FOCUS ON CONSTRUCTION

High Rise Multi-family Construction

BY THOMAS COX , AIA

THANKS TO NEW TRENDS IN DESIGN, construction, and consumer demographics, the development of high-density housing in downtown areas is becoming increasingly popular. The multi-family market is hot at the moment . . . so hot that everyone is trying to get into it. The growing consumer interest in multi-family housing is drawing developers from other sectors of the industry, including single-family and commercial real estate developers.

Competition has always been fierce in the multi-family industry, and the bar of expectation continues to get higher. Today's renters and buyers are more demanding than ever when it comes to high design. They want to be surrounded by special features and amenities; they want to entertain guests, they want to be proud of where they live.

So what does this mean for the multi-family developer and what will it take to remain competitive? Sadly, the rising cost of building new for-sale and rental housing (especially in growing urban areas), will push many out of business. Those who do succeed in this increasingly competitive market will have to strive to improve and utilize new techniques, materials and design principles. Multifamily developers -both for-sale and rental, will have to develop better, newer construction methodology such as modular construction, off-site manufacturing and prefabrication. Many of these techniques help save time, control quality and eliminate waste—they should be used in other types of construction as well.

Concrete and steel have to be used in order to achieve these higher densities in taller residential structures. In the urban environment, the developer of higher density housing is looking to build about 100+ units to the acre. Five stories is pushing wood to its absolute upper limits. Using Type 3 modified construction, which is a wood hybrid technique, allows for up to 150 units to the acre. Higher densities are going to require Type 1 construction that utilizes concrete forms and steel framing.

Higher densities are not the only factor driving the shift from wood to concrete and steel. It's all about limiting liability. Water intrusion through walls, windows and roofs can create huge construction defect issues. Concrete and steel construction help to minimize some of these issues. The most important advantage to using these materials are their resistance to expansion or contraction due to moisture content, which can be a catalyst for mold. By not being vulnerable to fungi or organisms, concrete and steel help reduce the chances of mold infestation. Steel framing has the highest strength-to-weight ratio of any building material, and it doesn't rot, warp, split or crack, or serve as a banquet for termites.

Building with concrete and steel also helps with phasing and value engineering-it eliminates the guessing game associated with the fluctuating costs of lumber. We believe this will become an increasingly important factor in the future. As it is, in the last year, lumber prices have increased about 50 percent and plywood prices have increased about 100 percent. It should be noted however

About our Featured Columnist

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that steel can be difficult to obtain right now because it's in such high demand, even in other countries like China.

Building with concrete and steel further eliminates waste, which is a huge advantage, especially with larger buildings. With the use of steel panelization, there is very little waste, and unused steel is recycled. In fact, approximately 60 percent of the steel used in steel panelization comes from recycled products, and for green community advocates, it's the most recycled material in the world. Another advantage . . . there's less mess on the jobsite itself, and thus cleanup time is minimized.

The use of concrete and steel does not present any major obstacles to design; in most instances, it helps because it can be more flexible. There are occasional design issues in which other materials have to be used to create the intended architectural detail, but the materials hybrid well. In many ways, steel framing creates unintended benefits by going up straight and true.

There are some architectural requirements that could only be achieved with steel framing. The panelized construction of the steel stud walls make it possible to mockup entire floors before development actually starts so design changes can be made prior to the final steel fabrication for the project. This can be an extraordinary opportunity to maximize final designs.

As far as the availability of a trained workforce is concerned, in many instances, building with concrete and steel can be more difficult. While I believe this is a better type of construction, it is more complex and difficult. There aren't a lot of people trained in this area yet, at least not in the residential construction industry, which puts those in the commercial construction industry in a good position to move into high-rise. Making the change from wood to concrete and steel construction can be difficult, but once you do, it is easier in the long-term. Builders can order panels with all studs and rough openings pre-cut for the "carpenter" to assemble. These panels can result in easier installation for workers; builders become more like assemblers rather than framers. Ultimately, this helps reduce construction time and creates a more consistent product since framing pieces are manufactured in a controlled environment and once on-site are impervious to weather and other climate conditions.

One of the challenges of designing high-rise is creating an "urban quality" design in a cost-effective manner. In many instances, increasing the density of a project, allows for better profits. In fact, higher densities may be the only way to make these projects pencil out because of high land costs. It costs between $250 and $300 per square foot to build high-density projects of steel or concrete.

There are other issues as well: When you go higher, the city may require larger setbacks and more parking. Public/private partnerships are crucial to developing high-rise housing. It has to be a cooperative process in which everyone involved must work together from formulating a vision to gaining the necessary approvals. In order to get these projects off the drawing table, private companies must actively pursue partnerships with the city and it has to be done early in the game plan.

Many high-rise communities are benefiting from striking exterior designs that are made possible thanks to new creativity and thinking on the part of architects. These structures have assumed a new sense of scale and character. Many of these communities offer a mix of low- and high-rise buildings, which help create nice street scenes. New trends are emerging to satisfy the demands of today's more discriminating residents. These people demand high design and they want to live somewhere that's cool, contemporary…Today's looks are much more modern—although many draw upon elements of traditional design. Many of the newest high-rises are offering never before seen architecture, both inside and out. These unique designs feature vibrant color schemes, eclectic detailing, commercial windows, and the creative use of different materials such as industrial metal siding and concrete block.

This is definitely an emerging trend —the move towards higher-density housing in urban areas that provide a variety of first-class amenities and appointments. According to demographics experts, these communities are catering to a new breed of more sophisticated renters and buyers who are changing the face of multi-family design. It can be a challenging market to satisfy, but with the proper planning and know-how, multi-family developers are successfully appealing to this market by providing exceptional floorplan design, distinctive architecture, lifestyle conveniences, and five-star luxuries.■