

ST**M** 24.06.24

FIRST FLOOR SOFFIT AND GRC COLUMN CLADDING

Contents

Precedents

Piccadilly Place, Manchester

Current Arrangement - Reflected first floor external soffit plan

Proposed subcontractor section

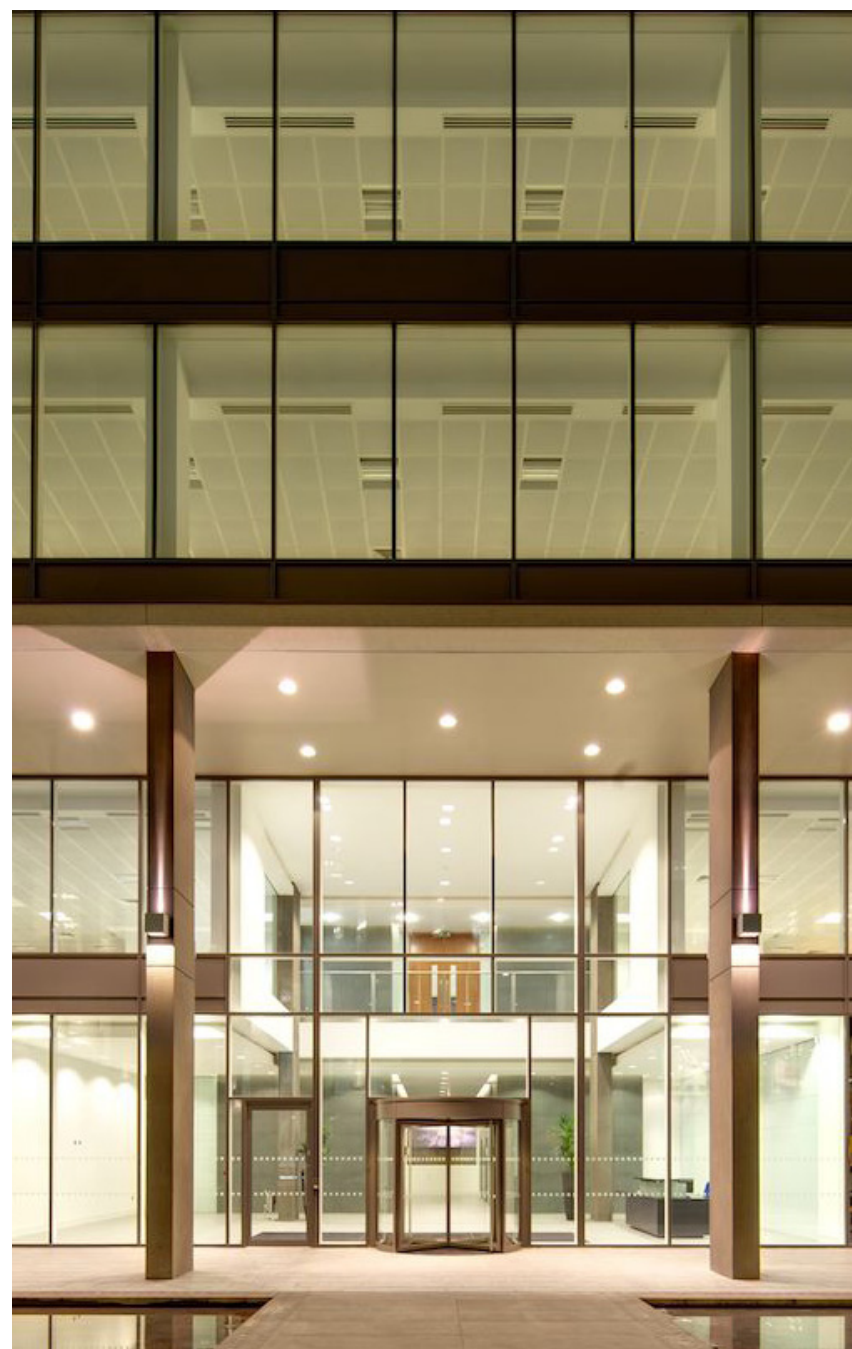
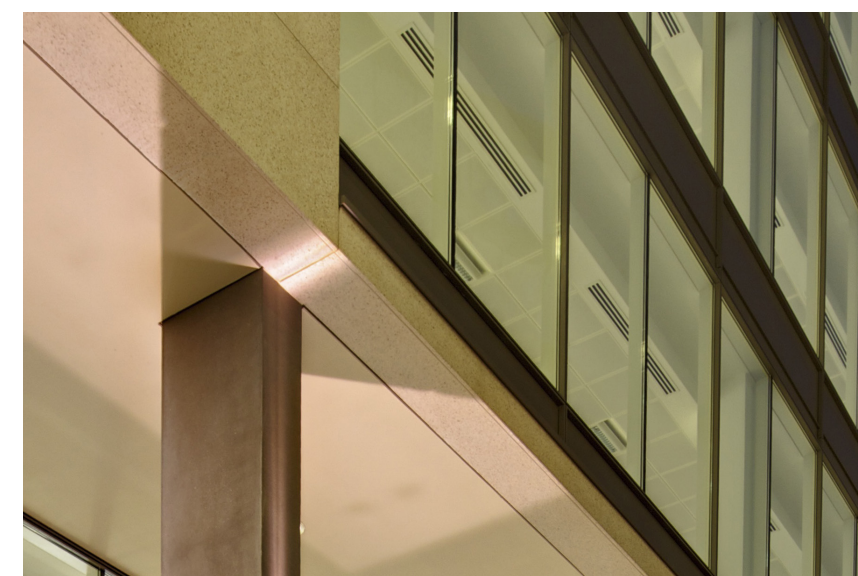
Mitred and chamfered corner (proposed)

GRC Column robustness

GRC Panel - Method Statement for repairs

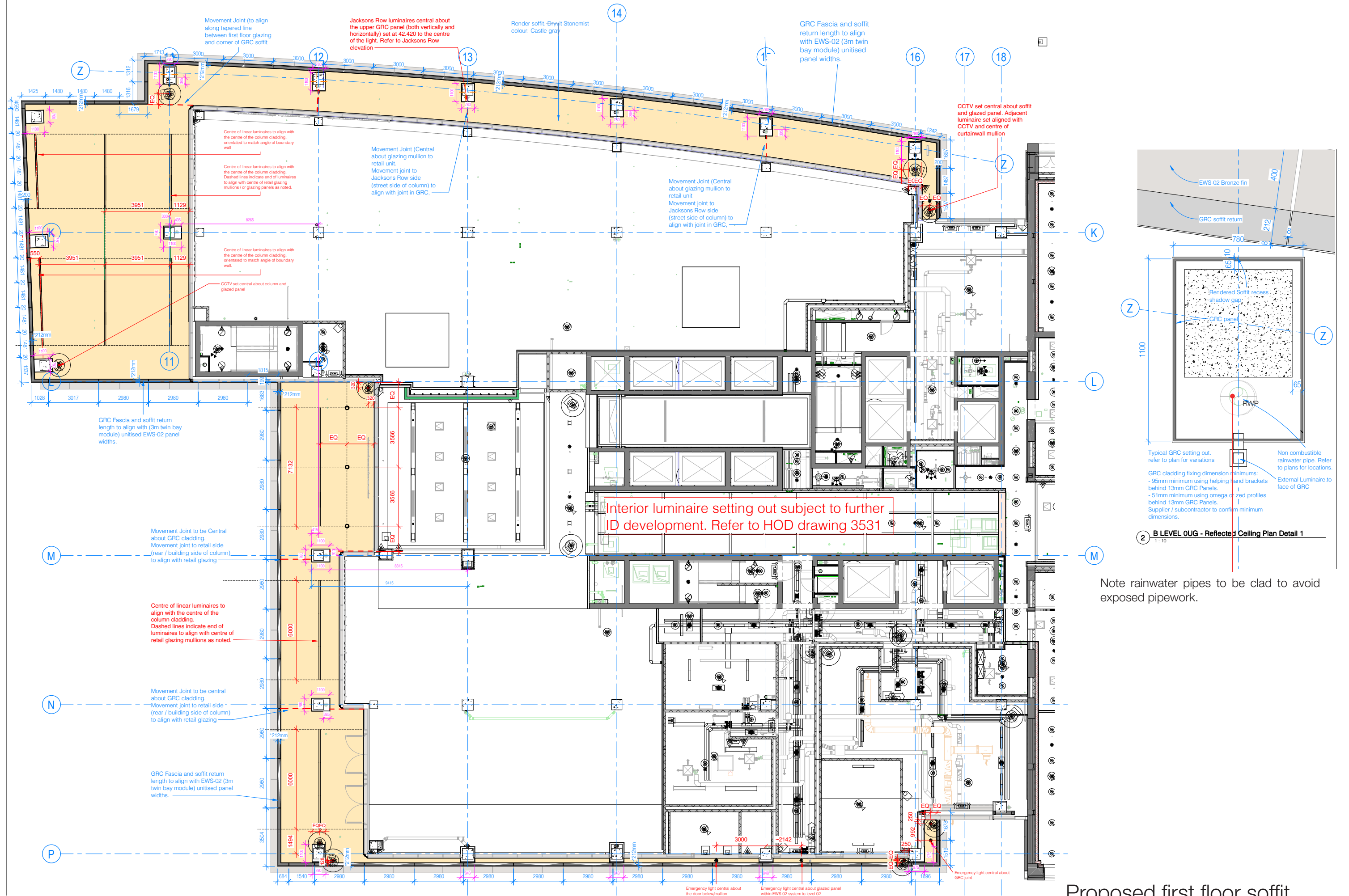
Appendices:

- Reider Fibre C impact test data sheet
- Repair Method Statements and Data Sheets
- GRC Column - Methodology for replacing a GRC Column Casing Panel

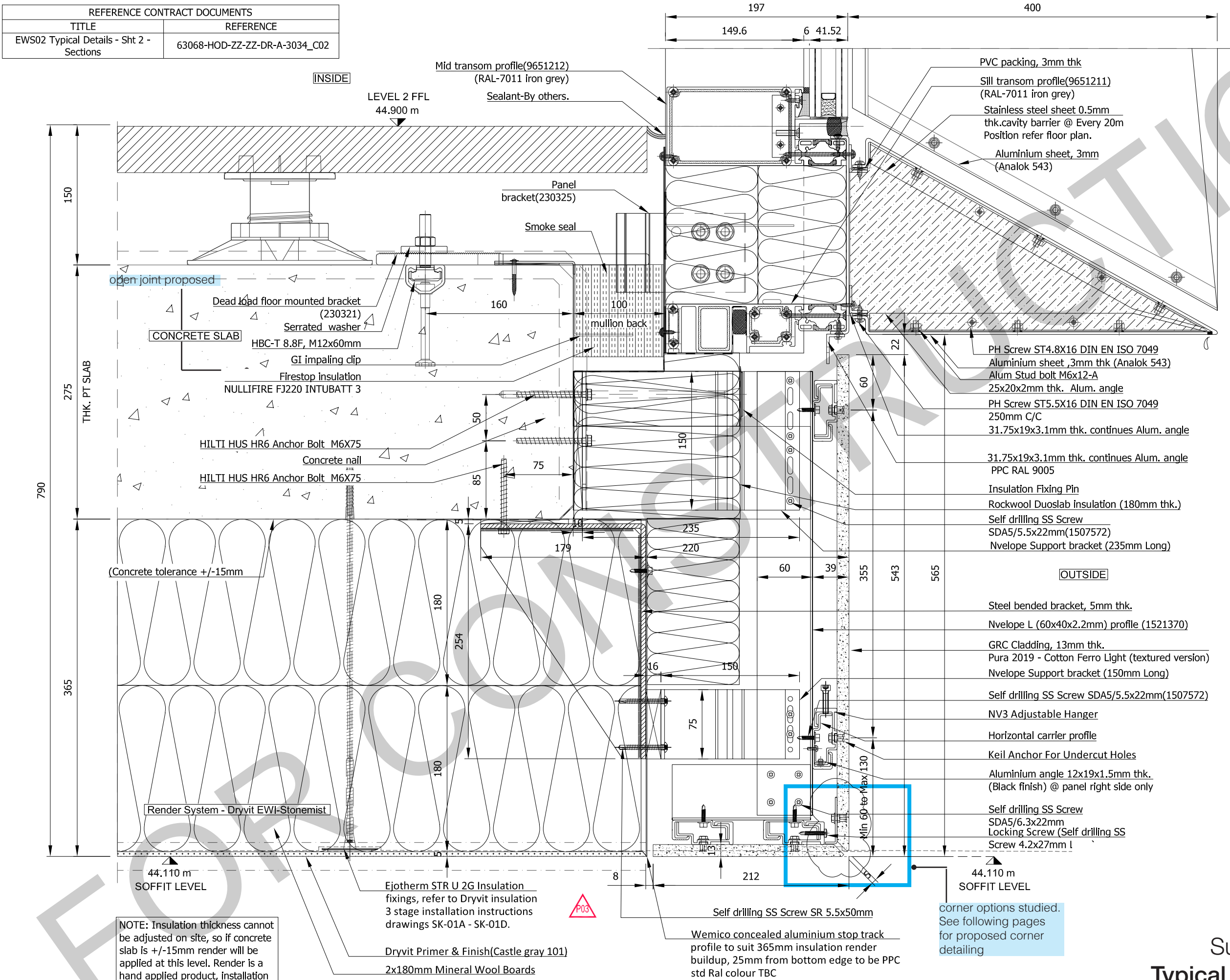


Concrete cladding and fascia panel. Monolithic soffit - High build up polymeric painted soffit on Bluclad cementitious soffit board.

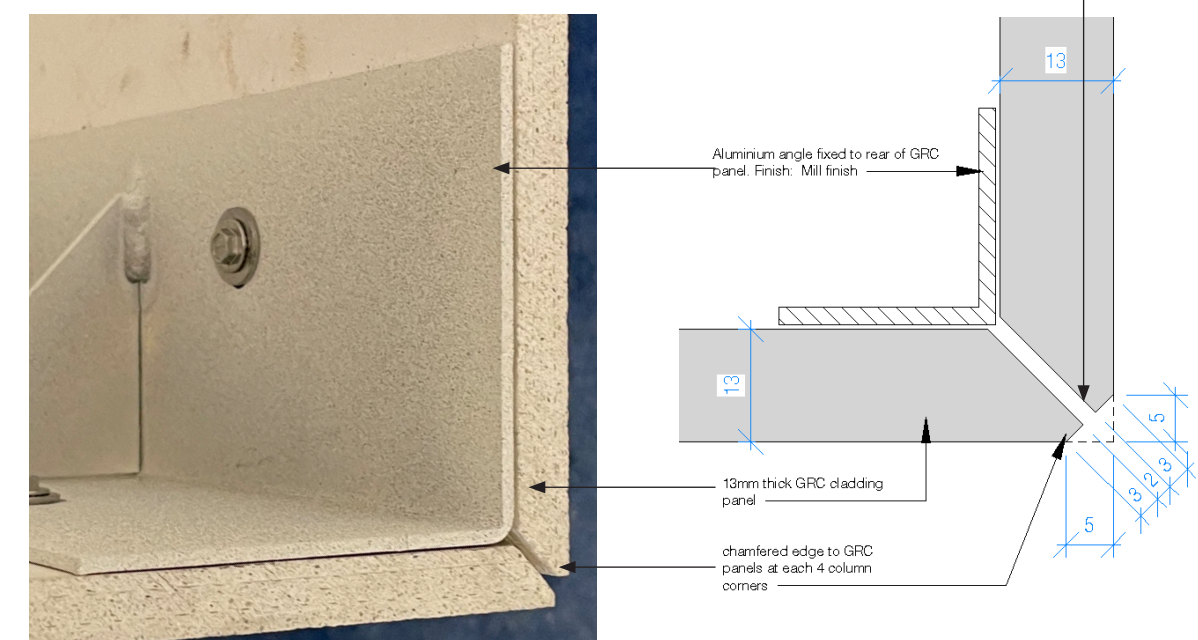
Piccadilly Place 4, Manchester
Building precedent



REFERENCE CONTRACT DOCUMENTS	
TITLE	REFERENCE
EWS02 Typical Details - Sht 2 - Sections	63068-HOD-ZZ-ZZ-DR-A-3034_C02



Subcontractor drawing
Typical Vertical Soffit detail



Pros:

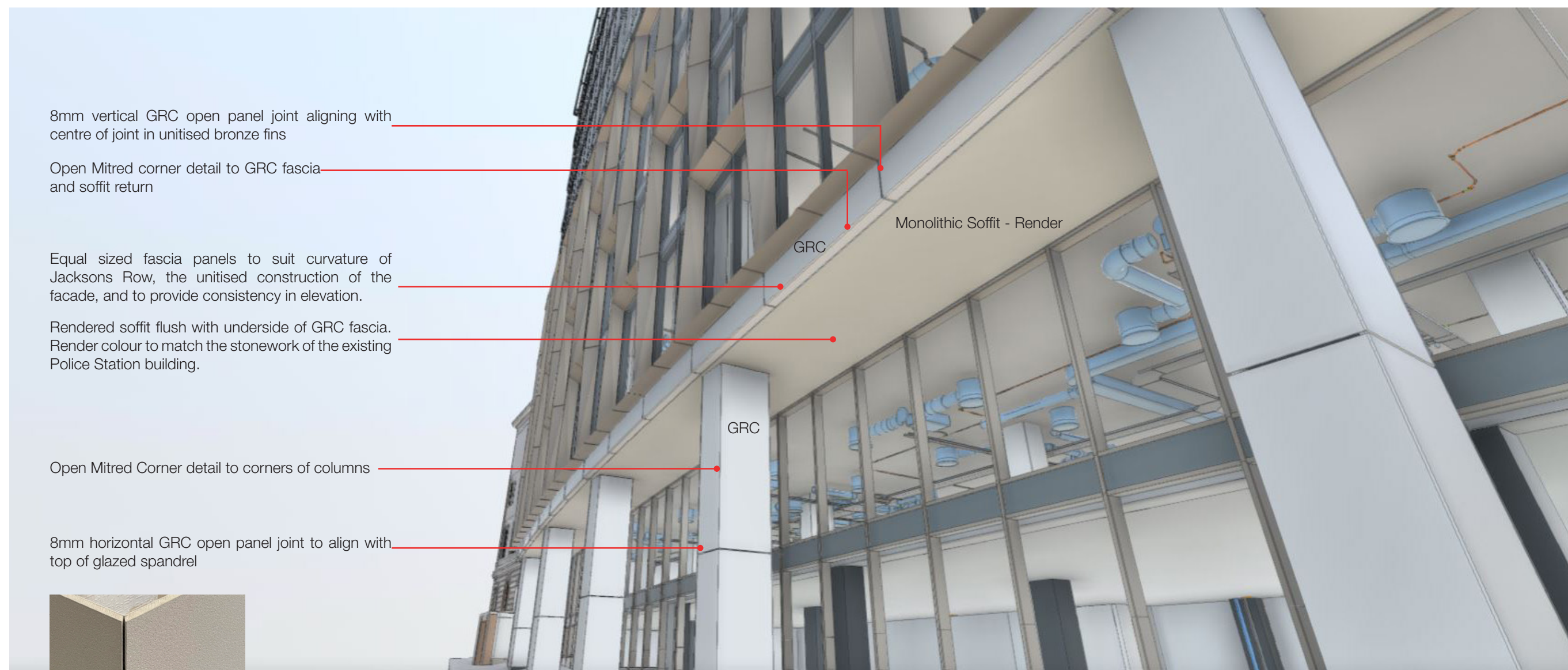
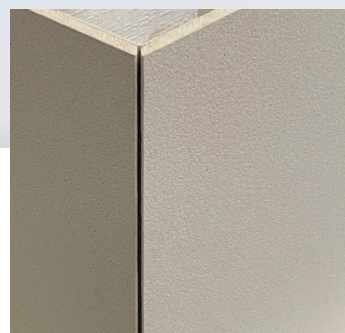
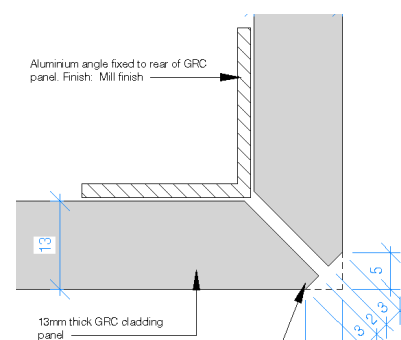
- Mid range cost (albeit higher than open mitred corner)
- Narrow visible gap to corner
- Neat appearance
- Robust corner
- No additional vertical joint required

Cons:

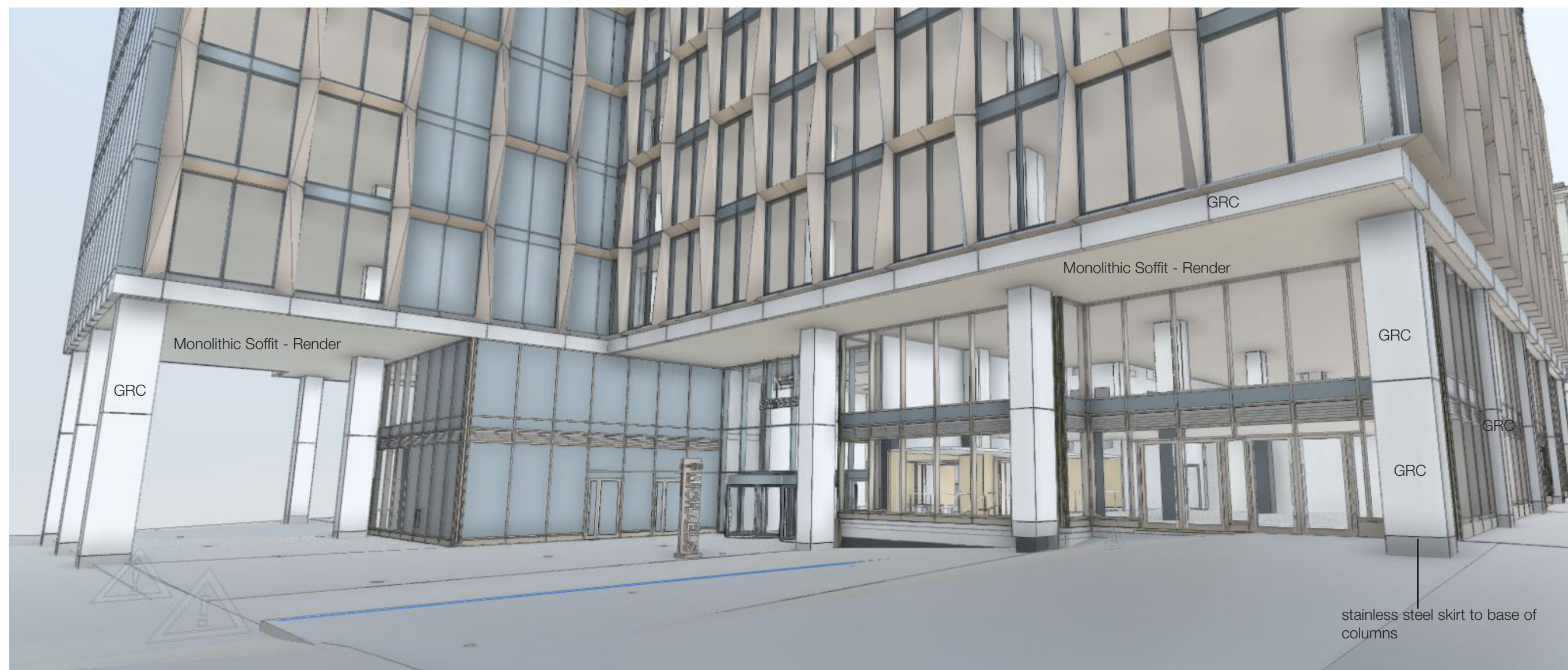
- Visible open jointed corner - (albeit minimal)

Corner Types

Mitred Corner (PROPOSED) (close mitred / chamfered)



Perspective
Fascia / soffit study (PROPOSED) - Mitred Corner detail (close mitred / chamfered)



Perspective from Bootle Street looking into new Square
(Landscape modelling omitted)



Perspective
Fascia / soffit study (PROPOSED) - Mitred Corner detail (close mitred / chamfered)

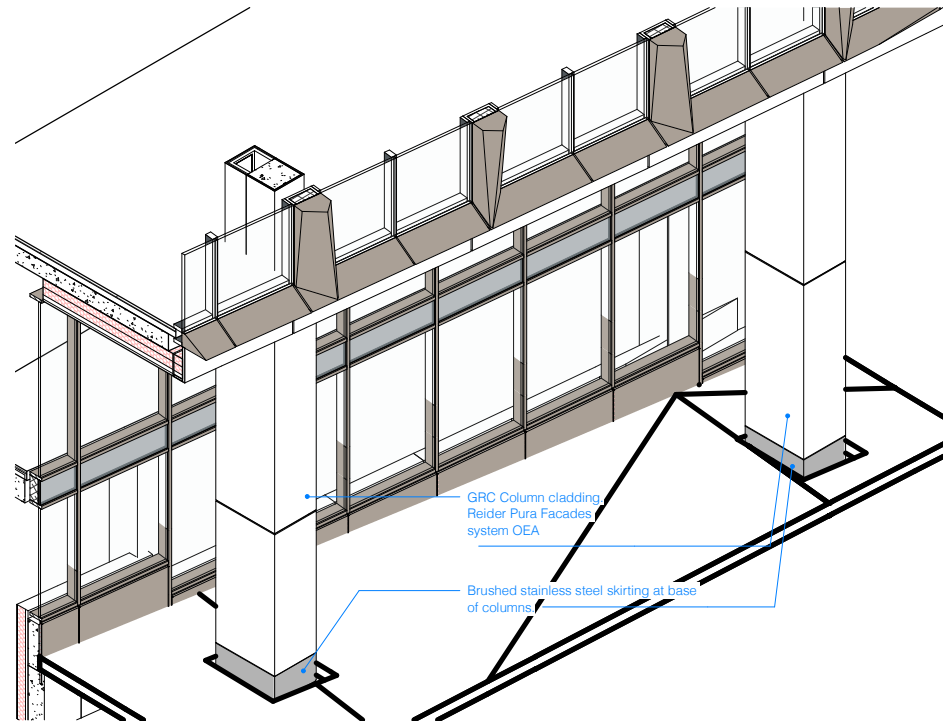


Elevation extracts (lower levels)
Fascia / soffit study (PROPOSED)

DO NOT SCALE
Work to annotated dimensions only. Read drawings in conjunction with relevant specification, Structural Engineers' and Services Engineers' drawings. Confirm all dimensions before commencement of any work on site or fabrication.

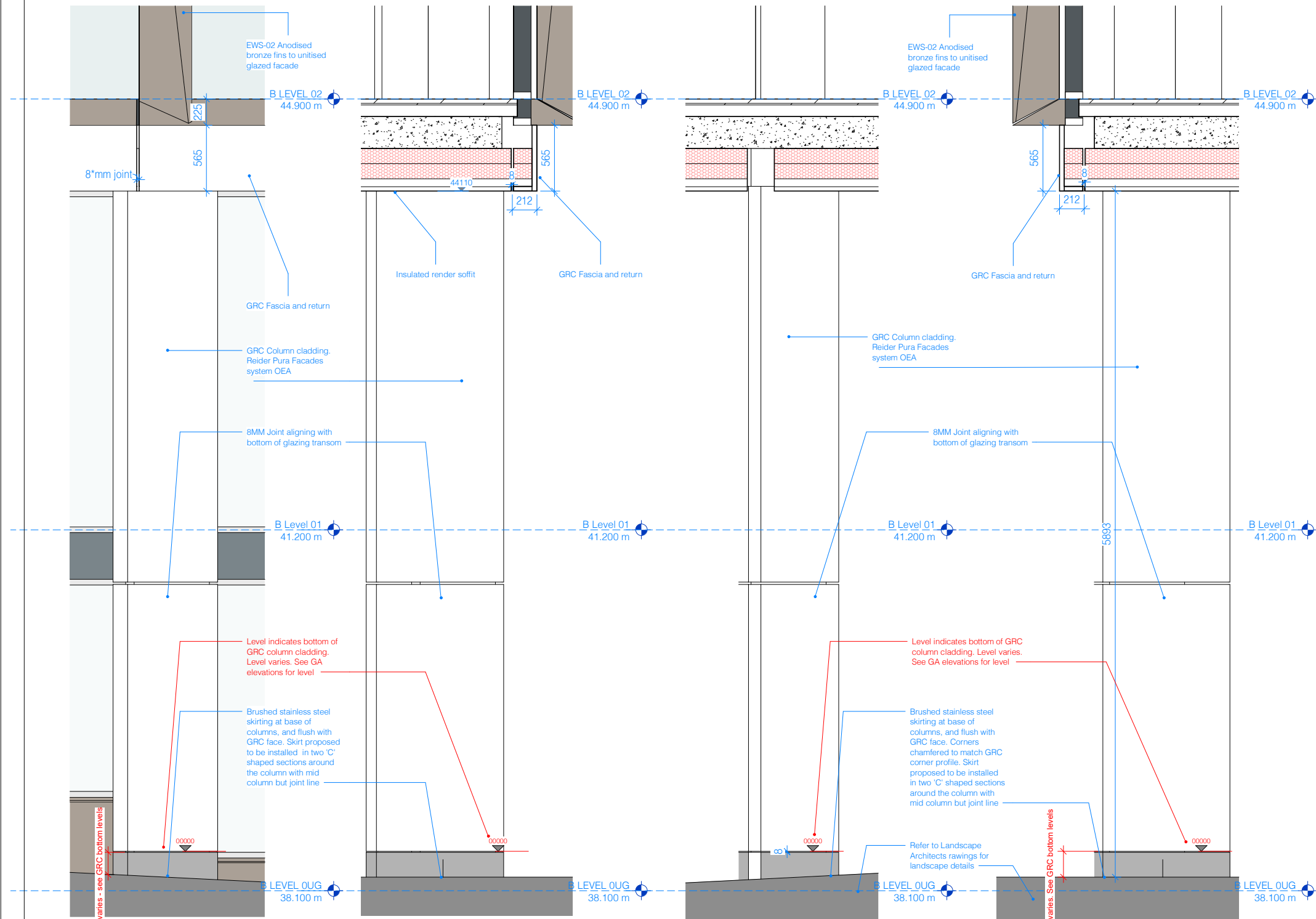
Refer to GA elevations for further information.

Refer to HOD drawing 3133 for RCP and column cladding casing dimensions



2 Typical External Column - Axo

ALL EXTERNAL MATERIALS SUBJECT TO PLANNING APPROVAL

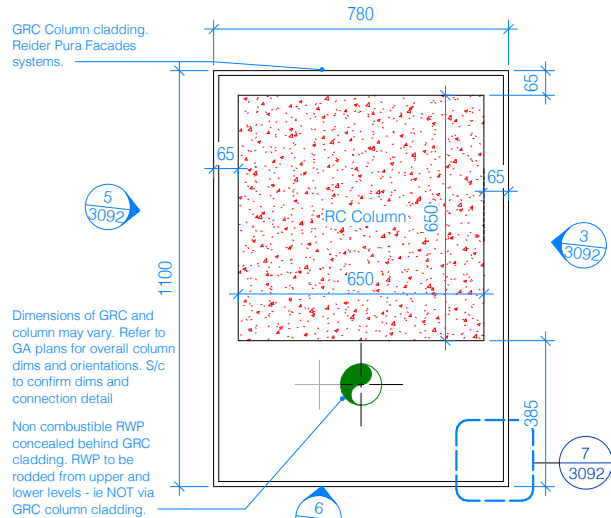


4 Typical GRC Column - Front Face

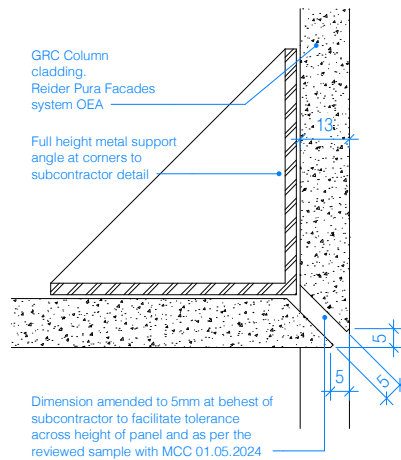
3 Typical GRC Column - Left Face

6 Typical GRC Column - Rear Face

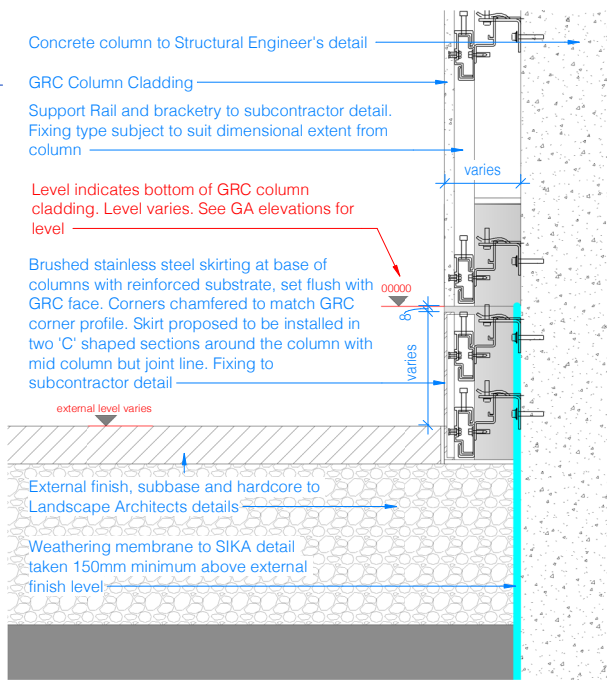
5 Typical GRC Column - Right Face



1 Typical External Column - Plan



7 Typical External Column - Plan Corner detail



9 Glazing Section - GRC column base

C01 Update to latest s/c info 2024.06.24
P01 Issue for subcontractor detail 2024.02.07
Rev: Details: Date:

client:
ST M + BOWMER KIRKLAND
project:
St. Michaels
job number:
0601
status:
STAGE 4

title:
Typical External Column

scale: As indicated
drawn by: HOD
@ A1

drawing number:
3092

drawing number BS protocol:
63068-HOD-ZZ-ZZ-DR-A-3092

current revision date: 2024.06.24
revision: C01

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hodd+partners

GENERAL SPECIFICATION:

Glazing System: (Schüco)
SCHÜCO STICK CURTAIN WALL SYSTEM FWS 50SG & FWS 50

Finishes: Internal : Profile RAL 7011 iron grey
Outside : Profile - Analok 543
Outside : Aluminium flashing - Analok 543

Grade: All external exposed screws grade A4-70
GI sheet DX51D, Steel No. 1.0917 according to BS EN 10346 - TBC

LEGEND: Vision Glass
Spondrel Glass
Aluminium sheet
GRC Cladding

Glass Specification:

G06

Glass Type: G06-VISION GLASS (37.52 mm THK.)
Outer pane:10.76mm thick annealed pvb Laminated SN75, Ground edges
Cavity:16mm wide,90% argon, black warm edge spacer
Inner pane:10.76mm annealed Laminated, Ground edges

G08

Glass Type: G08-VISION GLASS (41.52 mm THK.)
Outer pane:10.76mm thick annealed pvb Laminated SN75, Ground edges
Cavity:20mm wide,90% argon, black warm edge spacer,schüco plastic pocket profile 268201
Inner pane:10.76mm annealed Laminated, Ground edges

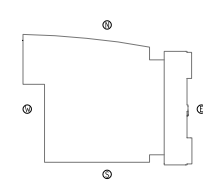
G10

Glass Type: G10-SPANDREL (36 mm THK.)
Outer pane: 8mm thick Heat soak toughened
Cavity: 20mm wide 90% argon, black warm edge spacer
Inner pane: 8mm Heat soak toughened + enamel coating RAL 7011 (face #4)

DRAWING STATUS

A NO COMMENTS
Proceed to Manufacture &
Construction.
B MINOR COMMENTS
Incorporate Comments -
Proceed to Manufacture &
Construction.
C MAJOR COMMENTS
Drawing to be revised and
re-issued for Approval

KEY PLAN:



PLEASE MARK UP DRAWING WITH COMMENTS AND PROVIDE STATUS FOR CLARITY

HOD 25.04.24
STATUS B

C02	GRC PANEL UPDATED	19/04/2024
C01	ISSUED FOR CONSTRUCTION	12/09/2023
P03	GRC COLUMN CLADDING UPDATED	20/06/2023
P02	DRAWING REVISED	17/02/2023
P01	ISSUED FOR APPROVAL	07/11/2022
Rev:	Description:	Date:

Project:

ST MICHAELS

Client:



Title:

SHOP DRAWING
TYPICAL COLUMN GRC CLADDING DETAIL

Dwg Status:

FOR APPROVAL

Date: 16/04/2024 Scale: 1:5 @ A3

Drawn: SB Checked by: SC

Dwg No: 63068-WSN-ZZ-ZZ-DR-Y-3211 Rev: C02

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WALSIN CDM INFORMATION

SIGNIFICANT HEALTH AND SAFETY INFORMATION

WORKING AT HEIGHT	☒
CLEANING & MAINTENANCE	☐
MANUAL HANDLING	☐
HAZARDOUS SUBSTANCES	☐
OTHER	☐
DESCRIPTION	

OVERALL LENGTH IS LONGER THAN
PROPOSED BUT ACCEPTED ON
BASIS THAT THE FRONT EDGE
REMAINS ALIGNED WITH JUNCTION
WITH SOFFIT.

ANGLED BRACKET AT ALL 4 NO.
CORNERS EXTENDS FULL HEIGHT
AND A HORIZONTAL COVER PLATE AT
THE CORNER TO MITIGATE VIEW S
INTO THE SYSTEM

01
3286

01
3286

01

TYPICAL COLUMN GRC CLADDING DETAIL
Scale : 1:5

REFERENCE CONTRACT DOCUMENTS

TITLE	REFERENCE
Internal/External Column Plan Detail	63068-HOD-ZZ-ZZ-DR-A-3094-C02

3. EXPOSURE CATEGORIES AND CLASSES

Note: Tables 1 to 2 are taken from CWCT TN76.

Table 1 - Classes for serviceability performance

Class	Definition	Explanation/Examples
1	No damage.	No damage visible from 1m, and Any damage visible from closer than 1 m unlikely to lead to significant deterioration.
2	Surface damage of an aesthetic nature which is unlikely to require remedial action.	Dents or distortion of panels not visible from more than 5m (note visibility of damage will depend on surface finish and lighting conditions – damage will generally be more visible on reflective surfaces), and Any damage visible from closer than 5 m unlikely to lead to significant deterioration.
3	Damage that may require remedial action or replacement of components to maintain appearance or long term performance but does not require immediate action.	Dents or distortion of panels visible from more than 5 m, or Spalling of edges of panels of brittle materials, or Damage to finishes that may lead to deterioration of the substrate.
4	Damage requiring immediate action to maintain appearance or performance. Remedial action may include replacement of a panel but does not require dismantling or replacement of supporting structure.	Significant cracks in brittle materials e.g. cracks that may lead to parts of tile falling away subsequent to test, or Fracture of panels causing significant amounts of material to fall away during test.
5	Damage requiring more extensive replacement than 4.	Buckling of support rails.

Extract from Reider Fibre C impact Test - Vinci test Centre.
Title: Hard body impact testing a Fibre C cladding system
Certificate of Test Number: 29288 rev2. See appendix for full document

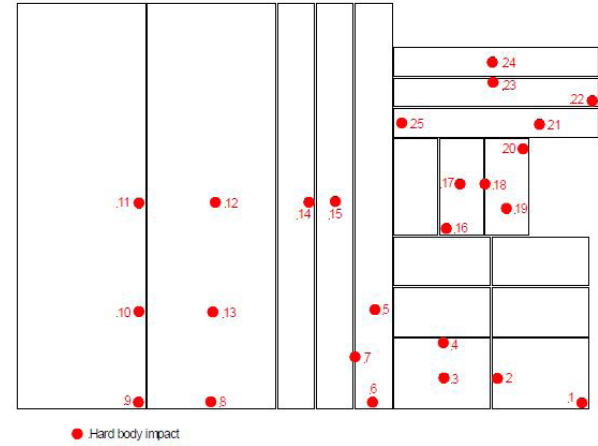
6. TEST RESULTS

Test Date: 26 June 2020

Ambient temperature = 23 °C

FIGURE 1

IMPACT LOCATIONS



GRC Column Robustness

Impact damage test data

In accordance with CWTC TN76 Standard the proposed GRC product test data shows that the product obtains:

Class 1 / Negligible risk
(see extract opposite)

This class is the highest grade of the CWCT TN76

This is same test that has been used to determine the robustness of precast sandwich wall panels on other projects - meeting the same class (1).

Impact Locations tested

The impact locations tested in the above test are as per the extract below (bottom left).

Junction at the corners

The corner detail can product vary and is not covered in the CWTC test data.

The previous pages demonstrates the measures taken by the team to assess the corner detailing.

An additional aluminium angle has been introduced to support the corner detail and tighten the gap between the panels.

The sharp arrises of the birds mouth detail are proposed with a slight chamfer.

Repair Kit

For smaller incidences of damage to the fibreC panel, such as broken-off areas at the edge, cases where material has split, or other flaws up to a size of 1 cm², we recommend the fibreC repair kit. The necessary steps for correcting the flaw in the best possible way are as follows:

Step 1 | Filler

The first step consists of filling in the damaged area. We recommend the following producers or systems for filler:

ARDEX F3
ARDEX F46

All three of the fillers indicated are suitable for repairing the fibreC panels. The materials can be ordered from the respective manufacturer or at your building materials stockist. We draw your attention to the processing guidelines issued by the manufacturers: Rieder Faserbeton-Elemente GmbH is not liable for any guarantee claims in the case of improper use.

Step 2 | Coloured Water-Repellent Agent

After repairing the flaw by using the filler and after observing the required drying period, the coloured-in water-repellent agent must be applied using a suitable brush, to cover up the colour tone of the filler. Rieder Faserbeton-Elemente GmbH offers a suitable coloured-in water-repellent agent for each fibreC standard colour.

The different surface structures - FE Ferro, FL Ferro Light and MA Matt - can be produced with the help of various aids. The smooth panel surface MA Matt is produced by the simple application of the water-repellent agent, using a brush, or a roller made of foam rubber. After it has been applied, the water-repellent agent must be lightly dabbed using a sponge, to produce the structure of the FE Ferro und FL Ferro Light surfaces.

Sources of supply for filler

ARDEX GmbH, Friedrich-Ebert-Straße 45, 58453 Witten, Germany, kundendienst@ardex.de, www.ardex.de
BOTAMENT Systembaustoffe GmbH & Co. KG, Am Kruppwald 1, 46238 Bottrop, Germany, info@botament.de, www.botament.de

Sources of supply for water-repellent agent

Rieder Faserbeton-Elemente GmbH, Glasberg 1, 83059 Kolbermoor, Germany, office@fibreC.com, www.fibreC.com

Extract from Reider Repair Method Statement document.
See appendix for full document

GRC Panel - Method Statement for repairs and replacement

A full method statement for repairs is available for review in the appendix. Further sample tests have been undertaken as below:

If the panel needs to be replaced a separate methodology for replacing a GRC column casing panel can be assessed in the appendix

Sample testing

Photographs of the control sample on site are below demonstrating the damage and then the same panel post repair:



GRC sample damaged

Maintenance and repair of panels
Technical data of GRC panels

see overleaf for further documented pictures during the repair process



image 1



image 2



image 3



image 4 (mid repair)



image 1 (repair)



image 2 (repair)



image 3 (repair)



repaired sample when viewed from 5m

23.04.2024

Sample panel reviewed internally and externally by MCC.

The repairs to the damaged panel were deemed to be unacceptable; requiring more work to reduce the visibility of the repairs.

Maintenance and repair
Sample panel documented repairs



Repaired Sample Panel as viewed externally with MCC 24.05.01

Panel orally accepted by MCC

01.05.2024

Sample panel reviewed internally and externally by MCC.

The panel had been repaired and then viewed externally at the required distance to assess.

The panel was deemed acceptable and to be used as a benchmark for the project during installion.

Appendices

- Reider Fibre C impact test data sheet
- Repair Method Statements and Data Sheets
- GRC Column - Methodology for replacing a GRC Column Casing Panel