

The two Jost JT 312-12 flat top towers at work during an earlier stage of the Cube's construction

Boxed up

A pair of Jost flat top saddle jib tower cranes have completed their work on The Cube project in Birmingham, UK. ALEX DAHM reports

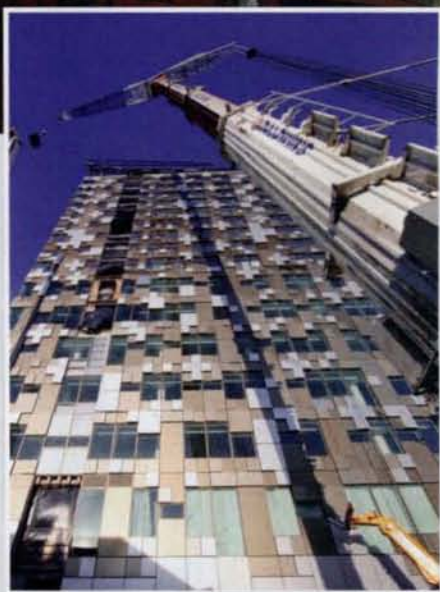
Construction of The Cube, a £100 million (US\$160 million) mixed-use development in Birmingham, UK, has reached a milestone with the removal of the 100 m tall tower cranes.

Birmingham Development Company's (BDC) city centre project is a 23 storey mixed use building that will include a hotel, cafés, shops, offices, apartments and a restaurant. It is the final phase of the Mailbox development and completion is scheduled for mid 2010. More than half of the 10,000 square metres of office space is

pre-let to the Highways Agency and more than half of the 244 apartments are sold.

The glass base of The Cube makes it appear that the building is hovering. Anodised aluminium fretwork encases the structure and an open glass atrium inside twists as it climbs the height of the building.

The two tower cranes – specially designed Jost JT 312 flat tops from London Tower Cranes – were erected in April 2008 and dismantled in December 2009. Painted black in keeping with The Cube brand, they were claimed as the only black tower cranes



in the UK since those used on construction work at Buckingham Palace in London.

Given the unusually confined city centre Cube site, situated between a canal, a road and a number of dense residential developments, the base tower sections for the cranes had to be specifically made for the project.

When the cranes were climbed to raise their height, the jacking took them from heights of 51 and 66 m to their full height of 87 and 102 m, respectively.

Go to work

Set inside the building's footprint, the towers started by helping to erect the >

ABOUT THE TOWER CRANES

MAKE AND MODEL	Jost JT 312-12 flat top saddle jib electric tower crane
CAPACITY	12 tonnes to 27.8 m radius
CONFIGURATION	TC1: jib length 45 m (7.4 tonnes at 43 metres) initial height 51 m, final height 87 m, on four falls of rope
	TC2: jib length 45 m (6.6 tonnes at 45 metres) initial height 66 m, final height 102 m, on four falls of rope

SITE REPORT

concrete superstructure. The Cube has a central atrium which, initially, went down to the basement where an automated car parking system, the largest of its kind in the UK, is being constructed.

Getting materials into the basement was tricky as the access hole was only an 8 x 4 m rectangle. Steel work for the three levels of car park and piping were the main materials used in the basement. To erect the steel a Maeda LC785-6 mini crawler crane was also lifted into the hole. Access platforms and other machines also had to be lifted in.

The internal escalators were the next major lift on the project. They were lifted off the delivery trucks using two mini crawler cranes. The cranes also transported them into the building and landed them onto skates. A scaffold deck had to be erected in the central atrium to load the escalators onto. The tower cranes then lifted the escalators into their final positions.

The steel roof structure, a glass canopy over the lower part of the atrium and the building maintenance unit on the roof were the last things to be erected by the tower cranes.

To dismantle the two Jost tower cranes the Liebherr LTM 11000D tele mobile crane from Baldwins was rigged with a luffing jib



The operator's cabin of one of the two Jost tower cranes is lowered during dismantling



BDC's construction arm, BuildAbility, managed the removal of the two tower cranes. They were dismantled using a Liebherr LTM 11000D wheeled mobile telescopic crane from Baldwins Crane Hire, squeezed into minimal available space. The 1,000 tonner was rigged with luffing jib to reach from the road adjacent to the site over to the front of the development where the cranes were situated.



In position on one side of the confined site, the luffing jib of the Baldwins Crane Hire Liebherr LTM 11000D was used to reach right over the top of the new building