

## For construction at pace, the future is modular



By Paul Wellman

13/06/2018 | [Residential](#)

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It was just October 2016, not even two years ago, when the now seemingly seminal government commissioned review into the UK construction sector by Cast's Mark Farmer "Modernise or Die" was published.

Since then, more and more players have looked to offsite construction in various forms, with Berkeley, Swan Housing, Legal & General, Lang O'Rourke and Stanhope all setting up their own factories.

One, however, has quietly been getting on with the job – and now has a few records to shout about.

Vision Modular Systems, based in a 170,000 sq ft factory in Bedford, works as a contractor building other developers' schemes, but it also has a developer arm, Tide Construction, which acquires sites, gains planning and does forward-funding deals.

Repeat business comes from the likes of Greystar and Pocket.

Modules take just two working weeks from start to finish, on a moving production line that isn't far from what Henry Ford envisaged, with capacity for around 2,000 modules per annum.

With major projects in Croydon, Holloway and Ealing, all under construction currently, and further ones likely to come, capacity is obviously an issue. With that in mind Vision are set to open a brand new factory in South Wales, in order to sustain its continued and expected further growth.

Similarly sized, it will employ another 200+ employees, with the homes put on the back of trucks and delivered to development sites down the M4, rather than the M1.



### ***How does it work?***

Invented by Vision chairman John Fleming and developed over the past two decades, the manufacturing process uses a controlled assembly line environment.

Modules are built with a steel frame forming the structure and a concrete base, giving each module weight and the structural solidity – some weigh as much as 13 tonnes.

Walls are installed, sanded and plastered, and internal finishes, mechanical and electrical installations, windows, external insulation and some external finishes are applied. During this process, more than 80% of the waste created in the Bedford factory is recycled – impossible on a traditional building site.

Each module comes with a 60-year guarantee, reflecting the confidence Vision Modular Systems have in its products, as well as reassuring customers of the long-term investment opportunities presented by modular construction.

Vision works with around 300 suppliers, providing 5,000 products. Between 40 and 45 modules are constructed each week, which will double when the new factory comes into operation. A student housing unit takes the form of a single module, with a 1-bed residential apartment forming two modules.

### ***A proven concept***

What will be the world's tallest modular building is currently under construction in Croydon, with work starting earlier this year. A forward-funding deal with US multifamily developer Greystar will provide 546 homes, with around 1,500 modules. Completion is set for Q1 2020.

A 24-month build programme for a 44-storey tower may seem far-fetched. It's not. Vision has demonstrated the model and a proven track record.

In Wembley, it took just 12 months from planning consent to completion, with a nine-month construction programme to build 580 student beds across 29 storeys. It currently holds the record for the tallest modular student housing building in Europe, and the second-tallest modular building in the world.

A one-year build – rather than a two- or even three-year build – obviously has its advantages, not least the extra income in rent.

WATCH: [Time lapse video of Apex House, Wembley](#)

### ***Additional capacity***

Something Fleming is keen to point out is the benefit to places such as Bedford and South Wales, where factories are located. Modular factories such as Vision's bring consistent employment.

Similar jobs on traditional building sites across the capital might mean long commutes across London, where living costs are more expensive.

The factory setting also means the environment is much safer and comfortable to work in for staff. In addition, modular factories "bring a much more consistent and quality product", according to Fleming.

He adds that if modular factories were closer to London, employers would probably be taking labourers from other construction sites, meaning there wouldn't be any additional capacity.

### ***Design***

The factory also gives the added benefit of the product being constantly refined, with a specialised team of around 10 working on research and development full time, while the rest of the factory is a production line.

Fleming adds: "We are continually developing the product: if you stop, you are out of the game. Just five years ago I would have been hesitant to say we could build 20 storeys with modular; now we are building 44 storeys."

Mike De'ath, Partner at HTA, the architects behind many Vision schemes – including Croydon, Holloway Two and White City – says: "We have developed a way of understanding their product and designing for it. We are not limited by the way Vision create their modules. We have even done triangular modules and an oval-form building.

"Student accommodation works very well but the flexibility of the Vision system allows us to do larger units, and increasingly we are now looking at build-to-rent apartments, up to three bedrooms. It's a continuously improving delivery model."

The most recent scheme is Chapter White City. Snagging is almost complete, with students set to arrive in September. De'ath adds: "You would never know it is modular, and that's important for the occupants, the operator, and the locals looking at it from the outside."

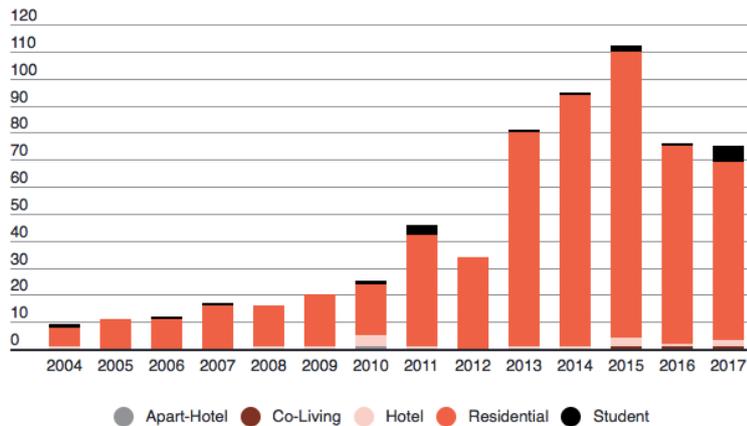
Although Fleming is the mastermind and creator of the product, he is quick to admit it is the people and workforce he has that makes the whole concept so successful. The years of experience, the knowledge of the product, the determination to continually improve, as well as the loyalty to the company is more than apparent while walking round the factory.

### ***Further opportunity***

Within the sectors where Vision operates – residential, student and hotels – around 400 tall buildings of 20 storeys or more are in the pipeline, according to EG's Radius Data Exchange, and more than 100 are currently under construction. In short, the opportunity for Vision is huge.

Although the overall numbers being applied for have dropped in recent years, there is still a healthy pipeline of schemes being submitted.

### Tall building applications (20+ storeys)



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Fleming also sees the opportunity towers bring to his business. “Towers suit our system, with modular construction definitely suitable for around 90% of those buildings in the pipeline,” he says. “Obviously the capacity isn’t there to do all them, but we very much welcome towers and will try to do as many as we can.”

Data includes all residential, student and hotel projects that are at EIA, application and permission stage – not those that have completed or are currently under construction.



## ***The challenges***

One thing Fleming is keen to point out is that getting local authorities on board with the understanding of modular, and with the supply-chain processes involved.

The shorter construction process is made possible because the modules are constructed way before they are needed. For instance, while the core of its Croydon project is still yet to get above ground level, with 44 storeys to rise once it does, the modules are already coming off the production line.

In short, Vision can install them quicker than they can be built, with 11 per day currently being installed at Holloway Road. Modules are lined up at the factory ready and waiting. Certainty in the planning process is therefore obviously vital, with delays and setbacks eating in to the construction timeline.

## ***The vision is modular***

It seems getting the wider public on side – as well as those local authorities – is now the wider goal, in order to fuel expansion.

The construction industry clearly has many hurdles to overcome, with pain points aplenty. Tightening margins for contractors and squeezed viability for developers means huge opportunities for players such as Vision, with the sector ripe for disruption, aided by technology.

A construction and skills crisis (to go alongside a housing crisis) has meant the GLA and national government backing off-site manufacturing for housebuilding.

It may not be a cost saving in construction terms (yet), but the added benefits are clear.

This is clearly a sector fuelled for growth.