Kings Dock Mill, Liverpool

Project: Specialist Concrete
Value: £50m
Client: Bell & Webster for Bowmer & Kirkland
Sector: Concrete / Residential / Hotels / Regeneration
Completed: 2011

Overview

Kings Dock Mill occupies a 1.5 acre Brownfield site near Liverpool's historic waterfront in the Baltic Triangle area. The £50m development consists of a complex of brick clad buildings and features a 150 bedroom hotel, 190 new apartments and 350 sq.mtrs of office space. Waldeck designed and detailed the specialist precast system based on a traditional crosswall system but also comprising of prestressed concrete. It is quite possibly one of the largest and most complex applications of this technology in the country today.

Waldeck Innovation

The hybrid design solution that was developed specially for this project included both traditional precast reinforced concrete and prestressed concrete floor panels which enabled the Architect to provide flexible spaces in excess of those areas commonplace in the precast crosswall construction projects. To our knowledge, this system, developed by Waldeck is the first of it's kind in the UK for such applications.

Waldeck
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Coldharbour Lane, Brixton

Project: ModernaHus Housing Development
Value: £13m
Client: Tarmac
Sector: Precast / Residential
Completed: 2011

Overview

The ModernaHus development on Coldharbour Lane, Brixton is a first for the UK and delivers 108 one, two, three and four bedroom high-quality apartments over two separate nine-storey blocks. Waldeck designed and detailed the precast concrete elements of the development, which included 665 wall panels and 239 floor panels. The process of making the panels was quite complex, the screens were cast and the insulation added using wall ties followed by the top skin in one complete operation. The external surface of the panels was rendered and painted to match the surroundings. Using large precast concrete panels, rather than bricks saved both time and money.

“It’s eye catching, it’s quick to construct and it’s substantially cheaper to live in than the standard housing being built in the UK today” - John Hughes, Development Director at Notting Hill Housing.

Waldeck Innovation

The apartments are 44% more efficient than standard homes thanks to a well insulated building envelope and combined with an under floor heating system, helping to reduce heating bills and combat climate change. This development achieved Code for Sustainable Homes level 4.

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Hilton Hotel, T5 - Heathrow

Project: Structural Engineering Design
Value: £43m
Client: Buchan Concrete Solutions
Sector: Concrete / Commercial
Completed: 2010

Overview

Buchan Concrete Solutions was awarded a contract to design, manufacture and erect a precast from for the new seven-storey Hilton hotel at Terminal 5, Heathrow. Waldeck worked with Buchan Concrete Solutions internal design team and were responsible for the structural engineering design and detailing for all of the precast elements of the development. The Waldeck Project team produced over 1000 general arrangement and reinforced concrete detailed drawings. In total there were 236 external wall panels, 432 internal panels and 761 floor panels as well as stair flights and landings.

“This was a particularly challenging and complex job because the design was very intricate and there was a huge amount of detailing required to be completed within the tight programme but with quite possibly one of the leading specialist teams in the UK working in this sector. We had the know-how and resources to achieve.” Paul Waldeck, Founder & Director.

Waldeck Innovation

The hybrid design solution that was developed specially for the project included both traditional precast reinforced concrete and deep panel beams which enabled the Architect to provide flexible communal spaces at ground floor level. Another UK first for Waldeck.

Waldeck
Consult Design Deliver

Premier Inn, Manchester

Project: Dale Street Hotel
Value: £9m
Client: Buchan Concrete Solutions
Sector: Concrete / Hotels
Completed: 2012

Overview

Waldeck were involved with the new 14-storey, 193 room Premier Inn Hotel Development, based in the Northern Quarter of Manchester. Construction was from pre-fabricated, pre-cast panels with blue brick external cladding, glazed fronted public areas and a ground floor restaurant and sloping section on the easterly corner running up the final few storeys of the building. The basement and ground floor of the building were constructed using in-situ reinforced concrete, with a 600mm thick transfer deck between the precast section and in-situ concrete lower levels. The external panels are a brick faced sandwich construction and came with pre-fixed windows which were then lifted directly into position and held by tie cables and dowel bars before the joints were filled using a high-strength thixotropic grout. The pre-fabricated bedroom pods were then dropped into place, allowing the following-on trades to continue working. By using the latest's connection details for the stairs it allowed them to be pre-made and installed to tight tolerances allowing removal of site crane, thus reducing costs.

Waldeck Innovation

Construction involved pre-fabricated brick faced sandwich panels with pre-installed windows that fitted onto precast concrete cross walls. Although relatively expensive, their cost was out weighted by the reduced construction time (on average eight days for a floor level.)

Waldeck
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Memorial, Bethnal Green

Project: Historical ‘Stairway to Heaven’ Monument
Value: £5m
Client: Aggregate Industries
Sector: Concrete / Precast
Completed: 2012

Overview

Waldeck were appointed by Aggregate Industries to design and detail three concrete plinths that will form part of the memorial dedicated to those who died in the Bethnal Green disaster – the worst civilian disaster of World War II where 173 people died in the stairwell of Bethnal Green tube station, that was being used as an air raid shelter at the time. The Bethnal Green Memorial was initiated six years ago by Harry Paticas, a director at Arboreal Architecture who formed the Stairway to Heaven Memorial Trust and won the support of the local community which has raised funds towards the first phase of the project which includes the groundwork, landscaping, benches, plaques and the precast concrete plinths. One of the three polished concrete plinths acts as a supporting arm for a hollowed out, laminated teak stairway: echoing the entrance stairway to the tube station. A series of bronze plaques will be mounted on the two lower plinths which will rise out of the ground. By Using Tekla Structures software Waldeck were able to integrate the design and eliminate any problems at an early stage, thereby reducing design and fabrication errors.

Waldeck Innovation

This was a challenging project due to its unusual shape, with sloping planes and no straight angles. Using 3D finite element analysis and detailing software Waldeck were able to produce extremely economical specifications and accurate drawings and deal with irregular structural configurations more efficiently. The 3D model also enables the manufacturer to produce a precise mould.

Waldeck
Consult Design Deliver

Blackfriars, London

Project: Railway Bridge Restoration
Value: £5.5bn
Client: Aggregate Industries
Sector: Concrete
Completed: 2013

Overview

Waldeck was appointed to work on a multi-million pound project to restore Blackfriars railway bridge in London in 2010. The bridge is a key component of the £5.5bn Thameslink programme designed to double capacity on one of Europe's busiest stretches of railway – the core route through central London – benefiting tens of thousands of passengers daily. The bridge will effectively house a brand new station which is the first London station to span the Thames. Waldeck's specialist team of engineers were appointed to detail precast concrete slabs and crosswall units designed by Network Rail, making up the station's platforms. The first phase of the work which comprised the straight sections of platforms 1 and 2 involving detailed 60 crosswall units and 120 platform slabs which average about 1.7m x 4.m on plan.

Waldeck Innovation

The team involved has a combined total of 250 years' experience in structural design and detailing for the precast and pre-stressed fabrication industry. Use of BIM software was used to produce a large number of precast units to meet a very tight contract programme.

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