Riding the Wave of Modular Success

THE MODULAR RISK MANAGEMENT SERVICES TEAM FROM FULCRUM

MORITZ LUNO
ANDREW TYNES, CIA, MSCM, AC
RAYMOND L. HARROWER, CPC
Riding the Wave of Modular Success

BY MITCH LUND, FULCRUM

The ocean covers the majority of the planet and is the most unexplored aspect of the earth. Its deepest depths remain a mystery, yet we know a great deal about what's on the surface and nearest to our shores—waves. We understand what creates them, their various components, their cycles, and we know they'll continue, presumably indefinitely. The ocean doesn't adapt or change to meet our needs. We change and adapt to it.

Construction and development are no different. It's been happening since the beginning of human existence. Like waves, we know what creates it, its various components, its cycles, and we know that it will, presumably, continue as long as we do. However, unlike the ocean's waves, construction has to adapt and change to meet the ever-shifting and growing needs of society. Some aspects have been tried for centuries, dating back to the ancient pyramids (the original offsite construction project) and found to be tried and true with relatively little change. Other aspects have done nothing but grow and adapt as our understanding of the principles of engineering, nature, and our environment grows.

So, what's the point? What does this have to do with offsite and volumetric modular construction? Simply put, everything! Plato was correct. Necessity IS the mother of invention. As the August 2018 study by the AGC of America states, 80 percent of US construction firms have already had significant trouble recruiting skilled labor. With the construction workforce projected to grow at a measly 0.5 percent annually over the next ten years and the average age of the existing labor force being 41 and quickly aging out, the US construction labor force is quickly drying up. The current COVID-19 pandemic is going to accelerate this challenge, with many tradesmen looking for an alternative, "safer" careers. This current and worsening labor shortage, however, is not driving the industry to invent something new. It requires the industry to take a hard second look at a construction method developed long ago—offsite and modular construction.

Just as any surfer, fisherman, explorer, or sailor needs to learn the ocean and rhythm of the waves, prospective developers who recognize the potential benefits of offsite and modular construction need to identify the components and rhythms of the offsite and modular wave.

See the Swell and Paddle Like Crazy!

According to science, a groundswell is a long-period group of waves created by a distant storm over long distances. These are,
Riding the Wave of Modular Success
BY MITCH LUND, FULCRUM

The ocean covers the majority of the planet and is the most unexplored aspect of the earth. Its deepest depths remain a mystery, yet we know a great deal about what’s on the surface and nearest to our shores—waves. We understand what creates them, their various components, their cycles, and we know they’ll continue, presumably indefinitely. The ocean doesn’t adapt or change to meet our needs. We change and adapt to it.

Construction and development are no different. It’s been happening since the beginning of human existence. Like waves, we know what creates it, its various components, its cycles, and we know that it will, presumably, continue as long as we do. However, unlike the ocean’s waves, construction has to adapt and change to meet the ever-shifting and growing needs of society. Some aspects have been tried for centuries, dating back to the ancient pyramids (the original offsite construction project) and found to be tried and true with relatively little change. Other aspects have done nothing but grow and adapt as our understanding of the principles of engineering, nature, and our environment grows.

So, what’s the point? What does this have to do with offsite and volumetric modular construction? Simply put, everything! Plato was correct. Necessity IS the mother of invention. As the August 2018 study by the AGC of America states, 80 percent of US construction firms have already had significant trouble recruiting skilled labor. With the construction workforce projected to grow at a measly 0.5 percent annually over the next ten years and the average age of the existing labor force being 41 and quickly aging out, the US construction labor force is quickly drying up. The current COVID-19 pandemic is going to accelerate this challenge, with many tradesmen looking for an alternative, “safer” careers. This current and worsening labor shortage, however, is not driving the industry to invent something new. It requires the industry to take a hard second look at a construction method developed long ago—offsite and modular construction.

Just as any surfer, fisherman, explorer, or sailor needs to learn the ocean and rhythm of the waves, prospective developers who recognize the potential benefits of offsite and modular construction need to identify the components and rhythms of the offsite and modular wave.

See the Swell and Paddle Like Crazy!
According to science, a groundswell is a long-period group of waves created by a distant storm over long distances. These are,
according to most surfers, the preferred waves. Why? They have longevity, stability, power, energy, and are ready to be ridden when the wave hits the shore. The same is true with offsite and modular construction. This current wave, brought on by a not-so-distant perfect storm, has been coming for a while. The trick is recognizing it and knowing when to start paddling.

As a prospective wave rider sees that swell coming, they point themselves in the right direction and start paddling like crazy! You should, too, if you’re a developer looking to increase your profitability and complete your project in as much as half the time. Why so much paddling at the beginning? Because modular construction is not design-hyphen-build. It’s design, comma, build. Design first. Build second. It’s not “design as you go”. The difference between a hyphen and a comma in modular construction is the difference between you riding the wave and the wave riding you! With modular, you need to establish and complete your design & engineering and establish your project delivery team (including architect, modular construction manager, manufacturer, general contractor, set-up contractor, transporter, etc.) upfront.

With an average rate of 10 completed modules per week on many manufacturing lines, the guestrooms for a typical 155-room modular hotel (which consists of approximately 80 modules), are complete in an alarming eight weeks! There’s no time for changing your mind once production begins. That’s where the prototype process plays a critical role. The prototype is the developer’s and project team’s opportunity to see it in person, ensure it meets building specifications, and make changes without the pressure of holding up a production line. And so you know: an average-sized manufacturing facility with a production staff of 125 people costs approximately $50,000 per day. Do yourself a favor. Don’t be the reason to hold up a manufacturing production line.

According to Bruce Greenfield, Principal at Architects Orange (AO), “This accelerated schedule relies on accelerated decision making, particularly for interior design and FF&E. That is an important part of the equation to maximize the shortened schedule that modular can deliver.” As the modular architect of record on the Virginia Street Studios project, a 301-unit affordable housing project in San Jose, CA (developed by The Pacific Companies and manufactured by Autovol) on which Fulcrum is currently providing modular risk management services. AO knows a tremendous amount about how this proactive strategy can be the difference between a success story and a cautionary tale. Caleb Roope, the President, and CEO of The Pacific Companies summed it up perfectly. “Modular construction requires discipline in multiple domains. A tentative commitment to using modular construction is not a wise approach and defeats some of the benefits of this building technology. First, assess that modular is or is not “right” for your project, and if it is, proceed with earnest intention.”
To assist in and accelerate that decision making, Fulcrum offers Modular Feasibility Reviews. “We work alongside architects, modular manufacturers, set-up contractors, and general contractors to identify and provide preliminary modular layout, constructability solutions, and Rough Order of Magnitude (ROM) pricing for the modular and site work portions of the project, initial schedule duration, preliminary specifications, and a delineation of contractor responsibility,” says Mitch Lund, Project Manager at Fulcrum. This review puts prospective developers in a powerful position to move forward into financing, permitting, and design with the confidence of knowing their potential gains by developing with modular and retaining a strong modular delivery team.

A savvy developer who’s done their homework, recognized a perfect swell, assembled a reliable project team who are all paddling in the same direction, and made the up-front decisions will enjoy the smooth transition from the swell onto the face of the wave. Fulcrum has a deep-rooted knowledge and experience in modular construction and risk management, which makes all the difference between a rough and a smooth ride. With a nationwide network of respected and trusted industry professionals, including architects, modular manufacturers, modular-centric general contractors, set-up contractors, and the like, as Lund mentions, “Fulcrum can help you paddle at the right time right direction, and ensure you enjoy the best view on the beach, the face of a glassy, smooth modular wave. Surf’s up!”

What do we do now? Ride the Wave!

What’s better than enjoying the thrill of riding a one-of-a-kind wave and partnering with the most powerful and untamed force on earth? Some would say nothing. Most hospitality and multi-family developers would say that making a bunch of money by successfully building a modular project and reaping the immense rewards is better!

There may be few current examples that better showcase the power of modular construction than the wildly successful Home2Suites by Hilton in South San Francisco, CA, completed in 2019. The developer, Vijay Patel, President of Ashkar Development, Inc., rode the modular wave to the tune of $7.23MM in total savings. As the project is located in the Bay Area where skilled labor is in short supply and costs of development are among the highest in the world, the $2MM in hard cost savings would have been enough to attract any developer to modular. But that was just the beginning. Because modular affords the project delivery team to construct the building concurrently with the site work, the project completed eight months faster using modular construction versus using conventional construction, resulting in an estimated gross revenue capture of $5.23MM.

Ashkar Development did it right! They did their homework, built their team, took the experts’ excellent
advice on their team, and watched their project blossom into a success story for others to follow! He said it all when he said, “Being our first modular hotel development, we needed to have the right team supporting us. Fulcrum’s modular construction knowledge and unique risk management services proved to be vital to the project’s success. We look forward to working with Fulcrum on many more modular deals!”

This can be your success story too! Let us help you find the wave and ride it to your own success story!

Wait! What About the Surfboard?
Financing is to development what a surfboard is to surfing. You don’t get far without it. Yet, funding in the world of modular is still a challenge. According to Jeff DeHarty with NorthMarq, the largest privately-owned provider of commercial real estate debt and equity in the US, “Significant recent investments from the likes of Alphabet, Amazon, IKEA, SoftBank, PIMCO, Griffin, and Alpha Edison are shifting the perception of modular construction and accelerating institutional acceptance. However, while institutional investments provide credibility for an emerging industry, many developers often find that obtaining construction financing for their modular projects is challenging. Understanding some of the uniqueness surrounding the modular industry is critical in expanding lender comfort.”

He goes on to explain a widely misunderstood concern from the lending perspective. “As the lender typically takes a senior position of security within the land as real property collateral on[conventional] projects that are built onsite, the lender’s collateral improves as the project progresses. With modular, the offsite manufacturing prevents the lender’s real property collateral position from improving during manufacturing. They are deemed personal property and don’t convert into the real property until the modules are delivered and set onsite. Compounding this collateral issue is the fact that design and material deposits, and an accelerated draw schedule often leads to modular projects requiring up to 50 percent of total project costs to be funded upfront. This timing creates a misalignment of project capital needs and the lender’s collateral position. As modular construction has gained more prevalence, some lenders have been more willing than others to learn about the unique risks associated with modular construction. These early adapting lenders have structured loan agreements accordingly to mitigate risks, such as filing UCC (Uniform Commercial Code) liens to collateralize the modules as they remain personal property while at the manufacturing plant. Expect lenders closely scrutinize the manufacturer’s experience and financial health, as nobody wants an insolvent manufacturer with a half-completed project.

Additionally, the transportation and onsite setting of modules pose unique exposures of liability, requiring insurance coverage to be structured accordingly during these periods of the collateral transfer. To change this perception, developers must form a best in class team, starting with selecting the appropriate design and manufacturing partner. Other advisors such as attorneys, financial and insurance brokers, and inspecting consultants are critical in mitigating risk.

Fulcrum can help you paddle at the right time right direction, and ensure you enjoy the best view on the beach, the face of a glassy, smooth modular wave. Surf’s up!

“

The next five years are critical for the modular industry. Continued and repeated success stories of modular project deliveries, stabilizations, permanent refinancing and profitable dispositions will set the tone for institutional lenders and their willingness to provide construction financing.”

What’s the Next Wave?
So, what’s next? What’s the next wave of offsite construction? How will offsite and volumetric modular evolve and progress? What’s going to help the offsite industry maintain this success? What’s going to prevent it from becoming just another wave breaking on the shore, quickly becoming a thing of the past?

Some industry professionals feel that volumetric modular, in and of itself, may not be the only significant offsite wave of the future. Another offsite construction

Andrew Lyons, CIA, MSCM, AC

This can be your success story too! Let us help you find the wave and ride it to your own success story!
method, Cross Laminated Timber (CLT), appears poised to take wood construction to new heights. Literally. Heavy timber construction goes back centuries. However, with old-growth timber protected and in short supply, the timber industry needed a unique solution. In the early 1990s, CLT began being used in Germany and Austria and, by the 2000s, across Europe. To make a short story tall, CLT takes the place of above-grade steel and concrete superstructures which make up most of the mid-to-high rise construction using laminated timbers and sheathing to create structural members. While there remain inevitable trade-offs, CLT is considered an advantage due to its design flexibility, eco-friendliness, and being much lighter than steel, and concrete requires smaller foundations. Beyond that, CLT is prefabricated. This offsite component adds to the advantage already realized by the volumetric modular. According to Tom Kostelecky, AIA, Director of Design at Marriott International, who are massive proponents of volumetric modular construction, “There are similarities between modular construction and CLT technologies (advantages overlap, speed to market, cost, buildings are quieter, more energy-efficient), but industry capacity and market availability are concerns.” CLT seems to be employed more like fundamental building blocks (walls and floors), and as such, might have a much greater overall potential for market adaptability, well beyond modular. Franchisors are not necessarily able to apply modular solutions to every brand they offer, and modular approaches in project development pipelines may only account for single digit percentages relative to construction approaches overall; the two technologies could be linked in practice, but CLT could well surpass modular going forward.”

The concept of a volumetric modular and CLT hybrid is also being explored. A group of industry professionals consisting of the aforementioned Mr. Kostelecky (Marriott), Mitch Lund (Fulcrum), Chad Chalupsky, MBA (Fulcrum), Gary Golla, NCARB (SERA Design), Josh Cabot (SERA Design), Erica Spiritos (Swinerton Mass Timber), and Jack McCutcheon, PE (KPFF Engineering Consultants), are exploring additional applications of CLT and will be publishing a research article later in 2020. Stay tuned for more on that.

Another emerging trend in the world of modular is robotics and automation. Modular manufacturers such as Skender, Z-Modular, AutoVol, and others have added robotics and automation to their manufacturing process in an effort to integrate auto-industry efficiency and output into the modular manufacturing process. This aspect is still relatively new to the volumetric modular industry, and the overall impact is yet to be realized, though it’s presumed that the impact will be potentially significant.

Some Waves Break Harder Than Others. Successful Modular Development Through COVID-19

Trying to build anything in this current pandemic mess that is COVID-19 can be like trying to ride a “closeout” wave. That’s a wave that breaks all at once, abruptly, and from end to end. It doesn’t allow surfers to ride it, and can be more of a nightmare than a wave. But you don’t have to let COVID-19 stop you from planning for the future and catching the next set! Many people have been credited with saying it, but the phrase, “Never let a crisis go to waste!” is a good bit of advice for developers who might be fearful of development right now. That’s where offsite and volumetric modular come to the rescue! Instead of COVID-19 being your personal closeout wave, offsite and modular construction can be more like a “surging” wave. Offsite and modular are the solution to the labor shortage, immense and out-of-control labor costs, and wary lenders who see sharks in the water and closeout waves everywhere.

Modular offers stabilized, fixed pricing that doesn’t change with the tides and currents. The consistency of the labor force provides more consistency of quality. The dry, well-lit, temperature-controlled, safe, and efficient factory setting of modular allows construction to occur year around without the hazards of extreme weather that can damage buildings, delay the schedule, and present potentially unsafe working environments. As of the writing of this article, I don’t know of a single modular factory floor that’s been shut down due to COVID-19. Modular manufacturing has been steady through this crisis.

Where are you in the process? Are you in place? Are you paddling? Or are you still on the beach? Use this time, despite its many delays, to plan your next project using offsite and modular construction! This is a perfect time to connect with Fulcrum and its industry partners to perform a Modular Feasibility Review. Get your plans, your lender, your team, and your project in place! When we finally get back to life as we (sort of) knew it, you will surge into the future like a pro surfer who finds their spot, locates the perfect swell, paddles at the right time, and rides modular construction like a boss! 🏄
The annual listing of 10 companies that are at the forefront of tackling customer challenges