THINKING PRECAST?
THINK FP MCCANN

DOCK LEVELLER PIT SYSTEMS

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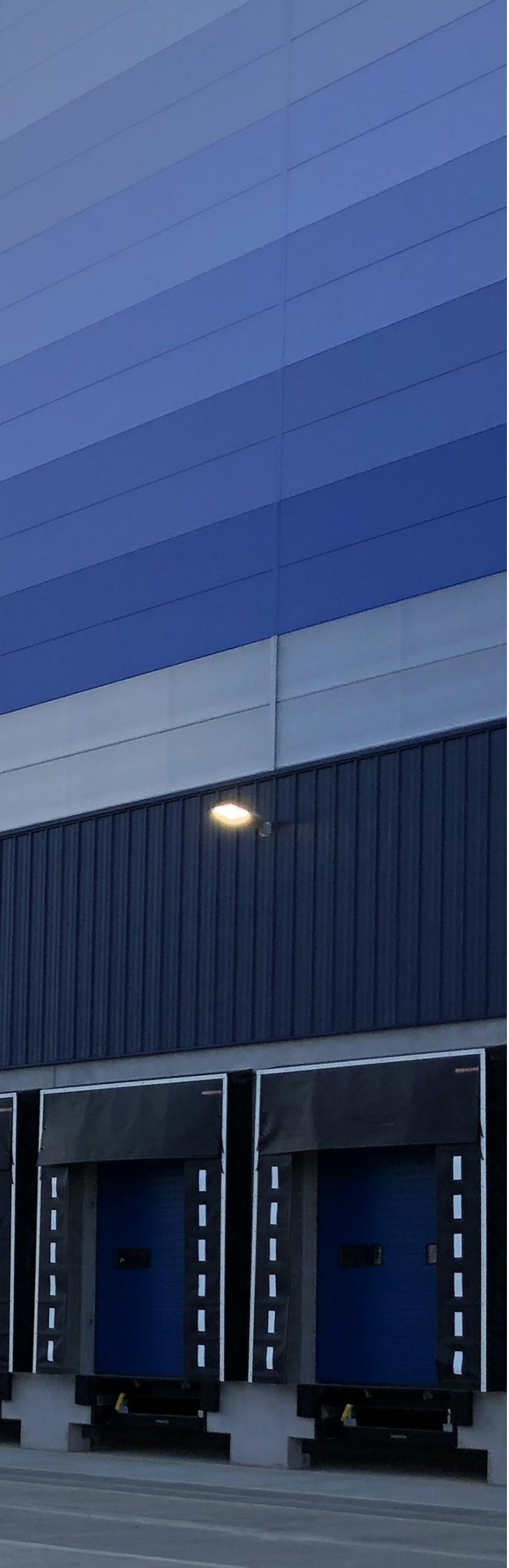


PRECAST DOCK LEVELLER PIT SYSTEMS

FP McCann offers industry-leading precast dock leveller pit systems and the durable Prowall concrete wall system, delivering high-quality, off-site manufactured solutions for logistics, warehousing, and commercial developments.

Our precast products are designed to help contractors meet tight deadlines, reduce on-site labour, and ensure long-term structural performance—all while remaining fully compliant with relevant building and safety standards.

CONTENTS

OUR COMPANY

FP McCann is the UK's largest manufacturer and supplier of precast concrete solutions. We are committed to providing high-quality, cost-effective, and sustainable solutions tailored to meet our clients' requirements.

From our fourteen UK manufacturing facilities, FP McCann offers a range of solutions, including architectural and structural products, rooms, flooring, fencing, walling, shafts, tunnels, drainage, rail, power, and agricultural products. FP McCann has worked on a large range of Design for Manufacture and Assembly (DfMA) projects across the UK. Our in-house Digital Engineering capability has grown in line with government and client expectations.

OUR COMPREHENSIVE PRECAST CONCRETE BUSINESS EXTENDS TO INCLUDE:

AGRICULTURE I BAGGED PRODUCTS I BOX CULVERTS I BUILDING PRODUCTS
CONCRETE ROOF TILES I DOCK LEVELLER PITS I DRAINAGE I FENCING
FILTER BED SYSTEMS I FLOORING I NATURAL STONE PAVING
POWER & INFRASTRUCTURE I PRECAST OFF-SITE BUILDING SOLUTIONS
RAIL I SPECIALIST PRECAST I TANKS & CHAMBERS I TUNNELS & SHAFTS I WALLING

Modern manufacturing plants at Alnwick (Northumberland), Armagh (Northern Ireland), Byley (Cheshire), Cadeby (Warwickshire), Ellistown (Leicestershire), Grantham (Lincolnshire), Lisnaskea (Northern Ireland), Littleport (Cambridgeshire), Lydney (Gloucestershire), Magherafelt (Northern Ireland), Toomebridge (Northern Ireland), Uddingston (Lanarkshire) and Weston Underwood (Derbyshire) incorporate the latest computerised batching, distribution, casting, curing and handling systems. Skilled and experienced workforces operate them to ensure consistency of quality. Their geographical spread gives us an unrivalled ability to serve the construction industry throughout the UK and Ireland.

By applying the DFMA principles, FP McCann's design engineers can evaluate individual precast concrete products part by part, in addition to documenting the assembly process step by step. This allows them to generate the cost, part count, and assembly time, providing a benchmark to measure its success and identify opportunities for part and process improvements. In turn, this has enabled FP McCann to design and manufacture more cost-effective and efficient high-quality precast concrete products with reduced waste and increased on-site recycling. As a result, increased productivity, combined with a reduction in production time and costs, allows FP McCann to be more competitive within the marketplace.

FACTORY LOCATIONS

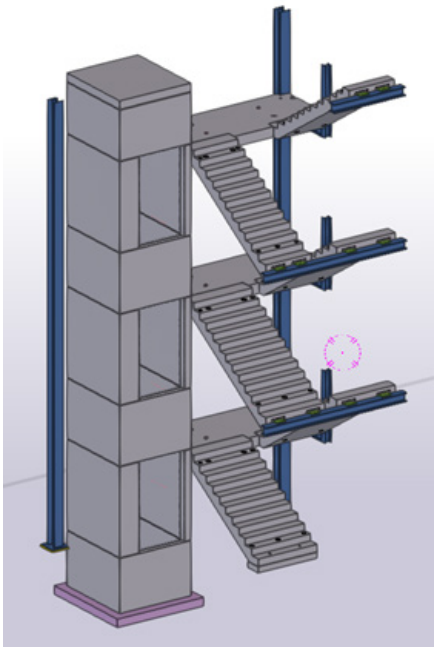
OUR EXPERTISE

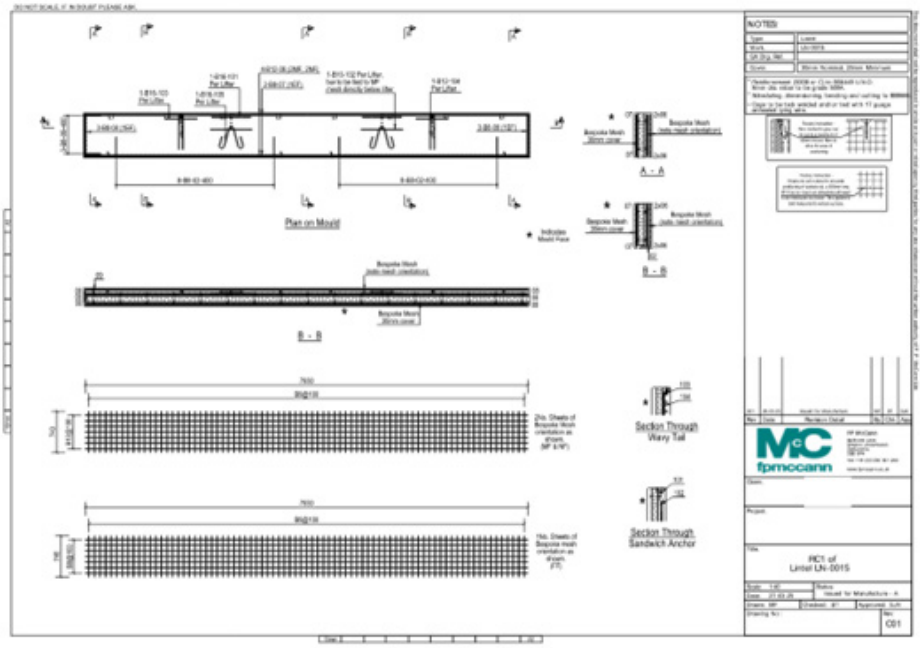
Our in-house design team boasts over 35 years of cumulative experience utilising Tekla Structures, a robust Building Information Modeling (BIM) software widely employed for structural design, particularly in the realm of precast concrete. This software facilitates the creation of precise three-dimensional models of precast elements, which is paramount for ensuring a high degree of accuracy in designs. Such precision is crucial in precast construction, where accurate measurements are vital to guarantee the proper fit of elements during assembly. Moreover, Tekla Structures facilitates the identification and resolution of clashes or potential issues at an early stage in the design process, thereby minimising the incidence of costly rework on-site.

Key Benefits of Tekla Structures

The software offers comprehensive tools for creating detailed drawings and modeling reinforcement, which are crucial for precast concrete elements. It encompasses the entire process, from initial layout to final reinforcement detailing. Tekla Structures enables seamless integration with manufacturing processes. Data derived from the three-dimensional model is utilised in conjunction with our CNC machines and mesh plant, thereby reducing the likelihood of errors during the production of precast elements. This integration also ensures that components are fabricated according to exact specifications.

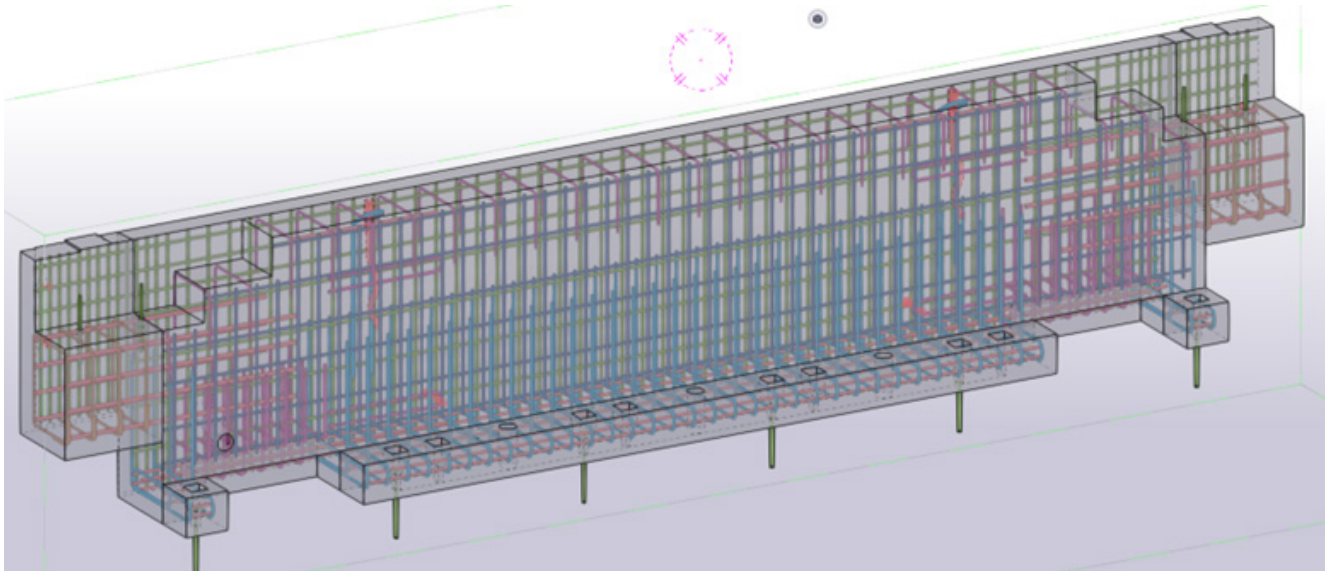
Additionally, the software demonstrates strong compatibility with other BIM tools and platforms, facilitating seamless integration with the overall project workflow.

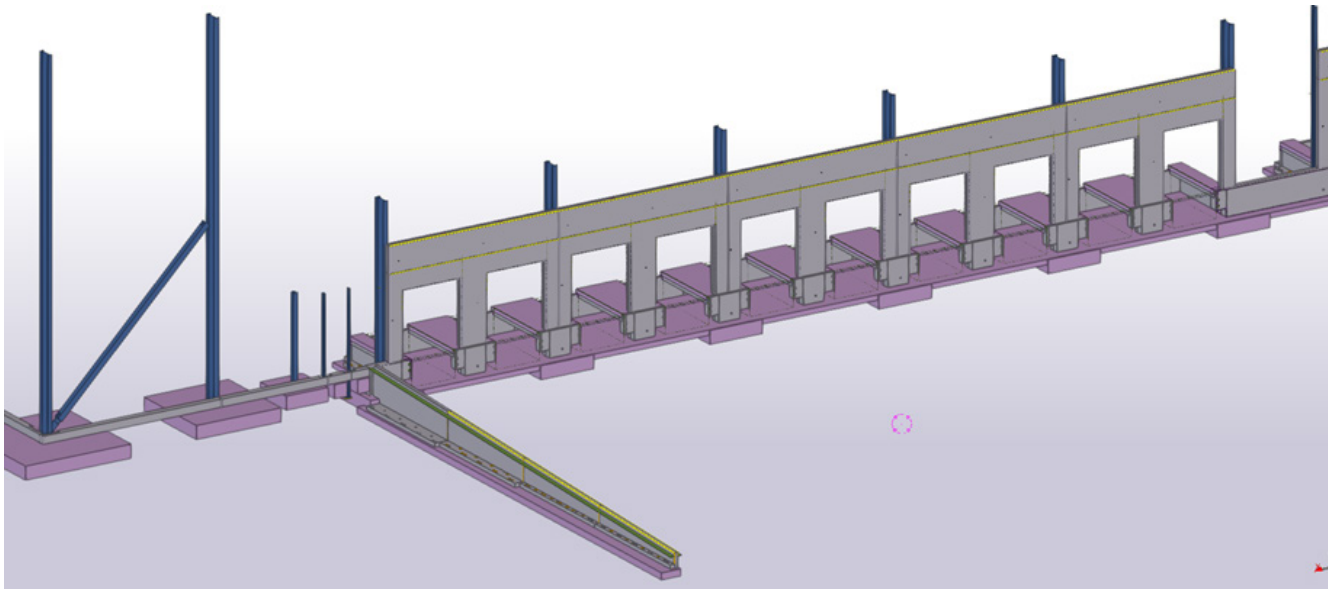




OUR EXPERTISE

In summary, Tekla Structures streamlines the entire precast concrete design process, encompassing modeling to manufacturing, and ensures that designs are accurate, well-coordinated, and cost-effective. It fosters collaboration, minimises errors, and promotes a more efficient workflow, which is indispensable in the fast-paced construction industry.





CONTINUOUS TAILGATE

The FP McCann Ltd dock leveller pit system is constructed from precast reinforced concrete sections. These combine to form a pit into which a hung dock leveller can be installed. Our system will incorporate dock levellers supplied by all leading manufacturers. Each pit is designed for use with a top-hung leveller, provided with a tailgate slot, and configured in a continuous run.

The FP McCann Ltd dock leveller pit system is not designed to serve as the edge support for the ground floor slab. For piled sites with a suspended floor slab, the precast components can be increased in design and thickness upon request for an additional cost.

The front, rear, and end side walls are designed to be supported off and are connected to a reinforced structural concrete foundation slab. The foundation slab is to be designed and installed by others to suit the ground conditions and wall loadings.

The rear retaining wall of our system is built as a continuous wall parallel to the building's face. It is constructed in panel lengths suited to our manufacturing and casting program.

The early installation of rear walls and side walls can be accommodated to allow for early backfilling for program advantages. However, the entire dock pit system must be installed before laying the main floor slab.

Early installation of rear walls may incur additional visit charges.

The FP McCann dock pit system requires a head height clearance for installation of 8000mm above Finished Floor Level and a minimum of 1m clear working space behind the walls is necessary to install the Excalibur bolts, dry pack and grout beneath the walls to a maximum height of 40mm and a minimum height of 10mm.

The Frontwall 'arm' to which the buffer is fixed is designed for an accidental force of 75kN acting on the buffer. Note that the upstand to the arm is not designed for impact loading and therefore, it should not be subjected to the forces transferred through the buffer.

Dock Leveller bumpers must be fixed in the designed locations specified by the Dock Leveller Manufacturer at the FP McCann RFI stage. The biscuit slab will be designed to act compositely with a minimum 110mm thick in-situ topping, provided by the main contractor, to support loads of up to 50 kN/m^2. Other in-situ topping thicknesses or loadings can be accommodated, subject to design checks and additional charges.

The front walls, sides, and rear of the dock levellers provide permanent shuttering to the edges of the biscuit. When the main contractor provides the in-situ topping as part of the central floor slab installation, the pits become a fully integrated unit.

Door posts to stop a minimum of 30mm above the biscuit for casting into an in-situ floor slab by others.

Drawings for all prefabricated components will be provided, including design arrangements and drawings for approval, in addition to those required under current CDM Regulations.

All designs are carried out by Eurocode standards and relevant national annexes.

Panels will have a standard steel mould finish based on a BS 8110 Type B Finish to the flat face. The boot face will have a float finish, based on a BS 8110 Type A finish, due to mould configurations.

Insitu works to column areas and Mastic joints to be done by others.

THE FP MCCANN LTD DOCK LEVELLER PIT SYSTEM COMPRISES OF:

- Front elevation walls (HT & FT)
- Rear retaining walls (BW)
- End Side walls (SW)
- Intermediate biscuit slab (BS)

PROWALL

The FP McCann Ltd Single Door Prowall walling system is designed in insulated reinforced precast concrete. The integral insulation will provide an elemental U-value of 0.22 W/m2K. Better U-values can be achieved by increasing insulation size, but this will incur additional costs.

Doors will only require support from the steelwork above the panels, as tracks can be connected directly to the internal face of Prowall. Dock shelters can be externally attached if needed. Door openings will be incorporated to suit dock door and personnel door openings

to a maximum size of 3000mm high x 3000mm wide. For larger openings, a Stonehenge prowall arrangement will be required, which may incur additional costs.

The Prowall panel must be clipped to the outside of the steel columns using galvanised fixing plates. The prowall sits on top of the biscuit slabs or thickened front walls of the dock pit system. Therefore, the steel columns cannot be any further back or forward than the thickness of our Prowall.

For Prowall, the head height clearance for installation is 6,000 mm above the precast. To enable installation, if the first sheeting rail cleat is less than 200mm above the top of the prowall, the cleat will need to be bolted on by others after the prowall installation.

To complement the system above dock levellers, Prowall panels can be utilised as cladding panels above the perimeter retaining walls.

Prowall Panels will have a standard steel mould finish, based on a BS 8110 Type B Finish, to the external face. The internal face will have a float finish based on a BS 8110 Type A finish. To achieve a relatively consistent colour on the floated face, the units will be machine pan-floated to bring the fine aggregate and

cement paste to the surface, which will then be finished off by a hand steel trowel to create a smooth, even finish. This process will be consistent across all FP McCann manufacturing depots.

Note that due to the manufacturing processes and conditions, both mould and float finishes can have an initial colour differential in appearance; however, over time, once the panels have weathered, they will have a more consistent colour match.

All designs are carried out by Eurocode standards and relevant national annexes.

SINGLE DOOR PROWALL

The Single door panel spans between Main stanchions and Intermediate stanchions over a single dock pit. Which ensures a rapid on site erection programme and eliminates the requirement for the more traditional areas of cladding and steel doorposts/rails.

Single panel sizes are generally provided up to a maximum height of 3800mm above Finished Floor Level and length 4000mm. Additional heights above FFL are achieved by the introduction of a lintel to the sit on top of the prowall. Lintels may incur additional costs.

DOUBLE DOOR PROWALL

The panel spans between Main stanchions over a 2 dock pits per grid. By using the double prowall system there is no requirement for intermediate stanchions offering cost savings for the Steel Columns and Foundations

Using the Double Door Prowall system ensures a rapid on site erection programme and eliminates the requirement for the more traditional areas of cladding and steel doorposts / rails.

Double panel sizes are generally provided up to a maximum height of 3800mm above Finished Floor Level and length 8000mm. Additional heights above FFL are achieved by the introduction of a lintel to the sit on top of the prowall. Lintels may incur additional costs.

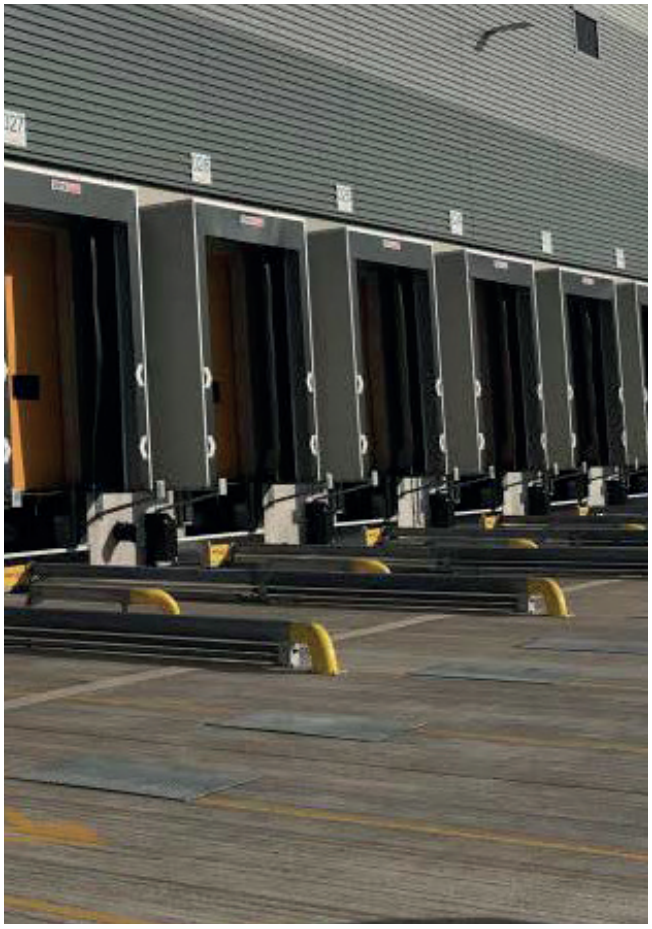
STONEHENGE PROWALL

The FP McCann Ltd Stonehenge Prowall walling system is designed in insulated reinforced precast concrete. The integral insulation will provide an elemental U-value of 0.22W/m2K. Better U-Values can be achieved by an increased insulation size but this will incur additional costs.

The system consists of Single Vertical legs and spanning Lintels—the Lintels span between Main stanchions and Intermediate stanchions over a single dock pit. The legs and lintels must be clipped to the outside of the steel columns using galvanised fixing plates. The legs sit on top of the biscuit slabs or thickened front walls of the dock pit system; therefore, the steel columns cannot be any further back or forward than the thickness of our Prowall.

Using the Stonehenge system eliminates the need for traditional areas of cladding and steel doorposts or rails.

Where Intermediate stanchions are not available, temporary propping off the biscuit slab to the leg will be required at additional costs.



Doors will only require support from the steelwork above the panels, as tracks can be connected directly to the internal face of Prowall. Dock shelters can be externally attached if needed.

Door openings will be incorporated to accommodate door openings that are above 3000mm in height.

For Stonehenge Prowall, the head height clearance for installation is 6000mm above the top of the precast. To enable installation, if the first sheeting rail cleat is less than 200mm above the top of the prowall, the cleat will need to be bolted on by others after the prowall installation.

To complement the system above dock levellers, Prowall panels can be utilised as cladding panels above the perimeter retaining walls.

Stone Henge Panels will have a standard steel mould finish, based on a BS 8110 Type B Finish to the external face. The internal face will have a float finish based on a BS 8110 Type A finish. To achieve a relatively consistent colour on the floated face, the units will be machine pan-floated to bring the fine aggregate and cement paste to the surface, which will then be finished off by a hand steel trowel to create a smooth, even finish. This process will be consistent across all FPM manufacturing depots. Note that due to the manufacturing processes and conditions, both mould and float finishes can have an initial colour differential in appearance; however, over time, once the panels have weathered, they will have a more consistent colour match.

SERVICE YARD RETAINING WALLS

The external service yard walls will be supported by a reinforced concrete strip footing/base, designed and installed by a third party. We have included the installation of Excalibur fixings and grouting; however, accurate casting of the supporting strip footing/base by the main contractor is required to ensure correct levels are achieved.

Any retaining walls over 1800mm high may require propping. Props provided by FP McCann Ltd.; propping bases provided by others at no additional cost to FP McCann Ltd.

It is assumed that the above-mentioned retained area to the rear of the retaining wall will be free-draining, and suitable land drains will be provided to avoid the possibility of buildup of hydrostatic pressure. We have not included weep holes.

A Minimum of 1m clear working space behind the wall is required to install the connection dowels and grout and to dry pack beneath the walls to a maximum height of 40mm and a minimum of 10mm.

The slope to the top of the wall will be designed to our specifications, with a focus on maximising panel lengths to achieve the overall length of the wall. The total maximum height of the wall is to be 2000mm. More extensive walls can be accommodated with increased panel thickness and boot sizes at an additional cost.

Panels will have a standard steel mould finish based on a BS 8110 Type B Finish to the flat face. The boot face will have a float finish, based on a BS 8110 Type A finish, due to mould configurations.

The wall is to be protected from vehicular impact damage by the use of an Armco barrier or a similar device.

Design – The retaining wall has been based upon a nominal surcharge of 20kN/m2

All designs are carried out by Eurocode standards and relevant national annexes.

FULL DEPTH INFIL KITS

The FP McCann Ltd Infil kit system is constructed from precast reinforced concrete sections. These combine future-proof buildings, enabling easy installation of dock levellers supplied by all leading manufacturers in the future. Infill kits are designed to work in conjunction with continuous and individual tailgate dock pits.

The FP McCann Ltd Infil Kit system comprises of:

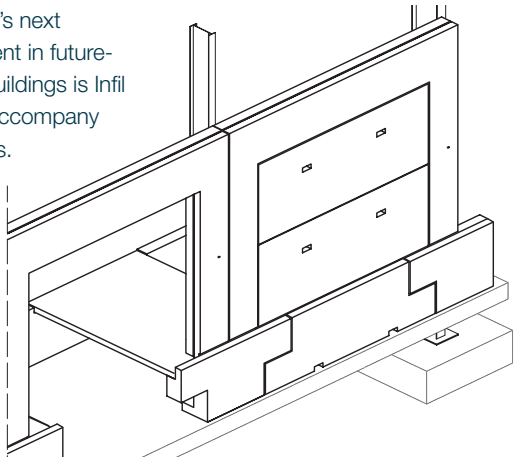
- Invert front Elevation T wall
- Intermediate Rear support walls (BW)
- Full-depth Infil biscuit

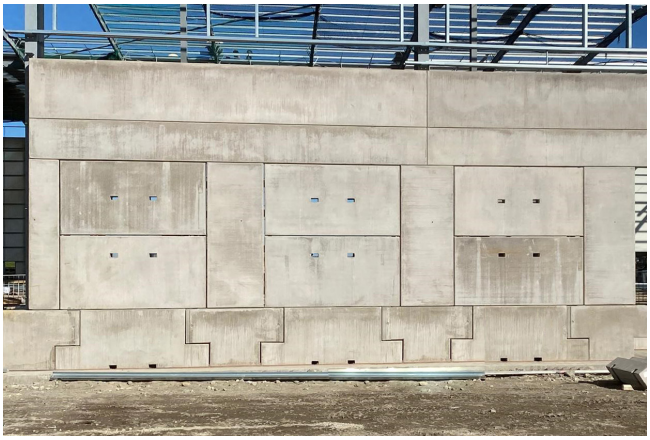
The infill biscuit finishes at the finished floor level. The biscuit allows for the current use of the floor slab area up to a loading of 50 kN/m². The design allows for easy removal of the kit via forklift trucks, reducing the need to remove the current cladding.

Drawings for all prefabricated components will be provided, including design arrangements and drawings for approval, in addition to those required under current CDM Regulations.

All designs are carried out by Eurocode standards and relevant national annexes.

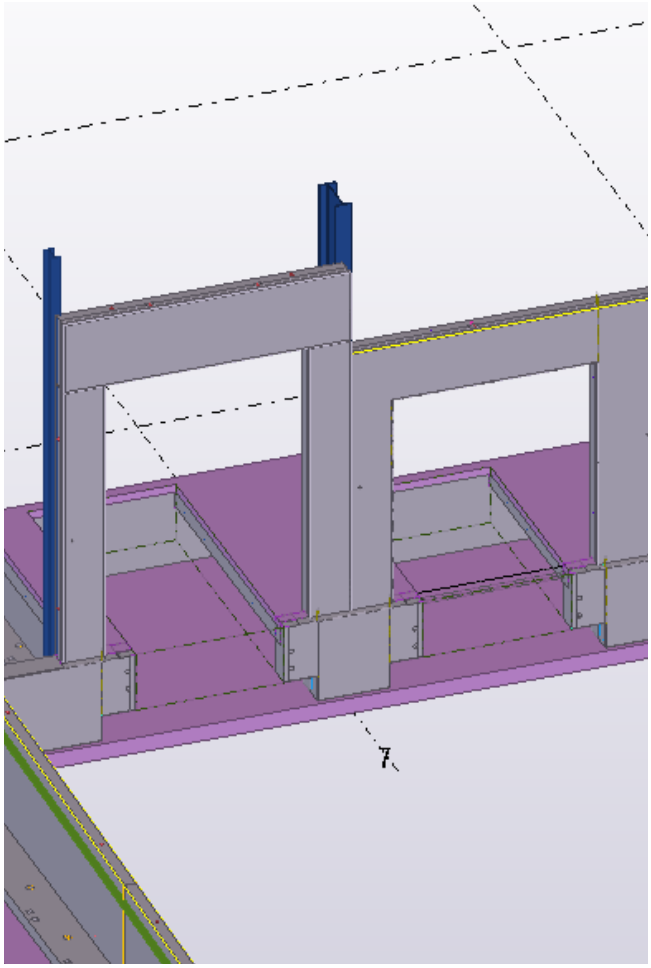
FP McCan's next development in future-proofing buildings is Infil Doors to accompany the Infil Kits.





EURO DOCK LEVELLER

Euro Dock Levellers can be incorporated into a building, consisting of a larger dock leveller pit. By raising the Prowall height, it caters for an increased dock shelter height. Where required, the door height opening can be increased by changing from standard prowall to a Stonehenge arrangement.



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ARCHITECTURAL PRECAST
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BOX CULVERTS
Weston Underwood 01335 361269

BUILDING PRODUCTS
Cadeby 01455 290780

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
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RAIL
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SPECIALIST PRECAST
Littleport 01353 861416

STRUCTURAL PRECAST
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TANKS & CHAMBERS
Littleport 01353 861416

TUNNELS & SHAFTS
Cadeby 01455 290780

WALLING
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