

## Hotels embrace steel-frame construction

By their nature, general contractors continually must seek out newer and better products and methods of service to stay competitive, especially in a marketplace like this one.

More than anyone else in commercial real estate, contractors have to make dozens of daily decisions on the tangible parts and pieces that bring a project out of the ground.

Hotel construction is one of the few pursuits in which structural repetition and symmetry can be utilized to make projects move faster and more smoothly if the plans, materials and methodology are all in sync.

Besides first floor reception areas, and amenities like conference rooms or restaurant and lounge areas hotel design and construction can follow a template for 100 identical rooms. This perceived blessing of repetition could quickly become a curse if even one detail in the process goes bad. So accuracy can never be compromised for speed of construction.

One set of products in the marketplace is gaining considerable notoriety for combining speed of application with accuracy, more structural strength, and even economy. The system pairs long span composite metal decking with pre-panelized structural steel stud framing. Used in tandem, this system is replacing conventional concrete slabs and masonry block or wood framing in mid-rise hotel and motel construction.

The decking is a heavy gauge 2-inch deep platform with a dovetail rib and flat bottom profile, which distributes loads evenly over stud construction. This type of decking acts as permanent steel form which, when concrete is poured over it, can accommodate longer spans with fewer support members. The monolithic structure requires less concrete, which reduces overall floor thickness, minimizing building height. It has an excellent fire rating and outperforms other floor systems on sound control tests.

The pre-panelized steel stud framing is manufactured in various sizes



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and gauges depending upon the load application. The studs are pre-punched for electrical installations, and the walls are assembled using wire feed welding instead of screws or nails for maximum rigidity.

While both products have been available for years, it is only recently that an Atlanta-based company has brought the system to the marketplace as a package ideally suited to hotel and motel construction. The system costs more than wood, but the long-term benefits and overall quality are so attractive that many major hotel and motel owners are requesting its use as a cost-effective alternative.

From a contractor's perspective, the benefits are obvious. First, consider the system's portability. The steel stud walls are assembled off-site in whatever dimensions are required, so on-site work can be accelerated without the interruption of framing out the entire structure. The walls can be shipped in at the last moment in the exact dimensions required, and put up floor by floor.

The hassle of dealing with lumber grades and price fluctuation is alleviated, and there's no material waste, and virtually no threat of job site theft since the product is shipped pre-paneled--and only when the contractor is ready for it. Comparatively speaking, the product is lighter, easier to work with, and can be installed in almost any weather.

From the owner side, the strength, safety and longevity of the system are most attractive. And of course, the economy. Since the system is installed faster than conventional materials, construction time can be substantially cut allowing for earlier op-

ening dates, and revenue. As mentioned earlier, the decking uses less concrete, which can translate into volume sales of up to 15 percent, in addition to minimizing building height.

Since steel framing allows for reduced wall thickness, building footprints are smaller and exterior skin costs are reduced. Also, the system's lightweight makes for significantly reduced foundation costs.

There are no termite or insect problems, steel has lower maintenance costs than wood, and the system's components are all man-made and recyclable. The walls are non-combustible and the system has excellent fire and sound ratings, thereby lowering insurance premiums. Finally, the solid construction and strength of components make for a longer-lasting structure with a higher re-sale value.

So why isn't every building everywhere being constructed this way? Well, there are some limitations. First, six stories is the maximum allowable for this type of system for structural safety reasons, and the system does cost significantly more up front than wood.

The bearing points and weld requirements to hold it all together demand substantially more engineering work, more precise and detailed drawings, and all the extensive calculations that follow. And with more engineering detail comes heavier scrutiny by building inspectors which can delay the process.

As expected, any new or unfamiliar product or service in this industry is going to cause some hesitation and anxiety. Subcontractors not yet familiar with the nuances of the system have been, and will continue to be, skeptical until steel framing becomes as comfortable to work with as wood and brick. Limitations notwithstanding, the structural steel framing and decking system seems to be an ideal fit, especially when owners seek more viable materials alternatives in hotel and motel construction. ▲