New technologies boost construction efficiency

September 28, 2016

Factory-made beams cut building time and boost safety

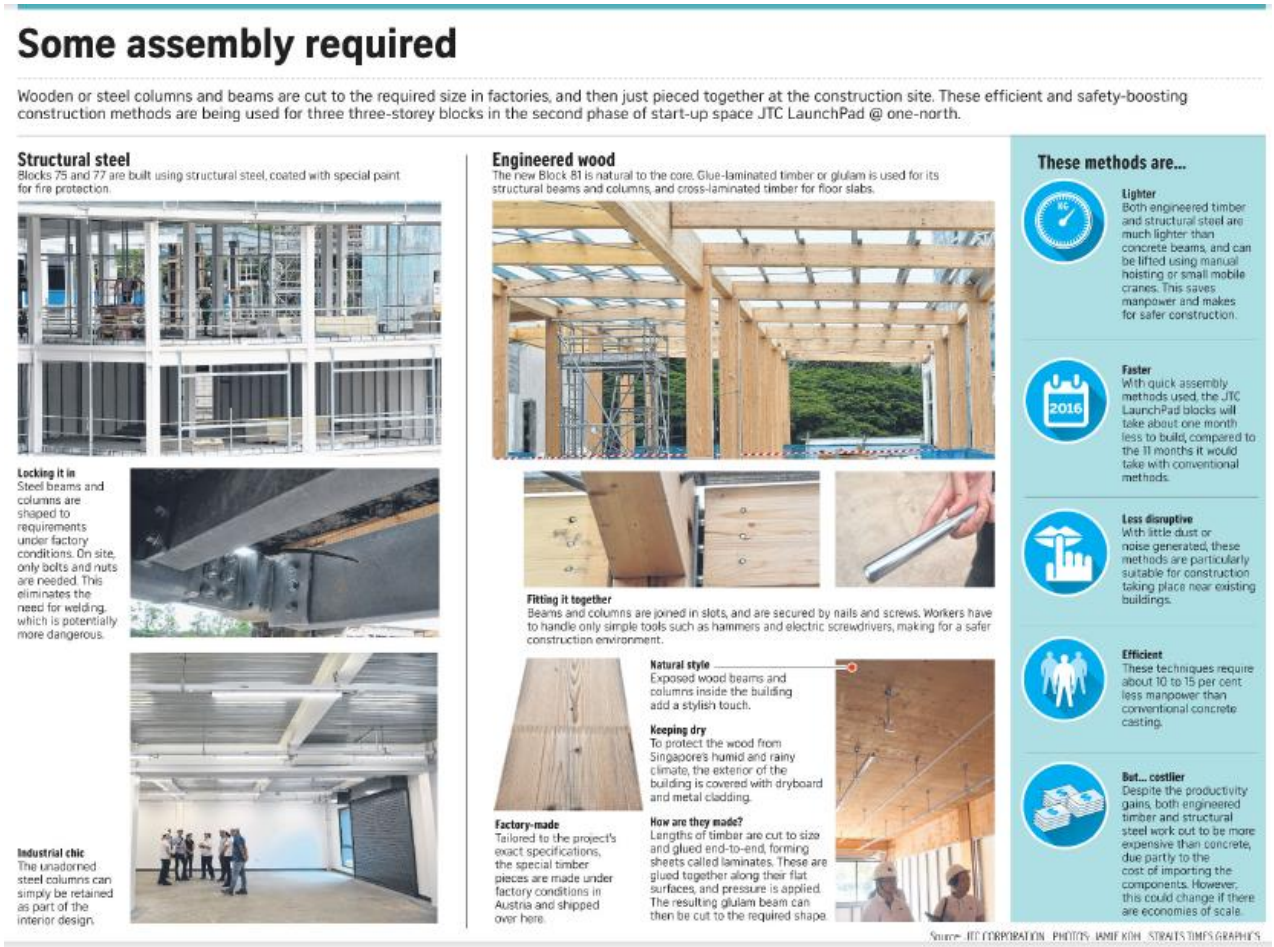
Specially engineered timber and lightweight steel beams are holding their own against traditional concrete structures.

These productivity-boosting technologies are being used to build three industrial blocks in the second phase of start-up space JTC LaunchPad @ one-north.

One block, for instance, has an internal structure made mainly of wood which has been specially engineered for strength. Two other blocks rely on structural steel.

These methods bring considerable benefits to productivity, worksite safety and construction quality.

As the materials are factory-manufactured, they are less susceptible to defects. Easy onsite assembly means manpower savings of 10 to 15 per cent, compared with conventional concrete construction.



Instead of having to be welded onsite, the engineered timber components are joined manually by galvanised nails and screws, while nuts and bolts keep the galvanised steel parts together.

These techniques also shave off about a month in construction time - making it possible for all three new blocks to be completed by the end of this year. In addition, less heavy equipment and no temporary structures such as scaffolds are needed, meaning less dust, less noise and a safer worksite.

Such techniques are also less disruptive to the existing tenants, said Mr Png Giok Hua, JTC Corporation's engineering and operation group's group director (infrastructure development) and director (innovative space division).

"In a way, we have a community here now," he said, referring to the tenants of the LaunchPad's first phase. "They would be quite affected if it was a dirty worksite with a lot of noise and so on," he added.

But such productive techniques have their limitations. For one thing, they are more expensive than concrete, partly due to import costs.

Still, Mr Png is optimistic that such construction techniques will eventually become more widespread.

"JTC, being one of the big developers, generates sizeable demand," he said. "Being an early adopter of these new technologies and methods, we hope that we can act as a good role model."