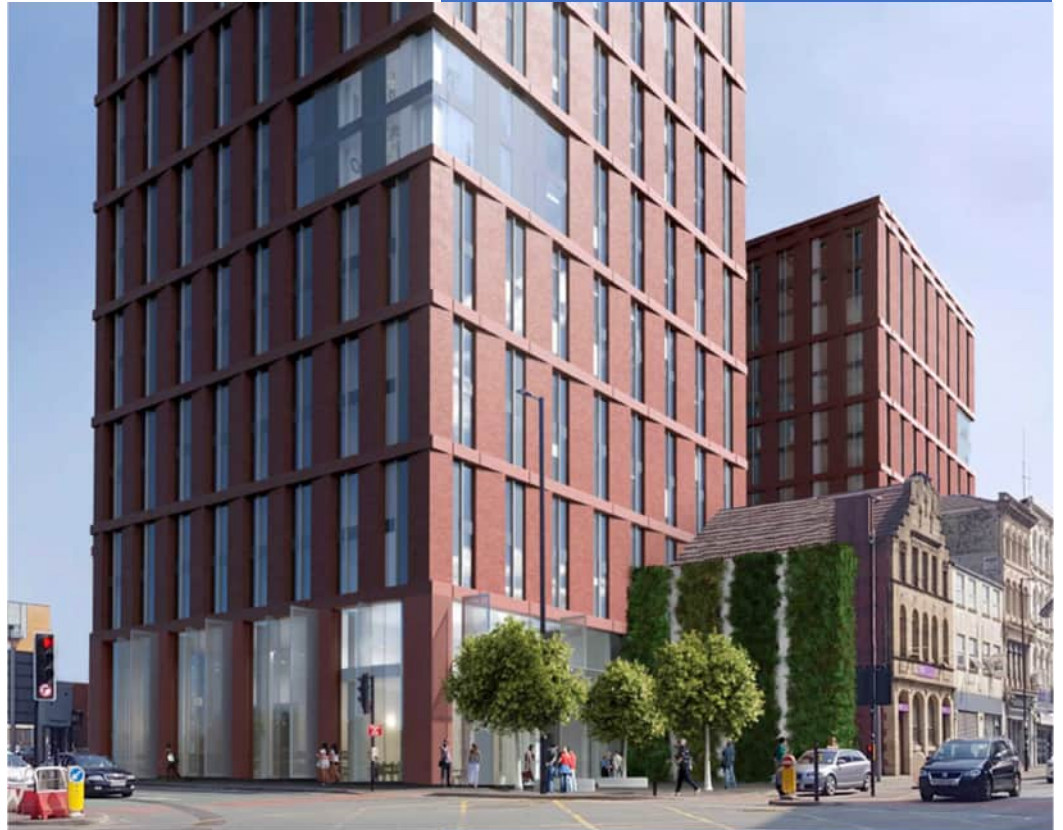




2022

Swan House – Façade Quality Management Plan



RG Group – Swan House Project

Manchester M4 5JU

11/22/2022



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Introduction to the Project

This high quality residential development forms part of the New Cross Neighborhood Development Framework (NDF), which we helped develop. It serves the Private Rented Sector (PRS) market and supports the ongoing regeneration of Manchester city center by providing 373 apartments made up of 1, 2 and 3 bed homes, including affordable housing, and 12 serviced apartments over the top of two retail units at ground level, and a new public realm at the junction of Swan Street and Rochdale Road.

The development is set across a single building containing two towers – 32 and 14 storeys - connected by a 6 storey plinth. The glazed and red brick façade is organized in a grid following the vertical height of two storeys. The materiality was selected for its deliverability, buildability and future maintenance while also keeping in line with the emerging vernacular at New Cross of solid and robust elevations, often featuring brick, as can be seen with our adjacent AC Hotel and Mason Street Aparthotel projects. The angle of the façade's vertical brick element provides visual interest as the sun moves around the building and shadows are cast on the façade.

Glazed cut-outs on a limited number of floors, across both towers, extend across two elevations for each reveal. These reveals respond to the extents of larger apartments within the proposals and add to the visual interest of the elevation when viewed both in proximity of the site and at distance.

The Design team

Simpson Haugh - Principal Architect

Helen Trott - Partner

Nicholas Nelsen – Architectural Assistant

Curtins - Structural Engineer

Darren Cheetham – Principal Engineer

Sam Hoyer – Structural Engineer

Brentwoods – M&E

John Osbourne – Associate Director

Hanns Tucker - Acoustics

Joseph Sinker

Fire Engineer – BB7

Nathan Edwards - Senior Fire Engineer -

Thermal Analysis – Stroma

Client – Ridgeback Group

Seamus Keane

Clients Agent – Savils

Mark Pythian

NEG – Curtain Walling system

Operations Director - Ayrton Thompson

Senoir Draughtsman - Robbie Thompson

Project Draughtsman – Andrew Aiston

Stoneguard – SFS & Cladding

Operations Director – Stephen Boardman

Contracts Manager – Steve McKenna

Draughtsman – Steve Last

FPMccann – Precast concrete

Design Co-Ordinator – James Harney

Design Office Manager – Graeme Robinson

Façade System – Overview



The Façade will consist of 3 main elements, at every other level we will have a feature pre-cast beam encompassing all elevations of the structure. The curtain wall system will in the main a stickwork system with pressure plated glass units into an aluminum frame, interjected with areas of double height glazed areas which are toggled & structurally glazed into the aluminium frame.

The cladding system will be a weather defense or Cement particle board, sealed to the superstructure, insulated, rendered & then finished with a brick slip system adhered to the render to give the appearance of a traditional brick finish.



Project Location

The project is situated in Swan Street, between NOMA and Norther Quarter, Manchester M4 5JU:



Aerial view at pre-start time:



Façade & Sample panel

A sample unit was built before any

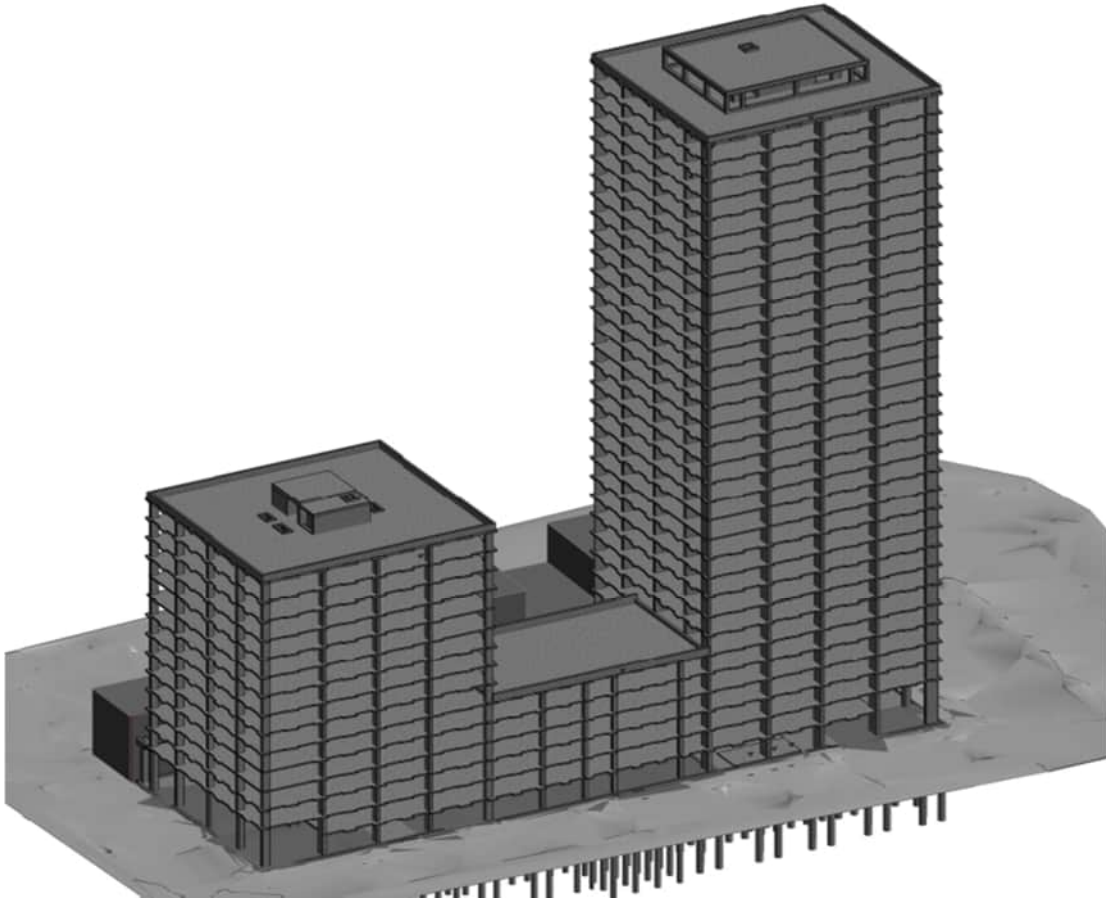




3D elevations & Model







Sub-contractor's ITP and Quality Management Systems

- (1) *NEG*
- (2) *Stoneguard*
- (3) *FPP McCann*

Project Quality Plan



**Neg Architectural Systems Ltd
Swan House, Manchester
Quality Plan No. 1
Date of Issue: 03/12/21
Prepared by: Ayrton Thompson**

Neg Architectural Systems Ltd., Unit 1, Stephenson Industrial Estate, Washington, NE37 3HR
Tel: 0191 276 4418 Email: info@negasl.com

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1.0 Status, Distribution and Responsibilities

1.1 Introduction

This Project Quality Plan describes the procedures and documentation to be utilised on this project. All referenced documents can be viewed within Appendix A.

The procedures described aim to ensure that the effective control of design, procurement, manufacture, installation and testing is achieved in accordance with Neg Best Practice Operating Procedures, the Contract Specifications and Construction Status Drawings.

1.2 Revision Record

<u>Rev No</u>	<u>Effective Date</u>	<u>Sections Affected</u>	<u>Prepared By</u>	<u>Approved By</u>

Note: All revisions must be submitted to the Quality Assurance Manager for approval prior to issue and distribution.

1.3 Distribution

All employees have a responsibility for the quality of the Company's products; however, copies of this Project Quality Plan are restricted to those listed below. It will be the responsibility of all Neg recipients to ensure that they and their subordinates are familiar with those parts of the Quality Plan which affects them.

<u>Recipient</u>	<u>Controlled Copy No.</u>
Neg Design Department	1
Neg Procurement Department	2
Neg Site Manager	3
Neg Quality Assurance Manager	4
Main Contractor	5

1.4 Organisation

The following individuals will be responsible for ensuring that this Quality Plan is implemented:

Off Site

HSQ&E Manager	Carney Consulting
Operations Director	Ayrton Thompson
Senior Draughtsman	Piotr Maslak
Site Manager	Simon Trenholme
Production Manager	Ray Hancock
Site Audits	System Suppliers

On Site

Site Manager	Simon Trenholme & Ben Thompson
Installation Supervisor	tbc

2.0 Quality Procedures

2.1 Scope of Works

Item	Ref	Description	Location
1	Typical Curtain Wall	Technical MX52 capped curtain wall with vision units, minimal FY65 insert vents and a mixture of spandrel and composite panels.	External Elevations.
2	Feature Corner Curtain Wall	Technical MX52, MXM toggle SG curtain wall with vision units, FY65 insert vents and a mixture of spandrel and composite panels.	External Elevations, Feature Corners.
3	Doors	Technical STII commercial doors as standard.	External Elevations, Levels 00 & M0.
4	Fire Rated Curtain Wall	Tbc.	Tbc.

2.2 Design Control

Neg will implement documented procedures to control and verify the detail design and production drawings in order to ensure that the specified requirements are met.

These procedures make provision for the necessary Design Input, Design Output, Design Review, Design Verification and Design Validation activities.

All design changes and modifications are identified, documented and reviewed and approved by authorised personnel before their implementation.

2.3 Document and Data Control

Neg Best Practice Procedures require control of all project related documentation, including Drawings, Specification, Procedures, and Records etc.

2.4 Off Site Inspection Procedures and Documentation

2.4.1 Assessment of Suppliers and Subcontractors

Suppliers listed within the Neg Suppliers/ Subcontractors Registers have been accepted either on historical performance or vendor assessment. Vendor assessment will have been completed in the form of a QA questionnaire and factory visits.

Suppliers will be constantly monitored to determine continued usage and required inspection level.

Where Neg use external installation companies, these have been accepted on historical performance and by inspections of previous work undertaken prior to a subcontract being awarded.

2.4.2 Pre-Order Meetings

Prior to placing an Order (and where appropriate) with a Principal Supplier/Sub Contractor, a material Suppliers review Meeting is convened, during which the following matters will be reviewed/agreed:

1. Materials/ Scope of Supply
2. Review of Relevant Drawings/Specifications
3. QA Procedures, Inspection & Test Plans
4. Programme Delivery dates
5. Transport/ Off Loading Requirements
6. Packaging/ Labelling
7. Protection

2.4.3 Inspection During Manufacture

Visits to the supplier's premises where appropriate will be made by Neg at agreed 'milestone' dates to monitor progress and to inspect the materials in manufacture.

2.4.4 Suppliers QA Records

Each principal supplier is required to carry out their own Quality Assurance checks during the manufacturing process. (The nature and extent of these checks will have been established during the pre-order meeting).

Neg will inspect the supplier's records of these Quality Assurance checks during factory visits.

At each stage of delivery, suppliers are required to issue copies of all Quality Assurance Records and Certificates of Conformity applicable to the Neg Purchase Order for inclusion within the Project QA file.

2.5 Head Office QA, Design, Procurement, Manufacture and Despatch

2.5.1 Quality Assurance

Neg are ISO 9001:2015 accredited and all manufacturing departments from Design to Despatch operate in strict accordance with Neg Best Practice Procedures.

The Quality Assurance department audits all departments and ensures Design, Procurement, Storage, Manufacture and Despatch are all completed in strict accordance with the Neg Best Practice Procedures.

The Quality Assurance department are also responsible for the accreditation, monitoring and risk assessment of supplier's products and Services.

2.5.2 Design Drawing Control

The Drawing Office control the design and production of drawings in strict accordance with the Drawing Office Procedures.

2.5.3 Procurement

Procurement is completed in strict accordance with the Procurement Procedures.

2.5.4 Goods Receiving and Storage

Goods Receipt and storage is carried out in strict accordance with the Goods Receiving and Storage Procedures. Any problems with supplier parts are highlighted to the Quality Assurance Department.

2.5.5 Production and Despatch

Production and Despatch of products from Neg is strictly controlled using the Production Procedure. Any issues arising during manufacture are highlighted to the Quality Assurance Department.

2.6 On Site Inspection Procedures and Documentation

2.6.1 Inspection of Inherited Structure and Remedial Procedures

As built surveys of the concrete/steel structure and all fixing inserts performed by the relevant Trade Contractor should be released to the Main Contractor and issued to Neg identifying any non-conformances in sufficient time to either carry out remedial works or for an alternative design solution to be found.

To assist Neg in setting out the subcontract works, Neg will require grid lines and datum levels to be marked out on each floor slab adjacent to the intended work areas by the Main Contractor.

2.6.2 Materials Receiving, Inspection and Testing.

Where components are delivered to site from Suppliers, they will be deemed to have undergone a quality of goods and manufacture inspection process in accordance with agreed and approved inspection and test plans, and copies of all necessary certification/records shall be delivered with the goods to site. The Neg QA Manager will undertake supply chain audits as deemed necessary.

Goods delivered direct from a supplier must be visually checked for damage and random samples checked for size and quality, by the Neg Site Manager.

Delivery notes of materials despatched to site must be checked and cross-referenced to items actually delivered. Where goods delivered to site do not accord with the delivery note the Neg Procurement Department will be immediately informed verbally and followed up with an email and photographs where necessary.

Where goods require re-ordering, Procurement Department will purchase the required material. The Site Manager will assess any programme implications and advise all interested parties as required.

Where goods are found to be damaged or defective, an Orange Reject Label will be affixed to them and they shall be immediately segregated or returned to the source of supply.

The Neg Procurement Department will further investigate, audit or review as necessary at source to ensure full compliance to the specification is achieved for further deliveries.

2.6.3 Handling, Storage, Packing and Delivery.

Prior to receipt of components to site all delivery, offloading, packaging and Project requirements will be defined in the Purchase Order

Materials will remain identified at all times to ensure correct installation. Pallets and stillages of materials will have contents lists fixed externally to identify contents.

Adequate on-site storage space to suit the programme requirements will be agreed with the Main Contractor to facilitate safe access and egress, distribution and to prevent damage or deterioration of stored materials.

2.6.4 On-site Inspection and Testing

To ensure Quality Control of Site Installation QA Checklists will be prepared in accordance with the Project specification.

Specialist on site hose testing will be undertaken by a UKAS accredited company such as Wintech to elements of the façade agreed prior to testing when required.

2.6.5 Site Installation Control

The Building will be divided into suitable areas for itemised inspections as work proceeds and identified upon the QA process checklists.

To enable adequate site control prior to start, during installation and after works have been completed the Neg Site Manager must ensure that the following documentation is completed on an ongoing basis.

- Neg Site Setup Checklist.
- Installation QA checklists and/ or Hold Point Forms to be completed on an ongoing basis as installation is in progress ensuring that defined and specific areas inspected are documented.
- The purpose of the QA check sheets is to satisfy Neg and the Main Contractor that all elements of each work package have been installed correctly, and in accordance with the approved drawings and Project Specification.
- Upon completion of each 'item' of work (items defined as section 2.1), Neg will inspect the works and sign the QA Checklists. The Main Contractor will be requested to sign the QA Checklist confirming that they are satisfied with the installed works.
- Should the Main Contractor require any Corrective Action, Neg will carry out the required corrective action and re-issue the letter of completion. If, however, Neg does not agree with the Non-Compliance Notice, a letter will be issued stating the reasons.
- Delivery Notes for all materials delivered to site, will be copied and the originals will be returned to head office once a week.

Copies of all documents are to be uploaded to the Neg Contract Filing Folder system each week.

In addition to the Neg and Main Contractor Inspections, system suppliers (namely the curtain wall and fire stopping system suppliers) will also attend site to inspect and report on the installed works.

Relevant manuals are held within the Neg Drawing Office and relevant extracts will be provided to site on a project by project basis as appropriate. Installation operatives will be required to demonstrate in advance of the commencement of works their credentials as qualified installers

2.6.6 Design Compliance Control

Any part of the works which require a change to the approved drawings must be requested via email and confirmed by a Senior Draughtsman that has sought further approval to the required changes.

2.6.7 Reporting of Damage

If during the course of the works damage has been discovered to an area of works, the Site Manager will cover this on his weekly report and issue to the Main Contractor as necessary. Any necessary rectification works will commence upon instruction from the Main Contractor.

2.6.8 Retention of records

The Quality Record Retention Period will normally be 12 years from Practical Completion of the subcontract works.

2.6.9 Calibration and Maintenance

Equipment that requires calibration will have, where practicable, a sticker or label attached upon which the calibration status and the date for the next calibration is indicated. Each item of calibrated equipment will always be logged on the calibration register to maintain calibration status.

Prior to the use of equipment, the user will check the calibration status.

During the Contract Works regular checking will take place to ensure that the equipment complies with the calibration requirements and accuracy is maintained.

At no time will equipment be used which is out of calibration.

All measuring equipment, spirit levels etc, used by Neg on the Contract will be checked periodically for calibration/ accuracy, clarity of markings, damage etc. At no time will inaccurate or damaged equipment be used.

The Procurement Department control the calibration register.

2.6.10 Protection

Coated Metal

Painted extrusions, panels and pressed metal will be delivered to site with a layer of low tack tape applied to them in the works following final inspection and prior to dispatch to site. The low tack tape will remain on the components until final handover for removal by the Main Contractor.

Glass

Glass will be delivered to site securely banded on purpose made stillages. All glass is inspected upon delivery for compliance with the delivery note and checked for edge damage and breakages which are immediately identified as section 2.6.2. As each unit is installed it will be checked for compliance ensuring there are no tears, blisters, cracks, inclusions, edge damage or any defects apparent.

Doors

All doors installed by Neg will be locked, and the keys issued formally to the Main Contractor.

2.6.11 Operating & Maintenance Manual

Upon completion of installation, the Main Contractor will be provided with an Operating & Maintenance (O&M) Manual which should be handed over to the End User/ Client.

The O&M Manual will include all “As Built” drawings and other pertinent records.

Providing the structure is operated and maintained in strict accordance with the O&M manual by the End User/Client, then Neg will warrant the installed works in accordance with the original specification.

2.7 Method Statement Creation & Submission

Method Statements will be created by the Site Manager and submitted to the Main Contractor for review 14 days prior to that element of work being undertaken. The programme in appendix A will be used to determine the timing of these.

2.8 Staff Training at Site

Staff will be trained at site using the relevant procedures below.

- a) The Main Contractor Site Induction – All operatives will be required to complete the Main Contractor site induction prior to starting work on site
- b) Project RAMS – The Neg Project RAMS for the project (HS00010) will be briefed to all staff on their first day and they will be required to sign the RAMS Briefing Register.
- c) Toolbox Talks – Toolbox Talks will be briefed as a minimum once a week on topics or hazards applicable to the work being undertaken at the time, operatives briefed will be required to complete the Toolbox Talk Register (HS00020).

In addition to the above all operatives are required to provide copies of CSCS, SMSTS, IPAF and all other applicable training records. These will be held on a training register file in the site office by the Site Manager.

2.9 Environmental

At the start of the project, the HSQ&E Manager will discuss all environmental implications and site-specific environmental requirements directly with the Site Manager.

Waste streams will be reviewed for all waste products that cannot go directly into the Main Contractors skips.

Any Environmental issues arising or reported at site will be reported to the Neg HSQ&E Manager so that corrective and preventative actions can be taken.

3.0 Appendix A

3.1 Neg Document Register

Department	Document Description	Document ref.:	Revision
General	Internal Handover Minutes	GEN00010	-
	Meeting Minutes	GEN00020	-
	Contract Review Minutes	GEN00030	-
Drawing Office	Design Risk Assessment	DRW00010	-
	Calculations Register	DRW00020	-
	RFI form	DRW00030	-
	Drawing Transmittal Form	DRW00040	-
	Sample Approval Form	DRW00050	-
	Glass Requisition	DRW00060	-
	Sections Requisition	DRW00070	-
	Accessories Requisition	DRW00080	-
	Shop Order Cover Sheet	DRW00090	-
Production	Curtain Wall Part List	PROD00010	-
	Windows Part List	PROD00020	-
	Doors Part List	PROD00030	-
	Despatch Note	PROD00040	-
	Production review Minutes	PROD00050	-
Site/ Installation	Site Setup Checklist	SM00010	-
	Site File Labels	SM00020	-
	Curtain Wall QA	SM00030	-
	Window QA	SM00040	-
	Door QA	SM00050	-
	Hold Point Form	SM00060	-
	Site Diary Record	SM00070	-
	Daywork Sheet	SM00080	-
	Site Instruction Form	SM00090	-
H&S	Method Statement	HS00010	-
	Toolbox Talk Register	HS00020	-
	PPE Issue Form	HS00030	-
	MEWP Inspection Form	HS00040	-
	Telehandler Checklist	HS00050	-
	Accident report form	HS00060	-
	Harness Inspection	HS00070	-
	HS&E Report	HS00080	-

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1.4.8	Risk Assessments completed	Project Method Statement	Auditing of procedures & Files	100%	Meet H&S 12000	Site Manager	Site Management Records	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.4.9	Task Specific Method Statements completed and issued to subcontractors for approval (low risk) and to subcontractors for approval (low risk) and to subcontractors for approval (low risk)	Project Method Statement	Task specific method statement	100%	Meet H&S 12000	Site Manager	Site Management Records	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.4.10	Approved task specific method statements issued to all site operatives and signed off by operatives	Project Method Statement	Task specific method statement	100%	Meet H&S 12000	Site Manager	Site Management Records	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.4.11	QA Checklist completed and issued to Main Contractor for review, approval and designation of appropriate hold points	Hold Point Form and QA Checklist	QA Checklist	100%	Meet H&S 12000	Site Manager	Site Management Records	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.4.12	Approved QA Checklist	Hold Point Form and QA Checklist	QA Checklist	100%	Meet H&S 12000	Site Manager	Site Management Records	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5	Design	Design Drawings	Design Drawing Approval	100%	Meet H&S 12000	Design Engineer	Design Drawing Approval	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.1	QA drawings completed from Client Drawings and submitted for approval	Design Drawings	Design Drawing Approval	100%	Meet H&S 12000	Design Engineer	Design Drawing Approval	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.2	Uncommented drawings received from architect and other revised or issued (approved) on status	Design Drawings	Design Drawing Approval	100%	Meet H&S 12000	Design Engineer	Design Drawing Approval	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.3	Approved Drawings formally issued	Design Drawings	Design Drawing Approval	100%	Meet H&S 12000	Design Engineer	Design Drawing Approval	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.4	Calls completed and submitted to Structural Engineer for approval	Calculations Regular	Calculations Regular	100%	Meet H&S 12000	Design Engineer	Calculations Regular	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.5	Approved Calculations formally issued	Calculations Regular	Calculations Regular	100%	Meet H&S 12000	Design Engineer	Calculations Regular	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.5.6	Production Drawings and Shop Orders completed & issued	Design Drawings and Shop Orders	Design Drawing Approval	100%	Meet H&S 12000	Design Engineer	Design Drawing Approval	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
1.6	Purchasing	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	100%	Meet H&S 12000	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	100%	Meet H&S 12000	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.1	Samples to be submitted for client approval	Sample Approval Form	Sample Approval Form	100%	Meet H&S 12000	Sample Approval Form	Sample Approval Form	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.2	Approved samples received	Sample Approval Form	Sample Approval Form	100%	Meet H&S 12000	Sample Approval Form	Sample Approval Form	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.3	Technical Submissions sent for client approval	Sub-Contractor Proposal/ Technical Submissions	Sub-Contractor Proposal/ Technical Submissions	100%	Meet H&S 12000	Sub-Contractor Proposal/ Technical Submissions	Sub-Contractor Proposal/ Technical Submissions	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.4	Technical submissions approved	Sub-Contractor Proposal/ Technical Submissions	Sub-Contractor Proposal/ Technical Submissions	100%	Meet H&S 12000	Sub-Contractor Proposal/ Technical Submissions	Sub-Contractor Proposal/ Technical Submissions	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.5	Purchase order POs from approved suppliers for materials and materials as outlined in the spec and in accordance with any submittal and Technical Submissions	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	100%	Meet H&S 12000	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.1.6	Goods received and verified against PO	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	100%	Meet H&S 12000	Material Submissions & Purchase Orders	Material Submissions & Purchase Orders	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
2.2	Manufacture	Manufacture	Manufacture	100%	Meet H&S 12000	Manufacture	Manufacture	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1	Mock up Produced and issued for Approval/ Test	Sample Approval Form & Shop Order	Sample Approval Form & Shop Order	100%	Meet H&S 12000	Sample Approval Form & Shop Order	Sample Approval Form & Shop Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.1	Mock up Produced and issued for Approval/ Test	Sample Approval Form & Shop Order	Sample Approval Form & Shop Order	100%	Meet H&S 12000	Sample Approval Form & Shop Order	Sample Approval Form & Shop Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.2	Mock up approval	Sample Approval Form	Sample Approval Form	100%	Meet H&S 12000	Sample Approval Form	Sample Approval Form	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.3	Production of products in accordance with the drawings and shop orders issued	Shop Order	Shop Order	100%	Meet H&S 12000	Shop Order	Shop Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.4	All materials installed & recorded as per procedure	Purchase Order	Purchase Order	100%	Meet H&S 12000	Purchase Order	Purchase Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.5	Manufacture	Shop Order	Shop Order	100%	Meet H&S 12000	Shop Order	Shop Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
3.1.6	Products delivered to site on substrate transport	Shop Order	Shop Order	100%	Meet H&S 12000	Shop Order	Shop Order	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1	Installation	Installation	Installation	100%	Meet H&S 12000	Installation	Installation	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1.1	Installation will take place in accordance with the Contract Programme	Contract Programme	Contract Programme	100%	Meet H&S 12000	Contract Programme	Contract Programme	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1.2	Contract Programme	Contract Programme	Contract Programme	100%	Meet H&S 12000	Contract Programme	Contract Programme	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1.3	Staff will be trained in the safe and required installation sequence as defined below:	Project Method Statement	Project Method Statement	100%	Meet H&S 12000	Project Method Statement	Project Method Statement	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1.4	Installation sequence and progress checks will be recorded onto the Continual QA Checklist with hold and sign off points defined	Continual QA Checklist	Continual QA Checklist	100%	Meet H&S 12000	Continual QA Checklist	Continual QA Checklist	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site
4.1.5	Hold points will be reviewed and signed off by the Site Management Contractor	Continual QA Checklist	Continual QA Checklist	100%	Meet H&S 12000	Continual QA Checklist	Continual QA Checklist	Q/R	I	REV	1 H	Issued to Manufacturing, Purchasing and Site

4.1.8	Third Party testing and/or commissioning carried out in accordance with contract		Test report issued and recorded on site	100%	Correct to drawings and specifications	Site Manager	Site Management Records	G R SUB	T	R C	I H	This will be arranged as required by the Site Manager
4.3.1	Installation	Contract Programme	Installation in accordance with drawings and specifications	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
4.3.2	Staff will be trained in the safe and required installation sequence as detailed below:	Project Method Statement	Staff Training on installation sequence, risks and controls for safe installation	100%	In accordance with M&S Site Management procedures	Site Manager	Site Management Records	R				Records of all training will be maintained by the Site Manager
4.3.3	Project Method Statement	Project Method Statement	Installation in accordance with drawings and specifications	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	I			
4.3.4	Toolbox Talks	Toolbox Talk Register	Installation in accordance with drawings and specifications	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	I H	G	I H	Held points witnessed and signed off by Neg supervision and Main Contractor
4.3.5	Hold Point Form and QA Checklist	Hold Point Form and QA Checklist	Installation in accordance with drawings and specifications	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	T	R C	I H	This will be arranged as required by the Site Manager
4.3.6	Third Party testing and/or commissioning carried out in accordance with contract		Test report issued and recorded on site	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
4.4.1	Installation	Contract Programme	Installation in accordance with drawings and specifications	100%	In accordance with M&S Site Management procedures	Site Manager	Site Management Records	R				Records of all training will be maintained by the Site Manager
4.4.2	Staff will be trained in the safe and required installation sequence as detailed below:	Project Method Statement	Staff Training on installation sequence, risks and controls for safe installation	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	I			
4.4.3	Project Method Statement	Project Method Statement	Installation in accordance with drawings and specifications	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	I H	G	I H	Held points witnessed and signed off by Neg supervision and Main Contractor
4.4.4	Toolbox Talks	Toolbox Talk Register	Installation in accordance with drawings and specifications	100%	Correct to drawings and specifications	Site Manager	Site QA Checklist	G R	T	R C	I H	This will be arranged as required by the Site Manager
4.4.5	Hold Point Form and QA Checklist	Hold Point Form and QA Checklist	Installation in accordance with drawings and specifications	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
4.4.6	Third Party testing carried out in accordance with contract		Test report issued and recorded on site	100%	In accordance with M&S Site Management procedures	Site Manager	Site Management Records	R				Records of all training will be maintained by the Site Manager
Section 5 - Close Out and Handover												
5.1	Handover	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.1.1	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.1.2	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.1.3	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.2	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.2.1	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				
5.2.2	Handover Certificate	Handover Certificate	Handover Certificate	100%	Agreed programme	Site Manager	Mostly Programme reviews and site	G				

Stoneguard Northern Limited (SG)

Quality Plan

Stoneguard Northern Limited (SG) are established in the design, installation and supply of industrial cladding systems, and rain screen.

As a commercial enterprise we are aware of the importance of satisfying our customers and of the financial impact of nonconformities on our profitability and for those reasons we are committed to complying with all customer, legal, statutory and other requirements as a minimum, and to continually improving the effectiveness of a Quality Management System.

Objectives for quality are set and reviewed as per client requirements and SG objectives, but generally overall quality objectives are set and reviewed as a result of opportunities for improvement or business needs which have been identified at any management review, although quality objectives may be set outside of this forum at any time by the directors in reaction to circumstances which present themselves. Quality Objectives may include objectives for the product and may form part of the company's continual improvement programme. They are periodically reviewed by the business management who retains a full listing of all Quality.

This Quality Policy is reviewed for continuing suitability it has been communicated to all members of the company.

POLICY STATEMENT 01

SG has documented, implemented, maintained and continually improves the effectiveness of its Quality Management System, which has been formatted in accordance with the needs/demands of the business and has determined the processes needed for its Quality Management System, how those processes apply throughout the company, their sequence and interaction, the criteria and methodologies required to make certain that their operation and control is effective, the availability of any resources or information needed to support, operate and monitor them, the necessary monitoring, measuring and analysis activities, and ensures that actions which are needed to achieve the planned results and continual improvement of the processes is implemented.

SG manages these processes. Where SG outsources any processes which could affect the conformity of the product to the requirements, the company exercises appropriate control over the processes. The type and extent of control applied to these outsourced processes is continually monitored to ensure effective delivery of the product or process. (An "outsourced process" is a process that the company needs for its QMS and which it has performed by an external body. Having control over an outsourced process does not absolve the company of responsibilities of conforming to all customer, statutory and regulatory requirements. The type and scale of control applied to outsourced processes is influenced by factors such as the possible impact of the process on the company's ability to provide products that conform to requirements, the extent to which the control is shared, and the capability of achieving the required control through supplier/subcontractor control.)

The outline points of SG quality planning is as the schedule of tasks issued below

This covers product and procedural tasks to ensure effective procurement and installation of materials used in SG construction projects.

SALES/MARKETING

Control of Documents	Customer Communication
Control of Records	Control of Production and Service Provision
Customer Focus	Customer Property
Quality Objectives	Customer Satisfaction
Internal Communication	Internal Audit
Provision of Resources	Monitoring & Measurement Processes
Competence, Training And Awareness	Corrective Action
Determination & Review Requirements Related to The Product	Preventive Action

PLANNING

Composition & Format	Requirements related Product
Doc Requirements	Customer Communication
Control of Documents	Design & Development
Control of Records	Purchasing Process
Management Commitment	Purchasing Information
Customer Focus	Verification of Purchased Product
Quality Policy	Control of Production and Service Provision
Quality Objectives	Customer Property
QMS Planning	Measurement, Analysis and Improvement: General
Responsibility Authority	Customer Satisfaction
Management Rep	Internal Audit
Provision of Resources	Monitor/Measure Processes
Competence, Training & Awareness	Monitor/Measure Product
Infrastructure	Control N/C Product
Work Environment	Analysis of Data
Planning of Product Realization	Continual Improvement
Determination/Review of	Corrective Action
	Preventive Action

PRODUCTION/PURCHASING

Control of Documents	Identification & Traceability
Control of Records	Customer Property
Customer Focus	Preservation of Product
Quality Objectives	Control of Monitoring and Measuring Equipment
Internal Communication	Internal Audit
Provision of Resources	Monitoring/Measurement of Processes
Competence, Training And Awareness	Monitoring/Measurement of Product
Verification of Purchased Product	Control of Nonconforming Product
Control of Production And Service Provision	Corrective Action
	Preventive Action

INSTALLATION

Control of Documents	Identification & Traceability
Control of Records	Customer Property
Customer Focus	Preservation of Product
Quality Objectives	Internal Audit
Internal Communication	Monitoring/Measurement of Processes
Provision of Resources	Control of Nonconforming Product
Competence, Training And Awareness	Corrective Action
Control of Production And Service Provision	Preventive Action

POLICY STATEMENT 02

The documents required by the Quality Management System are controlled. The documented procedure ensures that documents are approved for adequacy before they are issued, reviewed and updated as required (and re-approved), that changes and current revision or issue status are identified, that relevant versions of documents are available where they are in use, that they remain legible and easily identifiable, that external documents determined by the company to be needed for the planning and working of the QP are identified and their distribution controlled, and that obsolete documents are prevented from being used and are suitably identified if they are to be retained.

POLICY STATEMENT 03

Records which provide evidence of both conformity to requirements and the effective operation of the Quality Management System are controlled, have been established and are maintained. These records remain legible and are easily identifiable and retrievable. The established documented procedure defines the controls used to identify, store, protect, retrieve and dispose of records, as well as defining the retention time.

The records needed as a minimum requirement SG are as follows:

- RAMS / Risk Analysis
- Competency (i.e. suitable records of training, education, skills, experience, etc, as appropriate)
- Evidence that the manufacturing/realisation processes and products meet requirements
- Contract Review (review of customer and other requirements) and actions resulting
- Design and Development Records
- Supplier & Subcontractor Evaluations
- Unique Identification of Product (where required)
- Loss, Damage or Unsuitability of Customer Property
- Calibration
- Authority For Product Release
- Nonconforming Product (and actions)
- Corrective Action
- Preventive Action

POLICY STATEMENT 04

The most senior management of SG can provide evidence of its commitment to implementing, developing, and continually improving the effectiveness of the Quality Plan.

Senior management achieves this by communicating the importance of satisfying customer, statutory and regulatory requirements to the rest of the company, by establishing the company Quality Policy Statements, by making sure that Quality Objectives are set, by ensuring that all necessary resources are available.

POLICY STATEMENT 05

The company has determined what resources are necessary to implement, operate, maintain and continually improve the effectiveness of the Quality Plan and has provided such resources as are necessary to achieve those aims. The importance of achieving customer satisfaction by fulfilling customer requirements is paramount to the success of the business and this is widely understood within the company.

Further or additional resource requirements can be identified by any member of the company at any time, usually in response to the needs of the business, and these needs are communicated to the senior management who will then decide if the need is justified and if so provide whatever resource is required.

Due to the size and nature of the company most resource needs tend to be raised and addressed informally as they arise.

The Directors are solely responsible for all capital expenditures, should they arise.

POLICY STATEMENT 06

SG personnel who perform work which affects product conformity to requirements are competent to do so on the basis of relevant education, training, experience and skill. (Conformity to product requirements can be directly or indirectly affected by anyone performing any task.)

The company has determined the necessary competence levels required for such personnel and where applicable provides training (or takes alternative actions) to achieve those requirements. The effectiveness of the training or actions is evaluated. The company ensures that personnel are aware of the importance and relevance of their work, and how their contribution helps in the achievement of the Quality Objectives.

Appropriate records of education, training, experience and skills are maintained

POLICY STATEMENT 07

SG has determined, provided and maintains the infrastructure it requires to ensure conformity of the product to requirements. This includes buildings, workspace, related utilities, equipment (hardware and software), and support services such as transport, communication and information systems.

POLICY STATEMENT 08

Planning Of Product Realization

SG plans and develops the required product realization processes. This planning is consistent with the needs of other processes in the Quality Management System.

In planning the product realization, SG has determined the Quality Objectives and product requirements, the necessity to establish the processes and documents specific to the product, determined and provided the necessary resources specific to the product, identified what verification, validation, inspection, monitoring, measurement, tests and acceptance criteria are specifically required for the product, and determined what records are required to show evidence that the realization processes and the product satisfy the requirements.

The planning output is in a form which is suitable to the company's system of operation and may be in the form of the Quality Plan or similar.

POLICY STATEMENT 09

DETERMINATION OF REQUIREMENTS: SG determines what requirements are specified by the customer (which includes delivery and any post-delivery requirements), what requirements may not be specifically stated by the customer but which the company knows are necessary for the product's use, what product-applicable legal and regulatory requirements are necessary, and any other requirements which the company determines are needed. (Post-delivery activities may include such things as warranty or guarantee actions, contractual obligations such as maintenance services, and additional services such as recycling or final disposal.)

REVIEW OF REQUIREMENTS: SG reviews the product-related requirements before the company commits to supplying the product (that is, before submitting tenders or accepting contracts, orders or changes to contracts or orders).

This review ensures that the requirements for the product are properly defined, that any differences in the contract or order from those previously stated are resolved, and that the company has the capability to satisfy the requirements.

Records of reviews and any actions resulting from the reviews are kept.

In cases where the customer has provided no documented statement of the requirements, they shall be confirmed by SG prior to accepting the order.

In cases where the product requirements are altered, the company ensures that the relevant documents are revised and that the personnel involved are made aware of the alterations.

POLICY STATEMENT 10

SG plans and controls product design and development. During the planning stage the company determines the phases (or stages) of the design/development in conjunction with the customer what review, verification and validation activities are relevant to each phase, and what the responsibilities and authorities are.

The company manages the interfaces between different functions or departments involved in the process to make sure that effective communication takes place and to ensure that the assignment of responsibilities is made clear.

The plan, or the output from the planning process, is updated as required. (Design and development Review, Verification and Validation have specific purposes. They can be conducted and recorded singly or in any combination, as is suitable to the company and the product.)

INPUTS: The inputs associated with the product requirements are determined and records of these are kept. The inputs include requirements for product function and performance, the applicable legal and regulatory

requirements, information from previous similar designs/developments (if applicable), and any other requirements needed for the design/development process.

The inputs are reviewed to ensure they are adequate for the process/work to begin. This means that requirements are complete, are not ambiguous and are not in conflict with each other.

OUTPUTS: Outputs from design and development are produced in a format that is suitable for verification to take place against the inputs. Outputs are approved prior to release.

The company ensures that the outputs match the input requirements, provide all the necessary information needed for purchasing and production (or provision of the service), contain the acceptance criteria for the product (or reference it), and specify those characteristics of the product which are necessary for its safe and proper use. (Information for production and service provision may include details regarding the preservation of the product.)

REVIEW: Systematic reviews of the design and development are conducted at planned intervals at appropriate stages or phases of the design in order to assess the ability of the design results to meet the requirements and to highlight any problems or difficulties and determine any necessary actions.

Design/Development Reviews include representatives of functions or departments who are concerned with the particular stage (or stages) under review.

Records of review results and any actions resulting from them are kept.

VERIFICATION: Verification activities are conducted in accordance with the plan (PLANNING) to ensure that the outputs from the design have matched the input requirements.

Records of verification results and any actions taken are kept.

VALIDATION: Validation is conducted in accordance with the plan (PLANNING) to make sure that the product itself is capable of satisfying the requirements for its specified use or application. Where possible, validation is completed before the product is delivered or implemented/installed.

Records of validation results and any actions required are kept.

CONTROL OF CHANGES: Changes to the design are identified and records of changes are kept. Changes are reviewed, verified and validated (as applicable), and they are approved before being implemented. Reviews of changes include the assessment of the effect the change might have on component parts or previously delivered products.

Records of Change Review results and any actions are kept.

POLICY STATEMENT 11

SG ensures that products purchased from suppliers conform to the company's purchase requirements. The extent and level of control which the company applies to the supplier (and the products being purchased) is appropriate to the effect that the supplied products have on the manufacturing (realization) process and/or the company's final product.

SG assesses and selects its suppliers on the basis of their ability to supply products to the company's requirements. The criteria for selecting, appraising and re-appraising the suppliers has been established and records of the appraisals, including any actions arising, are kept.

Purchasing documentation/information describes the product to be supplied to the detail necessary to ensure that the requirements are clear and can be met. This description can include (as applicable to the purchase) what the company requires of the supplier in terms of product approval, procedures, processes and equipment, qualification of personnel and the supplier's Quality Management System.

SG makes sure that the purchase requirements are adequate before they are communicated to the supplier.

SG takes care to preserve product conformity during internal processing through to delivery at the specified location. Preserving the product (which extends to component parts or sub-assemblies of the product) includes identification, handling, packing, storage and protection, as applicable.

STORAGE: Storage in the warehouse is in suitable racking or locations. Storage in the yard is for items which do not require internal storage. Hazardous solvents and adhesives such as Solvent 6 and Solvent 13 must be stored in the designated container in the yard. All materials and items are identified by labels or location, or are readily identifiable.

Storage on site depends on the individual site but normally will be a container or similar, provided by the customer or main contractor.

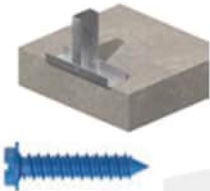
HANDLING: All operational personnel are aware of the necessary handling techniques through their training. Manual Handling training has been given to some employees and the company maintains a register of these. Fork Lift Truck users have been trained.

PACKING: The company tends to buy parts and materials in bulk, then split and repack for delivery to site. Packaging is appropriate to the materials and is labelled or otherwise identified.

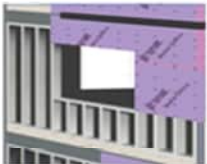
POLICY STATEMENT 12

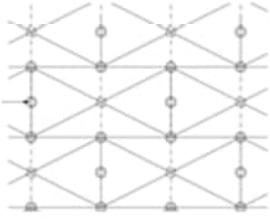
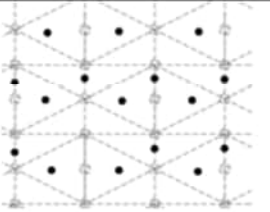
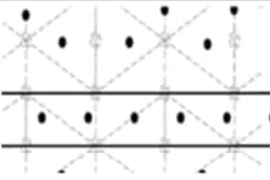
CONTROL OF NONCONFORMING PRODUCT

SG ensures that nonconforming products are identified and controlled in order to prevent their use or delivery. The procedure defines the controls, authorities and responsibilities for dealing with nonconforming product. Where applicable the company deals with nonconformities in a number of ways, depending on the nature of the problem, which can include taking action to eliminate the problem, authorising the product's release, use or acceptance through a properly authorised concession (which may include authorisation from the customer), by acting to prevent the product being used for its original purpose or application. Records of nonconformities and subsequent actions (including concessions) are kept. Rectified or corrected nonconforming product is subject to re-verification to prove conformity to requirements. SG takes action (appropriate to the scale of effect or potential effect of the nonconformity) on any nonconforming product where the problem has not been detected until the product has been delivered or is in use.

CHECK SHEET FOR		SFS			
SECTION OF WORK: LEVEL:		LOCATION:			
STAGE	ITEM	Checked by		RG	Date
		Stoneguard Site Team (Y/N)	Stoneguard Site Manager (Ref)	Appointed person/s Sign Off	
SFS	Check that the perimeter Grid Lines are in place				
	Check that a datum is marked on at least one column				
	Mark rear position of SFS using A&L Drawing				
	Mark out any openings on the slab				
	Cut base track to lengths to suit openings				
	Min 2/3 track bearing – fixing at stud positions into slab Fixed with MF 32				
	Min 2/3 track bearing – fixing at stud positions into underside of steel using HS 38 fixings.				

	Detail for Joining Head Track and Base Track ensure fixings are in place				
	Base Track to Stud Connection – Ensure fixings are installed both sides into base track using LP19-HEX				
	Head Track to Stud Connection – Ensure fixings are installed both sides into Head track using LP19-HEX				
	Cill Member fixing arrangement set to level from Datum in conjunction with A&L Drawings using LP19-HEX				
	Head Member fixing arrangement set to level from Datum in conjunction with A&L Drawings using LP19-HEX fixings.				
Installation Team	Manager/Appointed Person	RG Appointed Person/s			
Date:	Date:	Date:			
Sign:	Sign:	Sign:			

CHECK SHEET FOR WEATHERBOARD/INSULATION					
WI-RG-STO-					
STONEGUARD		RG-GROUP			
Apartment: : LEVEL:		LOCATION/GL Tower			
STAGE	ITEM	Checked by		RG GROUP	Date
		Image Reference	SC Site Manager	Appointed person/s	
	Ensure all Siniat boards are fixed and supported by the SFS structure or approved Framing. And free from damage				
	Ensure Gtec Wet area fixings are used Locate screws at least 13mm and no more than 20mm from board edges				
 GOOD	 BAD	All fixings not perfectly flush with the board must be sealed with GTECH fire rated silicone to ensure weather tightness.			
	Expansion Joint EPDM works to be primed with approved primer. EPDM to be checked for correct adhering/bonding.				

	Single pin through center of board into SFS whilst adhesive layer cures.				
	Install remaining fixing through the board joints into the SFS using the 60mm & 90mm extension washer specified.				
	Once first mesh coat is applied install stainless steel fire pins through the mesh @1/m2. Install 200mmx200mm square mesh patch over & cover in basecoat				
	Install stainless steel fire pins @400mm centres to slab edge through the mesh coat layer in the mesh.				
Installation Team Date: Sign:	SC Manager/Appointed Person Date: Sign:	RG Appointed Person/s Date: Sign:			

#

CHECK SHEET FOR RENDER/BRICKSLIP					
WI-RG-STO-					
STONEGUARD				RG-GROUP	
APARTMENT: TOWER:		LEVEL:		GRIDLINE: WEATHER CONDITIONS:	
STAGE	ITEM	Checked by		RG GROUP	Date
		Image Reference	SC Site Manager	Appointed person/s	
	Using the mixed basecoat, fix the corner trims, and a 300x300mm stress patch installed at 45 degrees to all corners of openings. Apply the first coat to 3/4mm thick and when a suitable area is covered, trowel in the polypropene mesh in a horizontal direction ensuring a minimum of 100mm laps at edges and to the corner trims. Trowel apply second layer of polymer modified basecoat in 3-4mm thickness and smooth.				
	Once first Basecoat is applied install stainless steel fire pins through the mesh @1/m2. Install 200mmx200mm square mesh patch over & cover in basecoat				
	Install stainless steel fire pins @400mm centres to slab edge through the mesh coat layer in the mesh				

	Final layer of render to be applied ensuring smooth & level finish.				
	Apply Glueflex clay slip adhesive, with a serrated edge trowel, and install the clay slips by pushing the slip into the adhesive. Install at no higher than 10 courses at a time and leave to cure.				
	Ensure the slips are spaced and supported using nylon spacers, which should be removed on completion. Slips should be level & plumb.				
	Once the clay slips and adhesive have cured, point the joints with a gun grade Aliva pointing mortar and strike with a bucket handle finish and allow to cure.				
	All Silicone works to expansion joints & joints between Brick Slip & precast completed, using approved Product.				
Installation Team	SC Manager/Appointed Person	RG Appointed Person/s			
Date:	Date:	Date:			
Sign:	Sign:	Sign:			



Thinking Precast? – Think FP McCann

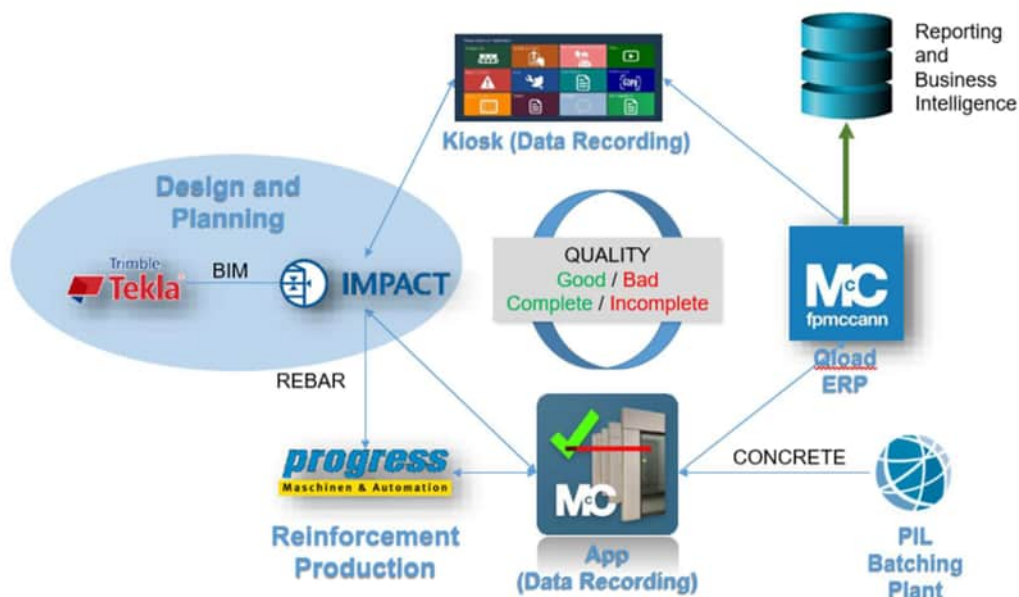
Introduction to the FP McCann Product Traceability App



1

Overview of how systems are interconnected

FP McCann utilise a number of systems to manage our design, production and commercial activity – Quality Control is central to all of these systems.



2

The screenshot displays the Revit software interface. On the left, a 3D model of a building structure is shown, with a section cut view. The structure consists of a series of rectangular blocks arranged in a row, with a central section cut through them. The blocks are colored in a gradient from green to yellow. On the right, a data table is visible, showing the properties of the elements in the model. The table has columns for Item ID, Item Name, Item Type, Item Material, Item Color, Item Width, Item Height, Item Length, Item Mass, Item Volume, and Item Remark. The table lists 14 items, including 'Reinforcement Ready B', 'Reinforcement Ready C', and 'All Internal Face'.

Item ID	Item Name	Item Type	Item Material	Item Color	Item Width	Item Height	Item Length	Item Mass	Item Volume	Item Remark
80-0001	1	Reinforcement Ready B	2400	1300	2000	0.42	Intermediate			
80-0002	2	Reinforcement Ready B	2400	1300	2000	0.42	Intermediate			
80-0003	3	Reinforcement Ready B	2400	1300	2000	0.42	Intermediate			
80-0004	4	Reinforcement Ready B	2400	1300	2000	0.42	Intermediate			
80-0005	5	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0006	6	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0007	7	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0008	8	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0009	9	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0010	10	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0011	11	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0012	12	All Internal Face	2400	1300	2000	0.42	Intermediate			
80-0013	13	All Internal Face	2400	1300	2000	0.27	Place End / Target			
80-0014	14	All Internal Face	2400	1300	2000	0.34	Place End / Target			

Within a Project – the structure or structures are separated down to individual elements.

Similar elements are grouped together as Element Marks.

For each Element Mark, there are a number of iterations of that particular item, which each gets given its own ID.

Each ID can be queried to determine it's status within the project life cycle.

The foundation of Product Traceability is defining Uniqueness

MC
fpmccann

BYLEY DEPOT
BYLEY LANE, MIDDLEWICH, CHESHIRE,
ENGLAND, CW10

PRE 05-BYL-0194-IP-0206

Contract: St Peters Square
Cast Date: 17-Feb-2020
Cast No/Elem ID: 2814
CastID: 172055
Weight (t): 12.45
Standard: EN 14992
Piece Number: 1
Length: 8830 Width: 460 Height: 2880



Every element produced can be traced, and its history determined.

In addition to the uniqueness of an element in the project, once the element is planned for production, it's cast ID is recorded and a fork of the previous data is generated.

Should a specific element be scrapped or need to be replaced, additional forks are generated so subsequent units can be identified individually.

Each stage of an elements development can be traced to ensure process is followed from design through to delivery.

4

Using The App – Simplifying and Controlling Data Entry



To ensure each elements status is accurately and easily recorded, we developed the Product Traceability App.

This ensures that data captures are:

- Live
- Accurate
- Enforced

The app has become an integral part of our quality process, and connects various systems to provide a centralised database of each element's details.

The app is in continuous development by our own software development team.

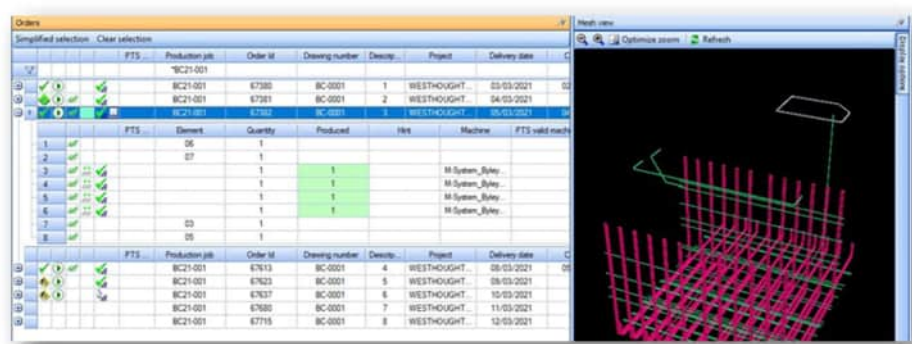
The next slides will describe the key functions.

5

CAGE SCANNING - Scanning Rebar cages to confirm made and correct Kit used

Reinforcement data is passed from our design package to the production machinery digitally.

The same unique identifiers are used to ensure that each element has it's own reinforcement.



The source of the reinforcement is recorded – either from external suppliers

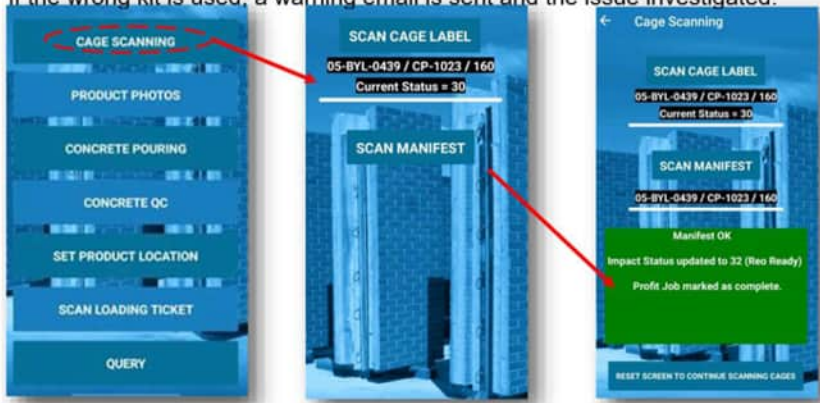
6

CAGE SCANNING - Scanning Rebar cages to confirm made and correct Kit used

Once the reinforcement has been fabricated and QC checked – the label is scanned which reports back to our planning software. Checks are carried out to ensure the correct reinforcement has been used.

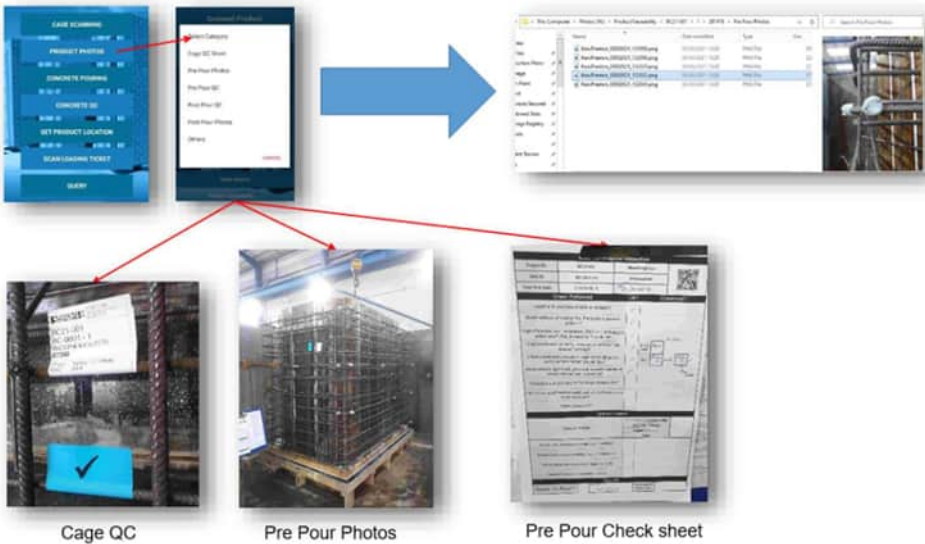
If the checks are passed, the appropriate dashboards are updated to signify the cage is ready to the production teams.

If the wrong kit is used, a warning email is sent and the issue investigated.



PRODUCT PHOTOS – a photographic record of Production

Photos are taken at key stages of production, and are automatically sorted and stored based on the products barcode. Metadata and database records ensure fingerprints are kept of each stage.



PRODUCT PHOTOS are validated to have been taken and uploaded daily

Reports are run to check that required photos are taken.

Hard-stops are programmed in – if a QC Check has not been carried on and reported, then production cannot be booked in and progress can not be made until the issue is resolved.

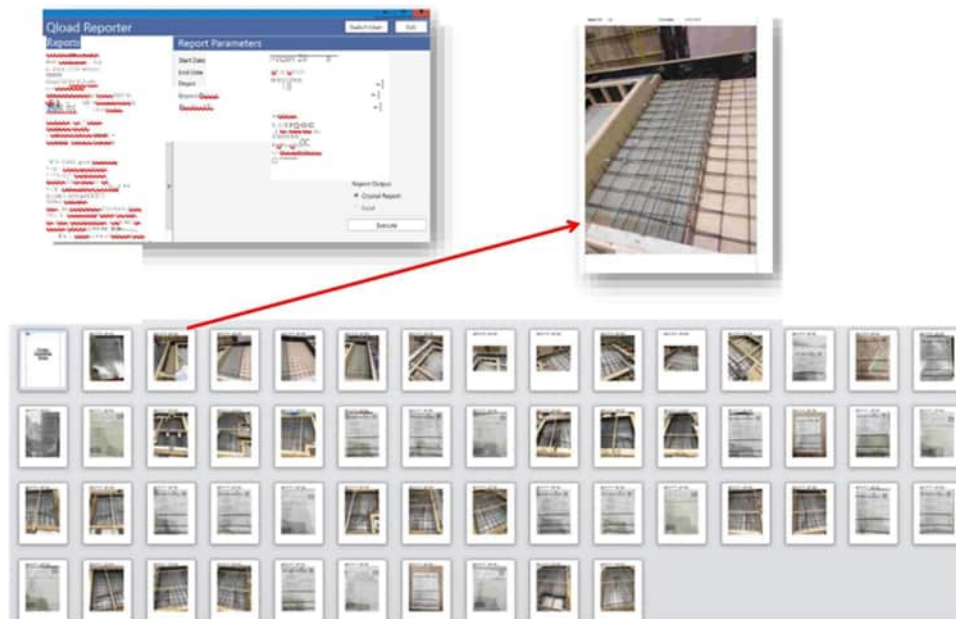
MC **Product Traceability - Missing Photos** **Byley**
 ipmccanv.co.uk Cast From Date: 04/03/2021 Cast To Date: 04/03/2021

Casts with Missing Photos		Total No Cast	
Byley - G Shop		19	19
Total		19	19

DrawName	CastDate	Prod Element	Resource	Cage QC Sheet	Pre Pour QC	Post Pour QC	Pre Pour Photos	Post Pour Photos	Post DIT	Concrete Batchers Not Included	Problem
Byley - G Shop	04/03/2021	BC20-113-BC-0001-36	918								
Byley - G Shop	04/03/2021	BC20-125-BC-0003-4885	908								
Byley - G Shop	04/03/2021	BC20-130-BC-0001-10	926								
Byley - G Shop	04/03/2021	BC20-130-BC-0001-8	927								
Byley - G Shop	04/03/2021	BC20-155-BC-0007-56	918								
Byley - G Shop	04/03/2021	BC20-163-BC-0001-4	907								
Byley - G Shop	04/03/2021	BC20-186-BC-0001-122	923								
Byley - G Shop	04/03/2021	BC20-186-BC-0001-123	924								
Byley - G Shop	04/03/2021	BC20-186-BC-0001-124	925								
Byley - G Shop	04/03/2021	BC20-186-BC-0006-53	926								
Byley - G Shop	04/03/2021	BC20-179-BC01-16	913								
Byley - G Shop	04/03/2021	BC21-091-BC-0001-2	914								
Byley - G Shop	04/03/2021	BC21-093-BC-0001-12	929								
Byley - G Shop	04/03/2021	BC21-093-BC-0001-8	930								

9

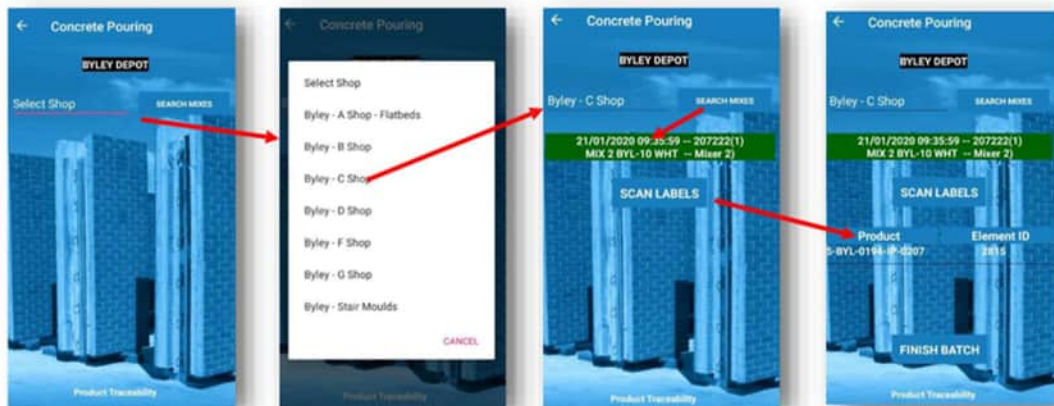
Customer Packs can be generated from our reporting software rather than searching for and scanning quality documentation



10

CONCRETE POURING – Connecting batching plant and product data

When a unit label is scanned during production, the batching plant database will return current batches in the system. This allows that batch to be associated with an element.



Have an electronic record of the batch(s) of concrete used in every product and can then link to the exact materials used and also link to all tests being done on these batches.

In development – checking of mix designs to prevent incompatible mixes from being selected during pouring, and automatic checking of test results to ensure material is fit for purpose prior to QC release.

11

CONCRETE QC - Recording concrete QC results.

The app is used to record QC test results- Cube strength tests and flow/slump tests. The results are associated with the source batch of concrete.



12

CHANGE QC STATUS – Update the status of a produced unit

Once an element has been produced, it will sit in the ‘Cast’ Status until it’s been positively verified as being fit for purpose and signed off by QC.

The barcode is scanned and the element can be set to:

- Finished Goods – Unit is fit to be loaded and delivered to the customer
- Remedial – Some form of minor remedial work is needed before it is fit for use.
- NCR – A None-Conformance must be raised against the element because major work is required to get it into spec.
- Scrap – Unit is not fit for purpose and cannot be rectified. An NCR must also be raised.

Permission levels are set within the system to ensure only authorised users can release a unit for delivery.



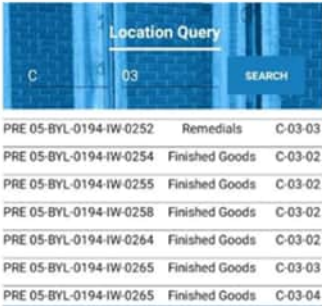
13

SET PRODUCT LOCATION

Products have a physical location set once they’ve been produced.

This will be automatically set to the factory area from which it was produced. Once it’s been released to storage, the status can be set to a ‘finer’ location with the appropriate yard and stack.

The app can be used to view the location of an element, but also what elements are within a location.



14

SCAN LOADING TICKET

Unique elements are allocated to deliveries.

A loading ticket contains a barcode which is scanned with the app. This then lists all the elements on the docket.

At the point of loading, the location and status of each element can be determined. If the unit is not yet ready for loading, it cannot be scanned and cannot be allocated to the load. Incorrect units also cannot be scanned.

A docket cannot be generated and the vehicle cannot be released unless each element has been scanned and confirmed to be correct and of the proper status.



15

Closing Comments

The app is constantly in a state of improvement and development.

Features that are in development and will be implemented in the future include:

- In-app prepour and postpour checks (instead of photographing the check sheet)
- Verification of mix suitability (design, required quality checks) prior to pouring.
- Concrete strength verification prior to stripping (lifting strength) and delivery (7 / 28 day results).
- Automatic population of concrete test results into appropriate documentation.

Questions or Comments?



Safe Operating Procedure



Task: Loading and Unloading of the Concrete Products in the Yard	Area: Yard Areas Byley, Grantham , Littleport & Uddingston
Prepared By: Nigel Kemp, Bernie Daly	SOP REF: SSW 137 v1.7
Assessment Date: 03/09/2020	Safe Operating Procedure Review Period not to exceed 3 years.

PPE Required									
									
High visibility Clothing EN ISO 20471	Safety Footwear EN ISO 20345	Hard Hats EN 397	Gloves EN 388	Eye Protection EN 166F	Face Protection EN 166B	Hearing Protection EN 352	Dust mask EN149 FFP3	Apron EN 14605	Safety Harness EN 361
✓	✓	✓	✓	✓					✓

Emergency Action

- First Aiders and Fire Wardens on Site – Report all accidents / incidents and Near Misses immediately

Equipment to be Used

- Concrete Products
- Overhead Cranes
- Trailers
- Ladders
- Timbers / Strapping/Corner protectors
- Harness & Lanyard (site depending)

Supervision Arrangements

- Operator should report to their immediate Supervisor / Manager

Key Documentation

- Risk Assessment Loading and Unloading of Concrete Products

Environmental Controls

- Ensure any spillages are cleared up immediately following the FP McCann spillage procedure. Spill kits are situated in various spots around site.
- Waste should be disposed of in its designated place.

Please Note: If you have any concerns report them to your Supervisor immediately

Step (Picture)	Safe Operating Procedure
1. 	Shunter Driver will put the trailer in place on the required yard and disengage the Shunter from the trailer.
2.  	- Before accessing on to the trailer, loading platforms and safety air bags must be in place. - The correct access equipment must be used to gain access to the trailer. - Ensure all debris from previous load is cleaned off the trailer before loading and that the boards on the trailer are in good condition - Place timber bearers as required ready to set down the concrete product.
Loading and Unloading (and Vice Versa):	
3. 	- Ensuring that the ladder is secured, climb up and screw in the lifters into the lifting sockets. - All lifting equipment is to be fully inserted into the receiver in the panel. The receiver should be clear of debris and ice which could obstruct the lifting gear. - Attach the lifting chains on the gantry cranes(s) to the lifters.
4. 	- Lift unit slowly (perform a test lift), being aware of your surroundings. - The banksman to use tag-line (at a safe distance) to turn/steady the load. Load to be guided into frames and racks by use of tag-line. Banksman to avoid standing in any vulnerable positions.

5. 	• Loading - If lowering the unit on to the trailer, make sure it is laid to rest on the timbers. • Unloading - If lowering a panel into a rack, be sure to use several chocks to secure in place. • Only when the product is secure, can the crane be removed. When the load is completed make sure that sufficient safety straps are applied.
6. 	• For a Wall Panel: Use the correct ladder to access the lifters and clutches (this ladder must be footed – see image) • For a Floor Panel: Access the trailer via loading platforms or fort dock steps, to access the lifters and clutches. • Loading Platforms or air bags must remain in place. • To prevent damage to the units, place 'soft packing' between the units. • Repeat as necessary to complete the load. • If loading: All units MUST BE clamped where there is racking or on a concrete carrier • Whilst loading all concrete units must strapped before the trailer is allowed to move. • On Perimeter and Yard walls (depending on the height), the concrete units must be secured with FP McCann safety straps
Loading of all A-Frames:	
7. 	<u>A FRAME WITH A WALKWAY</u> <u>ONLY Panels up to 650mm wide</u> are allowed to be loaded on A Frames <u>with</u> a walkway <u>Safety Strapping:</u> • For Panels weighing up to 10 tonne, 2 x 5t FP McCann safety straps must be attached • For Panels weighing between 10 and 20 tonne, 2 x 10t FP McCann safety straps must be attached • Do not remove any lifting accessories/equipment until the panel is secured with F P McCann safety straps.
8. 	<u>A FRAME WITHOUT A WALKWAY</u> <u>Panels that are 650mm wide and above</u> are to be loaded on to A Frames <u>without</u> a walkway. <u>Safety Strapping:</u> • For Panels weighing up to 10 tonne, 2 x 5t FP McCann safety straps must be attached vertical down the panel • For Panels weighing between 10 and 20 tonne, 2 x 10t FP McCann safety straps must be attached vertical down the panel • Do not remove any lifting accessories/equipment until the panel is secured with F P McCann safety straps.

Bespoke Products

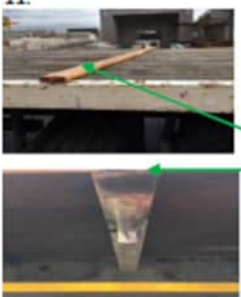
- For bespoke products F P McCann safety straps are to be used to secure the product horizontally across the product or when stacking on top of other panels.
- If in doubt you must inform your supervisor for further guidance.

10.

Loading of Dock Leveller Units

- (Strapped independently) means the units are strapped down on an individual basis so that each unit can be removed without unstrapping another. This allows the unloaders to attach the unit to the crane before the straps are removed so the unit is **NEVER** free standing once it has left the yard.
- Loading of all units to comply with the following table. Where the maximum height is exceeded the units must be sent **FLAT** or **Strapped Independently**
- The loading guide below sets out on how eleven highlighted products are to be loaded and haulier fully straps load.

Product Code & Brief			Lifting Method	Max Height
PDL	BP	Blank Prowall Panel	A-Frame / Rack	N/A
PDL	BS	Biscuit Slab	Flat	N/A
PDL	BW	Back Wall	Upright	1300mm
PDL	DP	Double Door Prowall Panel	A-Frame / Rack	N/A
PDL	FI	Firewall	A-Frame / Rack	N/A
PDL	FN	Non-Tailgate Frontwall	Upright	1300mm
PDL	FT	Tailgate Frontwall	Upright	1300mm
PDL	HN	Non-Tailgate Half	Upright	1300mm
PDL	HT	Tailgate Half	Upright	1300mm
PDL	IB	Infill Biscuit Slab	Flat	N/A
PDL	IF	Infill Frontwall	Upright	1300mm
PDL	LN	Prowall Lintel panel	A-Frame / Rack	N/A
PDL	PP	Personnel Door Prowall Panel	A-Frame / Rack	N/A
PDL	PR	Perimeter Retaining Wall	Upright	1500mm
PDL	QW	Quickwall	A-Frame / Rack	N/A
PDL	RL	Riser Lid	Flat	N/A
PDL	RR	Reverse Toe Retaining Wall	Upright	1500mm
PDL	RW	Riser Wall	A-Frame / Rack	N/A
PDL	SC	Stonehenge Column	A-Frame / Rack	N/A
PDL	SP	Single Door Prowall Panel	A-Frame / Rack	N/A
PDL	SW	Side Wall	Upright	1300mm
PDL	YD	Yard Wall Dowelled	Upright	1750mm
PDL	YI	Yard Wall Insitu	Upright	1750mm

11. 	• Timber laths with a depth of 22-25mm and a minimum of 75mm in width to be placed across the width of the trailer and in line with the steel bearers of the trailer.
12. 	• Typical example of how units can be loaded (depending on length of unit). • Straps are not to obscure any lifting points to enable the crane to attach lifting chains. Ensure adequate corner protection is used for each strap secured • Do a pull test/tug on the ratchet straps to ensure the tension is enough to prevent movement of units or straps. • If the products are stacked back to back additional units can be loaded. • In this case the units must be adequately spaced to avoid damaging other units. • Incorrect loading of products could leave other units in an unstable position.

13. 	• Haulage company straps are not to be removed until the trailer is in the final off load position. • Trailer post and edge protection straps to be erected before arriving at site.
14. 	<u>Loading of all Tank products</u> • Timber laths with a depth of 22-25mm and a minimum of 75mm in width to be placed across the width of the trailer and in line with the steel bearers of the trailer.
15. 	• Load with the boots facing outwards and any rebar facing inwards. • Mark the fixing holes for the clamps and drill the holes. One from above and one from the side for both ends of the clamp. One clamp at each end of the unit.

16. 	• Place the two clamps in position and adjust the span if required using the adjuster. • Insert the anchor bolts and tighten down to secure the units.
17. 	• Place two angle brackets one at each end of the two units each end and secure by drilling and inserting two anchor bolts.(one at each unit)
18. 	• Inspect safety straps to ensure they are fit for purpose. • Place two 10T safety ratchet straps over the top of the units and tighten down. • If internal units are part of the load, Place two 10 T ratchet straps through the unit (in addition to the two over the top) and tighten down.

Example 1  Example 2 	<u>OFFLOADING:</u> • Banks man / slinger to assess the stability of load before unstrapping. • If for any reason the banks man / slinger is uncertain of the security/stability of the load, then the load is to be strapped individually. See examples 1&2 • Example 1 – From trailer around the unit and back, pulling against the boot. • Example 2 – From lifter to trailer – pulling against the boot.
	• Adequate strapping must be applied to each load. NOTE: Where fitted, do not remove the FP McCann safety straps. These are only to be removed when the load is in the final off load position and the crane has attached the lifting chains (the straps are only to be removed by the slinger).

 SN061 – Sequence of Work FP McCann Safety Straps Do Not Remove 	
 Once a panel is loaded on to a trailer FP McCann Safety straps must be attached to secure the panel in position on specified products before the crane and accessories are removed. The Driver Can now add Transportation Securing Straps and Ensure the Load is Secured. UNDER NO CIRCUMSTANCES ARE THE FP McCann SAFETY STRAPS TO BE REMOVED BY THE DRIVER	 Hauliers may remove their haulage straps only when parked up in the final position for offloading once at their destination. DRIVERS MUST NOT REMOVE THE FP MCCANN SAFETY STRAPS THAT HAVE BEEN FITTED AT FP MCCANN SITES. The FP McCann Safety Straps will only be removed at site by the FP McCann nominated competent person once the Crane and the lifting equipment are attached supporting the load.
For products weighing up to 10 <u>tonne</u>, 2 x 5t straps must be attached. For products weighing between 10T and 20T 2 x 10t straps must be attached. Rev. C (July 2021 No Changes made)	



FP McCann Unit Schedule

	Ref	Len	Height	Thk	UNIT	Weight /t
					QTY	
Type	1	3.42	0.515	0.390	294	1.050
Type	01A	3.42	0.515	0.390	15	1.262
Type	2	3.075	0.515	0.390	255	0.949
Type	02A	3.075	0.515	0.390	16	1.007
Type	3	2.88	0.515	0.390	39	0.883
Type	4	2.805	0.515	0.350	6	0.814
Type	5	3.183	0.515	0.390	1	1.131
Type	6	2.527	0.515	0.390	3	0.864
Type	7	3.42	0.515	0.390	15	1.261
Type	8	3.075	0.515	0.390	18	1.134
CORNER	1	4.563	0.515	0.390	35	1.420
CORNER	01A	4.473	0.515	0.390	2	1.627
CORNER	2	4.452	0.515	0.390	33	1.380
CORNER	02A	4.362	0.515	0.390	5	1.576
CORNER	3	5.379	0.515	0.390	2	2.129
CORNER	4	5.163	0.515	0.390	2	2.146
CORNER	5	4.452	0.515	0.390	5	2.032
CORNER	6	4.563	0.515	0.390	6	2.083
Type	01C	3.42	0.515	0.390	28	1.245
Type	02C	3.075	0.515	0.390	28	1.091
Type	03C	2.88	0.515	0.390	12	1.042
Type	04C	2.805	0.515	0.390	2	1.006
Type	9	2.705	0.515	0.390	1	0.916
Type	10	2.767	0.515	0.390	1	0.941
CORNER	01C	4.563	0.515	0.390	2	1.595
CORNER	02C	4.452	0.515	0.390	2	1.521
Type	11	1.408	0.515	0.390	1	0.643
Type	12	2.936	0.515	0.390	1	1.020
					830	