Amstetten, November 2012

Press release

**Lotte World Tower: the height of elegance**

Thrusting skyward in the South Korean capital Seoul is what will soon be the tallest building in East Asia – the 555 m Lotte World Tower, which will add a striking new facet to the city’s skyline. The Doka formwork solution fielded here uses SKE100 and SKE50 plus automatic climbers and the Protection screen Xclimb 60, and is ensuring swift, safe construction progress. In a formwork-engineering ‘first’, the Formwork Experts are using telescoping protection screens and platforms to deal with the structure’s continuous taper.

The Lotte World Tower is a project on a superlative scale. Once this skyscraper is completed, its 123 storeys will house not only shops, offices and small apartments (known locally as ‘officetels’), but also a 7-star luxury hotel. The top ten storeys, with a viewing platform and café on the rooftop terrace, will be given over to public use. According to this megabuilding’s architects Kohn Pedersen Fox, the visual design of the gently tapered tower, with its uninterrupted curvature, was inspired by elements of traditional Korean ceramics, porcelain and calligraphy. The client, the Lotte Group, is incorporating photovoltaic panels, wind turbines, exterior shading devices and rainwater harvesting systems into the building. “Elegance of form” was one of the prime objectives. The facade will be clad in light-toned silver glass accented by a filigree of white lacquered metal.

Keeping time with automatic climbers

For the formwork of the immense reinforced concrete core, which has now (early November 2012) reached a height of 140 m, Doka is again deploying know-how that has seen many such megaprojects through to a successful conclusion: 132 SKE100 automatic climbers, combined with Large-area formwork Top 50, are being climbed ahead of the floor-slabs, in casting sections that are 4.5 m high in the typical storeys. Another twelve SKE100 automatic climbers are being used to raise the three concrete placing booms in sync with the forming cycles. Eighty ‘SKE50 plus’ automatic climbers carrying Large-area formwork Top 50 are being used to construct eight 318 m tall, solid-cross-section mega-columns on the outside of the structure, to give it extra stability and safety. Work has been progressing very satisfactorily, says Doka Project Manager Klaus Eckstein: “Despite the tight timeframe, we finished all the planning work in good time. The formwork deliveries all went to plan and work on the site is moving ahead well.”

Telescoping protection screen

At present, the work platforms are enclosed with netting and tarpaulins. A 20 m high Protection screen Xclimb 60 will soon be providing a gapless enclosure around the top four and a half storeys at any one time, probably from the beginning of 2013. All operations can then be carried out sheltered from climatic influences and high winds. The constantly changing shape of the structure presented the Formwork Experts with a great challenge in the planning phase. The Doka project team’s answer was to develop a new, telescoping protection screen specially for the Lotte World Tower; this screen takes little or no modification to adapt to tapering structure shapes. The screen elements can be adjusted to widths of between 3 m and 5 m. Says Eckstein: “One of the exciting things about this assignment was that there were more than 20 of us in a single team based in three different countries – Korea, Singapore and Austria – all working together to devise and implement individualised solutions for the Lotte World Tower.”

**In brief**

Client, investor Lotte Group

Contractors Lotte Engineering & Construction

Architects Kohn Pedersen Fox Associates

Start of planning work at Doka May 2011

First formwork deliveries Beginning of August 2011

Completion scheduled for 2015

Overall height of structure 555 m

Height of reinforced concrete core 498 m

Height of mega-columns 318 m

Systems in use Large-area formwork Top 50, Automatic climbing formwork SKE100, Automatic climbing formwork SKE50 plus, Protection screen Xclimb 60

**About Doka:**

Doka is one of the world leaders in developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 160 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support are provided swiftly and professionally. An enterprise forming part of the Umdasch Group, the Doka Group employs a worldwide workforce of more than 5600.

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**Captions:**

Doka\_2012\_11\_Lotte\_World\_Tower\_IMG\_01

On completion, the 555 m Lotte World Tower will be the tallest building in East Asia.

Photo: Doka

Doka\_2012\_11\_Lotte\_World\_Tower\_IMG\_02

The structure core of the Lotte World Tower is being raised by Automatic climbing formwork SKE100, climbing ahead of other casting operations, while SKE50 plus has been fielded for the eight mega-columns.

Photo: Doka

Doka\_2012\_11\_Lotte\_World\_Tower\_IMG\_03

The solid-cross-section mega-columns will give the skyscraper additional stability and safety.

Photo: Doka