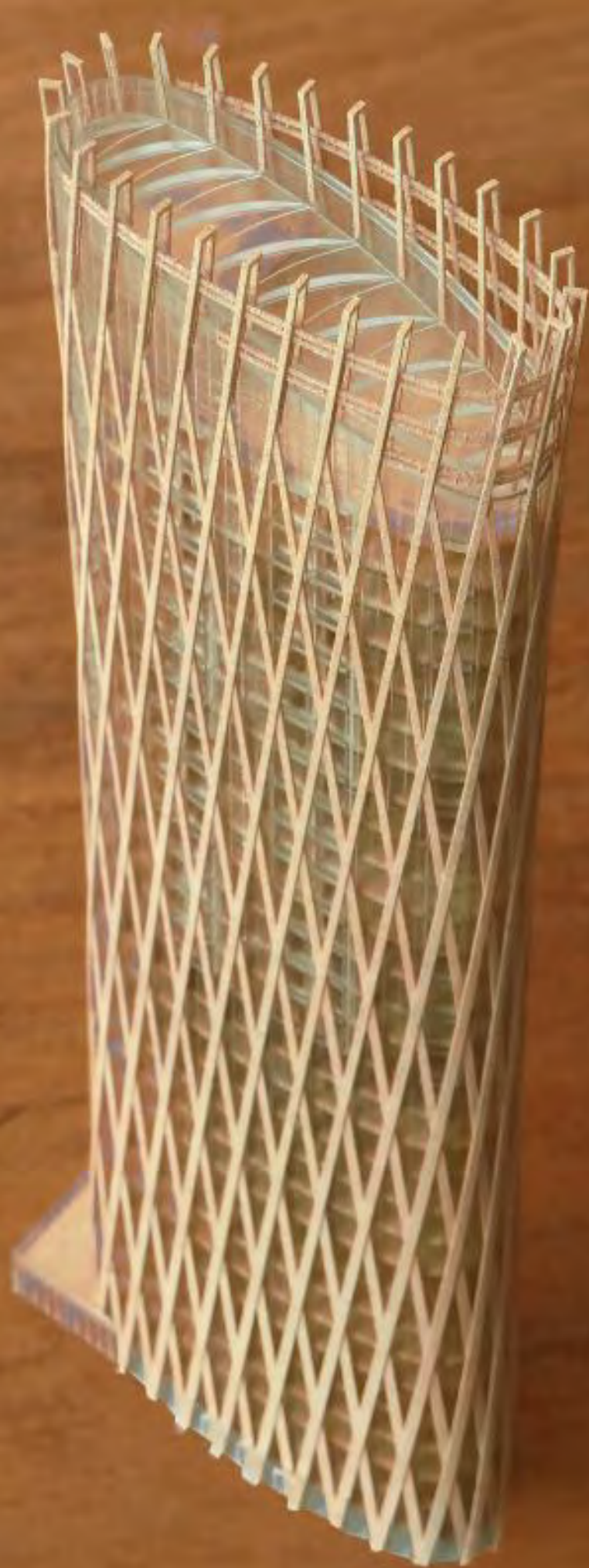


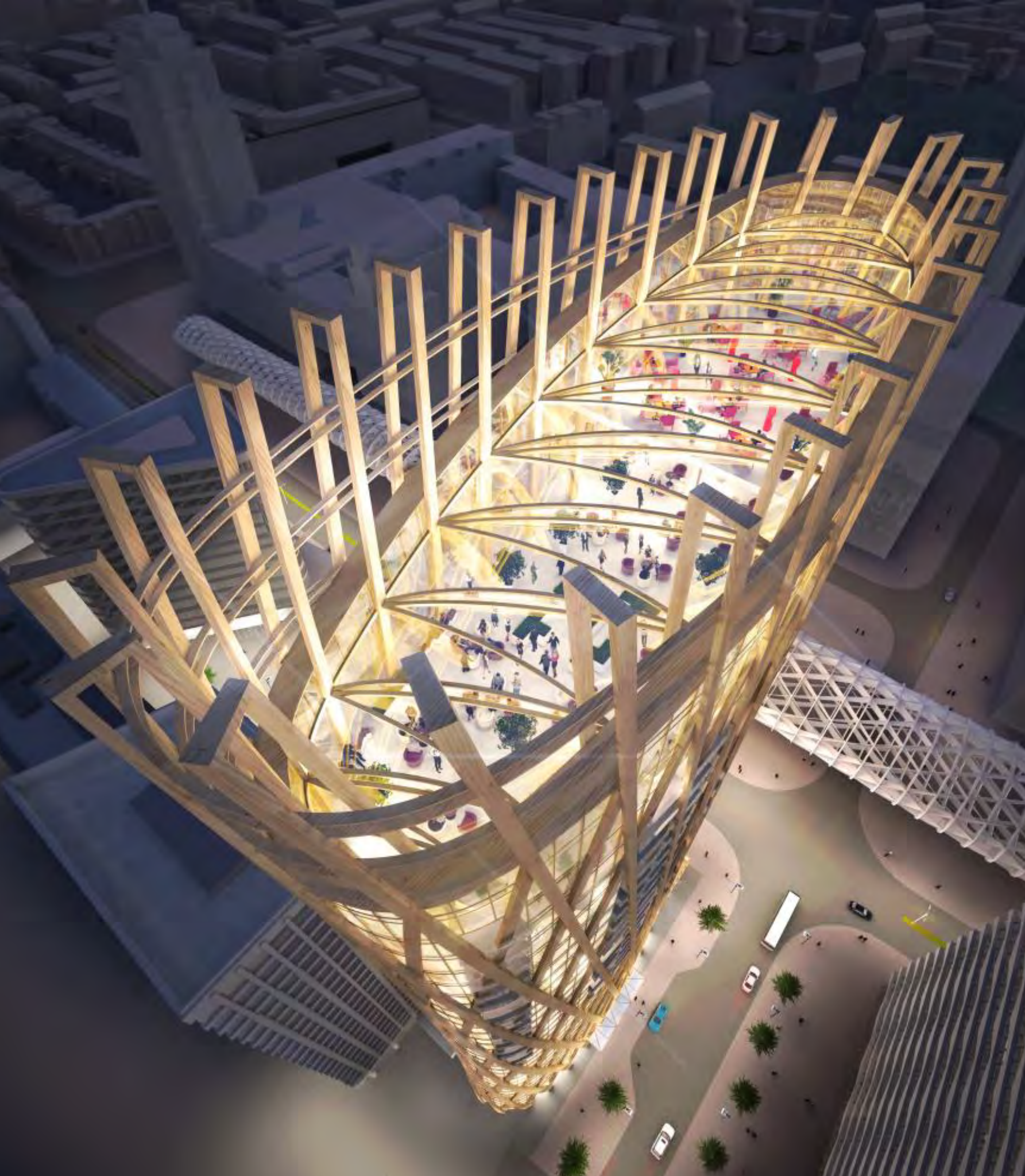
Residential Development, Hangzhou, China









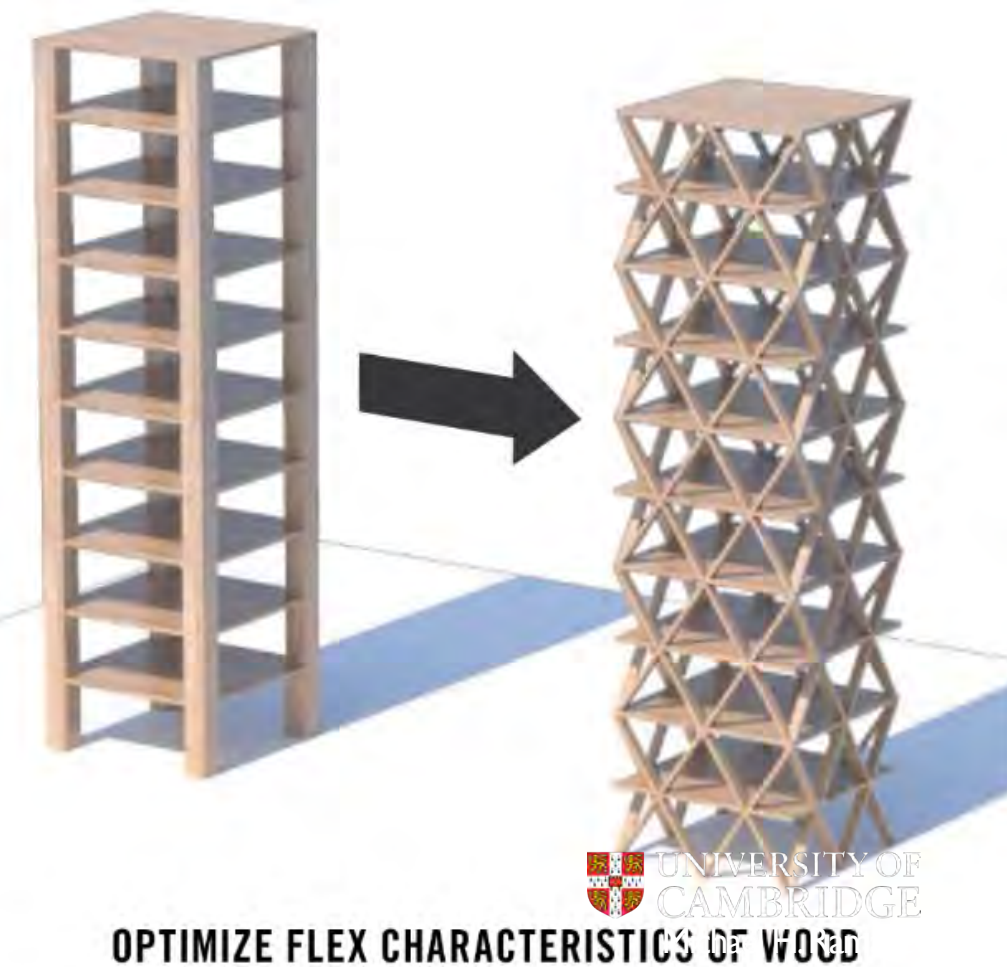
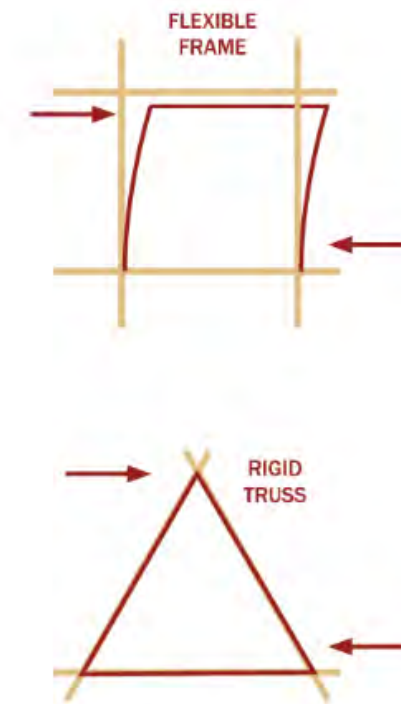
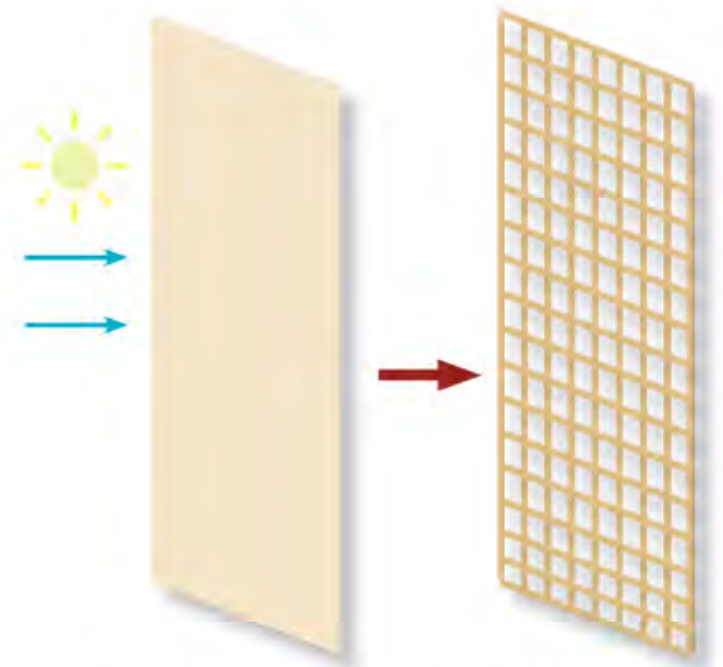
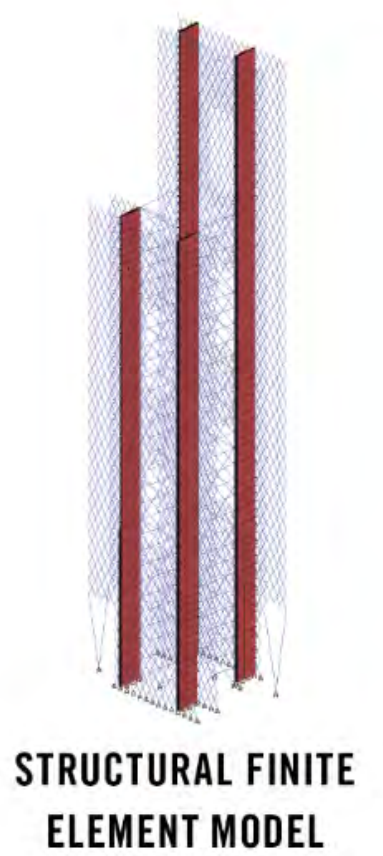
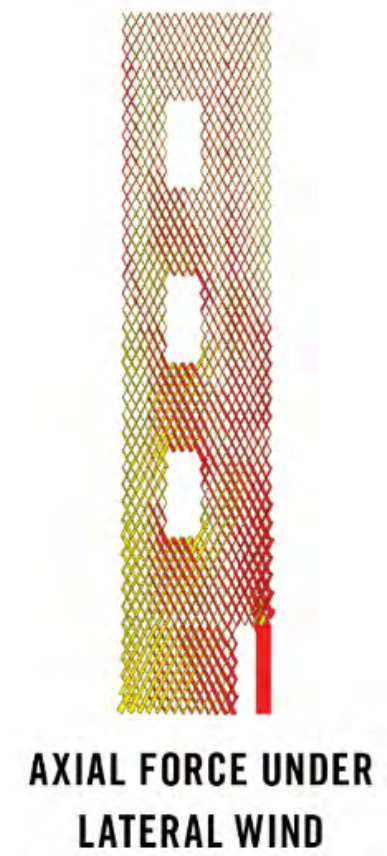
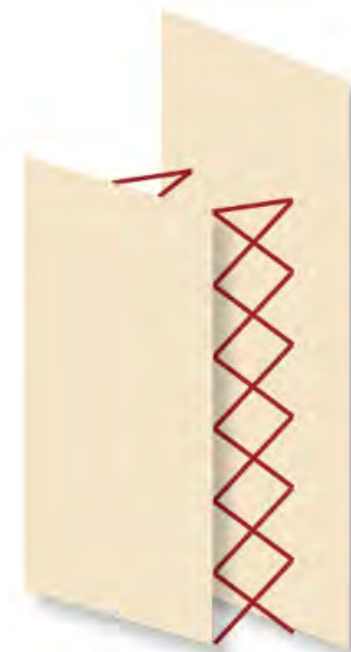
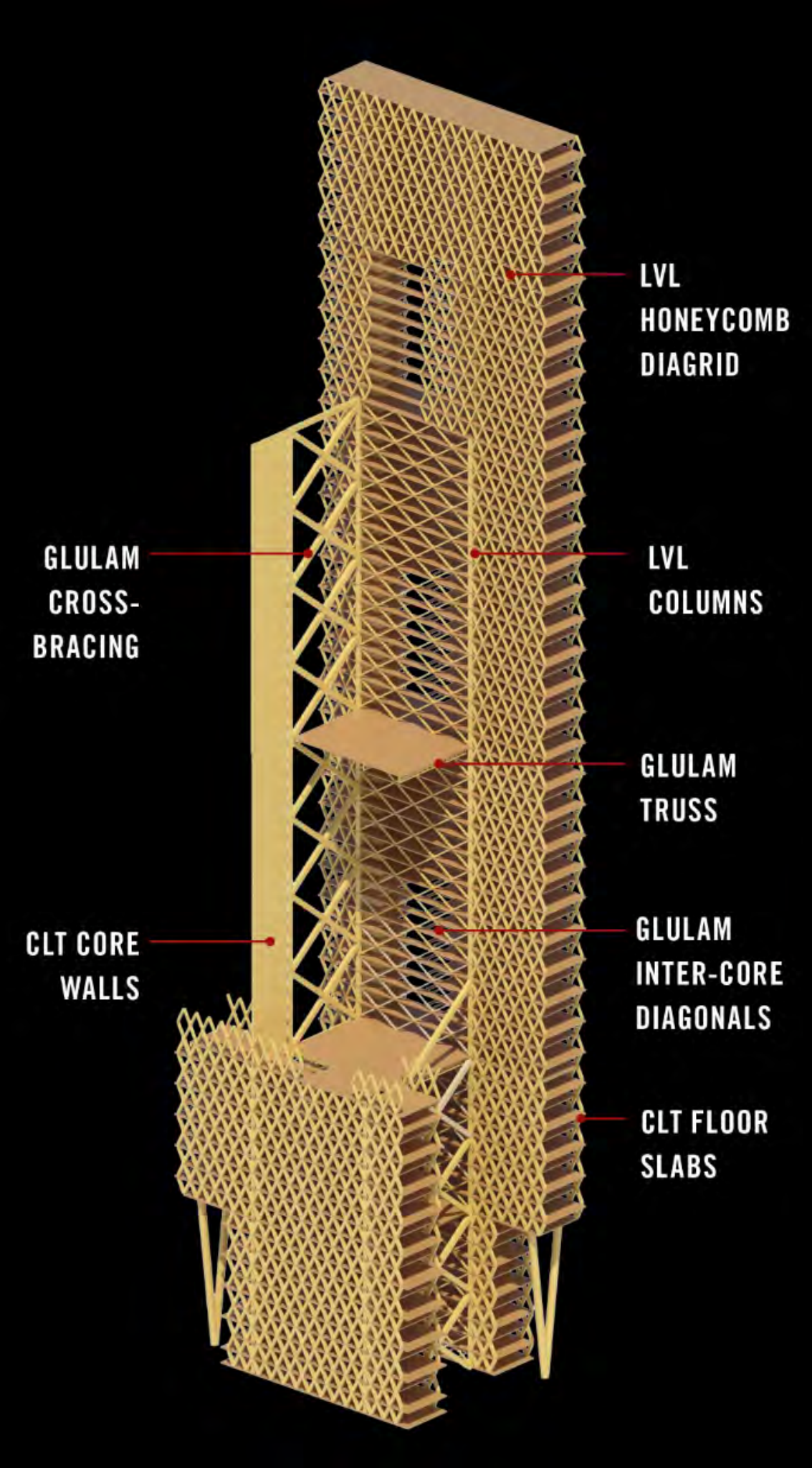


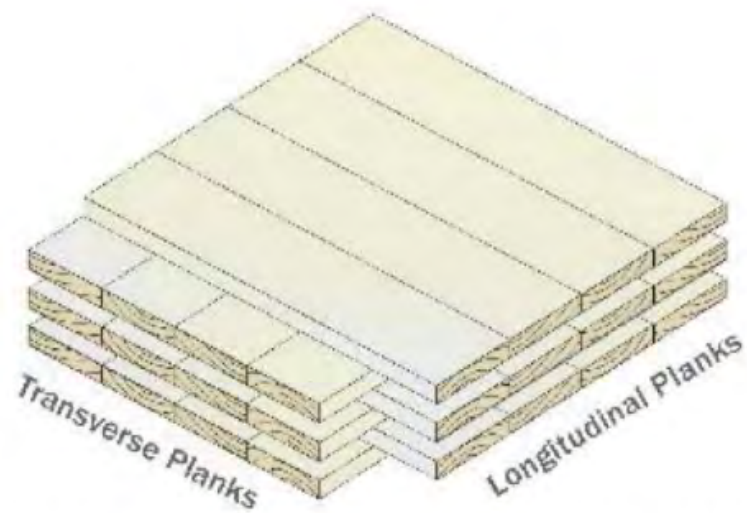


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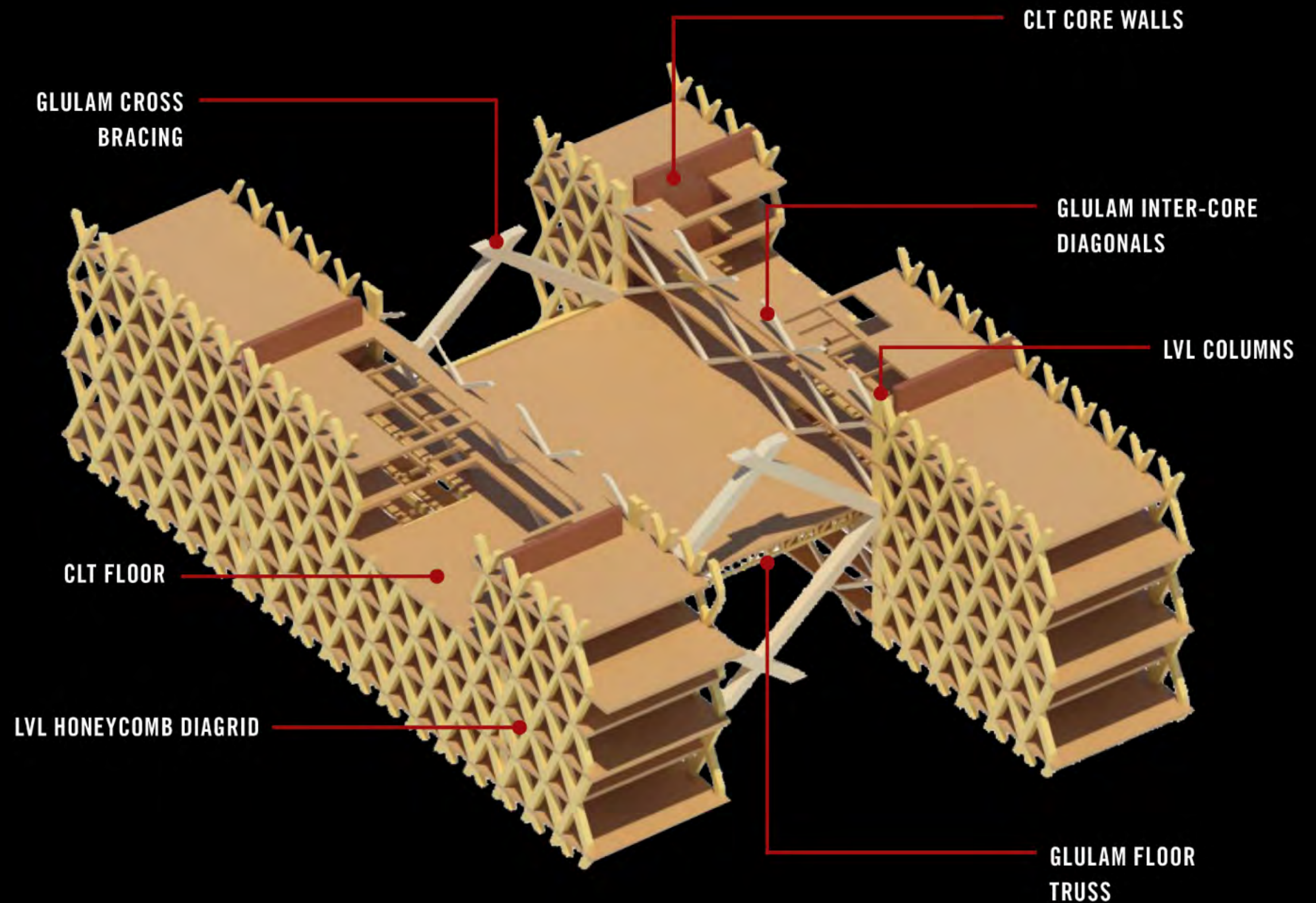
CROSS LAMINATED TIMBER (CLT)

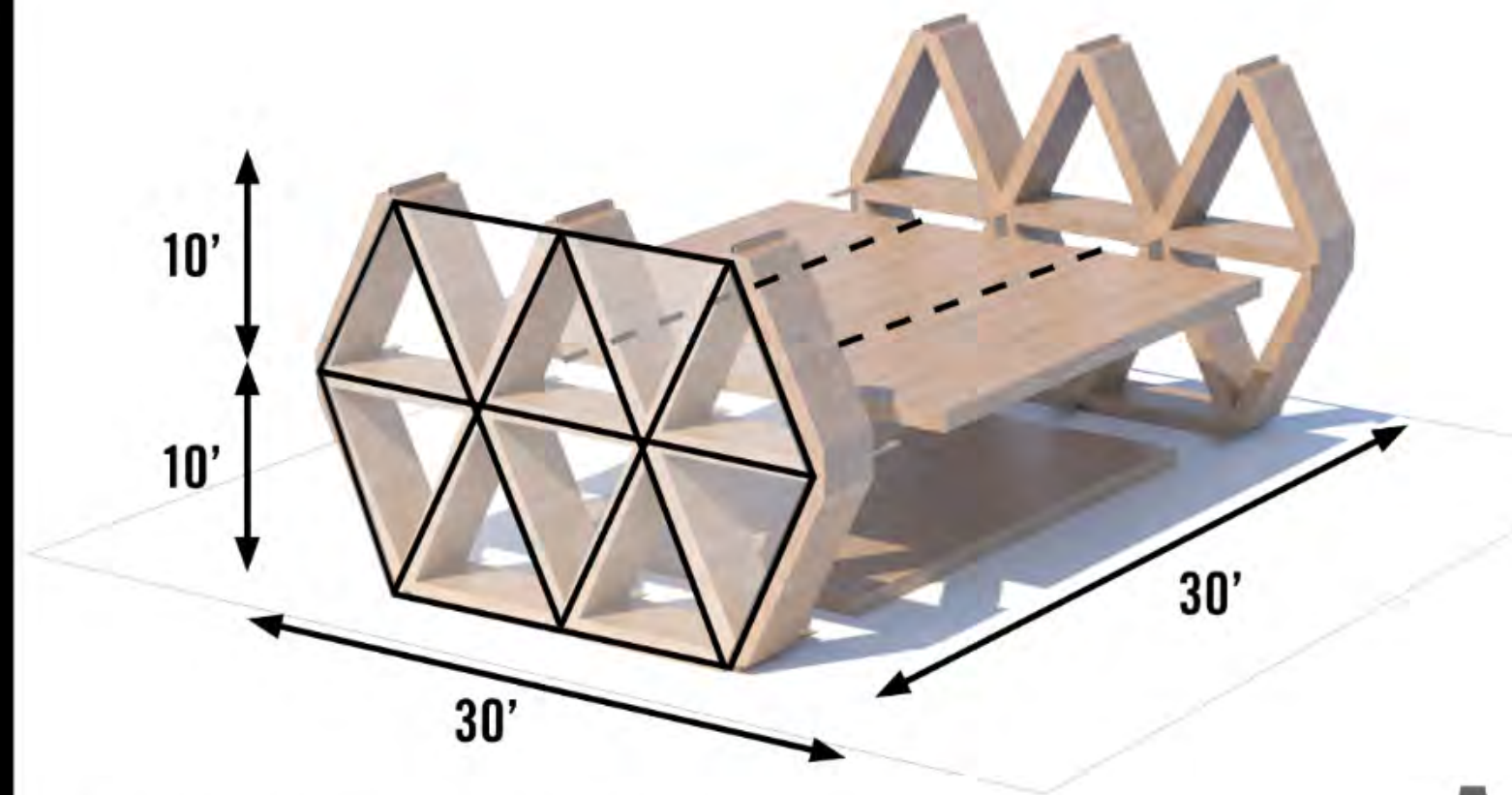
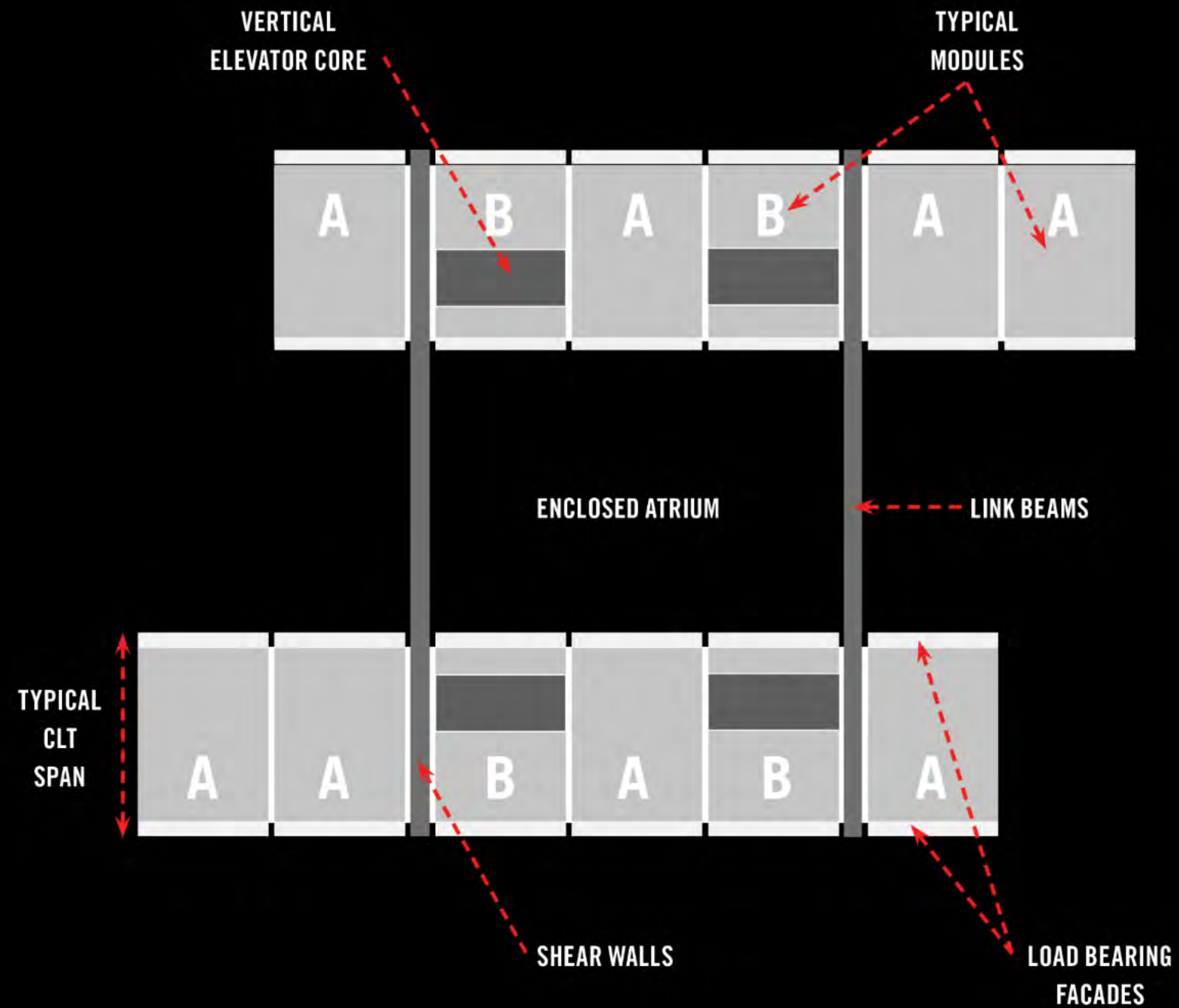


GLUED LAMINATED TIMBER (GLULAM)



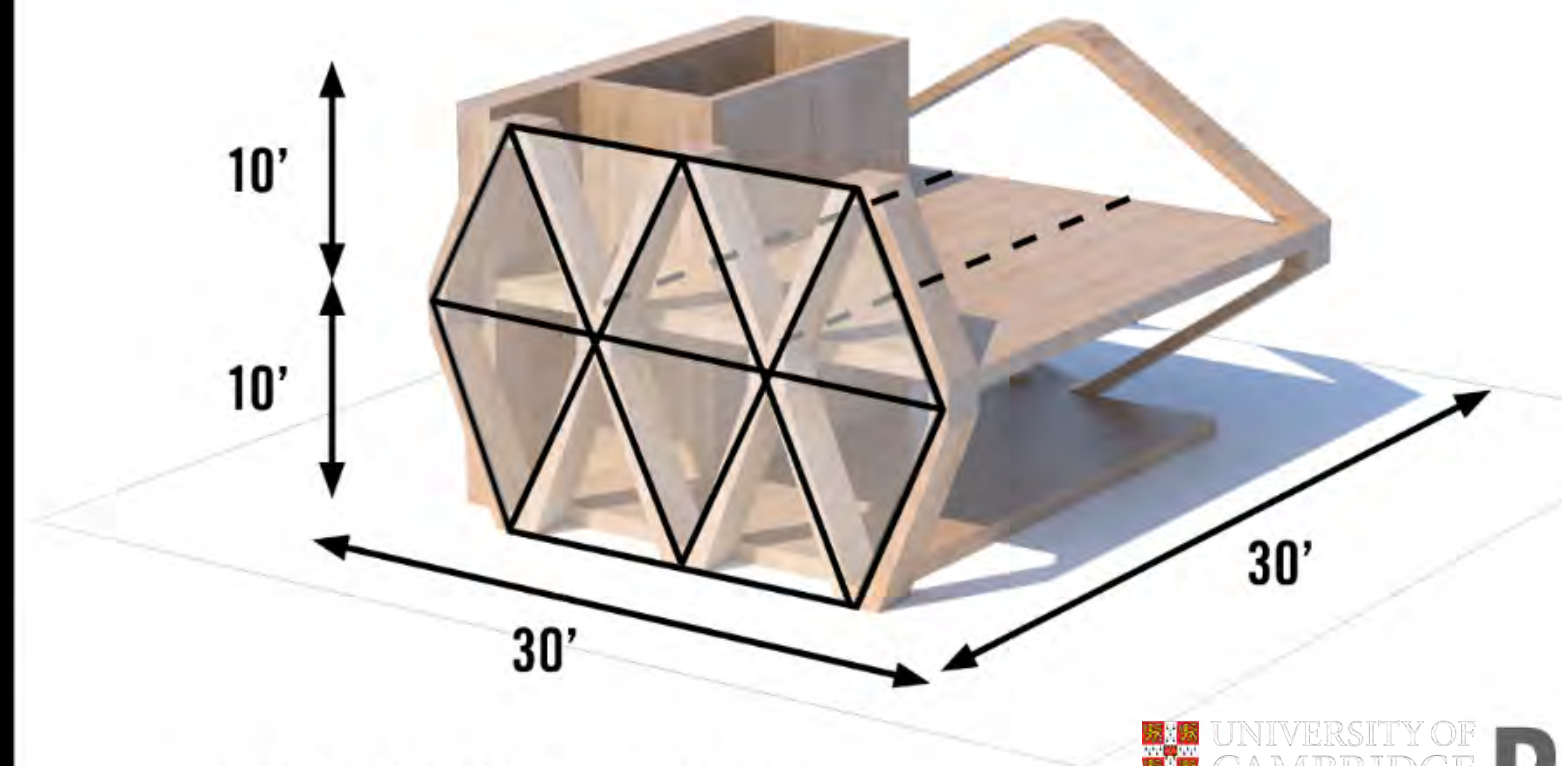
LAMINATED VENEER LUMBER (LVL)





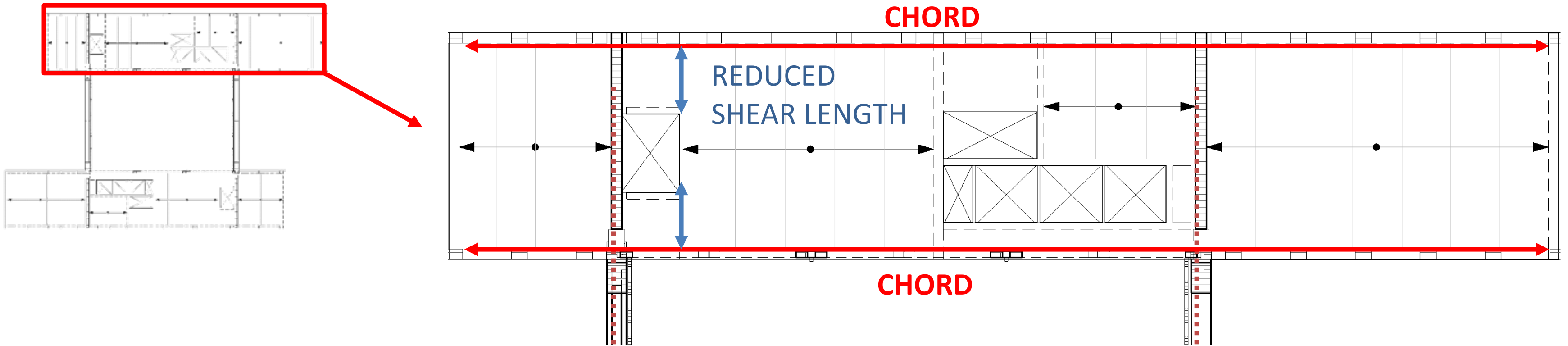
PREFAB MODULE - TYPICAL

A

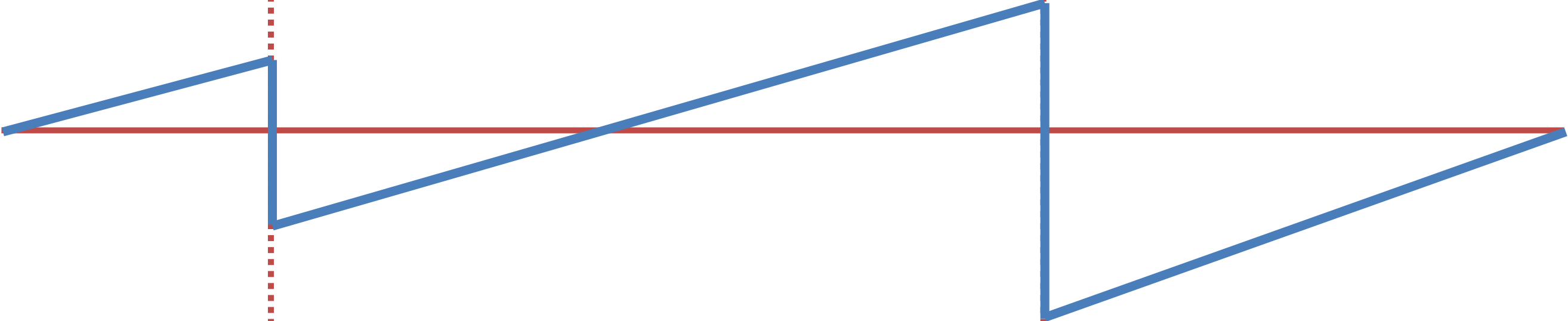


PREFAB MODULE - SHEAR

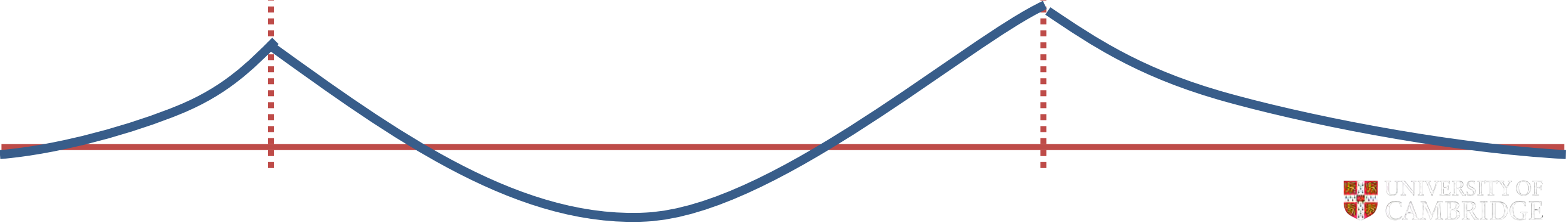
B

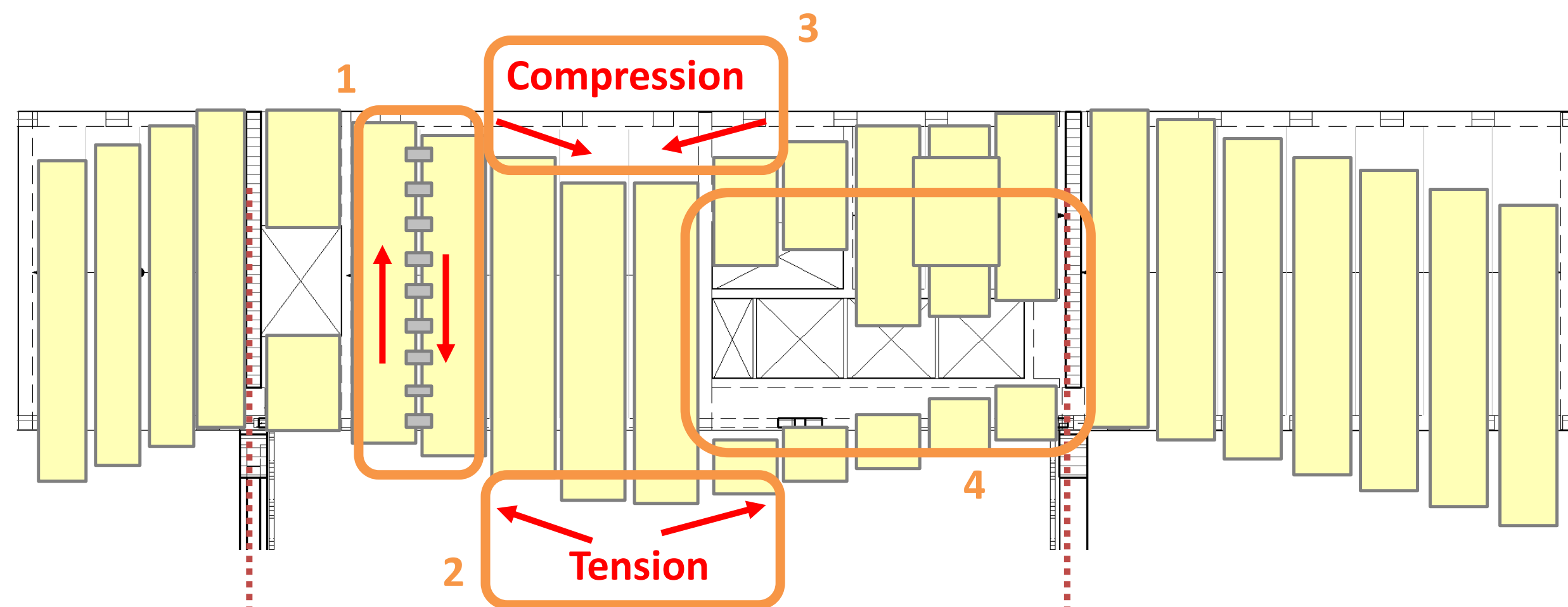
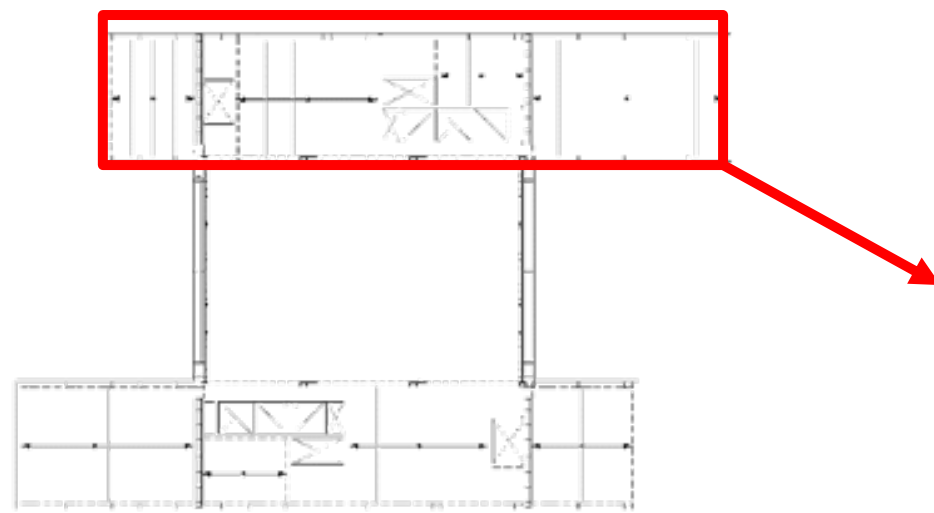


SHEAR DIAGRAM



BENDING DIAGRAM



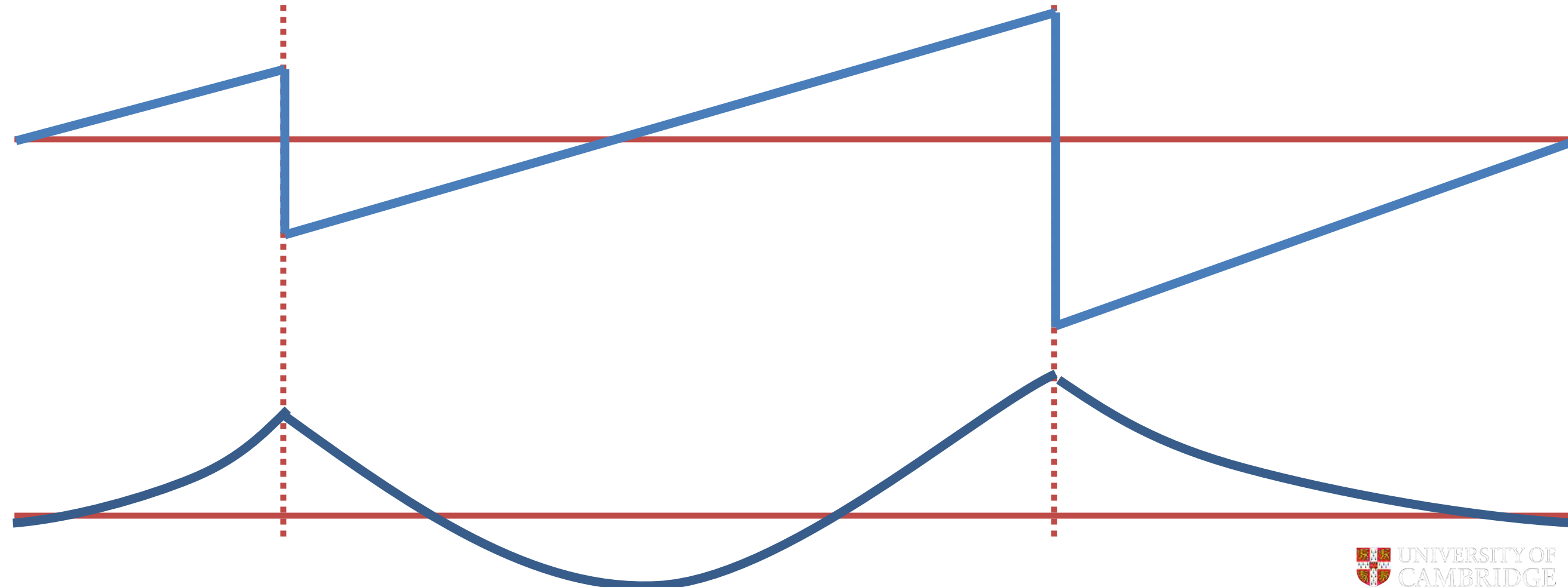


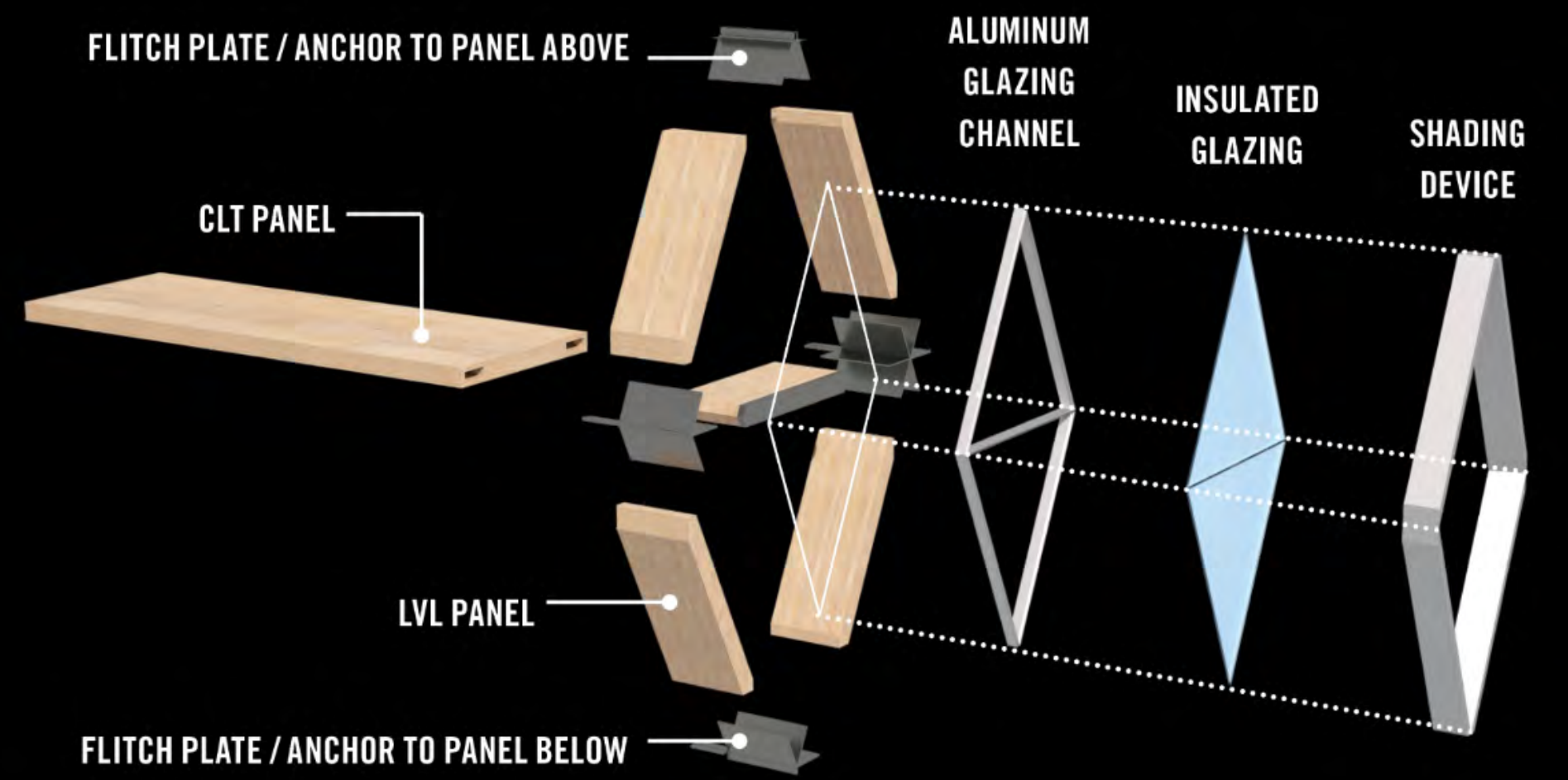
1 Panel-to-panel
connection reliability

2 Chord connection
sub-diaphragms

3 Influence of
diaphragm flexibility
on drift

4 Structural integrity

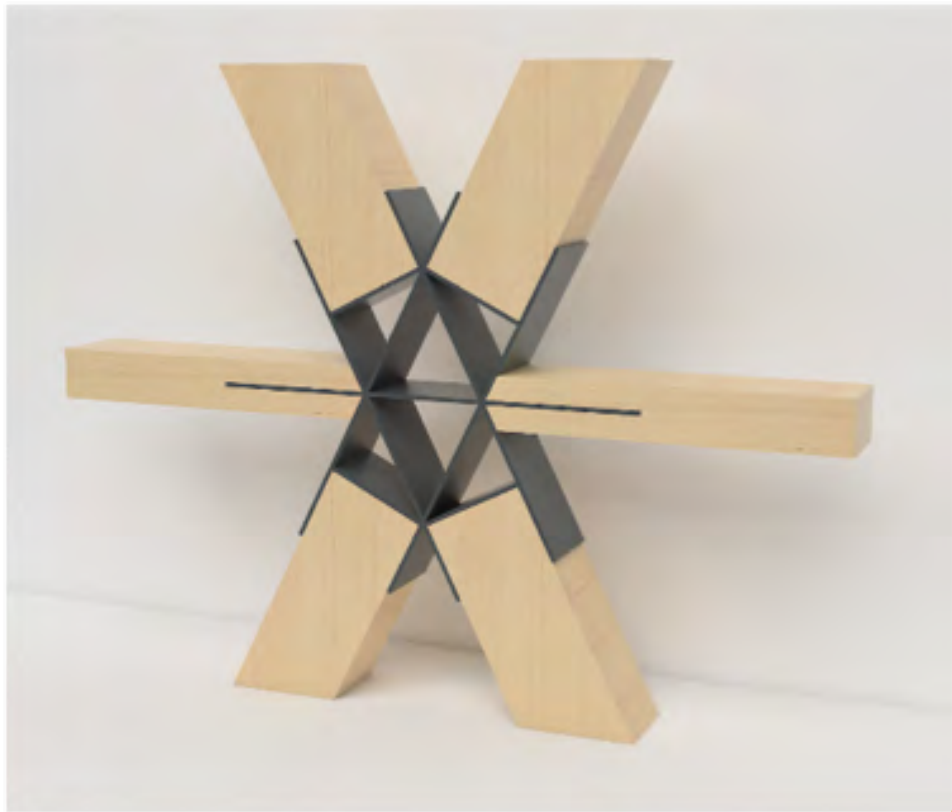




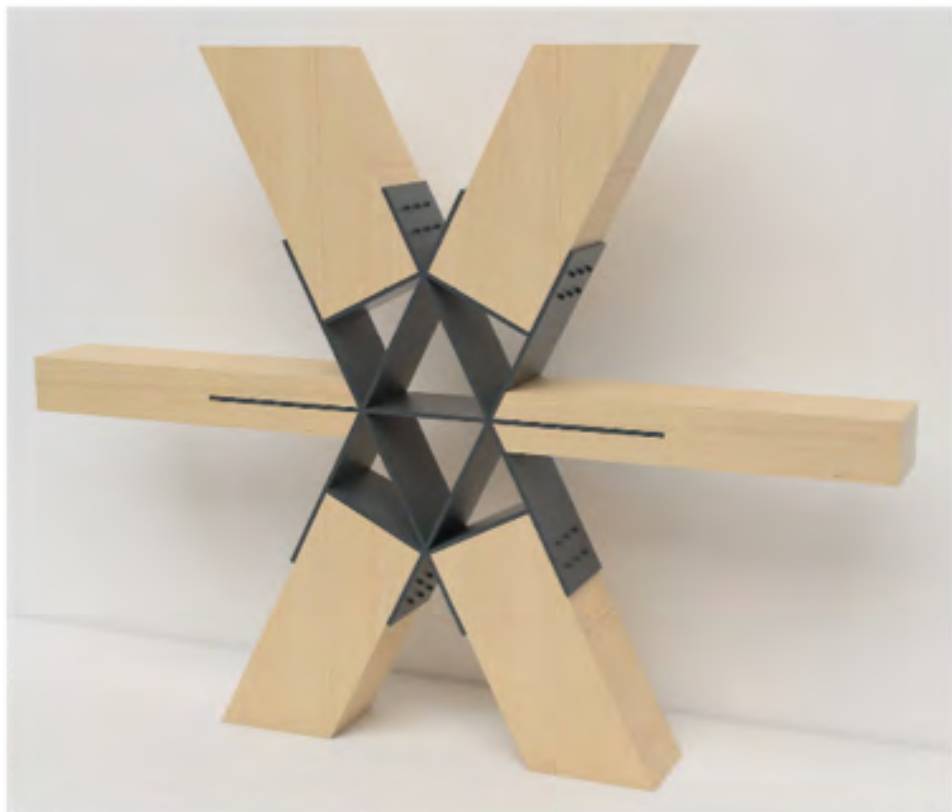
CONNECTION DETAILS



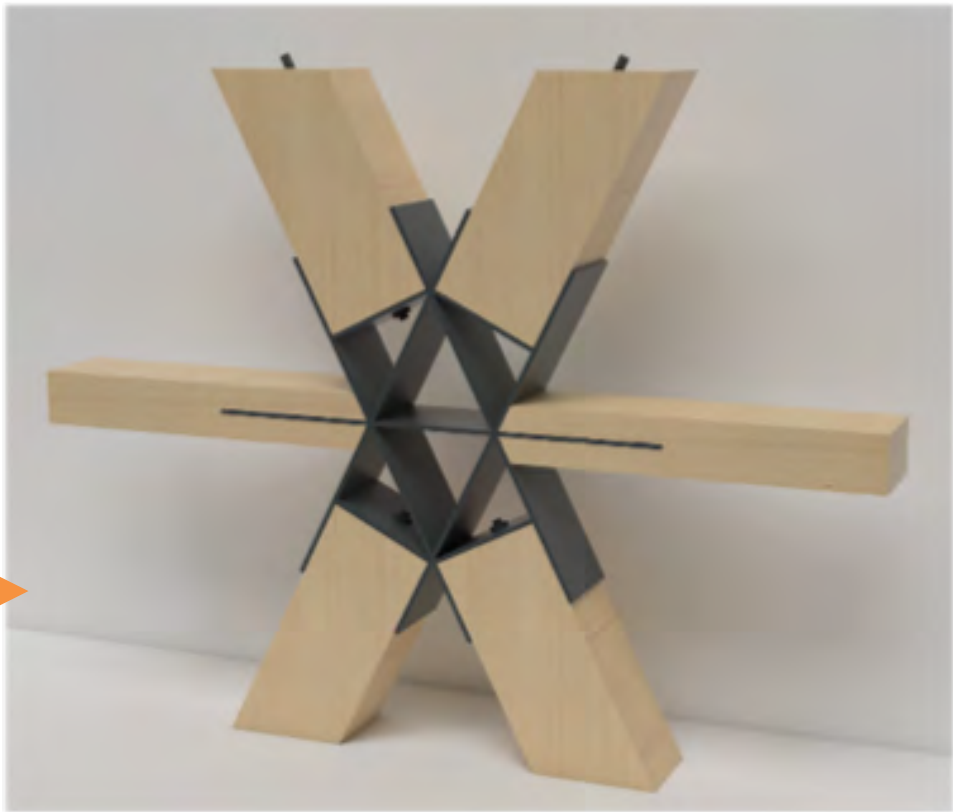
CLUSTER 1 - NO TENSION - DIRECT BEARING



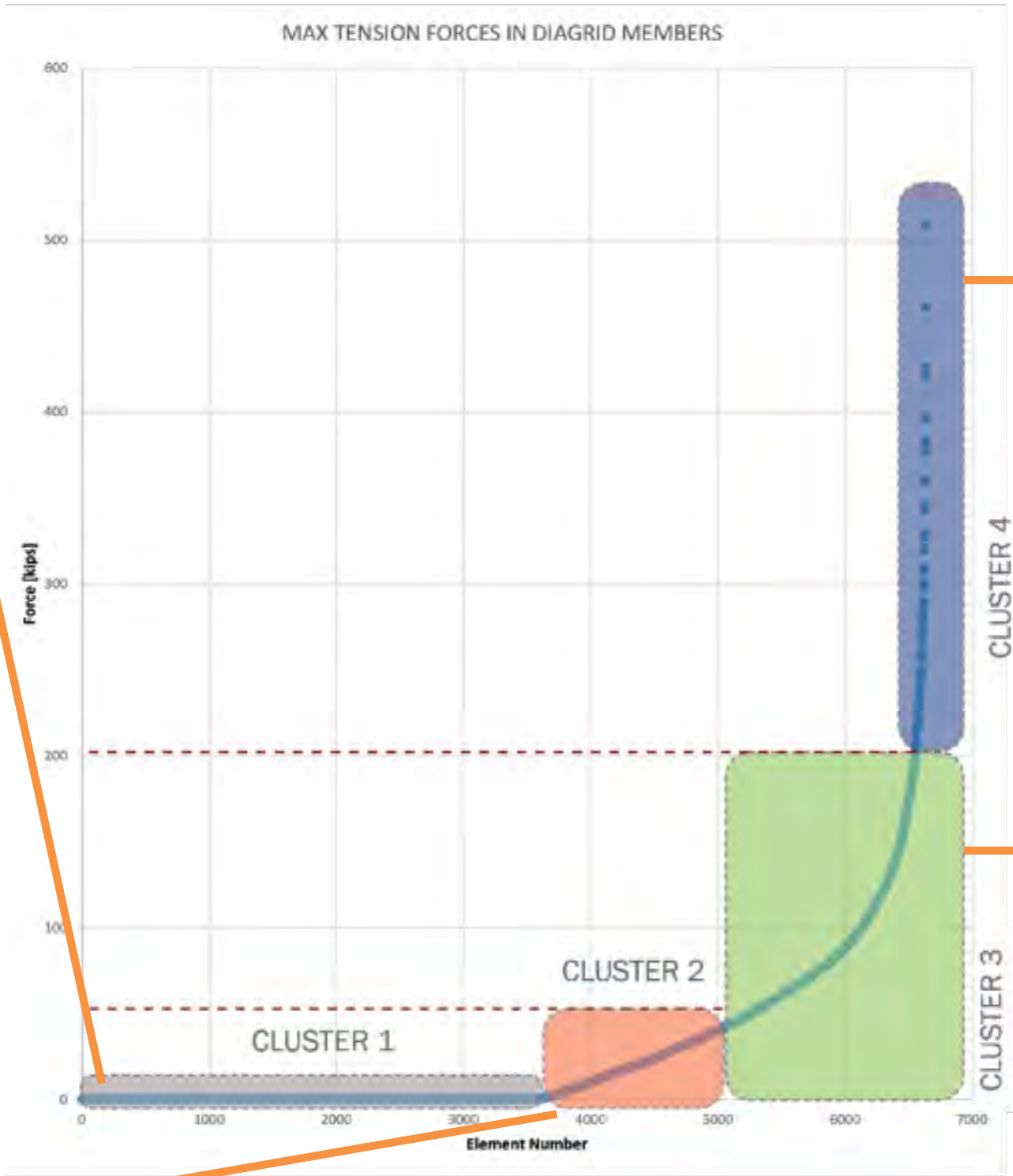
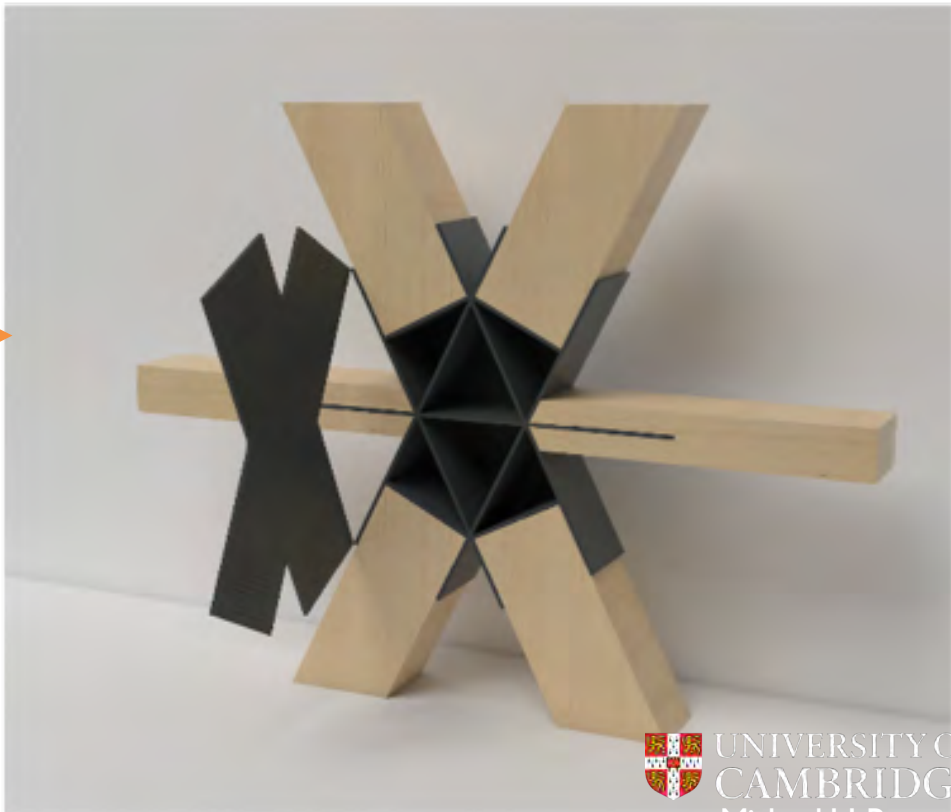
CLUSTER 2 - SOME TENSION - BOLTS / PINS

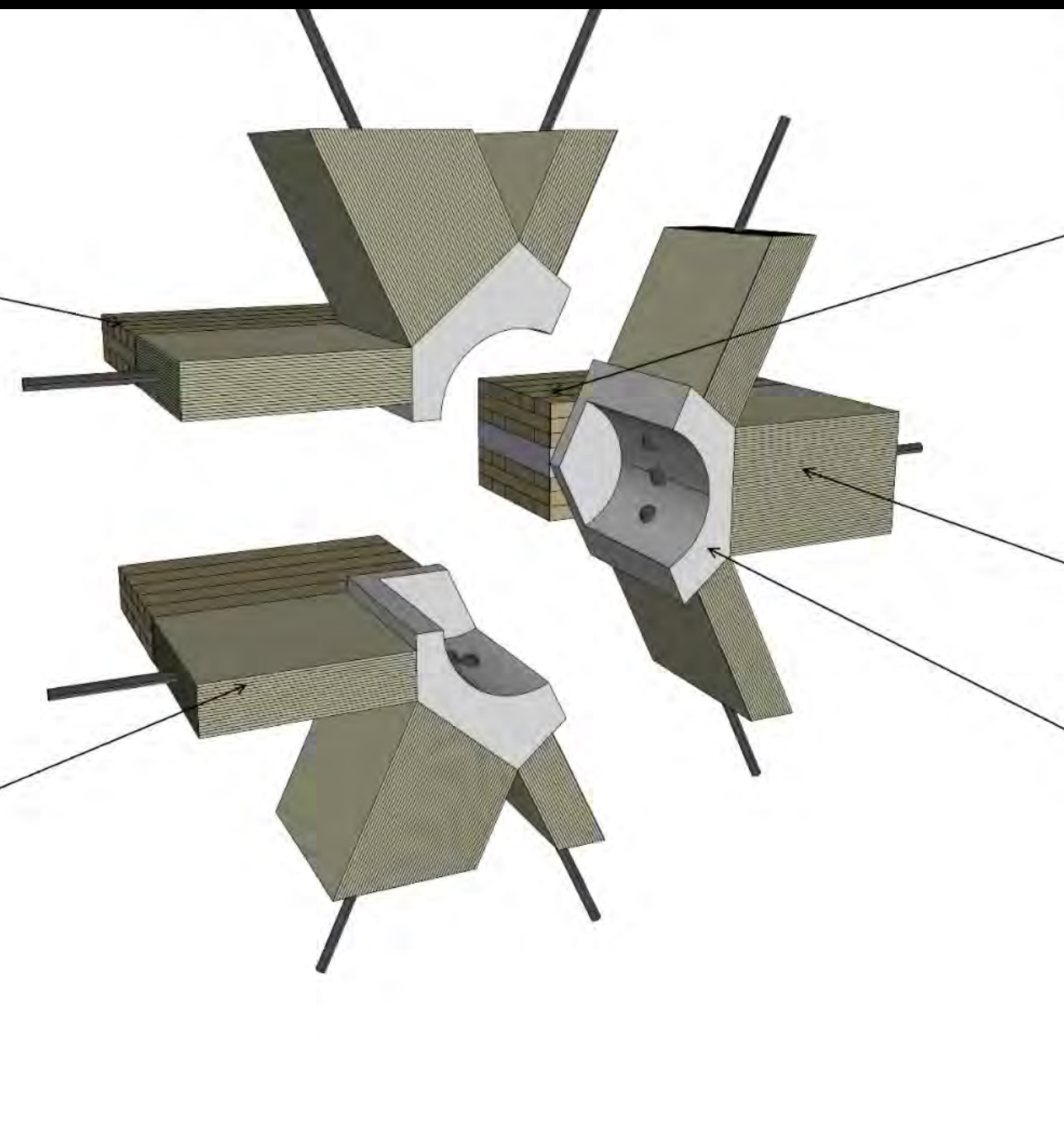


CLUSTER 4 - VERY HIGH TENSIONS - POSTENSIONING



CLUSTER 3 - HIGH TENSIONS - INCREASED BOLTS







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Dr. Tom Reynolds
Dr. Darshil Shah
Dr. Bhavna Sharma

Katie Blackett
Daniel Blower
Bridget Fryer

University of Edinburgh: Prof Luke Bisby, Dr Rory Hadden
PLP / Architecture: Ron Bakker, Kevin Flanagan
Smith and Wallwork: Simon Smith, Tristan Wallwork
Perkins + Will: Ralph Johnson, Todd Snapp
Thornton Thomasetti: Dave Weihing, Alejandro Fernandez
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Engineering and Physical Sciences Research Council

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