

## Building a Better Box by Thinking Outside of It

### *Innovations in the Pre-fabricated and Modular Construction Sector*



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*Gould & Ratner presents the next installment of our Construction Interview Series. As a continued effort to keep our clients informed of new building techniques and processes, we will continue to periodically sit down with leaders at some of the most influential companies in the construction industry to discuss their insights on relevant and pressing topics of interest in the industry.*

*Patrick Johnson, a partner in the firm's Construction Practice, recently discussed the creation of PrefabPads as well as new design methodologies in the construction industry focusing on pre-fabricated and modular construction with Peter Seltenright, Co-Founder and Chief Operating Officer of PrefabPads LLC.*

*Founded in 2022, PrefabPads, is focused on manufacturing and distributing innovative prefabricated homes to the United States under the My Cabin brand. Although the designs are purposely small in footprint they provide the feel of an actual home rather than that of a traditional tiny home or recreational vehicle. The focus is to provide an affordable living space built with high-end materials and a structure that will last.*

**Pat:** Peter, thank you for sitting down with me to discuss this interesting topic and your new endeavor. Could you tell me a little more about this new journey of yours with PrefabPads? What interested you in the prefabricated and modular construction sector?

**Peter:** Pat, thank you so much for having me. I'm always excited to chat about this new business and the product we're building. The long answer is that I come from a family in construction and design of high end homes in northern Michigan so building is kind of in my blood. I had been working in tech for years but I had been following the trends in prefab and modular building, especially when it comes to quality design in smaller structures.

When Covid hit I could see the shift to remote living, more people looking to escape into nature, but also the need for housing. I first explored the idea of a boutique nature resort with my co-founder, Hemang, where we would place 8-10 very cool prefab cabins on a property for short term rental. We just couldn't find the property we wanted in the location we had in mind and our favorite designs seemed to be stuck in Europe. We then got pretty lucky and found this brand, My Cabin, in a Dwell article and I immediately reached out to the founder. He put his trust in us to bring the My Cabin brand to North America and here we are now in 30,000 sq ft of factory space in Waukegan, IL building out the My Cabin product.

**Pat:** Regarding the units themselves that you are currently distributing, what is unique about them and who do you foresee as being your target customer or user? Since these are largely prefabricated, is there any ability to customize from the factory?



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**Peter:** Well we were a bit naive and thought we could just import the materials from Europe and build from their plans right away. We quickly learned that we needed to go into an extensive engineering process to bring the units to US code. We then made a decision to ensure these are top of the line cabins structurally and also with materials and finishes. It's not that in Europe they're building a substandard product, but we knew for the US market that high-end materials that last would be appreciated and the increased price of the units would be worth it.

While these units may have a rather traditional shape and layout, what's really unique is that we've converted these to what we feel is the most structurally sound and high-end cabin on the market for this price point. Our cabins can meet 130mph wind loads and comply with seismic requirements, and insulation levels for every state in the country. It's also just a beautiful Scandinavian design with tons of natural light and space. While our competition focuses on compliance with RV regulations or ease of shipment capabilities which restricts layout configurations, our prefabricated design is much wider making you feel like you're in a real home.

Our target customers range quite a bit. On one end you have someone trying to take advantage of Additional Dwelling Unit ("ADU") regulations and placing a unit in their backyard for an extra bedroom or an office, we also have customers looking for a few units for a remote property as a vacation home and/or a rental property, and then we have conversations with developers looking to build out their resort property. We're able to cater to all of it due to our pre-fabricated design process.

In terms of customization, it's limited but that's by design in a manufacturing environment like this. The dimensions of the unit can't change as we don't want to get into engineering changes for all projects but we can work with customers on finishes or non-load bearing items. Right now, we have two finishes for the exterior siding color and can offer different flooring finishes, and cabinet colors. Our design also affords us the ability to remove kitchens and bathrooms if customers prefer blank spaces and even small customizations with windows.

**Pat:** I have talked previously about the benefits of using prefabricated and modular construction methods but I am curious as to what your thoughts are on the topic?

**Peter:** There are plenty of advantages to this method. The obvious ones are speed and price. We can build these units in a month and have them to you in two months (if materials are arriving on time). Our fabrication process also allows us to take advantage of bulk ordering materials to bring price down and the pre-fabrication process also reduces material waste in the process. Additionally, a key advantage is a controlled building environment. With everything happening indoors, we're able to ensure that no moisture gets into the structure before it's closed up and finished and always be building year round. So while we're building the cabin, the customer can be installing their foundation in a parallel path, which really speeds things up.

Overall the pre-fabrication process is environmentally friendly and allows us to produce structures in a fraction of the time and at lower prices than a traditional stick-built home. But I won't say that it's all advantages. In order to make this work we have to limit customization and we have to make choices on the units to meet code in nearly all states. But at the same time, the repetition of building these over and over makes us experts on what we do compared to stick-built that essentially reinvents the wheel and brings in new processes and methods for each project.

**Pat:** What are your thoughts on trends in this industry and do you think these trends will continue in the future? From your perspective, has the pandemic impacted your business at all?

**Peter:** It's certainly a hot industry right now and it will continue to grow as traditional builders are backed up, building costs are up, and there's a housing shortage. We are seeing a ton of competitors popping up all over the world and more and more in the US but you tend to see a lot of concepts and renderings, not an actual project built at a high scale. This industry certainly addresses the housing shortage and the difficulties of getting things built right now but we still have issues with outdated zoning ordinances. ADUs are still not allowed across the country, many places have restrictive minimum square footage rules or even restrictions on the number of dwellings on a property.



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I think these restrictions are holding the industry back a little bit ,but I am hopeful with all the interest this sector is seeing that these outdated codes can be updated to conform to this new type of construction.

**Pat:** Do you see any specific regions/states utilizing these types of units more than others? Why do you think this may be?

**Peter:** It’s certainly clear that California and the West Coast seem to be the early adopters, in general they have less regulations against smaller square footage and more acceptance of ADUs. It also doesn’t hurt that a lot more of that population really wants sustainable products both in how they’re built and how they operate on the land. Most of the companies in our industry tend to be out there addressing that demand. But this will spread across the country and demand is really taking off in the East in places like upstate New York and North Carolina, which is exciting for us being in a location that can more easily address those customers.

**Pat:** With the trends of people leaving cities and things like glamping taking off, are you seeing demand from developers and hoteliers?

**Peter:** Yes, there’s a major trend towards unique escapes and nature focused retreats. I think we’re seeing the old campgrounds and cabin properties being updated with better rental units and concepts that connect people with nature in unique ways. We’re seeing a lot of glamping ideas with safari tents or RV concepts and I think that now that we’re producing unique cabins with lots of glass and exposure with the feel of an actual stick built home rather than that of a trend, I’m certain we’ll see more of a shift towards structures like ours.

**Pat:** Have you seen any pushback from any trades/municipalities on the use of prefabricated/modular construction techniques?

**Peter:** Yes, as I previously had mentioned there’s an unfortunate misunderstanding of the product and a lack of willingness to go against their outdated zoning ordinances. There’s also a common confusion between modular and manufactured homes. We build modular homes to US building code with permanent foundations. While they’re small, these are real high-end homes. Manufactured homes are mobile homes but it’s a confusing term as modular homes are built in a manufacturing facility.

**Pat:** Many construction industry professionals are experiencing material shortages and delays with construction due to a myriad of issues such as labor constraints and supply chain bottlenecks. Has your business been affected by any of these issues from? What steps have you taken to minimize these impacts?

**Peter:** It has certainly made things more difficult but I have been pleasantly surprised with the availability of items that we need. Although that doesn’t count windows and doors, the costs and lead times for those are incredibly frustrating given what has been happening in the construction industry. But outside of that, we have luckily had no issues with lumber, siding, flooring, cabinetry, etc.

Our method is to prefabricate the framing of the units but place large orders for finish materials as orders come in and those lead times work with our schedules. The one exception is the need to pre-order windows and doors and to take on that cost upfront.

**Pat:** Materials selection has become increasingly important and we have seen unique and specialty materials being specified on recent projects. Have you seen your clients making similar requests with their designs and how does this impact the prefabricated nature of your product?

**Peter:** Customers seem educated about materials and sort of test us on what we use. Fortunately, our choices of high-end materials has made this almost a non-issue. We already bring in a design with European style tilt and turn windows and doors and really high end wood paneling inside and out. We certainly listen to the requests of our customers and if we see a common trend, we try to address that with changes to the product we build moving forward. When we first started, we had to take a lot of feedback on the design from Europe and make it more US-friendly. For example, we couldn’t have a tiny bathroom sink or no washing machine for our design. Those kinds of things required thought and edits to the flow of the units. Fortunately, we seem to be meeting the requests for specialty materials.



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**Pat:** We have clients with projects all across the United States. Is this sort of design methodology more applicable to any specific geographical region, project site, or climate zone in your opinion?

**Peter:** Our designs seem widely accepted across all parts of the country and we have tried to create a product that can be installed almost anywhere. I would say that any of the hot real estate markets seem to have multi year waits for builders so naturally we're a great option as a quick solution. Prefab building is going to succeed in those areas where wait times and costs have gone through the roof. Also, anyone looking for an add on to their main residence would really benefit from our methodology. No one wants a construction site on their property for a full year just to build a few hundred square feet. Why not put in an easy foundation and have a modular unit delivered in a matter of months.

On the flip side, it's only fair to note that we do have some limitations. A prefab builder has a big challenge in creating a product for all 50 states when addressing extreme areas like Florida coastal zones that require 150-180 mph wind loads, it's really not possible to expect to use our same product unless we create a completely new product for those areas. Right now, we don't want to do that because it would either be something with a less desirable design or requires a design that significantly increases cost while reducing aesthetic appeal. For our design, climate zones are easier to handle and we decided to address that with extreme insulation that also provides better energy efficiency for all customers.

**Pat:** Although these units are largely prefabricated off site, there is likely some additional work to be completed prior to final completion. What additional work typically needs to be completed on site before these units are ready for their intended use? What benefits does this provide over a more traditional ground up construction type project of a similar footprint?

**Peter:** I really do wish we had the operation to be our customer's contractor across the country and to provide an all-in-one service but that's just not a reality. Our customers need to work with a GC to install the pier foundation we have designed and route their electric, water, and sewage to the correct locations per our design and their site layout. The great thing about this is that they can be doing that work while we're building their units instead of waiting to do that before construction can begin. Beyond site prep, the customer's GC will also need to coordinate the installation once the truck arrives with the unit(s). This might seem daunting but it's really just a crane that lifts the completed unit off the truck and it places it on the foundation where the final connections are made. Installation happens in a day and then it's move-in ready.

Of course other additional work could be customizations customers decide to make after the unit is installed on the exterior or interior. That could be building connections between units, which is yet another benefit of utilizing our pre-fabricated design process, or installing their own kitchen design. That's their choice.

**Pat:** Are there any other issues you think should be considered when contemplating using a prefabricated or modular construction type structure as opposed to a more traditional ground up construction?

**Peter:** Customers need to be comfortable with minimal customization, that's the obvious drawback. Another key item that could be challenging is financing. At this square footage it can be challenging to find a bank that will be open to a home loan due to lack of comps. They also seem to struggle to understand modular vs manufactured and how exactly our construction process works, which might prevent them from offering a true construction loan.

**Pat:** Finally, before we wrap up, I wanted to touch briefly on "green" design. It has become quite common in my experience for a design to incorporate certain green components, whether that be through solar panels, reflective window panels, innovative heating and cooling systems. I was curious what your thoughts were on "green" design. Since your units are largely prefabricated, do they have any "green" design aspects? Is there any ability to modify during the prefabrication process to make the unit more "green"?



**Peter:** We kind of ended up with a “green” design without even really focusing on it. Our high insulation levels, very efficient windows, energy recovery ventilation in the units and reduced building waste has all given us a product that I would consider sustainable and highly efficient. We’re doing some initial research on LEED certification and I don’t think we’re far off. Over the next year we also plan to address off-grid installation ideas. Solar is a no-brainer and rather simple to add and plug into our product. Other items like rain water collection, gray water systems, composting toilets, etc. are all things we’d like to be knowledgeable on for our products. My goal is to have clear direction on how that will work with our product line so that customers know their options and what they can do.

**Pat:** Peter, thank you again for sharing your knowledge and experience, especially as it relates to the prefabricated and modular construction industry. I believe that demand for these types of structures will only increase in the future and think it is important to stay abreast of innovative ways to meet this demand. Best of luck with this new endeavor and perhaps we can speak again soon to see how things are progressing in the industry.