

# MODULAR ADVANTAGE

Modular Building Institute

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# Stacking Up: How Vision Modular is Helping Take Modular Construction to New Heights

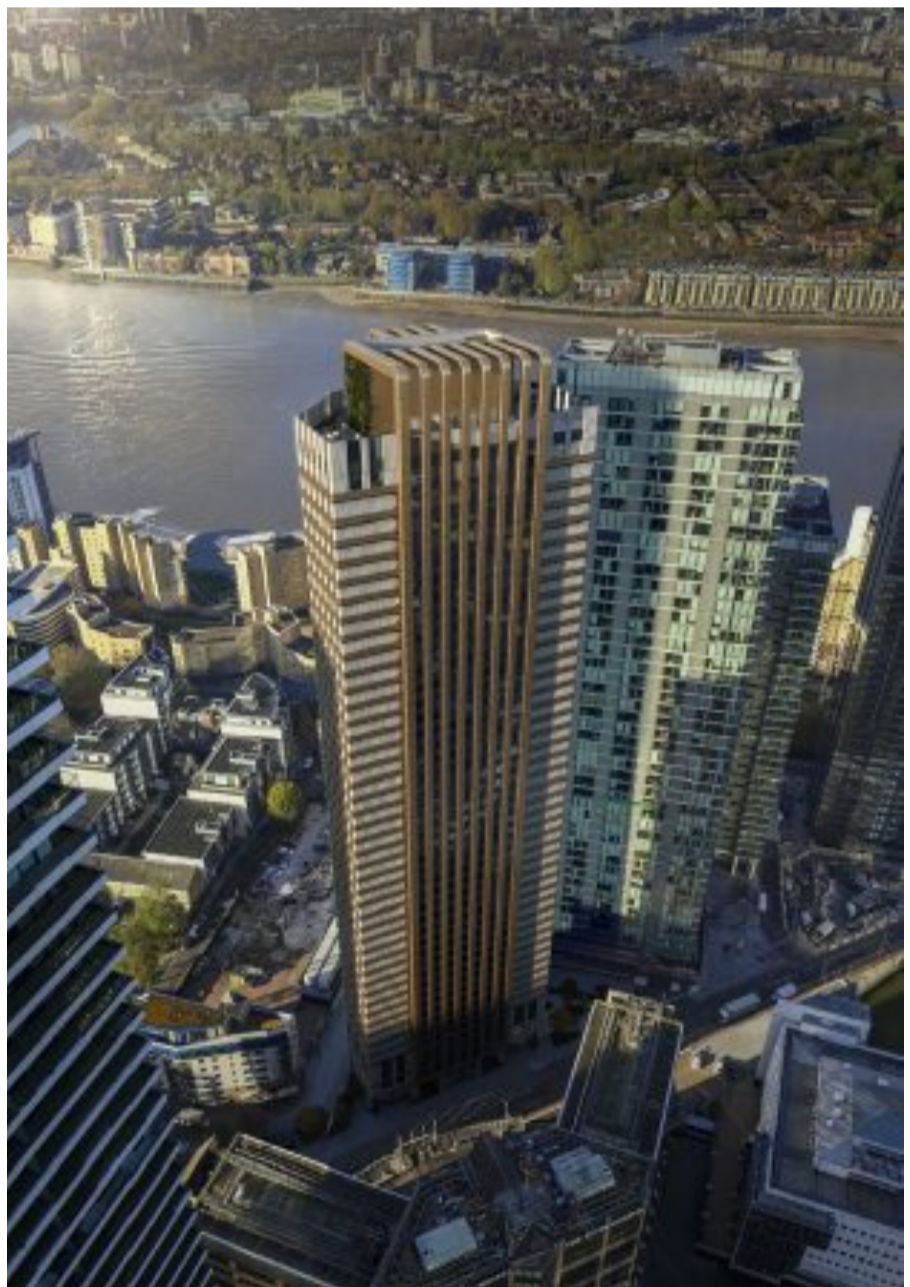
An interview with Vision Modular's **John Fleming**

By *John McMullen, Marketing Director, Modular Building Institute*

**A**s the manufacturer of some of the United Kingdom's—and indeed the world's—tallest modular buildings, Vision Modular has learned a thing or two about building upwards. Launched little over a decade ago as the modular building division of developer/contractor Tide Construction, Vision has steadily moved from one celebrated project to another. It's 101 George Street and College Road projects are currently among of the tallest modular buildings in the world, and it just announced plans for a 48-story student housing building in the Canary Wharf district of London.

Curious about their success and aspirations, I corresponded with John Fleming, Vision Modular's and Tide Construction's president and inventor. My questions and her replies are summarized below.

**Tell me about Vision Modular. When was it started and what was its goal in the beginning? What is its goal now?**



Marsh Wall, Canary Wharf by Tide Construction and Vision Modular Systems



Module install by Tide Construction and Vision Modular Systems

Vision Modular was established over a decade ago to tackle three of the main challenges the construction industry was facing and continues to face - the housing crisis, the climate crisis and skill shortages. We use traditional construction materials, but with all the benefits of a modular, factory-built format.

The advantages of using volumetric modular construction technology include quality – all our modules are constructed off-site in a quality-controlled factory environment - together with sustainability, safety, scalability and minimal disruption to the communities we build in. A key goal for us is to continue to pave the way for more industry and government leaders to support the use of modular construction.

**How have your manufacturing capabilities evolved since you started?**

There is a continuing investment program in our technologies, ongoing rigorous research and development, and testing regimes. When the business started, we were

building low-rise projects. We're now delivering schemes of 50 storeys, clearly demonstrating the evolution and advancement of the system. We're designing and delivering flexible schemes that reflect the demands of our clients across a range of asset classes.

**Tell me about how your factory is laid out. How has it changed since you started and why have you made the changes that you've made?**

Our manufacturing facilities are bespoke to Vision Modular and are purpose-built factories with automated production lines developed for the construction industry. The process can be likened to the modern-day car manufacturer. Modules, each taking around 10 days to complete, are transferred around the manufacturing line and fitted out by skilled labour, rather than the labour going to the modules. It's hugely efficient and again, the emphasis is on achieving the highest quality and safety possible.

**Is there a difference between manufacturing for 40-storey buildings and manufacturing for much shorter buildings? If so, what are they?**

Each project we deliver is highly unique. However, Modules are manufactured and fitted out the same way, whether they are going to be on the first floor of a building or the 50th floor. The design and manufacturing processes however are effectively the same. Naturally, the module installation for a low-rise and high-rise building differs. However, the same rigorous quality and safety controls are applied to every module regardless of its location within our buildings.

**Your partnership with MJH Structural Engineers has been going strong for several years now. What do you think is the**



Ten Degrees (George Street) and College Road Croydon by Tide Construction and Vision Modular Systems

## FEATURE

### **secret behind your string of successful projects?**

We operate on a vertically integrated procurement model with our company Tide Construction being the main developer and contractor, and Vision Modular being the offsite manufacturer. This integration gives us full autonomy over each moving part of a development. In addition to our strategic business model, we also work with some of the industry's leading consultants, and partnerships, such as the one we have with MJH Structural Engineers, and these teams have been a crucial part of our success.

### **Tell me about the plans (as best you can) for the just-approved 48-storey student housing building at 30 Marsh Wall. What was that development process**



Bollo Lane, Chiswick by Tide Construction and Vision Modular Systems



Greenford Quay, Ealing by Tide Construction and Vision Modular Systems

### **like and what details can you share about the modules you'll be building?**

Located in London's central business district, Canary Wharf, Marsh Wall will sit among many of the city's iconic, high-rise buildings. Award-winning practice EPR Architects have designed the building and along with 1,068 student beds' accommodation, the scheme will provide amenity space and a generously sized roof garden. A light bronze aluminum vertical band on the principal façade highlights the main entrance before extending up the entire 48 storeys, while secondary horizontal articulations varying in depth provide solar shading on each level. This scheme demonstrates the flexibility in design that the Vision Modular System makes possible.

An innovatively designed, recreational space will enhance the surrounding public space.

This modular approach on Marsh Wall will cut construction time by up to 50% and result in a more dependable construction program, with efficient construction logistics minimizing disruption in the local area.

Having just received planning, we are due to start onsite imminently.

### **Are there any specific design elements for this building that make its modules different than the others you've built? For example, are there any net-zero elements or structural complexities that have to be accounted for?**

As mentioned above, all buildings are designed individually and take into consideration elements such as the local architecture and site constraints. Marsh Wall follows the principles of previous schemes we've delivered in terms of carbon emissions. Research by academics from the University of Cambridge and Edinburgh Napier University found that construction using volumetric modular systems produced significantly less CO2 emissions compared to traditional methods. In Marsh Wall's case, using off-site construction could reduce construction waste by up to 80%, according to the local authority, with 97% of the waste being recycled. Furthermore, our schemes result in lower operating costs.

### **What's the projected timeline for this project?**

We are about to start construction onsite with the building due to be completed for the commencement of the 2025 academic year. This is a significant program savings particularly given the scheme's scale, intricacies, and the site's complex nature. It illustrates the speed at which our modular system can deliver such projects. The Tide and Vision modular framework offers significant program savings and certainty due to its ability to manage certain external risks.

### **Tell me about the logistics for this project (and similar projects). How much advance work needs to be done to coordinate the storage and transportation of all the modules you'll be building?**

As a high-level overview, the first process is to divide the building floor plate into appropriate module sizes suitable for transport – we call this modularization. We then identify an appropriate offloading point and carry out a detailed route analysis from our manufacturing facility to the site to identify any logistical restrictions. As with all our schemes, we will implement a highly effective logistics scheduling program to ensure modules are delivered when needed and craned into position. The process is mapped out meticulously in collaboration with the relevant local transport authorities, and progress is continually monitored to ensure we are on target to deliver on time.

### **Are you in charge of craning and setting the modules as well, or just building them? What can you tell me about craning modules for very tall structures? Are there procedures or processes that aren't used with smaller modular buildings? If so, what are they?**

Vision Modular executes the safe arrival, lifting, and installation of all our modules. In conjunction with the logistics strategy, this is known as the craning strategy, each requiring the same detailed consideration. Factors that need to be considered include the size and weight of the modules, the location of the loading bay and the footprint of the building. The crane location will then be determined by a variety of factors and engineered to suit. The process is similar regardless of the height of the building, and the same stringent quality controls and strategy apply. For taller buildings, an additional tower crane mast restraint may be required.

### **In taller buildings, generally speaking, are the modules nearer to the foundation built differently than the modules nearer to the top? If so, how?**

Our modular buildings also use traditional construction methods for the substructure. Larger, robust columns are used on the lower floors of our taller buildings to support the substantial vertical loads for these higher rise buildings.

### **What's the most challenging part of the fabricating very tall modular buildings?**

We look at this another way. We believe the modular system removes many challenges modern developers face. The manufacturing and fit out process takes place on a factory floor which is a safe, clean and temperature-controlled environment. We're removing those high-risk activities for the onsite workforce, for example, we can install module windows for the 40th storey within the safety of the factory.

### **What's next for Vision Modular? What other projects do you have in the pipeline?**

We currently have 3,000 homes under construction in the UK with a further significant pipeline, and there is strong interest in our technologies from other jurisdictions. We believe we can continue with our track record of delivering homes and play a significant part in revolutionizing how modular projects are delivered.

We are demonstrating the potential of volumetric modular construction to become a mainstream method for delivery in the construction industry, while ensuring architectural design intent and aesthetics remain at the heart of each project.

Years of significant growth, in terms of our pipeline and financial strength, is demonstrated through our long-standing partnerships with some of the world's biggest institutional purchasers and has established modular as a mainstream method of delivery.