PwC Tower soars steadily to completion

The iconic 28-storey PwC Tower at Waterfall City, Midrand is on schedule for completion early in 2018.

The R1.5 billion high-rise head office for PwC comprises 40 000 m² of modern offices, designed to house 3 500 PwC employees in an efficient and optimally designed workplace.

The PwC Tower is designed by LYT Architecture and is being constructed in phases due to the unique twist design of the structure. It gently twists through in its height to frame the grand urban park, which forms the green heart of Waterfall City.

The building is designed to conform to the internationally recognised LEED (Leadership in Energy and Environmental Design) Silver standard for the design, construction, operation, and maintenance of green buildings.

Guy Steenekamp, a director at LYT Architecture explains: “The brief for the PwC Tower at Waterfall City called for an iconic building form that would be unique to the development and which would mark the property as a new top tier destination for business.”

The height of the new PwC Tower and the fact that it is situated on a high point in Waterfall City will make it the tallest structure on the corridor between the Sandton and Pretoria CBDs. The PwC Tower will be visible from almost anywhere within a 30 km radius.

Richard Lawson, buildings associate at Arup – design engineers for the project – says: “To achieve the building’s twist, each floor of the 28-storey office tower rotates 1.2 degrees relative to the floor below. This posed a variety of design challenges for both the structure and façade, many of which Arup was able to solve creatively and efficiently using parametric modelling.

“The biggest structural challenge was that the twist causes the gravity loads to naturally create a clockwise torsional load on the building,” explains Lawson. “The obvious solution to this would have been a very thick core wall, but because we were able to quickly assess a number of different structural geometries, we were able to optimise the solution. Our final scheme incorporated structural columns on the façade of the building that slope in a counter-clockwise direction around the core, balancing the gravity loads on the corner columns and reducing the torsion on the core of the tower. This meant that the stresses on the core wall decreased by a factor of four; therefore we could use a 450 mm thick wall which is not much thicker than a typical straight tower of that height would have needed.”

Client
Attacq Waterfall Investment Company (Pty) Ltd
Developer: Athterbury

Architect/Engineer
LYT Architects

Design engineers
Arup

Main contractor
WBHO

Value at completion
ZAR 1.5 Billion

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