fpmccann

PRECAST STUDENT ACCOMMODATION SOLUTIONS

STUDENT ACCOMMODATION

With the quality of campus life now a crucial factor in determining students' choice of educational establishments, many colleges and universities rely on superior residential provision as a vital means of attracting high-calibre scholars.

Precast concrete is known for its natural fire resistance, strength and durability. Also, another main advantage of selecting precast concrete would be its low maintenance cost. FP McCann looks for areas of improvement with our products so that we can offer our clients the best solution.

FP McCann has experienced continued growth by contractors and funding clients towards precast concrete room solution owing, to the solutions durability, robustness, consistent high quality and the opportunity to value engineer a clients' projects. Some of their recent schemes have achieved BREEAM excellent ratings and with clients looking for the whole life costing benefits and a room that will stand the test of time, then FP McCann's Structural Solutions are a key constituent part of the project.

FP McCann has the experience of working on various sizes and complexities of student accommodation projects. Some of our well-known projects include the University of East London, The University of Essex, The Mason Hall residence for Birmingham City University (shortlisted for the Project of the year category at the Constructing Excellence Awards 2008) amongst many others.

BENEFITS

- Direct decoration finish to walls and ceiling minimised the need for dry-lining or suspended ceilings and wet trades
- Conduit cast into slabs not walls
- Good acoustic rating
- Speed of construction
- Following trades can commence on the lower floors as the upper floors are being erected
- Bathroom pods installed as frame erected
- Safe Access at all times
- Designed to facilitate progressive collapse
- Any style of bathroom pod can easily be installed
- Fire resistant
- Flood Resistant

UNIVERSITY OF BIRMINGHAM STUDENT ACCOMMODATION

Site: Selly Oaks Student Accomodation

Client: Birmingham City University

Main Contractor: Interserve

Products Supplied: Precast Concrete Modular Room Systems

FP McCann's structural precast concrete building and architectural façades division worked in close partnership with Interserve Special Projects on the construction of student accommodation on a site acquired by Unite and as part a £71 million major retail development in Selly Oak, Birmingham. The student accommodation block consists of 418 bedrooms over 18 floors.

Construction work began in July 2018, taking ten months to complete the 18 floor building, sited on the grounds of former metal factories known as the 'Birmingham Battery Company', which has been vacant since 1980.The accommodation is part of a scheme to re-develop 30-acres of the Battery Park site, ideally located at the heart of the student area and within walking distance of the University of Birmingham.

Main contractor Interserve's appointed architect Glen Howells Associates had previously worked with FP McCann on another Birmingham University campus development, University Locks near the city centre where a similar precast concrete crosswall/insulated sandwich panel system was used.

On the Selly Oak project, FP McCann provided some 2,500 precast units for the structural frame and the cladding envelope, including walls, floor slabs and external architectural sandwich panels. The internal crosswall sections are 250mm thick and external sandwich facade panels are mainly 495mm thick and 665mm thick on the returns of the corner sections. The inner leaf of the sandwich panel is a 180mm thick structural concrete skin designed to carry its own dead loading and that of the external skin together with floor loading where required. Insulation between the concrete faces is 200mm thick. The outer 50mm facade skin of the sandwich panels is a cut brick slip face. Bricks to the architects specification are Weinberger Ouverture Marziale and together with a colour designed mortar were cast onto the sandwich panels at FP McCann's specialist architectural factory in Byley, Cheshire.

UNIVERSITY LOCKS BIRMINGHAM STUDENT ACCOMMODATION

Site: University Locks, Curzon Street, Birmingham City Centre

Contractor: John Sisk & Son

Client: Birmingham City University

Products Supplied: Precast concrete modular room systems

One of the most prominent regeneration projects in Birmingham is the £48 million canal side prestigious student accommodation scheme at University Locks. The new site is part of the Birmingham City University (BCU) City Centre Campus.

The project carried out for Alumno Developments by main contractors John Sisk & Son was completed in autumn 2016. Structural engineers for the project were BWB Consulting and Architects, Glen Howells Associates.

The scheme to construct 659 student rooms (21,405m^2 of accommodation) in the form of cluster flats, with a main southern tower standing at 19 storeys high commenced installation mid 2015.

FP McCann commenced deliveries of the precast concrete modular room system to John Sisk early last year. Based on a process where walls, floor and ceiling slabs are linked together to form a unique crosswall construction, the precast panels were factory formed to suit design requirements.

In total, some 3,500 individual precast units were installed to form the structural frame and encompass the cladding envelope. The five panels framing each pair of bedrooms consist of walls 180mm thick, and floor slabs 175mm thick. Window and door openings have been accommodated and each bedroom has four conduits cast into the walls for electrics and communications networks.

COVENTRY UNIVERSITY BUILDING

Site: The Beatrice Shilling STEM building, Coventry University

Client: Coventry University

Main Contractor: Speller Metcalfe

Products Supplied: Prestressed Hollowcore Flooring, Lift Shafts, Precast Concrete Stairs and precast concrete 'L' Walls

FP McCann has supplied a full package of precast concrete building products on a brand new science and technology facility at Coventry University. The Beatrice Shilling STEM building, due to open in 2020, will feature a range of state-of-the-art spaces, including a gaming and virtual reality studio, a specialist area for 3D printing and rapid prototyping, a laser facility, and physics and electronics laboratories. It will be linked to an existing building via a covered bridge walkway.

The four storey development includes the construction of a steel frame and precast concrete superstructure covering a total floor area of 5,366m². The main contractor on the £27 million project is West Midlands based Speller Metcalfe. Also employed on the project are structural steel fixing specialist Adstone Construction and civils groundworker S&G Groundworks Ltd.

Earlier in 2018, FP McCann secured the contract to supply 1,500 tonnes of precast products, including hollowcore flooring, lift shafts, stairs and 'L' walls, all supplied from a number of FP McCann's specialist precast concrete factories.

The hollowcore flooring system covering 4914m² comprises 150mm and 200mm deep prestressed steel reinforced concrete planks, all delivered from FP McCann's Uddingston depot in Scotland. The ground to third floors have been linked with two precast concrete stair flights and have been installed by Adstone Construction. Both the hollowcore flooring and stairs have been covered with 58m³ of wet work concrete and rebar as part of the disproportionate collapse tie details undertaken by Beresford Flooring's progressive collapse joinery team.

Additionally, two of FP McCann's sectional lift shafts, each measuring 15.30m high have also been installed by FP McCann's own specialist contracting team. Individual square shaft sections (2.20m x 2.20m) were delivered on a just-in-time basis from FP McCann's Grantham works in Lincolnshire. Completing the supply contract, 80 no. precast concrete 'L' walls 1.75m high x 1.0m wide have been installed by S&G Groundworks to form a soil retaining wall to the boundary of the building. The 'L' walls have also been supplied from FP McCann's Grantham depot.

WOLVERHAMPTON SCHOOL OF ARCHITECTURE

Site: School of Architecture & the Built environment

Contractor: ISG

Client: Wolverhampton University

Architect: Associated Architects

Products Supplied: Portland Cement Precast Cladding Panels

FP McCann's structural precast concrete building and architectural facades division has recently supplied and installed a bespoke 3D cladding façade for the brand new three story School of Architecture and the Built Environment (SOABE), part of Wolverhampton University's multi-faceted engineering, building design and innovation centres on the site of a former brewery. The 12 acres, £100 million development once complete, will be Europe's largest built environment education campus.

The regeneration of the grade 2 listed Springfield brewery site noted for its historic red brick structures, is being undertaken by global construction specialist ISG. Fundamental to the design and build project is the reflection of the old buildings in the new architecture. Recognising FP McCann's experience in this field, ISG and principal designer Associated Architects, approached the Company to design, manufacture and install white Portland cement precast concrete cladding panels to complement the bronze metal façade and specialist glazing system on the 7,900m² SOABE. Additionally and as part of the panel design to match key features on the one hundred years old building, unique and detailed 3D patterns have been created in a number of panels by using special moulds and form liners.

Working alongside Derby based steel frame construction specialist MJ Robinson Structures, a total of 157 Portland white cement precast concrete panels have been installed by Staffordshire based sub-contractor to FP McCann, S4J. Supply of the panels on a just-in-time delivery basis, was from the Company's state-of-the-art architectural precast manufacturing facility at Littleport in Cambridgeshire. Integral to the structural design was FP McCann's precast hollowcore flooring and stair flights. Just over 500m² of hollowcore was manufactured and delivered from FP McCann's Weston Underwood facility and installed by MJ Robinson within the three storey building.

Throughout the project, the architectural facade team at FP McCann worked closely with engineers Atkins and designer Associated Architects to ensure all aspects of the build met the exacting client specification.

YORK UNIVERSITY STUDENT ACCOMMODATION

Site: Heslington East Campus

Contractor: Graham

Client: University of York/Equitix

Architect: Sheppard Robson

Products Supplied: Architectural Cladding Panels & more

FP McCann's structural precast concrete building and architectural façades division has worked in close partnership with national construction group Graham on the construction of a 1480 bed student accommodation project, part of York University's "Campus for the Future" masterplan. The £130 million flagship scheme which will help transform the Heslington East Campus commenced in 2019 and is due for completion ahead of the 2022 academic year.

Architect on the project Sheppard Robson designed the residential development in a natural waterside setting which has been broken down into 18 blocks that step down from four to three storeys in height as they get closer to the waterfront. The strong, simple forms of the precast concrete modular blocks, characterised by striking architectural finishes, have been designed to be a modern interpretation of the character of the university's original 1960s campus. Working closely alongside Sheppard Robson and main contractor Graham, FP McCann were able to satisfy the requirement for the design and build project to fully embrace Modern Methods of Construction (MMC). The key elements of MMC include prefabricated insulated sandwich panels with integrated external brick faced, acid-etched and stencilled finishes, factory fitted windows, first fix services and factory finished internal walls and ceilings.

Sub-contractor to FP McCann, Ulster based precast concrete installation specialist McVey Stone, has constructed the 18 block precast modular buildings in just 58 weeks. The off-site manufactured precast concrete crosswall/insulated sandwich panel system was specified on the build to enhance quality, safety and sustainability. Construction times were reduced by up to 60% and significant other benefits associated with MMC such as reduced wastage and all weather working were achieved.

FP McCann has manufactured and delivered a total of 7177 individual precast concrete units for the internal structural frames and the cladding envelopes, including walls, floor slabs and external architectural sandwich panels. Additionally and included in the supply contract, are precast stairs and landings, precast concrete columns and architectural cladding to support steels on all overhang areas.

SWANSEA UNIVERSITY BAY CAMPUS

Site: Swansea University Bay Campus
Contractor: Galliford Try
Client: St Modwen
Products supplied: Precast Concrete RoomSolution™ Modular System

St Modwen, the regeneration specialist behind the new £450 million Swansea University Bay campus, signed another agreement to provide an additional £50m of student accommodation and student facilities at the site which opened its doors in September 2015. The accommodation agreement will see 545 additional student apartments for occupation during the first quarter of 2016. Main building contractor Galliford Try was appointed to the contract in 2014 and work commenced on the land, formerly a BP distribution hub in autumn last year.

FP McCann successfully tendered for the supply and install contract on student accommodation buildings 15 & 16 and commenced deliveries of the precast concrete RoomSolution™ modular system late last year. Based on a process where walls, floor and ceiling slabs are linked together to form a unique crosswall construction, the precast panels are factory formed to suit design requirements.

In total, some 2400 individual precast units are being installed, consisting of walls, floors, stairs and landings. Gable walls and party walls are 160mm thick, with each room floor slab 175mm thick. Window and door openings have been accommodated and each bedroom has four conduits cast into the walls for electrics and communications networks.

All horizontal and vertical sections are designed for ease of build, linking together with hidden tie rods. Joints are finished with a high-strength non-shrink grout, fully conforming with building regulations. Walls and ceilings are to a quality fair face finish allowing for a simple gypsum wash prior to final decoration. In total, 541 individual bathroom pods are also being installed as part of the build. The RoomSolution™ system offers excellent acoustic and thermal mass properties as well as fire resistant qualities associated with precast concrete.

NORTHAMPTON UNIVERSITY CAMPUS

Site: Northampton University

Contractors: Bowmer and Kirkland/Shipley Structures/ FP McCann

Client: University of Northampton

Products Supplied: Precast, prestressed concrete hollowcore panels, Lift shaft lids

FP McCann has played a major part in the rst phase construction of a brand new university facility in Northampton, supplying and installing around 3,800m^2 of precast concrete hollowcore flooring.

The Senate Building at the University of Northampton's new Waterside development is the first of five new buildings to be 'topped out' as part of the £330 million 58 acre student campus scheduled to open in September 2018. The new site will cater for 14,000 students and 2,000 staff.

Main contractor Bowmer and Kirkland has been awarded the BREEAM Very Good rated contract to build the new campus which will include low carbon buildings for teaching, leisure and student accommodation.

FP McCann secured the contract to supply and install 200mm deep hollowcore flooring and lift shaft lids to the Senate Building as part of the main structural steel build headed up by Grantham based Shipley Structures. The design and build hollowcore package was undertaken by the FP McCann in-house team based at Weston Underwood. Hollowcore floor spans ranging from 1.0 metre to 7.25 metres and totalling 3,800m^2 were installed on the four storey building over a 3 month period, as phased in by Shipley Structures.

As part of the contract, FP McCann also completed all the wet work requirements and employed Beresfords Flooring's specialist progressive collapse joinery team who undertook the disproportionate collapse work.

Commenting on the FP McCann supply and fix contract, Chris Murphy Contracts Director of Shipley Structures said, ***"The hollowcore panels and lift shaft lids were supplied and fitted to the design specification and to the highest standard. With little extra preparation, the finishing contractors were able to apply paint and vinyl surfaces to the flooring surfaces".***

UNIVERSITY OF EAST LONDON

Site: Royal Albert Docks, East London

Contractors: FP McCann

Client: University of East London

Products Supplied: Prestressed Hollowcore Flooring, Lift Shafts, Precast Concrete Stairs

One of our most innovative projects has been the development of the University of East London's campus at Royal Albert Docks. The campus provides 788 student bed spaces and ancillary facilities on a previously vacant site adjacent to the University's existing Docklands campus.

Located opposite London City Airport, the site is bounded by the Royal Albert Dock, a publicly accessible dock edge path to the south, the Docklands Light Railway, Gallions Reach Roundabout, University Way to the north and Woolwich Manor Way to the east.

BYLEY OFFICE:
Byley Road
Middlewich
Cheshire
CW10 9RJ
T 01606 843500
sales@fpmccann.co.uk

AGRICULTURE
Lydney 01594 847500 Grantham 01476 562277

ARCHITECTURAL PRECAST
Byley 01606 843500 Grantham 01476 562277 Littleport 01353 861416

BOX CULVERTS
Weston Underwood 01335 361269

BUILDING PRODUCTS
Cadeby 01455 290780

DOCK LEVELLER PITS
Weston Underwood 01335 361269

DRAINAGE
Ellistown 01530 240000 (England/Wales) Magherafelt 028 7954 9026 (Scotland)

FENCING
Cadeby 01455 290780

FILTER BED SYSTEMS
Littleport 01353 861416

FLOORING
Weston Underwood 01335 361269 Uddingston 01698 803300

POWER & INFRASTRUCTURE
Littleport 01353 861416

RAIL
Littleport 01353 861416

SPECIALIST PRECAST
Littleport 01353 861416

STRUCTURAL PRECAST
Byley 01606 843500 Grantham 01476 562277 Littleport 01353 861416

TANKS & CHAMBERS
Littleport 01353 861416

TUNNELS & SHAFTS
Cadeby 01455 290780

WALLING
Grantham 01476 562277 Lydney 01594 847500
Uddingston 01698 803 300 (Scotland)

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