

Space Planning Primer



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The Voice of Commercial Modular Construction™

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Modular Construction Makes Sense

As a quick build-to-site deliverable, commercial modular construction makes a great deal of sense as an immediate space solution. In the face of population spikes, overcrowding, or funding drives (toward permanent construction), portables become a short-term, but quick space fix.

And the popularity of portable classrooms is not just about the speed. Other cited benefits include:

- Relocation ability from school to school
- Flexibility of financing options (purchase, lease, lease-to-own)
- Increased cost of typical site built facilities
- Minimal site disruptions (reduces safety concerns and minimizes distractions)

Most importantly, portables are built to local codes, just like their stick-built counterparts.

How do I find a provider in my area?

Go to modular.org, member finder. You can search for a provider in your area.

The different types of commercial modular construction

Not all modular construction units are created alike. There are several different types of modular construction available to fit your needs:

Portable units

Taking advantage of a portable unit provides the fastest space solution. This is because the portables are already built and in stock. Portables can also be referred to as 'relocatables' because they are so easy and inexpensive to move. Portables make a lot of sense when additional space is needed in a hurry.

Modular units

Modular units are also temporary construction. And while they are still relocatable, they represent a more permanent option. Because they are more permanent in nature, modular units require a larger lead time. Space configuration can be customized to meet specific needs and sizes can range from a single classroom to 10,000 square feet or more. Modular units can also offer many of the same features as site built construction, like restrooms, locker rooms, wiring for computers, exterior siding, and specialty lighting. Modular units generally present the best option if you are in need of a space solution intended to last a few years.

Permanent Modular Construction

Permanent modular construction consists of factory-built units that are assembled on a pre-determined site. The result is a building that is set on a foundation. Site built and permanent modular construction is indistinguishable from the outside. The real difference is the accelerated time-frame in which you can build the building. This results in earlier occupancy for the customer.

Common factors that affect both price and delivery time:

- **Customized Features.** Most dealers maintain an inventory of portable classrooms suitable for many purposes. If you want custom features, it may cost more money and take longer to deliver. Consider the timeline of the space need when you talk custom features.
- **Lead Time.** In normal business circumstances, a company should be able to deliver a portable classroom in a matter of weeks. However, the unprecedented demand for portable classrooms as a result of Hurricane Katrina may cause some delays, depending on your location.
- **Standard Dimensions.** Most classrooms are 24 feet wide and vary in length depending upon location. In California, the typical classroom is 24' x 40', in Texas, its 24' x 64'. Ceiling height is typically 8 feet. Classrooms usually consist of two modules approximately 12 feet wide each. You can ask for other dimensions, but transportation restrictions may impact your design considerations. Again, if you stay within reasonable industry guidelines, you may save money.

Consider all of your purchasing options

Look for a provider that is willing to discuss and develop a payment plan that is suited to your budget. Most providers will offer lease vs. purchase options. If your need is short term, consider leasing.

There are three primary means of acquiring modular space:

- Purchase. Allows you to own your space outright.
- Lease. This is the best option if you need space for a shorter time-frame, like one to three years. A lease allows affordable monthly payments, and you can walk away when the lease term is completed.
- Lease to own. If your goal is outright ownership within a matter of years, the best option may be lease to own. Lease to own allows for monthly payments keeping the ultimate goal of ownership in mind.

Choosing the right supplier

The right vendor can make all the difference between the right and wrong experience.

Referrals. Ask colleagues who have been through the process for their recommendations. Visit other schools where potential vendors have provided facilities.

Experience. How long has the company you are thinking about working with been in business? How knowledgeable are they on local and state codes?

Reputation. What is the supplier's reputation. You should not work with anyone that is not considered reliable, trustworthy, knowledgeable and timely.

Turn-Key Solutions. Is the vendor flexible and able to provide additional services that you may need, like relocation, parts, refurbishment, etc.

Proposal. This is the most critical portion of the process. You must review every single detail of the proposal to ensure that all specific services are clearly outlined before entering the contract.

References. It goes without saying that any reputable provider can provide you with a list of past customers. It is critical to take the time to actually call these references to see what other schools' experiences have been.

Meeting your space requirements

Modular space can be extremely flexible, so take advantage of its extraordinary capabilities to make it meet your school's unique requirements.

Considerations for Specing a Portable Classroom

More often than not, the modular building you receive is a result of a good innovative and an educated approach. As a guide, here are five suggestions to help you maximize your opportunity to obtain a temporary classroom facility that exceeds your expectations.

Communicate; Research Your Options

Ask questions, meet with potential suppliers to discuss your program in depth, and if you have not already done so, research your options. Look at all the materials, features and finishes available today that are being incorporated into these classrooms to create a healthy, comfortable learning environment and consider how they might work for you.

Understand that, just like traditional construction methods, modular buildings must conform to building code standards. There is no "free license" for design criteria, no exemption from the rules. In fact, the process of modular building is subject to stringent inspection procedures by the manufacturer, and in many cases, a third party inspection agency and/or a state or local official. In most instances, builders must have a quality assurance program in place that has been approved by either the state or third-party agency, or both.

Set Your Expectations High!

As the buyer, planner, or specifier, you are in control. You can set the specifications, you can set the standards, and you can drive the results. So set your expectations high! There is no reason to receive "second best" in any learning environment, including relocatable classrooms. In order to ensure that your classrooms and complexes meet or exceed your expectations, communicate your needs clearly to your potential suppliers. There should be no misunderstanding.

Outline Your Buying Criteria

This ties in a little with communication. Modular construction offers a multitude of features and benefits. Knowing them and using them to your advantage will assist you in attaining your desired objectives.

Financing options, building features, relocatability, speed of construction, minimized site disruption, and design flexibility are just a few of the motivators that prompt school administrators and planners to look to temporary classrooms for accommodation. Letting your suppliers know what particular motivators are driving your purchase will help them prioritize, make recommendations, and respond with your specific needs in mind.

Establish Your Base, Then Look for More

You may have specified your classrooms right down to the fasteners, and unquestionably this is the best way of evaluating your package on an "apples to apples" basis. But consider going a step further. Ask for recommendations. You would be amazed at the breadth and depth of experience and knowledge your modular building suppliers have in house—all looking for an opportunity to apply their innovation.

Go For the "Valley" Whenever You Can

Understandably there are external environmental forces at work that can prevent a school board from going out for proposals whenever they choose. Funding is usually at the top of the list. However, wherever possible, try to get a jump-start on the process so that you can be assured of securing regular production time.

Modular building companies look favorably on a steady diet of year-round production, as opposed to the peaks and valleys that tend to be more characteristic of the industry. Find out when the industry slows down in your region. It will vary between locations. Make an effort to slot your requirements into those "valley" time frames. It could be a win-win for you and your builder.

Making ordering easy

Ordering a modular space is just like any other major purchase. The more prepared you are and the more detailed your plan, the better the process will go. Additionally, the more lead-time you allow for your order, the better chance there will not be any delays in having the space exactly when you need it. Sometimes there are back-logs at the factory, particularly since the Hurricane Katrina disaster, with many pre-built modular units having been deployed.

What should you think about when you plan for your space? Here are the steps you must go through for the entire purchase:

Pre Plan

- Select your space
- Choose your supplier
- Design your space
- Determine financing plan

Finalize and Order

- Select your site
- Order your space six months prior to occupancy

Delivery

- Installation and Occupancy

Keep in mind that each one of the above steps will take time and you should build the appropriate time into your process. Planning all steps of the process will make the purchase as smooth and timely as possible.

Selecting the site

Site planning is very important and should be addressed early in the process. There are a number of issues that absolutely should be addressed concerning the site before purchasing your unit. These include:

- Access to utilities
- Codes
- Grading
- Proximity to property lines or other buildings
- Moisture
- Soil composition
- Visual impact in relation to the campus as a whole
- Site accessibility for delivery and removal of units

A reputable space provider with local expertise will be able to assist you in evaluating the site you are considering. Their experience can be invaluable so it is critical to select a knowledgeable company.

The Importance of Proper Maintenance

Once you have your unit, you absolutely must be prepared to provide the proper upkeep and maintenance. In fact, budgeting for the costs of maintenance should really happen in the planning process. Maintenance costs should be considered and planned for before the unit ever arrives to your site. Keep in mind that many modular unit providers offer service warranties for the units. You can choose to purchase a service warranty so that upkeep is covered as a part of that agreement. If you do not purchase a service agreement, then you will have to plan on maintaining the portables via your own resources.

Service/warranties

If you have a warranty, make sure you know what items are covered and for how long. Is an extended service policy available? Whom do you contact if you experience a problem? Thinking ahead can save you time and money down the road.

Below are several actionable items that will improve the performance of portables:

Protect Indoor Air Quality

First, specify no- and low-emitting building materials and furnishings to reduce airborne contaminants. The “Collaborative for High Performance Schools” (CHPS) has developed a list of low emitting materials for schools which can be found at:

http://www.chps.net/manual/lem_table.htm. Second, install proper drainage systems and control measures to prevent mold. Some areas to consider are landscaping systems that prohibit water from hitting the actual structure and draining off. Also important is providing the proper grading and drainage systems along with mitigation procedures for water leaks.

The US Environmental Protection Agency provides an Indoor Air Quality Tools for Schools Action Kit that details more indoor air quality maintenance and control procedures. You can order the kit from the Agency at <http://www.epa.gov/iaq/schools/toolkit.html>.

Support Gains in Energy Efficiency

Portable classrooms built today are much more energy efficient than ones built a generation ago. The Northwest Portable Classroom Project conducted by Washington State University in 2003 found that portables built to the 1993 code were 44% more energy efficient than models built 25 years prior. Further, portables built to 2000 codes are 20% more energy efficient than the 1993 models. And there are additional measures you can take to improve on this energy efficiency increase.

First, install programmable thermostats in all existing portables and require programmable thermostats for any new portables. Second, choose site placement of portables to maximize the benefits of day lighting. This measure will not only improve the energy efficiency of the portable, but could lead to improved student performance. Finally, for any portables that utilize a “wall-mount” HVAC system, specify a Seasonal Energy Efficiency Ratio (SEER) of 12 vs. 10. The higher the ratio, the more efficient your unit is and the lower your energy bills.

Improve Room Acoustics

It is important to note that acoustics are problematic in traditional classrooms as well as portables. MBI has several suggestions on how to provide the best acoustics (measures equally positive for traditional classrooms):

- assure seating away from highways and busy roads where possible
- reduce outside noise levels during instruction periods when possible
- use wireless microphone systems for cost-effective resonance

Although some teachers turn off the HVAC unit in an attempt to reduce noise, we advise against this practice. Studies have shown that student comfort and indoor air quality contribute more to a positive learning environment than acoustics. When you turn off the HVAC system, you are actually diminishing the learning environment.

Activate Proper Maintenance and Timely Replacement

There are two points that go farther than any of those already mentioned to ensure a positive learning environment in portable classrooms. Retire older portables when they become unserviceable or do not provide an adequate learning environment and properly maintain the portables currently in use. Today's portable classrooms are designed to last up to 30 years. But the length of this timeline is completely dependent on the proper maintenance of the portable in every year of its life. It goes without saying that portables should never be used beyond the recommended life of the unit.

Resources

MBI gratefully acknowledges the following MBI members for their direct contributions to this document:

Williams Scotsman. www.willscot.com

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