The shortage of low-cost, affordable housing in the UK is a result of many factors including an insufficient rate of housebuilding, the lack of skilled craftspeople to build houses, the sale of council and housing association property in right-to-buy schemes and the demands of an expanding population.

As a result, house prices and rents have been driven up with an impact on homelessness, prompting fierce political debate.

However, the UK timber industry is ideally placed to address this shortage. Successful timber frame companies such as Oregon Timber Frame, based in Selkirk and Burton-upon-Trent, have designed and built timber frame housing since the late 1990s.

Timber frame construction is a modern, low energy method of building with faster erection times than conventional brick and block construction and with lower environmental impacts.

Cross-laminated timber (CLT) takes the timber construction process a stage further and is manufactured in the form of substantial structural timber panels.

Legal & General Homes, based at Sherburn near Leeds, has invested heavily in a new manufacturing facility which offers numerous options for the off-site manufacture of precision engineered houses. Homes will be delivered to site almost complete following assembly from cross-laminated panels, installation of electrical and plumbing services, fitting of doors, windows, internal joinery, kitchens and bathrooms, final decoration and laying of floors.

There is scope for the construction of single storey to 20-storey CLT buildings, which can be delivered to site with only the requirement for a foundation.

Swan Housing has built a modular housing factory in Basildon capable of producing 300 homes per year, based on CLT, with the initial aim of regenerating a 1960s estate.

So what is cross-laminated timber, where was it invented and what are its attributes?

CLT was developed in Austria and Switzerland and combines the attributes of Bretttapel (sawn softwood planks held together by hardwood dowels) and glulam beams, whereby sawn wood is laminated with adhesive into three, five or seven layers to form massive structural CLT panels. Within each layer sawn and planed wood is longitudinally finger-jointed to form continuous lengths and the boards are laid side by side to form wide panels.

These panels are then cross-laminated and adhesively bonded in a press to form CLT. Solvent- and formaldehyde-free polyurethane is a common choice of adhesive.