

The Automated Parking Garage

ContiTech and Wöhr Team up for Unique Residential Solution

The Hamilton Scotts Apartments are one of the best residential addresses the city-state of Singapore has to offer. The 30-story condominium offers a very special feature: Residents can park their luxury cars directly in front of their apartment. This is enabled by a fully automated parking lift system of Wöhr, which employs ContiTech timing belts.

Those with money in Singapore like to show it, for example with luxury cars and exclusive homes. For residents of the Hamilton Scotts Apartments, these two things lie close to each other: they do not park in front of the building or in a garage, but take their vehicles to the floor they live. Through a large glass pane, they can marvel at their vehicles in the "Sky Garage" from their sofa, while at the same time, they can let their eyes wander over the Asian metropolis.



For the project in Singapore, Wöhr ordered 6,600 feet of the timing belt Conti Synchrondrive (photos courtesy of ContiTech).

While the residents reach their apartments by a passenger elevator, the parking lift takes their cars over at an access point at the ground floor in order to carry and park them in front of the particular apartment. This solution is not only exclusive, it also offers excellent space efficiency: "While underground parking requires extensive ramps and driving lanes, the parking lift system uses the existing space in the manner of a high bay," says Andreas Zangerle, development manager of Wöhr.

Extra-long belts

The belts that lift the vehicles up to a height of 370 feet come from ContiTech. "For very high parking lifts, timing belts are our first choice," says Zangerle. For the first time, they were used in 2006 for the parking systems in two 170 feet high towers in Mumbai, India.

For the project in Singapore, Wöhr has ordered 6,600 feet of the timing belt Conti Synchrondrive, in single lengths around 400 feet. "It is actually a standard belt," says Thomas Winkler, application engineering at ContiTech Power Transmission Group. "But it has never been installed in such lengths before." Usually, the belt is used in industrial lifting applications, where differences between 30 to 100 feet must be bridged.

Large weights are not a problem for the Conti Synchrondrive—it features steel cord, the strongest tension member in the ContiTech belt portfolio. But the belt provides other important characteristics as well, which are important for the project:



Conti Synchrondrive timing belts transmit rotary motions with angular accuracy.

A noise-reducing cover fabric makes it anti-static. "This protects the control electronics of the parking lift and can prevent disturbances in its operation," says Winkler. In addition, the tension member has been optimized: it offers a very low elongation and an improved setting behavior, which is important for the length required in Singapore.

Smooth parking

The cars are lifted on parking pallets. "The quick-change pallet system allows very speedy access, so that parking and exiting functions takes place smoothly and fast," explains Zangerle. The car elevator lifts up to ten tons upward with a speed of 9 feet per second. The elevator platform measures approximately 20 by 20 feet, it is supported by two timing belts at each corner.

"Of course, a rope or chain drive would have been a cheaper solution for the parking lift," says Winkler. But that applies only to the purchase. Due to the much lower maintenance costs of the belt—for example, lubrication is unnecessary—and their longer lifespan, belts are the more effective solution. Also, the noise level is kept within narrow limits, so that residents are not disturbed. And the teeth of the belt prevent slippage, so that the parking

lift comes to stop where it is supposed to, without complex position control.

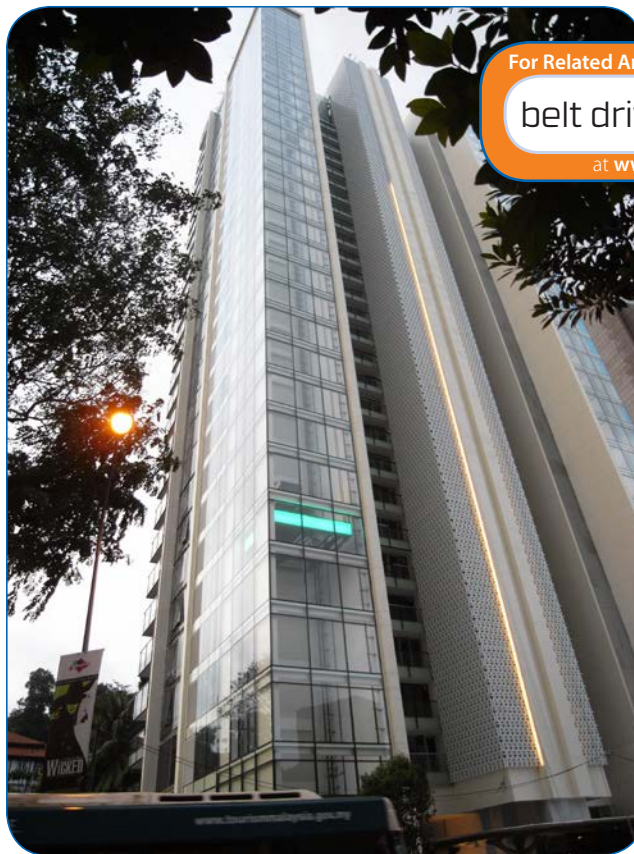
ContiTech and Wöhr have been working together successfully for a long time. "But this was our most spectacular project so far," says Winkler.

Wöhr is a manufacturer of car parking systems in Europe. For more than 50 years – since the number of cars began to grow rapidly – the company has designed and installed parking lifts. As a supplier of brake systems, systems and components for powertrains and chassis, instrumentation, infotainment solutions, vehicle electronics, tires and technical elastomers, Continental contributes to enhanced driving safety and global climate protection. Continental is also an expert partner in networked automobile communication. Continental currently employs around 182,000 people in 49 countries. **PTE**

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