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Afrisam Supplies Concrete To Final Phase Of Lynnwood Bridge Complex

AfriSam has supplied 13 000 m^3 of 30 MPA enhanced suspended slab mix for Phase 3 of the Lynnwood Bridge complex, in compliance with the developer's Green Star specifications. The company has supplied the concrete required for all three phases of the Lynnwood Bridge complex, located on the North East corner of the N1 Highway's Lynnwood Road off-ramp. Phase 3, the final element of the complex, is on track for completion by year end.

The bulk of the concrete required was delivered by May 2014, with much smaller quantities being supplied until the end of the project. Main contractor WBHO reports that the concrete mix has achieved very good early strengths on the project, typically way above the requirement. It was delivered to site in readymix trucks and reticulated around the site by means of a WBHO static pump, with concrete being pumped more than 140 metres in many cases before reaching a specific pour.

"We have a longstanding relationship with WBHO and have completed many successful projects with this contractor to date," AfriSam key account consultant, Margaret Lawrence, says. "Our involvement on the Lynnwood Bridge Complex is based on this excellent track record of consistent quality and reliability."

AfriSam has also supplied concrete to several other building developments in the same area, sourcing the required readymix primarily from its Ferro plant in East Lynne, Pretoria North, backed by its Kwagga plant in Pretoria West and its Rosslyn plant, also in Pretoria North.

Atterbury is developing the Lynnwood Bridge complex, a prime 74 000 m² mixed use development comprising three premium A-grade office buildings, a retail component, a hotel and bulk land under development. Two of the buildings — named for long-lease tenants Aurecon and Adams & Adams — are single tenanted, while the third will be multi-tenanted.

Lynnwood Bridge Phase 3 comprises two 7 500 m² A-grade office blocks (building A and building B), each five storeys high. Additional Aurecon personnel will occupy building A which has been linked by means of a steel bridge to its existing offices in the neighbouring building. Phase 3 rests on five levels of basement, each about 4 500 m^2. At podium level there is a split into the two standalone towers, which are linked through a bridge and a staircase. In the centre of each of the buildings is a main atrium that, in the case of building A ascends five floors and in building B, four floors.

The developers have partnered with Aurecon, which is also responsible for the majority of engineering design disciplines on the project, to oversee the green building elements of the project. Phase 3's two towers will form part of the submission for the Green Star SA rating as one development with a single rating, which means both towers are jointly required to achieve a high level of performance. This will be achieved through careful modelling of the towers' performance and constant tweaking of the building systems to achieve desirable performance levels.

Bulk earthworks began on Lynnwood Bridge Phase 3 in November 2012, including excavation of the five basement levels through the lowest point of the complex. Months of dewatering followed, with the site pumping out more than 300 000 litres per day in peak rainy season. Pumps will be permanently installed in the basement to remove future ingress of groundwater.

"Other than pumping out these high levels of groundwater, a major challenge on this project was the size of the foundations," Greig Bastion, WBHO contracts manager, says. "Each base had to be shuttered, with some bases requiring more than 250 m^3 concrete. The surface area of bases covered 50% of the total footprint on the structure of 4 500 m^2 with a total volume of 2 700 m^3 being poured."

When the structure reached podium level, transfer beams were introduced to accommodate the desired column positioning. The concrete poured into these beams, some of which were up to one metre wide and nearly two metres deep, contributed to a fifth of the total volume on the project.

Construction makes use of conventional concrete reinforced slabs, but the fact that Phase 3 is located at the lowest level of the Lynnwood Bridge complex in terms of elevation, has necessitated lateral support being incorporated to anchor the complex.

“One of our limitations in terms of the basement work is that we can’t de-tension any of the anchors on the lateral support for the five basement levels, specifically on the southern side of the building, until we have the entire structure complete up to roof level as the full weight of the structure is needed to stabilise the complex,” says Bastion.

The new building takes up almost the entire 5 000 m^2 stand and access is very tight. Materials enter the site through a single gate and everything else is craned onto the property. Two tower cranes move materials around the site, while hoists and Bobcats drive material into the construction areas.

LYNNWOOD BRIDGE PIC 01 : Greig Bastion, WBHO contracts manager responsible for the project.

LYNNWOOD BRIDGE PIC 02 : Construction makes use of conventional concrete reinforced slabs. Phase 3 is located at the lowest level of the Lynnwood Bridge complex in terms of elevation, necessitating lateral support being incorporated to anchor the complex.

LYNNWOOD BRIDGE PIC 03 : WHBO is now putting the finishing touches to Lynnwood Bridge Phase 3, which comprises two 7 500 m² A-grade office blocks (building A and building B), each five storeys high.

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