

## **UTILIZING MODULAR DESIGN & CONSTRUCTION**

### **A SOLUTION TO THE NATION'S HOUSING SHORTAGE**

By RC Alley



The COVID-19 pandemic and its associated economic downturn have heightened an already severe housing crisis, with new research estimating that between 30 and 40 million people in the U.S. are at risk of eviction in the next several months. Parts of the country, California in particular, are especially impacted and there has never been a greater need to develop more multi-family projects, especially affordable housing and housing for those experiencing homelessness. Yet, the COVID-19 outbreak and the associated regulations and safety protocols on construction sites have significantly complicated an already arduous construction process by delaying land use and planning applications while slowing down construction timelines. While not a panacea for all multi-family projects, modular design and construction offers great efficiencies that can help address some of the biggest challenges faced by the multi-family sector today.



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### **A Great Fit for Multi-Family**

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Efficiency in modular design and construction stems from the ability to replicate and standardize units, also called modules. For this reason, high-density multi-family developments, both affordable and market-rate, are well suited for this alternative delivery method.

The predictability and speed of the modular construction process that is afforded by a controlled, factory-built environment are two other key advantages. With 65% of modular construction currently completed in factories, various building components can be constructed in parallel and the risks inherent in onsite construction, such as weather and workforce disruption, can be reduced. A rise in automation and robotics in modular factories has further enhanced quality control and worker safety, helping to alleviate construction delays and shorten construction timelines to approximately half the time of traditional developments.

Housing for the homeless population is another area in which modular is being explored. AO, in partnership with Horizon North, is developing a case study for an affordable, temporary modular solution that provides an option between temporary tent-like structures and traditionally built housing. The solution, known as T-MOD, combines the benefits of being a temporary, flexible affordable housing solution that can cut the development timeline of much needed housing from years to months through the installation of pre-built modular units, while also providing an elevated quality of life for residents and the greater community. This building solution has been successfully implemented for homeless housing in Canada and is a promising option in California, which is home to the largest homeless population in the nation.

### **Keys to Modular Success**

Not all projects lend themselves to modular construction. Two factors that are critical to realizing the full potential of modular construction are: selecting the right team and collaborating at the onset. It is crucial to select the right architect and consultant team who brings the knowledge

and discipline to navigate the modular process, and properly assess the project goals, site and other important factors (such as transportation, logistics and time management) to ultimately determine whether it's a good fit for modular construction.

A great example of this working process is the partnership between AMG & Associates / The Pacific Companies (developer), AO (architect), Prefab Logic Solutions and Autovol (manufacturer). This team is partnering to develop, design and build over a dozen affordable multi-family modular projects throughout California. Based in Nampa, Idaho, Autovol recently opened their state-of-the-art 3D volumetric automated factory and began fabricating the modular units for Virginia Studio in San Jose, Calif., the first project off the assembly line for the new facility. While typically architects follow module specifications and design constraints provided by the manufacturer, the AO team collaborated closely with Autovol and Prefab Logic Solutions from the onset to develop prototype 3D volumetric modular units that can be built efficiently in Autovol's automated facility. The partnership has created a winning formula for modular best practices and as a result, each project will maximize the potential of multi-family modular construction.

While modular construction is not new, it has yet to be adopted on a broad scale by the multi-family community. This pandemic has exacerbated some longtime challenges of the industry that modular can help address. While not a fit for every project, modular could be the disruption our nation needs to help solve the housing shortage.

***RC Alley** is a partner at AO, a California-based architectural services firm with 13 distinct design studios serving the entire commercial real estate spectrum, including multi-family, modular and transit-oriented developments. He can be reached at [rca@aoarchitects.com](mailto:rca@aoarchitects.com).*