

Builder's Guide to Profitable Modular Construction





Introduction

Congratulations. Your choice to consider modular or “off-site” construction for your next project will allow you to take advantage of the many benefits offered by this efficient alternative to traditional site-built methods.

This guide provides an overview of modular construction. It is designed to help you better understand your role in the process, identify and avoid potential pitfalls and maximize your profits on every modular project.

Table of Contents

01	“Modular Construction” Defined
02	Design Flexibility: Meeting Customer Expectations
03	The Financial Advantages of Modular Construction <ul style="list-style-type: none">Reduced Financial RiskDecreased Site Supervision CostsDecreased Site Management CostsDecreased Vandalism and TheftGreater Insurance SavingsReduced Architectural and Engineering Fees
04	Managing the Process Towards Profitability <ul style="list-style-type: none">Submitting the Purchase OrderUnderstanding Payment PoliciesOptimizing Site SelectionKnowing Your Scope of ResponsibilityEducating Your SubcontractorsScheduling the DeliveryAddressing Delivery and StoragePlanning for SafetyArranging the Initial InspectionRequesting Warranty ServiceManaging Neighborhood ExpectationsContact Information

01

The modular concept is not new. For many years, builders have been improving the construction process by purchasing factory-assembled components such as pre-hung doors and windows, cabinet modules and roof trusses. These components allow builders to build faster and better.

Modern modular construction is simply a natural extension of this process, in which larger components are pre-built in a manufacturing facility with the same materials used on-site and adhering to the same construction codes.

In a manufacturing facility, modular manufacturers have access to tools, jigs, tables and material handling equipment which are not viable on a field construction site. These tools and equipment allow us to fabricate a stronger and more durable structure while controlling our labor costs.

And, since all material is protected from the elements and the construction takes place in a climate-controlled environment, the modules are not subject to weather-related damage that can cause rework or costly product liability issues (e.g. mold).

The result? Completed components (modules) are transported to your site and assembled on your foundation, resulting in a structure that is approximately 80% complete.

“Modular Construction” Defined

Many builders have a misperception that “modular” refers to a type or style of housing. Modular actually refers to a construction technique that can greatly enhance your efficiency and reduce your risk. With it, you can complete more homes and ultimately increase your profitability.

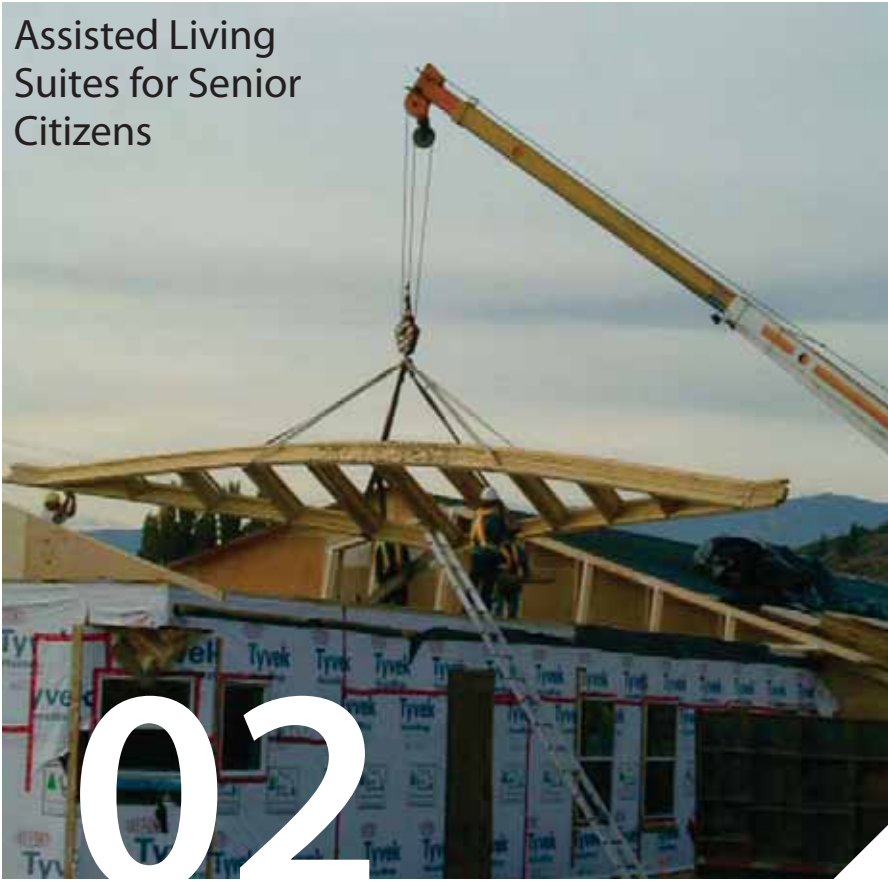
Advantages of Modular Construction

- Quality control
- Construction speed
- Energy efficient structures
- Stronger, more durable structures
- Less waste
- Neighborhood friendly – reduces construction traffic and noise

“I worked with SRI Homes from first concept through to occupancy. I was extremely pleased with the high quality of construction, along with their efforts to ensure a timely and successful project.”

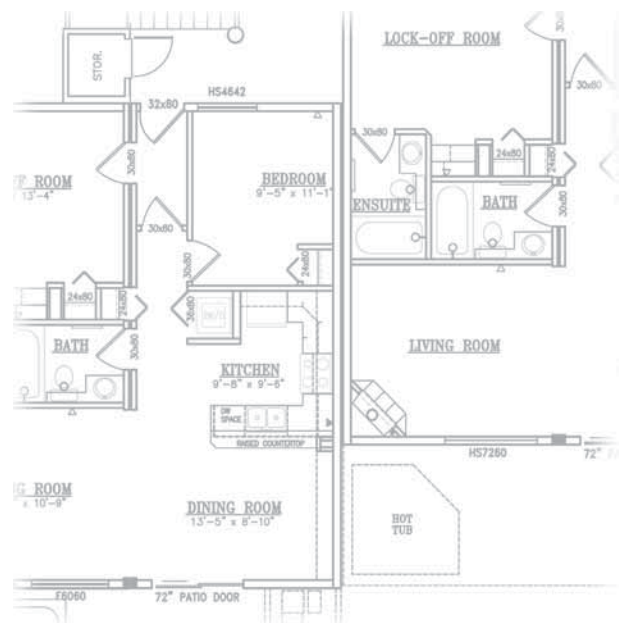
Alan Campbell, Consultant in Supportive Living

Assisted Living Suites for Senior Citizens



Design Flexibility: Meeting Customer Expectations

Thanks to computer aided design (CAD), modern modular construction can produce modules for virtually any architectural style or type of home. Once the modules are in place, your crew can install the custom trim and siding, signature architectural features or other unique design elements that you or your customers expect. So, whether you're building an affordable home, a high-end custom home, two-story townhouses or entire communities, you can do it faster and more profitably with modular construction.



03

The Financial Advantages of Modular Construction

While many decide to use modular construction simply to enhance the quality of construction, you should also be aware of the many value-added aspects of this innovative construction technique.

Reduced Financial Risk

Prolonged traditional construction schedules not only expose you to weather risks and other acts of God, they also leave you at the mercy of market swings or customer fall-out. By reducing the time of your project, modular construction minimizes your financial risk.

Most construction project timelines can be reduced by 33 percent or more when modular construction is used. This means shortening your construction loan and thus reducing the financing costs for the project.

Modular construction also decreases the risks associated with using small subcontractors. As small companies, they may be unable to stand behind their work – leaving you responsible for their deficiencies.

Finally, when you contract with a modular supplier, the invoice will reflect a majority of the cost for the project – thereby limiting the potential for cost overruns and unforeseen expenses.

Decreased Site Supervision Costs

With modern modular construction, your modular manufacturer becomes your largest subcontractor – significantly reducing the number of subcontractors you need to source, negotiate with and, later, oversee on-site. This can be especially advantageous in areas of the country facing shortages in skilled labor.

Less supervision can make you more productive. It may free up time for you to locate more customers, find new building sites or market your homes. (Of course, you could always use the extra free time for a little rest and relaxation!)

Decreased Site Management Costs

When you relocate 80 percent of the construction to a manufacturing facility you also relocate many of your site management costs. By limiting the amount of construction that takes place on your site, you also limit your need to provide expensive accommodations. Parking, sanitary and material storage considerations, as well as their related costs, are all reduced.

Costly delays waiting for site inspections are avoided since most of the construction inspection process takes place in a manufacturing facility.



Site refuse is limited to weather-protection material and some lumber used for stabilizing the module during transportation, which means modular construction generates a fraction of the site waste associated with traditional construction. The net result is you will see immediate savings in landfill expenses.

Decreased Vandalism and Theft

Modular construction can greatly reduce your exposure to vandalism and theft. Most modular buildings are fully secured on the day of delivery. And, with modular construction, you no longer have to store expensive building materials on-site and assume the expense of fencing or hiring security guards.

Greater Insurance Savings

With its greater efficiency, modular construction enables you to have fewer homes under construction at any one time, reducing your premiums for builder's insurance.

Reduced Architectural and Engineering Fees

Building modular homes selected from your manufacturer's portfolio of designs will save you a substantial sum for professional services. In this case, you will only need an engineered foundation that is specific to your site and home.

To assist you, your modular manufacturer will provide you with a typical foundation design and the point loads of the modular building. Then, once you obtain a soil analysis, you can have a specific foundation design prepared by an engineer.

If you are making modifications to an existing design or having a custom design developed, you will typically incur engineering fees. In most cases, however, these fees will be significantly less than those associated with traditional construction.

"Upon a factory tour, I was pleased to observe their detailed quality systems and controls, diligently expedited through each step of the building process."

I believe this level of attention to building control resulted in a finished product of superior quality."

*Bruce Rayburn, C. Tech,
RBD
Rayburn Technical Services
Ltd.*

Modular Tip

Another source of savings? Many module manufacturers have professional renderings of their homes that can be used in your permit package and for marketing your homes.

04

Managing the Process Towards Profitability

Even though a majority of the building is constructed by your modular manufacturer, your role as builder in the process is no less critical. Your ability to manage the project effectively and profitably will depend upon your knowledge of the modular process and its most important components.

Submitting the Purchase Order

During the initial stage of the modular purchase process, your modular manufacturer will provide you with a preliminary quote. The actual manufacturer sales order may result from several different preliminary quotes as you and your sales representative decide which model and set of features are appropriate for your site and/or for your customer.

Once the final specifications are established, the quote will be transferred to an order document. Many times, builders assume that all of the information that was passed back and forth during the quote process is contained on the final order. This is not always the case.

It is imperative that you fully review the final order to ensure that it contains all of the specifications and special information required to build your home. Do not rely on the information provided in previous quote sheets. Remember, if important details are not documented on the order form, you will have no recourse with the manufacturer once the home is built should any of those details be overlooked.

Never accept a verbal confirmation of the details concerning your home. Have your sales representative incorporate all of the

information into your final order. Sign the order before submitting it and retain a copy for your records.

If you are building for a specific customer, it is always a good idea to have your buyer sign a copy of the final order before you submit it to the modular manufacturer.

The manufacturer should be able to provide you with a copy of the final order without any pricing information for this purpose.

In addition, it is wise to inform your customer at this time that they will not be able to make any changes to the specifications of the home once you submit the order to the modular manufacturer.

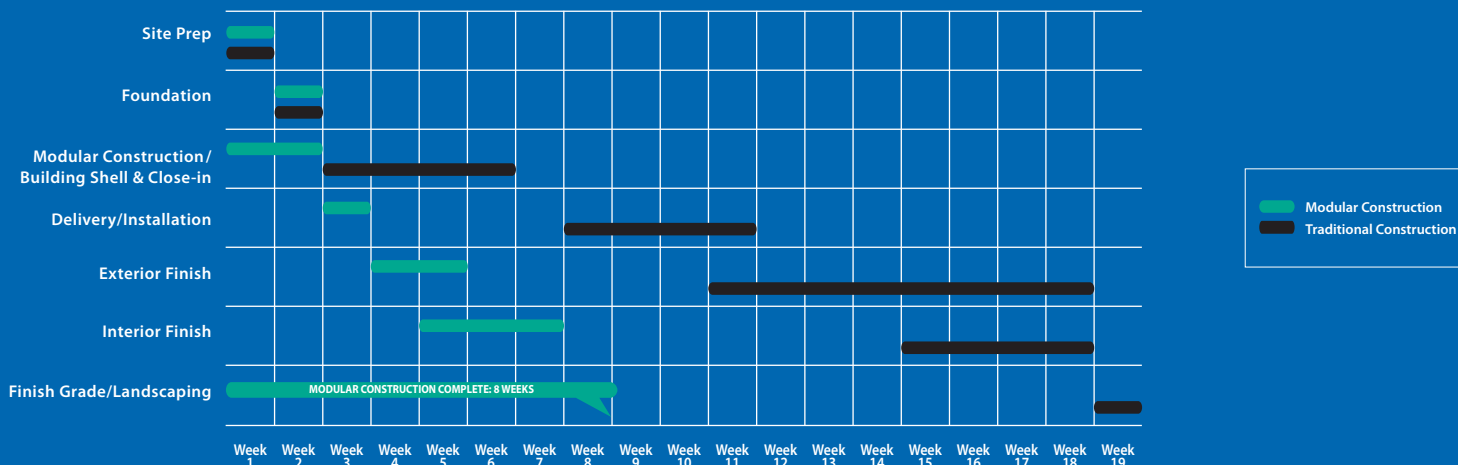
Modular Tip

Make sure you fully review the final purchase order before you sign – unexpected changes and additions can add cost and eat away at profitably.

Remember, that modular construction is fast and highly efficient. So, once you submit the signed order, you likely will not have the ability to make changes.

Modular – vs – Traditional Construction

Total Time for Completion



However, there may be an occasion when you or your customer will desire to change the specifications after the order is finalized. In this event, check with your sales representative to see if the order can be modified.

If it can be modified, be sure that a written change order is created and placed in your file. In most instances, the cost incurred by the manufacturer to administer the change will be passed on to you in the form of a “change order fee” or “restocking fee,” which you should be able to pass on to your customer.

Understanding Payment Policies

Make certain you understand your modular manufacturer’s payment policies in advance. You will typically be required to pay a deposit to initiate construction, and will need to pay the balance prior to delivery of the module to your site.

This knowledge can save you money. If you are unaware of the module manufacturer’s payment policies, you may not have funds available at the appropriate time, which can result in additional charges such as penalties and storage fees.

Make certain that your bank is aware of the payment policy in advance. Generally, once your bank executive becomes familiar with the modular construction process, he or she will realize that the bank’s risk as a lender is less than those associated with traditional construction and they will be able to accommodate your manufacturers’ policies.

Optimizing Site Selection

Whether you are building a “spec” home or a retail home, it is important to ensure the site is appropriate for a modular project.

You must first inspect the delivery route for overhead obstructions or grades that will make delivery of the module difficult or impossible. Generally, you will need at least 15’ of clear height (consider overhead obstructions such as power lines, tree branches, bridges, etc.) and a 20’ wide pathway to accommodate for the turning radius of the modules during delivery. In addition, any grade in excess of 1’ in 20’ can result in additional costs during delivery.

You must also determine if the site has enough room to position a crane adjacent to the foundation and identify where each of the modules will be staged prior to installation by the crane.

Finally, understand that some sites (primarily urban locations) will require special traffic permits in order to deliver the modules. Check with the appropriate municipal authority to identify any restrictions and cost.

Never quote a firm price to a customer until you have inspected the proposed site to determine what costs you may incur during the delivery. You may choose to have a crane company representative and/or your modular manufacturer inspect the site to help you identify any conditions that may require special equipment or additional costs.

Modular Tip

Once educated about the process, everyone likes reduced risk – including your bank – so let them know you’re building modular.

Be sure to inspect your customer’s site to determine what costs you may incur during the delivery before quoting a firm price.

Knowing Your Scope of Responsibility

Within the industry, there is a wide range of services you can purchase from the manufacturer along with the modules. These range from delivery to installation (often called “rough set”), interior and exterior finish, and site-built elements such as porches, garages, HVAC installation and more.

Make sure you have a written document that details any services to be provided by the manufacturer. To avoid confusion, delays and unnecessary expenses, the party responsible for dumpsters, portable toilets, temporary electric service and utility connections should be clearly identified.

What’s more, some exteriors can be complex and require a good deal of site construction. Make certain that you fully understand what will be expected of you or your subcontractors as you prepare your budget.

Educating Your Subcontractors

In some regions, modular construction is new and key subcontractors may not fully understand what they are bidding when you ask for quotes. This uncertainty can result in non-competitive pricing, thereby eroding the savings achieved by your modular manufacturer.

In light of this, it is generally advisable to shop for subcontractors that are familiar with modular construction. In the event this is not possible, your manufacturer’s field services manager may be able to help you educate subcontractors and provide you with typical costs to assist you in your negotiations.

Scheduling the Delivery

As with any construction project, proper scheduling is key to containing costs. There are a few nuances to modular construction that you should consider.

First, make certain that the foundation has passed inspection prior to the construction of the modules. This will eliminate module storage (and interest) costs that may be caused by a foundation that is not approved.

It is advisable to have the modules delivered to the site the day before crane installation. This will eliminate the potential for additional crane charges if the modules are delayed due to traffic or weather.

Addressing Delivery and Storage

Modules can be built extremely quickly and efficiently, often within weeks of submitting the purchase order. It is therefore important that you and your site are ready because your manufacturer may require immediate delivery to your building site or storage yard. Most factories cannot store modules for any length of time due to the high volume of their production and the size of the finished modules.

Exposure to the elements is another factor that dictates fast delivery of modules. Most are covered with a temporary weather barrier which is only intended to protect the modules during the delivery process. If, while in storage, the modules are exposed to the weather for any duration, it is critical that the weather barrier is inspected regularly for potential water leaks and repaired as necessary.

Given the temporary nature of the weather barrier, all modules should be carefully inspected upon arrival at your site to determine if any holes have developed during transportation.

Remember that the protection of the home is your responsibility once the module has been delivered into your care.

Before you arrange for transport of the modules to your site, it is imperative that several conditions are met. First, your foundation should be re-checked to ensure that it is within the manufacturer's tolerances. The site should also have a pad prepared for your crane. This pad needs to be immediately adjacent to your foundation and fully compacted to give the crane a firm footing. Most cranes require a 30' area for positioning.

Most over the road carriers will not be able to properly locate the modules next to the crane. Therefore it is always advisable that you have a piece of heavy equipment such as a bull dozer on hand. Crane rental is an expensive item in your project and delays will erode your profits.

Planning for Safety

The simple fact that you have shifted most of the construction process from your job site to the factory means that you have already made your project safer. However, there are certain safety considerations specific to modular construction that you need to observe at all times.

The day of delivery and placement of the modules on the foundation is always an exciting day for your buyers and

their neighbors. Many bystanders may gather to watch the erection of your home. To protect their welfare and your interests, the site should be cordoned off with orange safety tape.

Never allow anyone outside of your crew in the proximity of the crane or the home as it is being installed. Modules will be suspended, creating an extreme hazard. Never allow anyone to walk under a suspended load.

Modules can shift and settle after they have been placed on the foundation. The placement of one module next to one already positioned can also create a dangerous situation. This is also true of the erection of the roof structure. Only trained installation crews should be used to install your home.

Of course, all other common-sense aspects of construction-site safety such as good ladder practices, trench safety and proper electrical precautions should always be observed.

Modular Tip
Proper planning and scheduling is the key to profitability, so effectively managing your sub-contractors is critical.



Arranging the Initial Inspection

After the home is installed on the foundation and you have the ability to enter each of the rooms, it is essential that you fully inspect the home against your purchase order. Compare the inventory of items that are shipped inside the home (e.g. siding, shingles) with the list provided. Look for any obvious quality issues.

"We were very impressed with SRI's high standards of quality and their engineering/design contributions that have resulted in the delivery of an excellent product to our customer."

*Don Dessario,
Director, Poon
McKenzie
Architects.*

Any irregularities must be communicated to your module manufacturer in written form as quickly as possible. Failure to take this step may result in you assuming the cost of replacing missing items or repairing damaged areas.

It is always helpful to document any concerns with photographs. Digital or printed photographs will assist the manufacturer in the proper identification of the material required to remedy your problem.

Requesting Warranty Service

Should your home require any warranty service, be sure to submit the forms and follow the procedures required by the manufacturer. Generally, if you adhere to the prescribed methods you will find that the factory can respond quickly and effectively to any service concerns.

Managing Customer Expectations

If you are already in the business of building homes for retail customers, then you understand that this is an emotional process for your clients. Customers anxiously await the day of delivery and can't wait to gain entrance to their new home. Customers rarely understand that the home is still under construction and may misinterpret minor transportation cracks and unfinished wall portions as structural problems. While you may minimize their concerns by preparing them for the condition of the home in the

early stages of site construction it is always best to keep them away from the home until the interior is near complete. Your insurance company may encourage this practice.

Managing Neighborhood Expectations

Neighbors are often concerned about construction that occurs around their homes. However, when modules are first delivered they will not have the ability to see what the home will look like when it is fully assembled with site-built elements such as porches and decks.



This uncertainty can create anxiety. The neighbors may envision a structure that will not be as attractive as other homes on the street and could potentially affect their property values.

To alleviate these concerns, post a sign on the construction site with an artistic rendering of the completed home. Flyers with the same information distributed to the surrounding residences are also effective. This is also a good opportunity to point out that the buyer has chosen a construction technique that will have the least amount of negative impact on the neighborhood! After all, modular construction significantly lessens the noise, traffic and unsightly debris associated with most building sites.

Delivery Day Checklist

- All potential delivery route obstructions including power lines, tree limbs, shrubbery, and medians are identified with plans in place to remedy
- Traffic authority notified of movement
- Crane pad adjacent to foundation and fully compacted
- Foundation measured and within tolerances
- Means of shuttling modules from staging area to crane
- Dumpster on-site, sanitary facilities in place
- Staging area clear of construction traffic and noise

Safety Checklist

- No customers on-site during construction
- Site cordoned with orange safety tape
- Trenches filled in
- Trained installation crew
- No workers under suspended loads
- All other on-site safety procedures followed

Modular Tips

Understand manufacturer's payment policies and have funds available to avoid costly delays.

Obtain a written "scope of responsibility" document that details what is provided by the modular manufacturer and what is expected of you and your subcontractors.

Have your manufacturer provide you with a list of subcontractors familiar with modular construction to get the lowest bids for site work.

Always inspect weather barrier after transportation to site to identify potential damage. Avoid long-term storage of completed modules.

Post an image of the completed home on site prior to construction to alleviate neighborhood anxieties.

Document potential warranty issues with digital photography and notify the factory as soon as possible.



Start Building on Our Strengths

"We have found working with SRI Homes to be very rewarding. They made every effort to accommodate our needs and timelines, and we look forward to future projects with them."

*Nicola Huppertz,
Director of Design &
Construction, Interior
Health Authority*

Now that you have completed a walkthrough of a typical modular project and have learned first-hand why we think it is a "Better Way To Build," you're probably ready to become part of a growing number of innovative builders that are experiencing the efficiency, speed and profitability of modular construction!

To get started and explore the opportunities created by modular construction contact:

SRI Homes ULC
485 Beaver Lake Road
Kelowna, B C, Canada V4V 1S5
Office: 250.766.0457
Fax: 250.766.0451
www.srihomes.com

SRI Homes operates three manufacturing facilities in Western Canada:

Winfield Home Systems
9500 Jim Bailey Road
Kelowna, BC V4V 1S5
www.winfieldhomes.ca

Regent Home Systems
131 Stubb Ross Road
Lethbridge, AB T1K 7N3
www.regenthomes.ca

Shelter Home Systems
#200 Highway 18 West
Estevan, SK S4A 2A7
www.shelterhomes.ca



