Breaking Point

Louw, Danika

Buildings need strong wood beams to hold them up and support them. Can a composite laminated wood beam made out of the strongest woods under tensile and compression forces hold up and support the building, while still being more cost effective? A composite laminated wood beam subjected to a point load made out of oak on the top, two pines in the middle, and maple on the bottom will be the strongest and the most cost effective beam. To test it, make a beam bending press machine. Press the wood beam with increasing force. See at what force the wood fails and measure the distance between the bolt head and the nut. Then compare the strength of the different laminated beam combinations and evaluate their strength and cost to determine the most cost effective solution. After testing, it was found that composite beams were more cost effective than conventional pine beams or single species laminated wood beams. This experiment can help make stronger beams that will not buckle or snap under the pressure of a building and still be more cost effective to buy and manufacture.

Awards Won:
Fourth Award of $500