

New study finds that modular construction produces 45% less carbon than traditional methods



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HTA Design's Ten Degrees in Croydon, the world's tallest modular building. Image: HTA Design

Factory-produced homes can produce up to 45% less carbon than traditional methods of residential construction, according to new research by academics from the University of Cambridge and Edinburgh Napier University. A study found that two modular housing schemes designed by HTA Design, consisting of a total of nearly 900 homes, saved a combined 28,000 tonnes of carbon. — [Building](#)

The two schemes studied were the 44 and 38-story Ten Degrees towers in London's [Croydon](#) borough, the world's tallest completed [modular](#) building, and The Valentine, a 10-story student housing project in London's Redbridge. Both were completed in 2020. The report found that these developments achieved [embodied carbon](#) savings of 41% and 45%, respectively, compared to traditional [construction](#) methods.

This difference comes down to modular buildings requiring less carbon-intensive products, such as [concrete](#) and [steel](#), and less transport for on-site workers and materials. According to [University of Cambridge](#) senior research associate Tim Forman, the study highlights the importance of quantifying carbon in construction and across a building's life cycle. The results make a strong case for the broader adoption of modular construction, especially as it has the potential to address the challenges of the [climate crisis](#) and the [shortage of housing](#).