



Aesthetic and efficient precast cladding and structural solutions



Introduction



- FP McCann was established in 1947 and incorporated in 1979
- Currently 12 manufacturing sites in the UK
- Annual turnover in excess of £170 million
- Over 1500 employees
- Business is spread over 6 divisions
- **Precast Concrete Division** added to it's portfolio the purchased Bell & Webster in January 2014 and again in November 2015 with the purchase of Buchan Concrete. Both businesses compliment each other with B & W manufacturing grey concrete frames and Buchan manufacturing architectural concrete sandwich panels – both companies are now known as **FP McCann Ltd**

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Contents: Aesthetic considerations



Crosswall or 'room' solutions



Architectural sandwich cladding panels



Hollowcore floors

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Byley Site



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Grantham Site



What we provide



Estimate



Design



Manufacture



Installation

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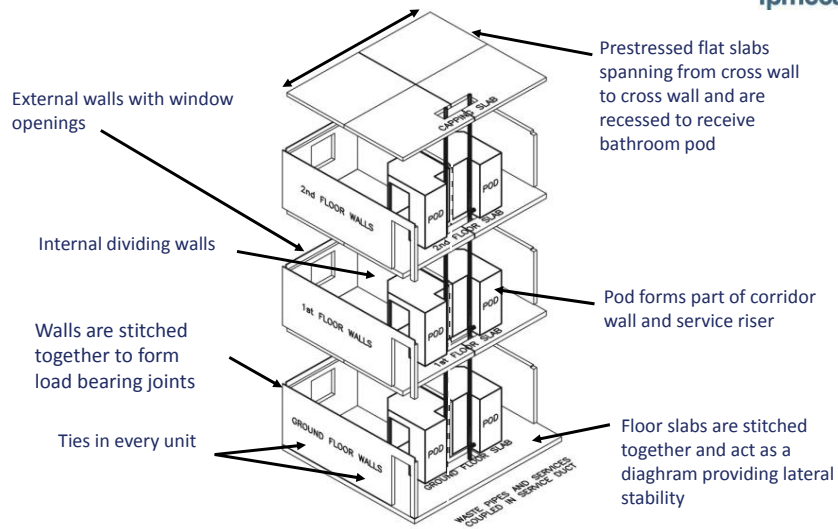
Crosswall construction

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Crosswall construction



Crosswall Construction



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Components



Crosswall construction comprises a number of factory engineered concrete components including:

- Walls
- Floors & Ceilings
- Stairs & Landings
- Lift Shafts



Hotels



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Residential



Student accommodation Secure Accommodation



Health



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Education



University of the West of England Case Study



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The Scope

- 24 house blocks
- 1974 rooms
- 374 Communal areas
- Staircase & Landings
- Installation of Bathroom Pods

Programme

- 39 week erection
- 50 rooms / week
- House block every 8 working days

Manufacture



- Large manufacturing facilities
- Committed investment programme
- Battery Moulds
- Steel beds
- Tilt-up tables
- Large storage area
- Experience of co-location
- Superior quality
- Award winning approach to safety



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Steel faced moulds




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- Concrete is poured into reinforced moulds. Typically self compacting
- Formed face typically 'as struck' type C as internal walls
- Upper surface is an 'unformed finish'

Flat Beds and Tilt beds



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Vertical Battery Mould



- Concrete is poured from the top of the mould using self compacting concrete.
- Vertical battery moulds provide a class 'C' finish and are used for party walls.



Quality control



Floor slab

Soffits exposed, floor ready for direct carpet



Cast in recess for bathroom pod



Integrated services?



Prefabricated and stored



Construction

Panels are delivered directly to site in line with the construction programme



Construction

Wall units are lifted directly from the delivery vehicles into place – no scaffolding



Floors fixed

Integrated barriers
Tying and grouting of joints as structure is erected



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Walls and bathrooms pods positioned



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Minimal internal finishing

Joints sealed by fabricator



Units directly decorated

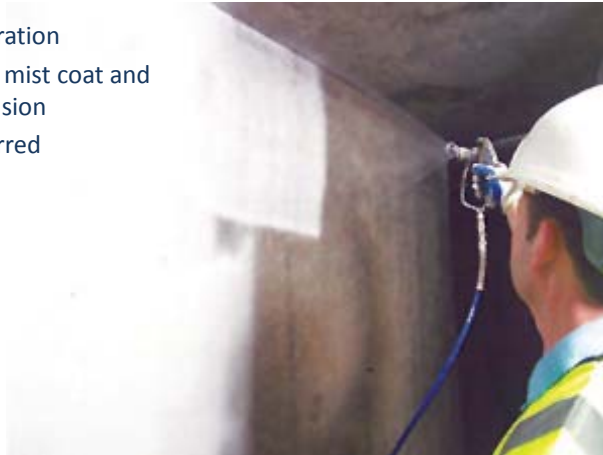
Lighting conduit cast in



Direct decoration



- Decorators preparation
- Walls to receive a mist coat and two coats of emulsion
- Spray finish preferred



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Electrical services built into furniture

Flexibility for the life of the room



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Electrical services built into furniture

Flexibility for the life of the room



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Construction

Early internal decoration
External cladding off of the critical path



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Construction

Or concrete sandwich panels – self finished or brick faced
Factory installed windows.... or on site.



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Motel One, Manchester



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Architect: Hodder + Partners
Main Contractor: Russells
Construction
Completed 2015

330 bed hotel
14 storeys

Concrete crosswall
construction with architectural
concrete (recon) cladding
panels

Build programme for precast:
35 weeks
Actually built in 22 weeks

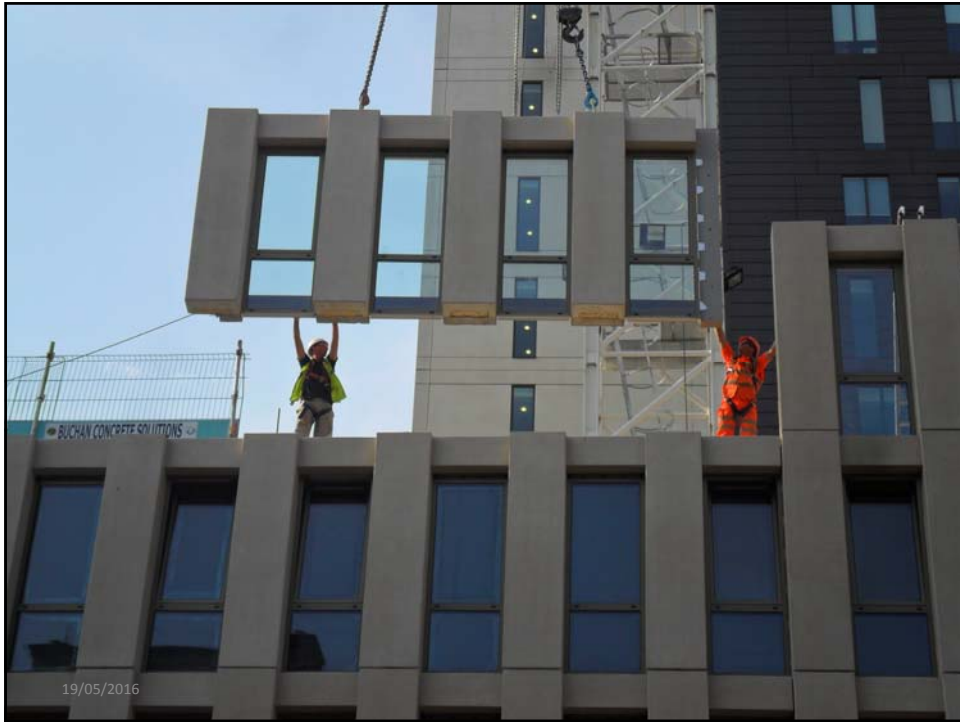
Acid etched precast concrete sandwich panels



Construction

Cross wall, bathroom pods, insulated sandwich panel facade





Eastside Locks, Birmingham

Glenn Howells Architects



Eastside Locks, Birmingham

Glenn Howells Architects





Sandwich Panels - Various Finishes

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Ashlyns Sports Hall
Ribbed Textured



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Baltic Triangle, Liverpool



Feldhaus Klinker Multi Red



Celina Klinker Gronable Metallic

Barons Quay
Ibstock Smooth Black Glazed Brick Slip



Brick slip faced panels

Setting out in the mould



Brick slip faced panels

Pointing in the mould – colour as required



Brick slip faced panels

Re-inforcement



Power floating the unformed face (back of the panel)



Sandwich panels

Low conductivity wall ties between slabs and insulation



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Premier Inn Hotel, Manchester 193 Bedrooms



Roger Stephenson Architects



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Premier Inn, Manchester
Aston Smooth Brick



Cut brick set out in the mould



Detail: Brick plus 'special' return



Detail: Joint size and location



Withington Girls School
St Ives Cream Rustica



Withington Girls School, Manchester



Architect: Levitt Bernstein
Structural Engineer: Civic Engineers
Main Contractor: Seddon Construction
Completed 2015 (18 months after
architects initial appointment)



Withington Girls School, Manchester



Crosswall construction with brick faced sandwich panels as flanking walls



Precast columns dividing the bays

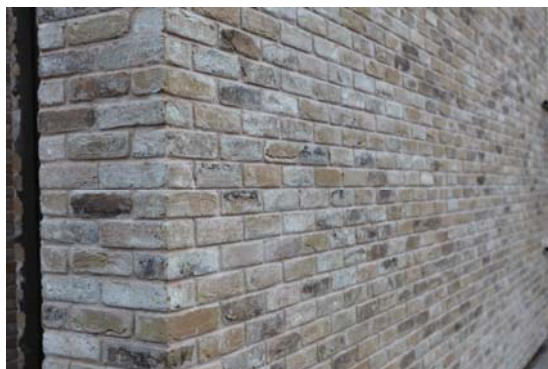


Precast fins and bands of façade fixed through insulation, back to structure



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Rustic style brick – a challenge to align in the mould.
Needed to be sanded before placing, and repointed afterwards



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Exposed concrete soffits – standard agreed following factory inspections of samples



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Hollowcore flooring

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Precast concrete hollowcore flooring units



- Prestressed concrete slabs
- Typically 1200mm wide (or parts thereof)
- 150-40mm deep depending on span
- Can be designed for long, clear unpropped spans

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Precast concrete hollowcore flooring units



- Cost effective, high performing structural floor
- Effective means of providing thermal mass
- Not an architectural product

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Exposed Soffits – Detailing: Points to consider



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Exposed Soffits – Detailing: Be realistic about achievable finish



- Typically an 'A' grade finish
- Always an as struck finish (although some touching up will be required for grade B)
- Benchmark samples with manufacturer early to align expectations
- No over wiring of units to be permitted in manufacture



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Exposed Soffits – Detailing: Or consider a painted soffit

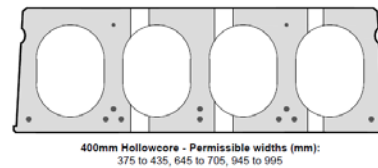
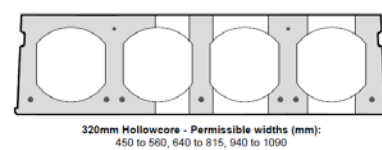
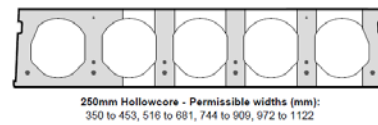
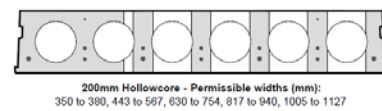
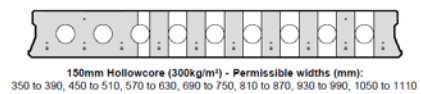
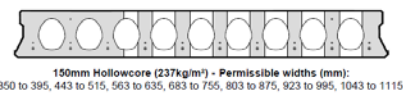


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Exposed Soffits – Detailing: Consider layout and cut locations



- Different slab depths (and different manufactures) have differing cutting zones
- Flexibility on cut widths units reduces in-situ strips (CDM/ visual)



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= Indicates No Cutting Zone

Exposed Soffits – Detailing: Setting out



- Uniform layout to reduce visual impact of camber
- But non-cut edges together

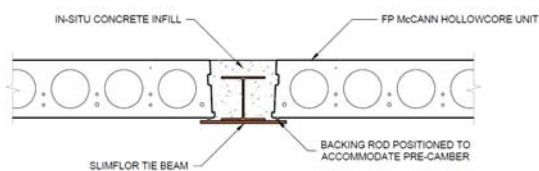


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Exposed Soffits – Detailing: Hide cut edges



- Cut edge hidden by non load bearing steel
- Non loading bearing steel introduced to eradicate site propping (CDM)
- No temporary works required (CDM)
- To reduce cost steel angle or plate can be stitch welded
- Tidy detail to contain concrete infill



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Exposed Soffits – Detailing: Control drilling on site



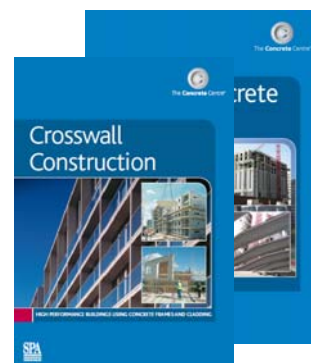
- Drainage holes are required to be drilled on site to drain the cores
- Control and align carefully



Image courtesy of Elaine Toogood

Further information

www.fpmccann.co.uk



www.precastfloors.info/technical/documents/HollowcoreFloors.pdf

www.concretecentre.com/publications



Thank You

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