

Title: **How Can an Innovative Elevator Ecosystem Speed Construction?**

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How Can an Innovative Elevator Ecosystem Speed Construction?



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For most contractors and developers, construction speed is of utmost importance. But in the labor-intensive construction industry, the actual application of automation remains limited. Can an innovative elevator system help boost construction efficiency? We asked a CTBUH expert, “how can an innovative elevator ecosystem speed construction?”

While today’s high-rise buildings are growing not just faster and taller, but more complex, customers also demand their buildings be completed as early as possible. The market expectation of the construction time of a building has changed: it used to take weeks to finish one floor; now, the market pushes for doing the same in days.

Considering this changed demand, to get the building finished and ready for opening, the speed of elevator installation does truly matter. Another challenge: Qualified labor is expensive and yet indispensable for the building’s completion. Both these factors mean that, the shorter the project schedule stretches, the less the overall cost will be.

Imagine an innovative elevator ecosystem that can be conveniently and safely installed with a small workforce and organically integrated into the construction plan. It can be set up prior to the building’s completion, largely independent of the contractor, and serve as a vertical transportation system. In this way, execution efficiency is improved in no small measure. Schindler offers such a seamless solution, using the latest technologies.

The first step is the Scaffold-less Installation Method (SLIM), a standardized installation methodology that consists of a certified false car with triple safety redundancy. The system can be installed at any stage of the building’s construction. Schindler has already applied this method globally for high-rise installations.

Secondly, the Schindler CLIMB Lift, a commissioned and safety-inspected elevator, comes into action as a certified self-climbing

vertical transportation system, serving the already-constructed floors, while construction continues on the remainder of the building. It can be fully tailored to meet the owner’s or the builder’s specifications. They will also benefit from optimized site logistics, as the elevator operates under all weather conditions, and the cost of a temporary façade elevator can be saved.

A Schindler CLIMB Lift can travel up to 4 m/s, with a nominal load of 4,000 kilograms and a maximum travel height of 400 meters. This robust and reliable system has already been implemented in several of our large projects, and has received very positive feedback from both contractors and owners.

In addition to the Schindler SLIM methodology and the Schindler CLIMB Lift, Schindler applies its pioneering Robotic Installation System for Elevators (Schindler R.I.S.E) as an integral part of the overall solution, delivering an even faster installation speed (see page 22).

The autonomous system can work up to 24 hours, doing drilling work and setting anchor bolts in the shaft. This cutting-edge technology not only sets a new standard for installation schedules, but also contributes positively to the safety and health of the installation team, as it takes over the loud, dusty, repetitive, and non-ergonomic work in the elevator shaft. Recently, Schindler R.I.S.E has been successfully deployed in the Triiiple Complex in Vienna, Austria and the Varso Tower in Warsaw, Poland.

In addition to these elevator installation methods that expedite on-site construction,

digital tools can further assist in the time-consuming project coordination. Building Information Modeling (BIM) has become the industry standard for digital project management. It provides traceability and synchronization of data throughout the project life cycle. Schindler’s BIM models in particular can integrate elevators and escalators into the overall building design, offering models for various levels of development and providing a digital information base for Schindler R.I.S.E.

While the construction industry has only started exploring automation and digitalization, an innovative elevator ecosystem can significantly contribute to the fast completion of a tall building. The system can be installed in a short time, using modern robotics such as Schindler R.I.S.E, and it will soon transport construction materials and workers for the completed part of the building.

In the future, the construction industry could see mature, long-term, and comprehensive robotic systems operating at the whole building scale. Before that, utilizing an advanced elevator system as a construction facilitator will continue to be a highly feasible and efficient solution. ■

About the Author

Urs Püntener is the Head of Global New Installation/ Modernization/ Large Project Fulfillment of Schindler Group, a leading global provider of elevators, escalators and related services, headquartered in Switzerland and founded in 1874.