Amstetten, March 2012

Press release

**Rapid construction progress amid tight space constraints**

La Défense is a modernistic high-rise commercial district in Paris. With over three million square metres of floorspace, this is the biggest office location in Europe, accommodating more than 150,000 office staff. 1600 firms – among them some of the biggest corporations in both France and the world – are represented in La Défense. A new prestige project is the 166 m ‘Tour Carpe Diem’ tower being built for the insurance group Aviva. Designed to Green Building Standards, it is scheduled for completion in 2012. The ‘Doka automatic climbing formwork SKE50 plus’ system is keeping operations moving ahead very fast on this project, despite the cramped conditions on the site. Used here as a protection screen, the Doka ‘Automatic climbing formwork Xclimb 60’ system is ensuring high workplace safety on this build.

The Tour Carpe Diem was designed by the firm of Robert A.M. Stern Architects. On its 38 storeys, this prestigious tower will soon house 45,000 m² of office space as well as shops, cafés and an 18 m tall conservatory. The office complex is being built by a JV between the firms of SCGPM and Besix.

The stringent safety requirements in force in France, the shape of the facade and the very tight space constraints on the site all presented the Doka technicians with a number of challenges. With its distinctive alternation of set-back and projecting floor-slabs, the facade on the narrowside of the building proved to be a particular planning challenge. The difficulty here was to find a way of permitting continuous vertical climbing that did not have to follow the alternating pattern of the slab-edges but still ensured a high degree of safety. The solution: the self-climbing Protection screen Xclimb 60, which since last year Doka has also been able to supply with adjustable ‘Floor supports’. To go with this new product, Doka technicians have devised a special profile to which the adjustable floor supports are attached. This allows the working platform to be moved forward and back in a certain range. Also, four hinged gap-decking units were made for each platform; these can be tilted up and down by a block-and-tackle to close the gap between platform and floor-slab as needed. Each protection screen covers the working platform and two further levels.

**Pre-fabricated formwork ensures smooth workflow**

Doka France pre-fabricated all the formwork elements at the Paris Branch and delivered them to the site ‘just in time’. The heavy traffic in the densely built-up La Défense district, and the fact that the formwork systems can only be delivered during certain time-slots, mean that the logistics are a critical factor for construction progress here: “Because there is so little space, on site storage or assembly are not an option. We’ve planned all the operational steps needed for delivering and installing the formwork systems right down to the last detail, and this has ensured a smooth workflow”, explains Project Manager Ibrahim Bara of Doka France. The forming operations were planned by the engineering office of Doka France with support from the Self-climbing Systems Competence Centre and the Applications Technology Dept. at Doka HQ in Amstetten, Austria.

**High-performance climbing**

Work on the Tour Carpe Diem got underway in March 2011. The 30 m long and 11.5 m wide structure core is being constructed entirely in CIP concrete. 80 high-performing ‘SKE50 plus’ automatic climbers combined with Large-area formwork Top 50 are in action on this high-rise project. For the structure core with its many smaller shaft cores, the modular design concept of ‘SKE50 plus’ is ideally placed to deliver fast cycle times and superlative cost efficiency. On the inside-shafts, the special ‘SKE50 plus shaft system’ is ensuring optimum adaptability to the structure geometry, combined with quick and easy operability. The wall formwork is fixed to Framax stripping corners I to make formwork boxes that can quickly be backed off the concrete in a few simple steps. 1500 m² of Doka’s Top 50 timber-beam system are being used as the wall formwork here. The 4.47 m high custom elements make for rapid progress on the 4.07 m casting sections, enabling the CIP concrete core to be raised in a weekly cycle. Workplace safety is being assured by ‘SKE50 plus’ working platforms with four levels: Level 0 is enclosed in trapezoidal sheeting to provide protection against the weather, while all other levels are enclosed in netting.

**Safety writ large**

The mantle of the Tour Carpe Diem is a futuristic construction of steel and glass. Architecturally, its narrowsides stand out for their multi-facetted facades with alternately projecting and set-back elements – a tough safety challenge, and so just the sort of thing the Doka Formwork Experts relish most about their planning work. When it comes to safety, France has some of the most stringent rules and regulations of any country. Besides this, the tight space constraints and the stipulations of the architects and contractors confronted the Doka professionals with several formwork-engineering challenges regarding the enclosures. To safeguard the forming operations on the building-facade, 11 platforms of the ‘Automatic climbing formwork SKE50 plus’ system are being used on the broadsides of the structure, and 12 ‘Protection screen Xclimb 60’ platforms on the narrowsides. The ‘SKE50 plus’ platforms have been enclosed with both trapezoidal sheeting and netting on Level 0, and with netting on Level -1.

**About Doka:**

Doka is one of the world's leading companies for developing, manufacturing and distributing formwork technology for use in all fields of the construction sector. With more than 140 sales and logistics facilities in over 70 countries, the Doka Group has a highly efficient distribution network which ensures that equipment and technical support can be provided swiftly and professionally. The Doka Group is a company of the Umdasch Group and employs more than 5500 people worldwide.

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**Captions:**

**Doka\_2012\_03\_Tour\_Carpe\_Diem\_IMG\_01**

With its distinctive alternation of set-back and projecting floor-slabs, the facade on the narrowside of the building proved to be a particular planning challenge. The difficulty here was to find a way of permitting continuous vertical climbing that did not have to follow the alternating pattern of the slab-edges but still ensured a high degree of safety.

Photo: Doka

**Doka\_2012\_03\_Tour\_Carpe\_Diem\_IMG\_02**

To safeguard the forming operations on the building-facade, 11 platforms of the ‘Automatic climbing formwork SKE50 plus’ system are being used on the broadsides of the structure, and 12 ‘Protection screen Xclimb 60’ platforms on the narrowsides.

Photo: Doka

**Doka\_2012\_03\_Tour\_Carpe\_Diem\_IMG\_03**

The 30 m long and 11.5 m wide structure core is being constructed entirely in CIP concrete. 80 high-performing ‘SKE50 plus’ automatic climbers combined with Large-area formwork Top 50 are in action on this high-rise project.

Photo: Doka