THE BENEFITS OF STEEL VS. WOOD FOR MID-RISE BUILDING CONSTRUCTION

Sustainability, durability, fire resistance, structural performance and cost-effectiveness are some of the strongest reasons for using structural steel or cold-formed steel framing in mid-rise building construction. As a dependable, noncombustible material, steel-framed structures provide a wise investment for builders and the occupants who live and work in them.

Steel structures provide long-term, consistent performance.
- Steel framing will not rot, warp, split, crack or creep.
- Steel framing is not vulnerable to termites.
- Steel framing does not expand or contract with moisture content.
- Steel framing is produced in strict accordance with national standards, with no regional variations.

Steel is a noncombustible material and will not contribute to the spread of a fire.
- Because steel is noncombustible, it reduces the fire risk to occupants, firefighters and property/business owners.

Steel framing improves design efficiency, saves time, and reduces costs.
- Steel framing provides a significantly greater strength-to-weight ratio than wood.
- Steel framing allows for larger bays and wider frame spacing than wood construction.
- Increased flexibility in bay spacing and framing layout maximizes usable floor space for owners and tenants.
- Steel is typically fabricated off-site, reducing on-site labor, cycle time and construction waste.
- Shorter construction time results in earlier occupancies and lower financing costs.

Steel structures perform well during earthquakes and other extreme events.
- Steel is a resilient material, with reserve strength and ductility that result in significant advantages in natural disasters such as hurricanes and earthquakes, and in other extreme events like fire and blast.
- Steel construction is engineered to provide a reliable, consistent load path.
- Steel construction employs quality control and quality assurance procedures to ensure that the project requirements are met.

Steel framing provides environmental benefits and complies with sustainable building standards.
- Steel framing results in less scrap and job site waste than lumber.
- Structural steel is continually recycled with a current recycling rate of 98 percent, meaning that these steels will still be in use hundreds of years from now, lessening impacts on future generations.
- Steel, when recycled, loses none of its inherent properties and can be recycled into different products such as cars, bridges, cans, etc.
- Steel can be used to comply with the requirements of sustainable design standards such as the International Green Construction Code (IgCC), ASHRAE Standard 189.1 (Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings), and the National Green Building Standard (ICC-700). Steel can also provide credit points for green building rating systems like the USGBC’s LEED (Leadership in Energy and Environmental Design) and the Green Building Initiative’s ANSI/GBI-01 (Green Building Assessment Protocol for Commercial Buildings).