A few weeks ago I sat in another conference room in Chicago, this time at AISC’s Fall Forum, and heard a presentation from Jon Magnusson of Magnusson Klemencic Associates—and knew it was another game-changer. His presentation was on the future of design and construction and covered ideas ranging from elevators that can move both vertically and horizontally (remember the Wonkavator from Willy Wonka and the Chocolate Factory?) to the use of augmented reality.

And while all of the topics he discussed will undoubtedly impact the future, the biggest impact will be from the development of a high-performing and cost-efficient composite coupled core wall system. The system shaves months off the construction schedule—and reduces costs—compared with a concrete core system. And most importantly, the new system performs spectacularly.

MKA is using it on a new mixed-use office and residential tower in Seattle, and the firm’s studies, spearheaded by its own Ron Klemencic (who led the development of the system), show a reduction of 136 calendar days for the steel-core building versus a typical steel-framed building with a concrete core.

The system provides the strength, stiffness, safety and serviceability of a reinforced concrete core without the negatives of rebar congestion and complex formwork. In addition, using the system means the entire structure is built to the tight tolerances standard in steel construction, rather than the broader tolerances permitted in concrete construction.

Time is saved by eliminating the installation of rebar and the construction of formwork. And without the need to wait for the concrete to cure, the core and perimeter steel can rise in tandem, resulting in much faster erection.

And the system is not just for use in seismic areas. “There is a great potential for the use of coupled composite steel plate shear walls in wind-controlled buildings,” added Larry Kruth, AISC’s vice president of engineering and research. “In fact, MKA’s project in Seattle, where the CCSPSW will be used first, is a wind-controlled design. The other potential is not just for high-rise structures. This system is very desirable for use in low-rise structures due to its speed of construction enabling the schedule to be shortened.”

According to Magnusson, “This system represents the greatest innovation in steel in high-rise buildings in decades.”

I urge you to sit in a conference room at the 2018 NASCC: The Steel Conference (Baltimore, April 11–13), listen to Purdue’s Amit Varma and MKA’s Ron Klemencic and learn more about the system.