

HSBC Headquarters, Birmingham

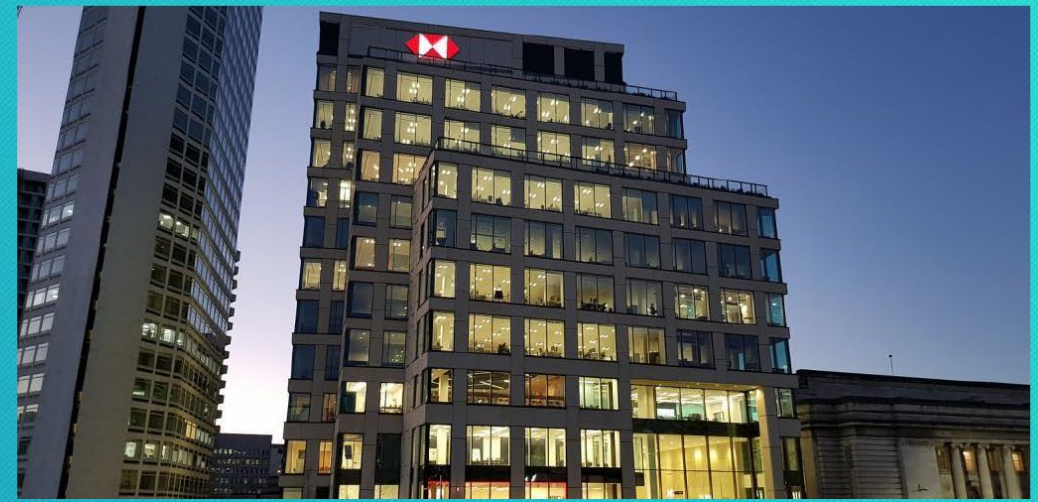


Introduction

HSBC UK's new headquarters in Birmingham spans 11 floors and employs over 2500 people, creating 700 new jobs.

The complex benefits from having an on-site gymnasium, dance studio and a training centre. It is the first building in Birmingham to be constructed to LEED (Leadership in Environmental and Energy Design) Gold accreditation, with sustainability at the heart of its design.

Both Henley Stone Ltd and Smart Crosby International Ltd are very proud to have been involved with this magnificent and iconic building.



HSBC Headquarters, Birmingham



Scope -	Construction of the new HSBC HQ
Client -	Galliford Try
Installer -	Henley Stone Specialists Ltd
Designer -	Smart Crosby International (SCI)
Product -	Grade 18p GRC Cladding panels & brackets.
Quantity -	7,500m ²
Completion dates -	April 2018

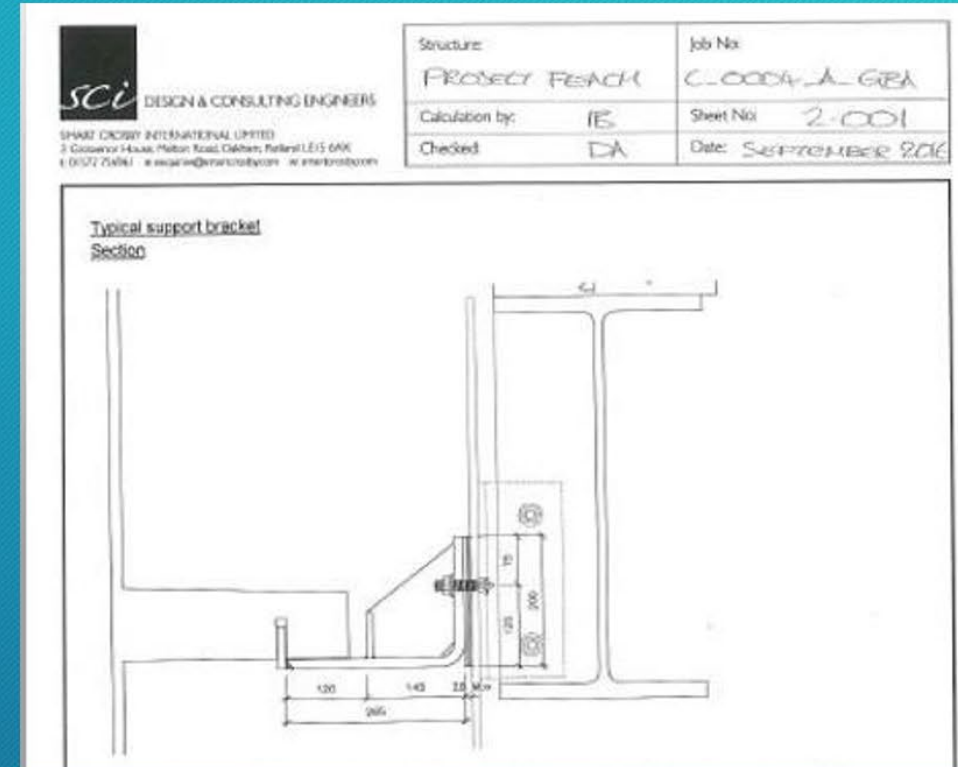
Detailed Design



DESIGN & CONSULTING ENGINEERS



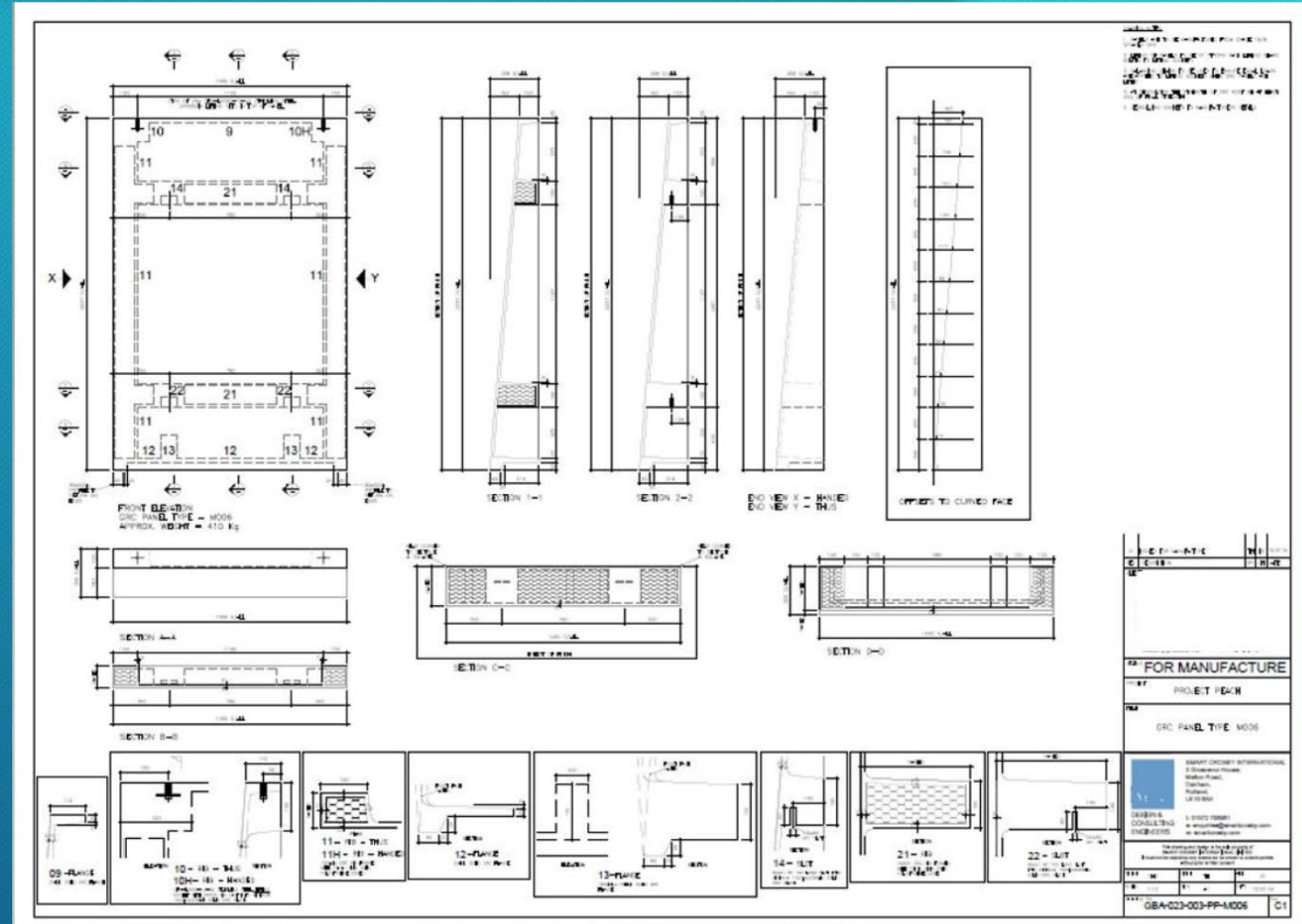
- Comprehensive detailing commissioned to SCI, included preparation of Key plans, GA Drawings, fabrication drawings [for fixings and GRC Panels], static calculations and design warranty.
- The detailing also encompassed all interface liaison with related trades, the install sequencing and mutually agreed tolerances.
- A substantial quantity of the GRC Panels, themselves weighing approximately 650kg, were to be attached directly to Metsec/SFS substrate. This incredibly challenging, indeed ground breaking, constraint for Grade 18P GRC Cladding, achievable via the deployment of Localized PFCs within the substrate.



Drawings



Detail Fabrication Drawings were produced for all Panel Types. This included calculated Lifting Sockets/Points and all Mortices to accommodate pre-installed site bracketry....



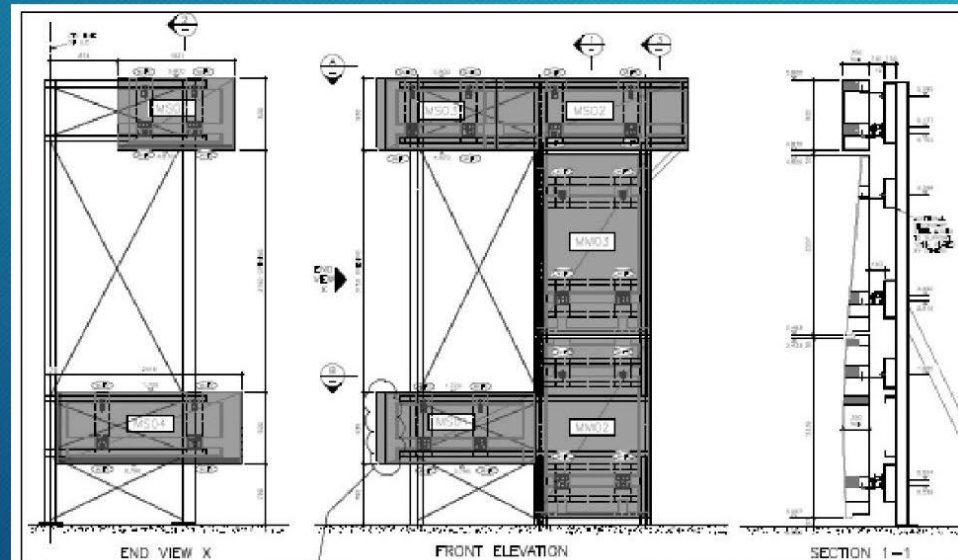
Mock up Installation



DESIGN & CONSULTING ENGINEERS



An extensive “as built”, full size mock-up arrangement was designed and installed to ensure all fundamental aspects of lifting, installation, bracketry and tolerances, etc, could be accommodated.



Pull Testing



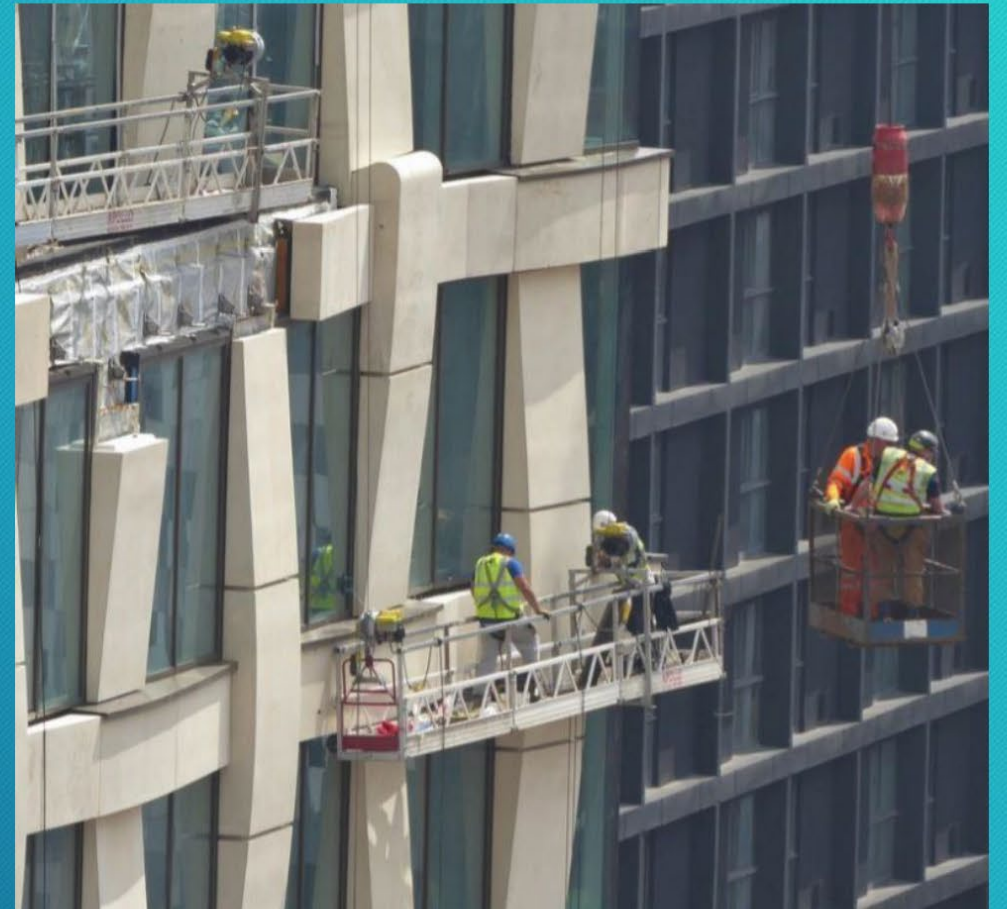
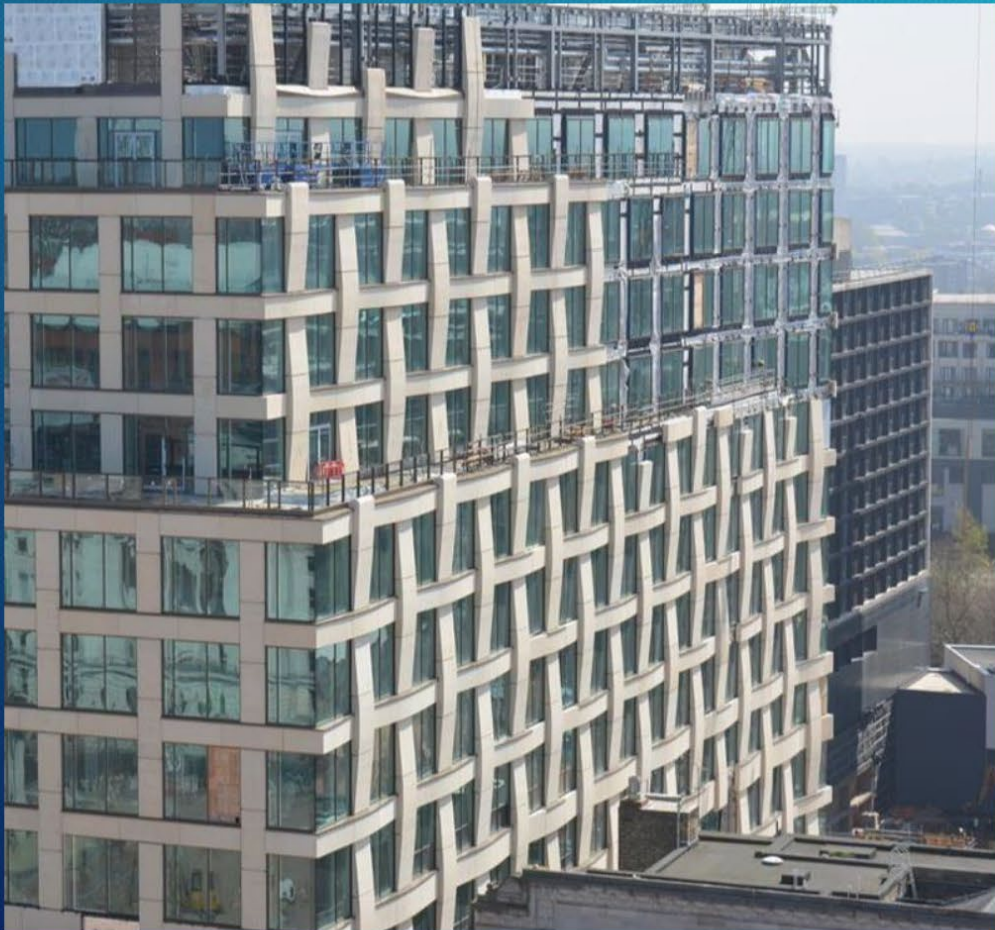
- The large format panels, linked with the associated risks of a congested and restricted site, necessitated absolute confidence in the “cast in” lifting Sockets.
- Therefore, each individual Lifting Socket was tested prior to dispatch to ensure SWL compliance.
- A number of Destruction Tests were also carried out to ensure compliance with Design Loads.
- An example of the full-scale destruction test is shown in the adjacent image.



Gallery



DESIGN & CONSULTING ENGINEERS

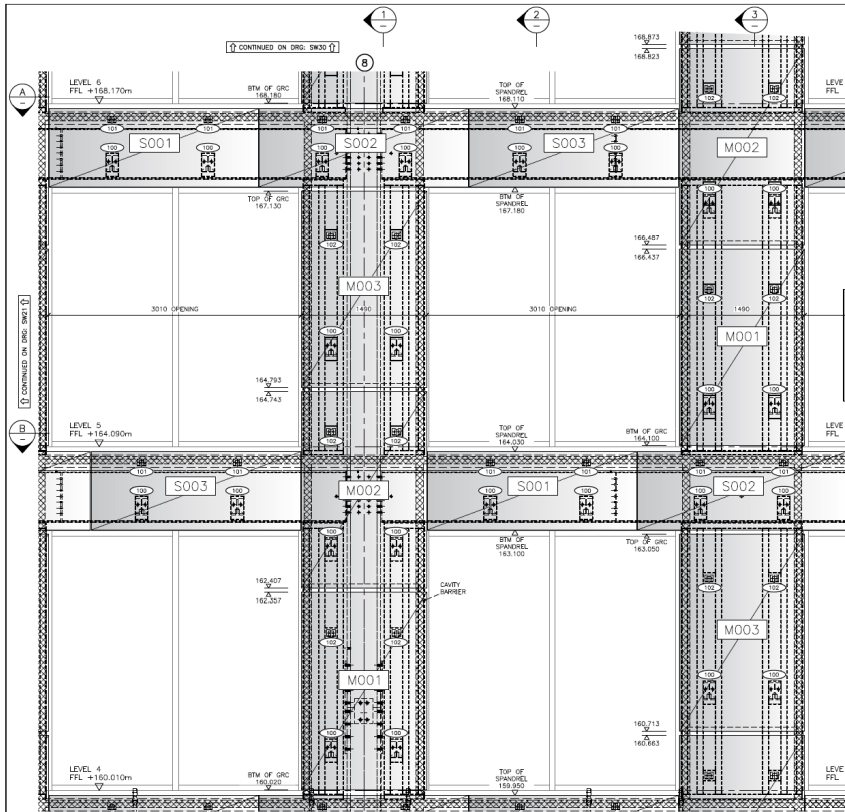




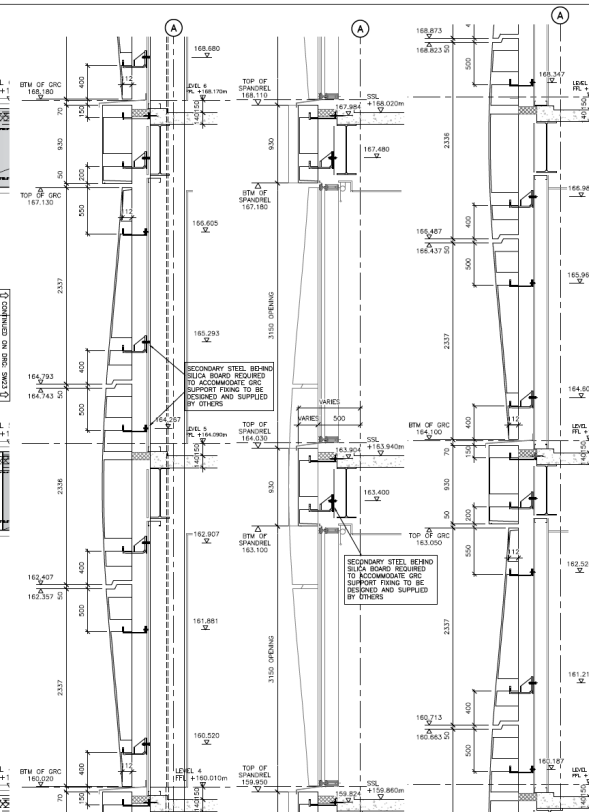
**HENLEY**
STONE
& GLASS REINFORCED CONCRETE
SPECIALISTS

sci





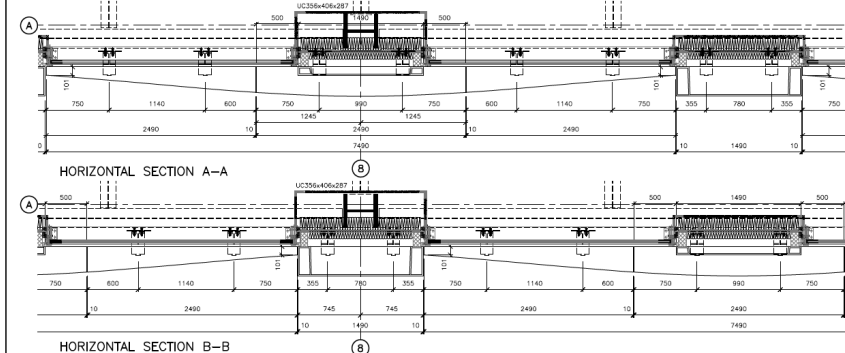
SOUTH WEST ELEVATION, LEVEL 4-6, GRIDLINE 8



VERTICAL SECTION 1-1

VERTICAL SECTION 2-2

VERTICAL SECTION 3-3



HORIZONTAL SECTION A-A

HORIZONTAL SECTION B-B

FOR GA LOCATION PLEASE SEE
KEY ELEVATION DRAWING
ACPP-WC05-HST-23-003-PP-1003

GRC SCHEDULE		FIXING SCHEDULE	
Panel Ref.	Quantity	Fixing Ref.	Quantity
M001	2	100	24
M002	2	101	12
M003	2	102	12
S001	2		
S002	2		
S003	2		

FIXING DETAILS REFER TO DRAWING SERIES
ACPP-WC05-HST-23-003-PP-0100

REFERENCE KEY	
(A01)	= FIXING DETAIL REFERENCE
(M001)	= GRC PANEL REFERENCE

ALL SCHEDULED QUANTITIES TO BE CHECKED
PRIOR TO MANUFACTURE

AB1 AS BUILT ISSUE	TH	BB	21/12/16
CI ISSUED FOR CONSTRUCTION	TH	BB	25/07/16
PI ISSUED FOR APPROVAL	TH	BB	28/04/16
REV DESCRIPTION	BY	CHK	DATE

HENLEY
STONE
& GLASS REINFORCED CONCRETE
SPECIALISTS

PROJECT
PROJECT PEACH (2 ARENA)

TITLE
**SOUTH WEST ELEVATION
LEVEL 4 - 6 @ GRIDLINE 8
GRC BAY**

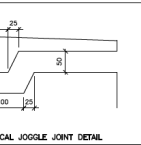
SMART CROSBY INTERNATIONAL
3 Grosvenor House,
Maltby Road,
Chatham,
Rutland,
LE15 6AX

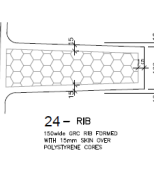
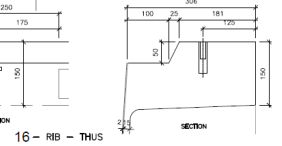
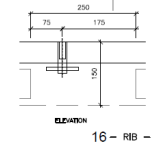
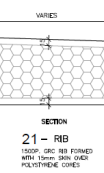
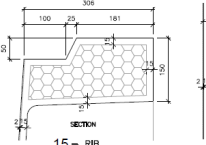
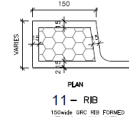
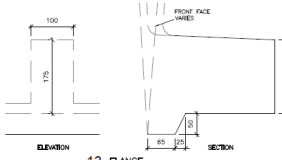
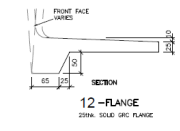
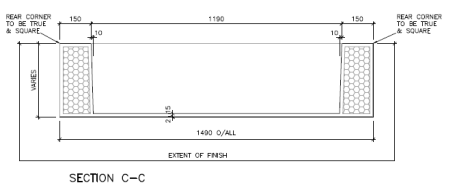
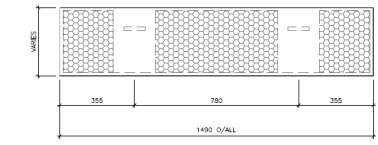
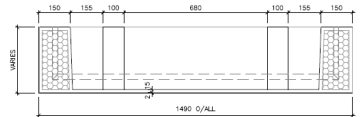
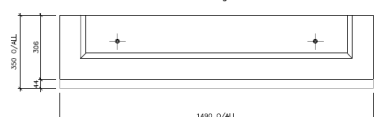
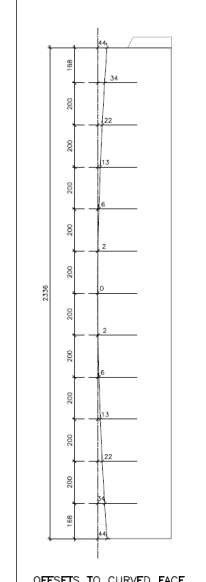
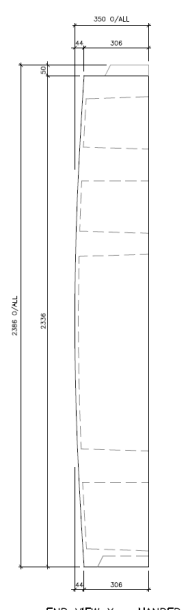
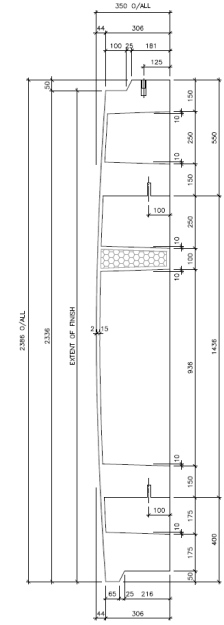
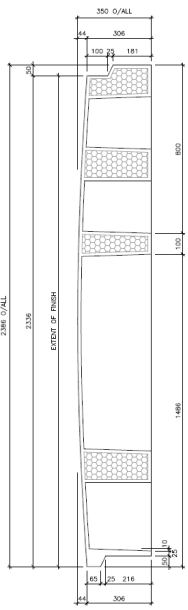
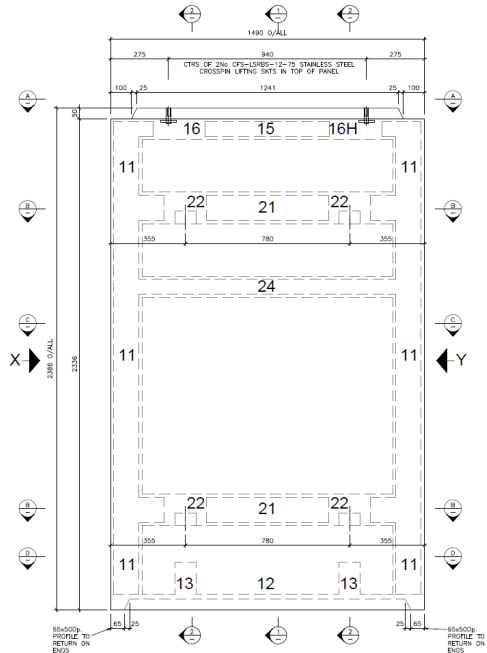
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w: smartcrosby.com

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Drawn	T.D.H	Checked	BB	App	IB
Drawn	1:25	Scale	A1	Date	17.03.16
Drawing No	ACPP-WC05-HST-23-003-PP-SW22				Rev
					AB1

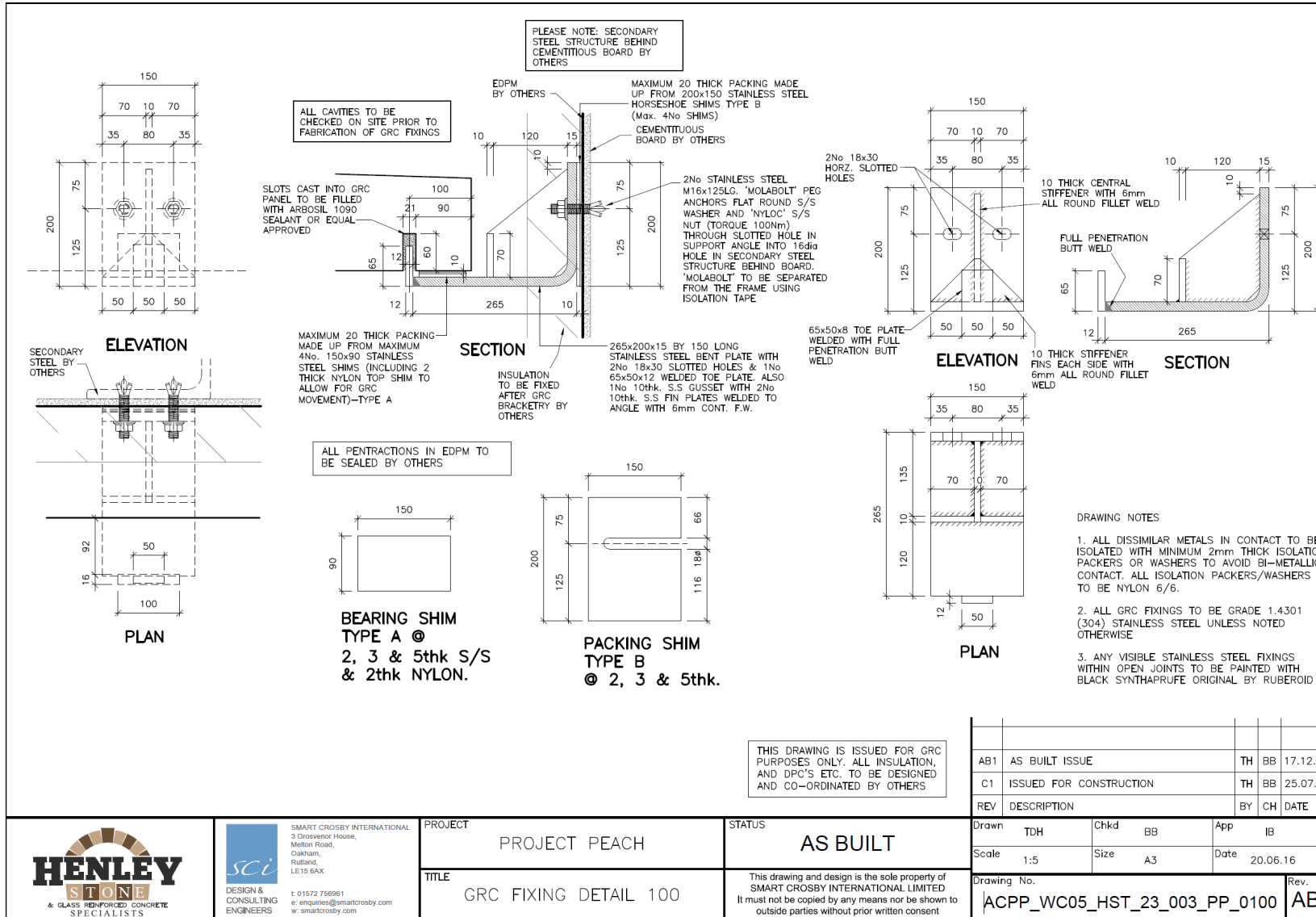
THIS DRAWING IS ISSUED FOR GRC PURPOSES ONLY. ALL OTHER CLADDING AND WINDOWS ARE TO BE DESIGNED AND ENGINEERED BY OTHERS





- GENERAL NOTES**
1. PANELS ARE TO BE MANUFACTURED FROM GRADE 15/8 SPRAYED GRC
 2. LIFTING OF PANELS TO BE BY STRIKING BACK LIFTING BEAMS BELT TO LIFTING SOCKETS
 3. BRANCHED CHAINS TO BE USED TO ENSURE EQUAL LOADS ARE APPLIED TO LIFTING SOCKETS WHEN GRC PANELS ARE LIFTED
 4. AT DEMOLISHING THE STRENGTH OF GRC MUST BE AT LEAST 25% OF FINAL STRENGTH
 5. DEMOLISHING SOCKETS TO MANUFACTURERS DETAILS

C1	ISSUED FOR MANUFACTURE	TH	18	05/05/14
REV	DESCRIPTION	BY	CH	DATE
 HENLEY STONE & GLASS REINFORCED CONCRETE SPECIALISTS				
STATUS FOR MANUFACTURE				
PROJECT PROJECT PEACH				
TITLE GRC PANEL TYPE: M002				
SMART CROSBY INTERNATIONAL 2 Grosvenor House, Malton Road, Oakham, Rutland, LE15 6AX				
DESIGN & CONSULTING ENGINEERS 1: 01672 785861 E: enquiries@smartcrosby.com W: smartcrosby.com				
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DRWN	TSH	CHKD	BB	APP JC
DATE	1/10	DATE	AT	DATE 03.05.14
PROJECT NO.	HST-023-003-PP-M002			C1



PLEASE NOTE: SECONDARY STEEL STRUCTURE BEHIND CEMENTITIOUS BOARD BY OTHERS

ALL CAVITIES TO BE CHECKED ON SITE PRIOR TO FABRICATION OF GRC FIXINGS

SLOTS CAST INTO GRC PANEL TO BE FILLED WITH ARBOSIL 1090 SEALANT OR EQUAL APPROVED

EDPM BY OTHERS
 MAXIMUM 20 THICK PACKING MADE UP FROM 200x150 STAINLESS STEEL HORSESHOE SHIMS TYPE B (Max. 4No SHIMS)
 CEMENTITIOUS BOARD BY OTHERS

2No STAINLESS STEEL M16x125SLC 'MOLABOLT' PEG ANCHORS FLAT ROUND S/S WASHER AND 'NYLOC' S/S NUT (TORQUE 100Nm) THROUGH SLOTTED HOLE IN SUPPORT ANGLE INTO 16dia HOLE IN SECONDARY STEEL STRUCTURE BEHIND BOARD. 'MOLABOLT' TO BE SEPARATED FROM THE FRAME USING ISOLATION TAPE

MAXIMUM 20 THICK PACKING MADE UP FROM MAXIMUM 4No. 150x90 STAINLESS STEEL SHIMS (INCLUDING 2 THICK NYLON TOP SHIM TO ALLOW FOR GRC MOVEMENT)-TYPE A

265x200x15 BY 150 LONG STAINLESS STEEL BENT PLATE WITH 2No 18x30 SLOTTED HOLES & 1No 65x50x12 WELDED TOE PLATE. ALSO 1No 10thk. S.S GUSSET WITH 2No 10thk. S.S FIN PLATES WELDED TO ANGLE WITH 6mm CONT. F.W.

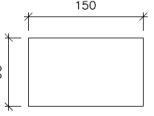
2No 18x30 HORZ. SLOTTED HOLES
 65x50x8 TOE PLATE WELDED WITH FULL PENETRATION BUTT WELD

10 THICK CENTRAL STIFFENER WITH 6mm ALL ROUND FILLET WELD

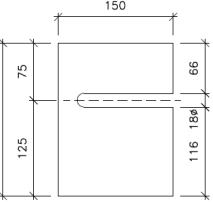
FULL PENETRATION BUTT WELD

10 THICK STIFFENER FINS EACH SIDE WITH 6mm ALL ROUND FILLET WELD

ALL PENETRATIONS IN EDPM TO BE SEALED BY OTHERS



BEARING SHIM TYPE A @ 2, 3 & 5thk S/S & 2thk NYLON.



PACKING SHIM TYPE B @ 2, 3 & 5thk.

DRAWING NOTES

- ALL DISSIMILAR METALS IN CONTACT TO BE ISOLATED WITH MINIMUM 2mm THICK ISOLATION PACKERS OR WASHERS TO AVOID BI-METALLIC CONTACT. ALL ISOLATION PACKERS/WASHERS TO BE NYLON 6/6.
- ALL GRC FIXINGS TO BE GRADE 1.4301 (304) STAINLESS STEEL UNLESS NOTED OTHERWISE
- ANY VISIBLE STAINLESS STEEL FIXINGS WITHIN OPEN JOINTS TO BE PAINTED WITH BLACK SYNTHAPRUF ORIGINAL BY RUBEROID

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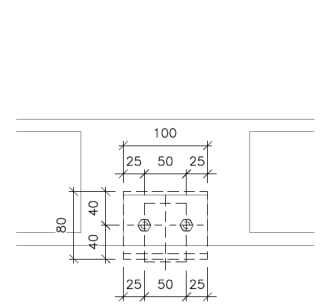
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C1	ISSUED FOR CONSTRUCTION	TH	BB	25.07.17	
REV	DESCRIPTION	BY	CH	DATE	
Drawn	TDH	Chkd	BB	App	IB
Scale	1:5	Size	A3	Date	20.06.16
Drawing No.	ACPP_WC05_HST_23_003_PP_0100			Rev.	AB1



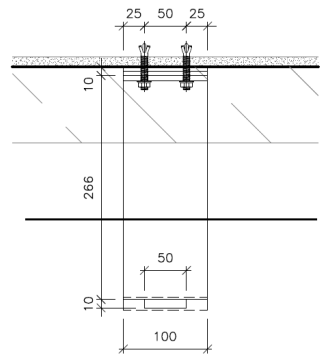
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PROJECT PROJECT PEACH
 TITLE GRC FIXING DETAIL 100

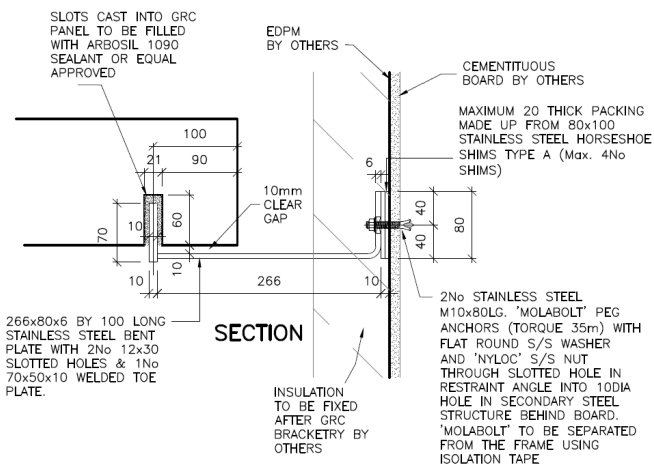
STATUS AS BUILT
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ELEVATION

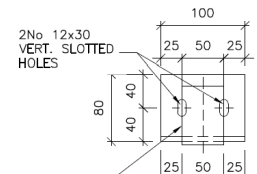


PLAN



SECTION

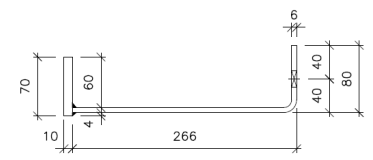
266x80x6 BY 100 LONG STAINLESS STEEL BENT PLATE WITH 2No 12x30 SLOTTED HOLES & 1No 70x50x10 WELDED TOE PLATE.



2No 12x30 VERT. SLOTTED HOLES

70x50x10 TOE PLATE WELDED WITH 4mm CONT F.W ABOVE & BELOW

ELEVATION



PLAN

PACKING SHIM TYPE A
© 2, 3 & 5thk.

THIS DRAWING IS ISSUED FOR GRC PURPOSES ONLY. ALL INSULATION, AND DPC'S ETC. TO BE DESIGNED AND CO-ORDINATED BY OTHERS

DRAWING NOTES

1. ALL DISSIMILAR METALS IN CONTACT TO BE ISOLATED WITH MINIMUM 2mm THICK ISOLATION PACKERS OR WASHERS TO AVOID BI-METALLIC CONTACT. ALL ISOLATION PACKERS/WASHERS TO BE NYLON 6/6.
2. ALL GRC FIXINGS TO BE GRADE 1.4301 (304) STAINLESS STEEL UNLESS NOTED OTHERWISE

AB1	AS BUILT ISSUE	TH	BB	17.12.18
C3	SLOT SIZE IN SHIM AMENDED	TH	BB	15.11.16
C2	PACKING REDUCED TO 10mm & SIZE OF MOLABOLTS INCREASED TO M10	TH	BB	22.08.16
C1	CONSTRUCTION ISSUE	TH	BB	18.08.16
P1	PRELIMINARY ISSUE	TH	BB	20.06.16
REV	DESCRIPTION	BY	CH	DATE



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Milton Road,
Oakham,
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LE15 6AX

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PROJECT	PROJECT PEACH
TITLE	GRC FIXING DETAIL 102

STATUS	AS BUILT
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Drawn	TDH	Chkd	BB	App	IB
Scale	1:5	Size	A3	Date	20.06.15
Drawing No.	ACPP_WC05_HST_23_003_PP_0102			Rev.	AB1