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From Factory to Finish:

A Guide to Residential Modular Construction

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Modular Home: A modular home is a home constructed in multiple sections in a factory. It is built to the same building code used by conventional site-builders and is transported to the new home site where it is placed on a permanent foundation.

Modular Manufacturer: A company that constructs modular homes in multiple sections inside a controlled factory.

Modular Builder: The company that sells the home to the homebuyer and is responsible for ordering the home from the manufacturer. The modular builder constructs the foundation for the permanent installation of the home and is responsible for some final finish work after the home has been installed.

Modular Installer: A subcontractor who specialized in the installation of the modular home on the foundation.

Stick-built / Site-built home: A home constructed at the site the home will occupy on a permanent foundation. This is the “traditional” method of home construction.

THE FACTORY/MANUFACTURER

Modular homes are built in a factory setting where raw materials and design and assembly personnel are brought together in a controlled environment to create a finished product. Construction within a factory eliminates the possibility of damage from weather and allows all materials to be assembled in a protected climate-controlled environment. This is important given the recent problems with mold as it eliminates the possibility of any water infiltrating the house during construction.

THE BUILDER/SELLER

The modular manufacturer generally does not sell directly to the homebuyer. Instead, homebuyers purchase a modular home from a modular builder, who is responsible for working with the buyer to determine the type and design of home they want. The modular builder then orders the home from the manufacturer. The modular builder is not an agent of the manufacturer, but an independent business owner.

CUSTOMIZATION

As mentioned in the previous paragraph, the builder and manufacturer will work with the homeowner to determine the type and design of modular home that best suits the purchaser's needs. Home purchasers are unlimited in the style and size of the home they can have built. These homes are totally customizable and no two are the same.

CONSTRUCTION & PLAN REVIEW

Before a modular manufacturer begins construction, all building plans must be reviewed and approved in each state where the manufacturer intends to sell homes. Homes must be designed and built to the code for the state where the home will be shipped for final location. The manufacturers contract with state approved third party plan review agencies which conduct plan review on behalf of the state. The modular manufacturer also contracts with a third party inspection agency that is licensed by the states to perform the in-plant inspection while the home is in production. When the housing sections or modules are complete, the third party places a label on the home certifying that the home has been manufactured in conformance with the approved plans and complies with all provisions of the building code.

SHIPPING & STABILITY

After construction in the factory the separate modules are loaded for transport. To deal with the rigors of shipping, each modular home has been constructed with roughly *twenty to thirty percent more materials* than a traditional stick-built home. (For example, drywall is typically glued with a special adhesive and then screwed to the framing). These additional materials greatly increase the structural strength of the home as noted in a recent FEMA study on 1992's Hurricane Andrew. The study concluded that "the module-to-module combination of units appears to have provided an inherently more rigid system that performed much better than conventional residential framing." Building Performance: Hurricane Andrew in Florida, FIA-22, Item 3-0180.

FINAL ASSEMBLY

After the builder orders the home from the manufacturer, the manufacturer will give the builder specifications for the foundation. The builder is then responsible for preparing the foundation for the modular home. When the home is constructed, it is shipped to the job site. The next day, a crane is used to place the housing modules on the foundation and set the roof in place. By the end of the day, the home has been completely installed and is closed up and secured. In the subsequent weeks, the builder will finish the home. This finish work includes securing any remaining roofing shingles, attaching siding and finishing some interior drywall work. Generally, the home is ready for occupancy within several weeks. Prior to moving in, a local building code inspector will make a final inspection and issue an occupancy permit.

Limited Number of Subcontractors

Generally, the modular builder contracts with a limited number of subcontractors. Since the majority of construction is performed in the factory, the modular builder has limited responsibilities. Most modular builders will subcontract out the foundation construction. In addition, the crane company and the installation crew are usually subcontractors. This eliminates the possibility that your builder will have delays from a “no-show” subcontractor.

Manufacturer Responsibility

Since most of the work is performed in the factory, the manufacturer is responsible for all of the construction of the home. When a problem results from work done in the factory (which is rare), the manufacturer corrects it. Consequently, ongoing problems with modular homes are relatively unheard of.

Regulation & Inspection

As a result of the intense regulation and inspection of the home during construction, it is extremely rare that a home leaves the factory with a defect in design or manufacturing. The third party inspection services see to this and assume liability for their plan review and inspection responsibility. Additionally, since modular construction is regulated by the state, the state is typically involved in correcting the problem.

Superior Construction

The larger quantity of construction material used in the modular home results in enhanced structural stability. The material that is used is also often of higher quality than what a stick builder uses and the material is stored indoors until needed. Additionally, better construction techniques and higher quality control techniques greatly reduce the chances for unforeseen defects. This includes problems such as mold that could arise from moist lumber.

The Southern Pine Inspection Bureau reported in August 2001 that “most mold . . . which are observed on lumber . . . can normally be attributed to the transportation, storage and construction stages.” Keeping an Eye on Mold, Kent J. Pagel, Structural Building Components Magazine, May 2002 citing to August 2001 SPIB report. The fact that modular homes are constructed in a controlled factory environment eliminates the possibility that lumber with mold will be used in the home.

Reduced Construction & Assembly Time

The modular home is completed in the factory in approximately one-third of the time it takes a stick built home to be completed. This eliminates the possibility of an on-site construction-related fire or other problems. The factory controlled conditions also eliminate the possibility of bad weather delaying the completion of your home. Furthermore, a modular home is not subject to delays from back-ordered materials or unreliable subcontractors. Once the home is delivered it is closed and sealed within days and the remaining on site work is completed very quickly. Within weeks, the home is available for the buyer to move in. Consequently, the neighborhood children won't have a chance to play in your uncompleted house and there is no chance for vandals to damage the interior of your home.

Skills and Specialized Training of Modular Builders and Installers

Modular Manufacturers do not choose to deal with builders that are under-skilled and poorly capitalized. Manufacturers have a set list of builders they deal with and are in constant communication with these builders to update them on new techniques and changes in the industry.

Many manufacturers require their builders to complete a modular home training course. The *Modular Housing Training Institute* (MHTI) located at Pennsylvania College of Technology, a Penn State University campus located in Williamsport, Pennsylvania, has developed a comprehensive training program for modular builders and installers. This program is available to modular builders and installers throughout the Northeastern and Mid-Atlantic United States. The MHTI also travels to other areas of the country to offer the training periodically. For more information on this course please visit <http://www.pct.edu/mhti/>.

Financing

Modular homes are financed in the same manner as conventional homes. The MBSA web site lists a number of mortgage companies (some with programs specific to modular homes) that can assist you in learning more about financing. Please visit their individual web sites to learn more about financing modular homes. A listing of these companies may be found under the "Financial" subsection of the "Vendors & Suppliers" area of the MBSA web site at <http://www.modularhousing.com/partners.html>.

We've covered the basics and some important highlights about modular homes. At this point you may be asking yourself how you can learn even more about modular homes, and perhaps even purchase one.

The Modular Building Systems Association has a large number of manufacturers and builders who stand ready to assist you with your decision. Simply visit the MBSA web site at <http://www.modularhousing.com> and proceed to the "Contact the MBSA" section. After filling out the form your request will be submitted to a modular manufacturer who will contact you with further information. Additionally, the "Find a Builder" section of the MBSA web site allows you to perform a state specific search for modular manufacturers and to contact them directly.

Regardless of which MBSA manufacturer you choose to purchase your home from, we're sure that you will enjoy the benefits of your new modular home for many years to come. We hope this document has assisted you in learning about today's modular homes and wish you all the best on your future modular home ownership.