

Savings from going digital

Digital fabrication enables precise component manufacture, resulting in improved on site productivity. While it is early days, a potential upside is reduced labour costs and more affordable housing.

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Figure 1: EDFAB digital fabrication sleepout.

MANY FACTORS CONTRIBUTE to the affordability of a building or home. The cost of construction, market rates, profit margins, and supply and demand all play a part.

Digital fabrication using computer-controlled equipment, automation and robotics has the potential to change the construction industry dramatically, and

affordability is one of the likely benefits. Others will include higher quality and more streamlined design to production.

Construction still labour intensive

Construction cost can be broken down into three broad categories - material, labour and approval costs.

Labour costs are substantial at 30-50% of construction costs on average. When compared with the car or manufacturing sectors, construction is very labour intensive.

This is with good reason. Early prefabricated projects were fraught with difficulty. A notable example is Ronan Point in the UK, which partially collapsed. The collapse was attributed to a combination of more complex joints and a new expectation for much tighter tolerances.

Change in accuracy needed

With traditional building elements, installation to within 10 mm accuracy was sufficient. Prefabricated elements, however, need to be fitted to millimetre accuracy.

This has been a significant shift for the industry, complicated further by new complex jointing techniques that are too difficult to achieve on building sites exposed to dust, dirt and the weather.

The industry is starting to have a much better appreciation of new technologies and

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