Highway Safety Report

The Globe Art Wall, New Quay Street, M3 4BN

Manchester Quays Development (G&S) Ltd

Prepared by:

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SLR Project No.: 410.065761.00001

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Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
01	4 April 2024	Phil Tilby	Phil Tilby	Phil Tilby
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Basis of Report

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1.0 Introduction

Introduction

1.1 SLR has been commissioned by Alter-Projects Ltd on behalf of Manchester Quays Development (G&S) Ltd to produce a Highway Safety Report to support a proposal for the globe media art wall on the eastern façade of No. 1 Quay Street in Manchester (M3 4BN).

1.2 This Highway Safety Report has been prepared to support an application to discharge planning conditions (CDN/23/0826) for the proposals at the above site in Manchester City Council (MCC). The purpose of this report is to assess the highway safety implications of operating the globe art wall at the site, and to address pre-application comments received from Transport for Greater Manchester (TfGM).

1.3 SLR have undertaken a site visit on the 28th March 2024 to assess the proposals.

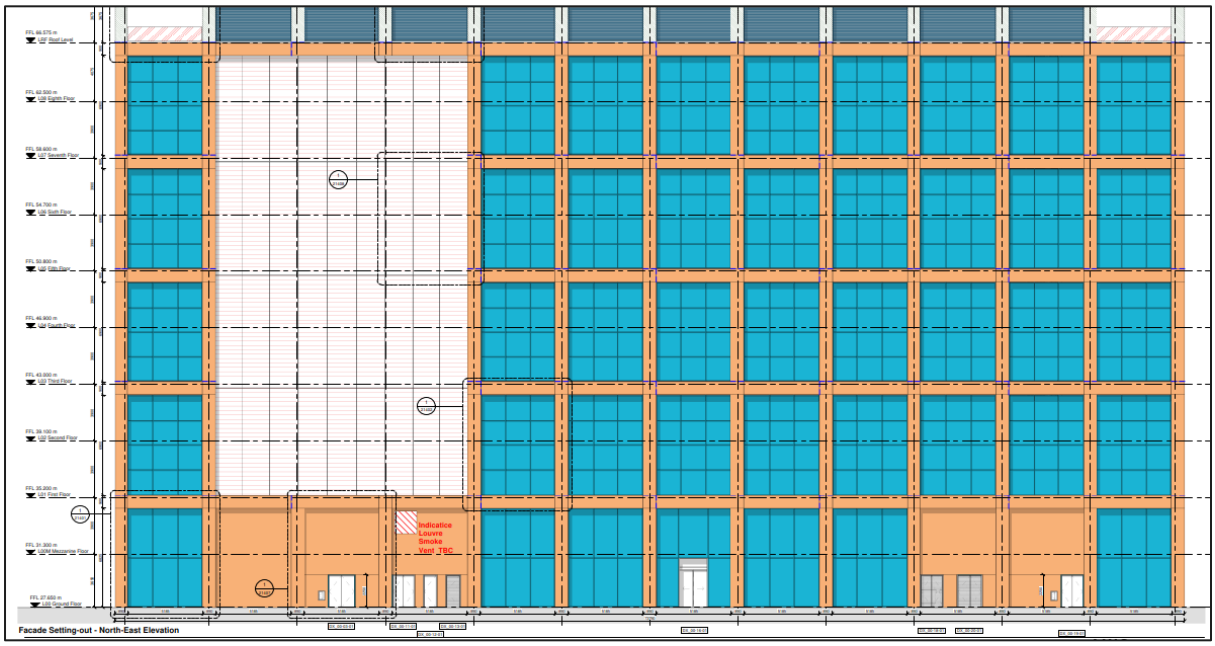
Proposal Site

1.4 The proposal is to install the globe media art wall on the east side of No. 1 Quay Street. The art wall will be 17m wide by 30m high, and it will be positioned approximately 12m above pavement level. It will be installed onto the building at the southeast corner next to the New Quay Street / Quay Street / Gartside Street signalised junction. The art wall will face in a northeast direction across New Quay Street, and this is illustrated in **Figures 1.1 and 1.2**.

Figure 1.1 – Site Location Plan *Source: Google Maps*



Figure 1.2 – No. 1 Quay Street Proposed Northeast Elevation



Key Considerations

1.5 The following factors will be subject to detailed analysis to ensure that no conflicts will arise as a result of the proposal:

i) Proximity to traffic signals at the adjacent junction;

ii) Proximity to controlled crossings;

iii) Sightlines on the key approaches;

iv) Existing accident rates at this location; and

v) Arrangement of the highway layout in the vicinity of the proposal site.

1.6 This document has been prepared in due cognisance of the Transport for London (TfL) document, '*Guidance for Digital Roadside Advertising and Proposed Best Practice*' (2013). It is considered that the guidance document provides a good framework for assessing the suitability of this roadside development proposal to install a LED art wall.

1.7 In addition, it is understood that Transport for Greater Manchester (TfGM) have provided the following pre-application comments:

- The LED screen should not feature any moving images;
- The images should not change too frequently (no greater than once every 10 seconds);
- The luminance levels should be in accordance with recommendations contained within the Institute of Lighting Professionals Lighting Guide – Technical Report Number 5; and

- TfGM require proper photomontages showing the view of the signals on approach to the junction at driver eye height.

Report Contents

1.8 Following the introduction, the structure of this report is as follows:

vi) **Chapter 2** sets out the proposal in more detail and reviews its relationship with the surrounding highway infrastructure and operation;

vii) **Chapter 3** reviews the accident data relevant to the proposal site on the key approaches, and provides some details on approved roadside schemes that comprise of the use of similar technology in their operation; and

viii) **Chapter 4** sets out the summary and conclusions of the report.

2.0 Site Assessment

Development Proposal

2.1 The proposal is to install the globe media art wall on the east side of No. 1 Quay Street. The art wall will be 17m wide by 30m high, and it will be positioned approximately 12m above pavement level. The scheme comprises of a LED Mesh Curtain design with LED RGB nodes at 200mm spacings, and this will be mounted to stainless steel cables. The scheme will provide a digital piece of artwork on the side of the building at No. 1 Quay Street, which will display a series of moving iconic videos making references to the heritage of Manchester, Granada and other iconic TV moments, which effectively transition between each one.

2.2 It will be installed onto the building at the southeast corner next to the New Quay Street / Quay Street / Gartside Street signalised junction. The art wall will face in a northeast direction across New Quay Street to the north of the adjacent signalised junction, and therefore it will not directly align with any of the highway approaches or controlled pedestrian crossings at the New Quay Street / Quay Street / Gartside Street junction.

2.3 The following images (**Figures 2.1 to 2.3**) illustrate the views on the key approaches to the site on New Quay Street, Quay Street and Gartside Street.

Figure 2.1 – Looking Towards the Site from the Quay Street Approach



Figure 2.2 – Looking Towards the Site from the New Quay Street Approach



Figure 2.3 – Looking Towards the Site from the Gartside Street Approach



2.4 It is proposed to operate the art wall as a full-motion display that will show moving images. These will change at a minimum of 10 second intervals with a smooth transition between each one, and this is in line with the TfL guidance and will limit eye dwell time on the art wall from road users. In addition, the scheme will be controlled by conditions in accordance with the Institution of Lighting Professionals 'Brightness of Illuminated Advertisements' (2015) guidance, with luminance limited to 300cd/m2 in the hours of darkness so as not to cause glare.

2.5 Detailed plans showing the proposals for the globe media art wall have been included as **Appendix A** to this report.

Site Description

2.6 The position of the proposed globe media art wall is shown in **Figure 2.4**, and the bottom of the scheme on the side of the building will be approximately 12m above pavement level, which is above the height of standard traffic signal heads as these typically extend to around 3.5m above ground level. It is considered that the location of the art wall at the New Quay Street / Quay Street / Gartside Street junction does not conflict with the traffic signals.

Figure 2.4 – Development Proposal at No. 1 Quay Street



2.7 New Quay Street / Quay Street / Gartside Street is a three-arm junction that is subject to signal control, and the Quay Street arm sits on a bend in the road. All of the approaches to the adjacent signalised junction consist of a single lane, controlled pedestrian crossings and Advanced Stop Lines for cyclists. The surrounding highway network is subject to a 20mph speed limit and is lit.

2.8 Moving images have the potential to distract for a longer period than a static display feature, and therefore the complexity of the surrounding road layout and the existing demands on the road users are key factors for review in the public safety assessment.

2.9 As shown in **Figure 2.1**, the proposal site will be mainly visible from the Quay Street approach to the adjacent signalised junction. The potential effects of the art wall proposals in relation to driver and pedestrian distraction have been considered in more detail below.

New Quay Street Approach

2.10 This link is the northern arm of the adjacent signalised junction and is a single lane approach for straight ahead and left turn movements. This signalised arm comprises of nearside and central island primary traffic signals at the stop line, and an offside secondary signal that is located to the south of the junction. The side on position of the proposed globe media art wall combined with its raised level on the building means that drivers on this approach cannot view the full extent of the proposed scheme in their field of vision looking at the road layout straight ahead. In addition, the position of the proposed art wall and the locations of the primary and secondary traffic signals on this arm will not interact in respect of approaching drivers, and there will be no safety conflict.

Gartside Street Approach

2.11 This link is the eastern arm of the adjacent signalised junction and is a single lane approach for left and right turn movements. This signalised arm comprises of a nearside primary traffic signal at the stop line, and a nearside secondary signal that is located to the west of the junction.

2.12 The position of the proposed globe media art wall to the north of the adjacent signalised junction combined with the building line on the north side of Gartside Street means that drivers on this arm cannot view the full extent of the proposed scheme, as illustrated in **Figure 2.5**.

Figure 2.5 –Gartside Street Arm of the Adjacent Signalised Junction



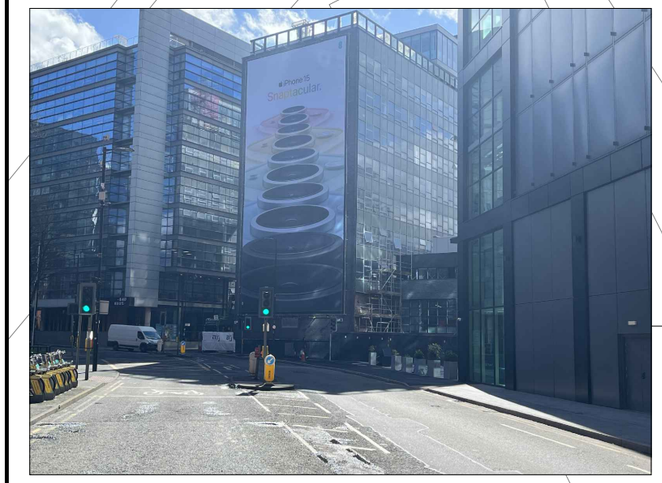
2.13 The driver sightline towards the proposal site at the 25m Stopping Sight Distance (SSD) on this approach to the stop line (critical decision-making distance), is illustrated in **Drawing 410.065761.00001-D100**. It is considered that the proposed art wall position and the locations of the primary and secondary traffic signals that control this arm of the adjacent junction will not interact in respect of approaching drivers at the 25m SSD for the 20mph approach speed, and there will be no safety conflict. From the 25m SSD, the proposed art wall will not be visible by drivers (refer to **Figure 2.3**).

2.14 Vehicles will be making an unopposed left or right turn after exiting the stop line, and it is considered that the demands on the driver will be low in relation to the execution of these movements, and so there will be no safety conflict from the proposed art wall.

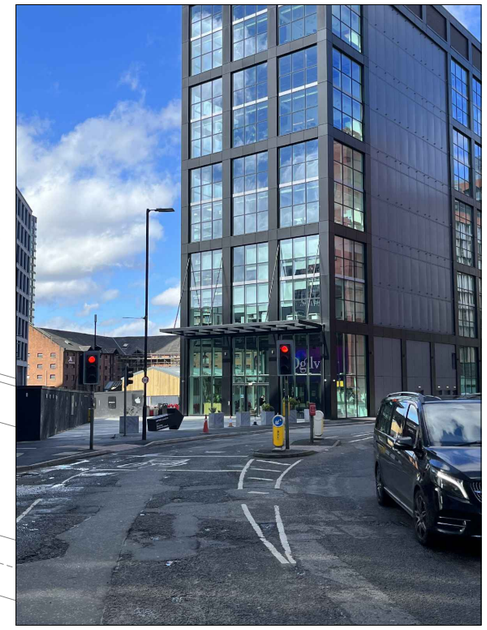
Quay Street Approach

2.15 This link is the southern arm of the adjacent signalised junction and is a single lane approach for straight ahead and right turn movements. This signalised arm comprises of nearside and central island primary traffic signals at the stop line, and an offside secondary signal that is located to the south of the junction.

2.16 The location of the proposed globe media art wall will be broadly consistent with nearside carriageway position on this key approach. The TfL guidance document acknowledges that a digital advertisement is likely to be best located alongside the nearside carriageway to reflect where official road signs would normally be located. Therefore, this will locate the art wall in the driver's eye and reduce the risk of drivers turning away from the road.









Proposed Digital Advertising Display
(17.3m Wide)

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REV.	DETAILS	DRAWN	CHECKED	DATE
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INFORMATION ONLY

Notes:
1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

Traffic Signal Sightline which does not directly affect the Digital Advertising Display - 25m for a 20mph road speed to the traffic signal head (Manual for Streets)

Primary Traffic Signal

Secondary Traffic Signal

Globe & Simpson Art Wall

Manchester Quays Development (G&S) Ltd

Traffic Signal Visibility Sightlines

SLR

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
DJR	PT	03.04.24	1:500 at A3	410.065761.00001-D100	.

2.17 It is considered that approaching drivers will have good visibility and a sight line towards the proposed scheme position from around 90m to the south of the site, and this would give sufficient time for the presence of the art wall ahead to be assimilated without surprise.

2.18 The driver sightline towards the proposal site at the 25m SSD on this approach to the stop line (critical decision-making distance), is illustrated in **Drawing 410.065761.00001-D100**. It is considered that the proposed art wall position and the locations of the primary and secondary traffic signals that control this arm of the adjacent junction will not interact in respect of approaching drivers at the 25m SSD for the 20mph approach speed, and there will be no safety conflict. The proposed art wall will be above and to the right of the two primary traffic signals, and the offside secondary traffic signal is separated further from the proposal site (refer to **Figure 2.1**).

2.19 Vehicles will be making straight ahead movements after exiting the stop line. It is considered that the demands on the driver will be low in relation to the execution of this movement and the right turn into Gartside Street will not have any interaction with the proposal site, so there will be no safety conflict from the proposed art wall.

Traffic Signal Sightlines Review

2.20 The driver sightlines to the traffic signals at the New Quay Street / Quay Street / Gartside Street signalised junction have been assessed in relation to the proposed globe media art wall. **Drawing 410.065761.00001-D100** details the driver sight lines on the following approaches in accordance with the Stopping Sight Distance for a 20mph road speed:

- New Quay Street;
- Quay Street; and
- Gartside Street.

2.21 The position of the art wall is not considered to be in conflict with the motorist's views of traffic signals on the above approaches at the adjacent signalised junction.

Proposed Junction Improvement

2.22 It is understood that there is a proposed junction improvement for the New Quay Street / Quay Street / Gartside Street signalised junction that could be brought forward in the future. The potential changes to the junction layout consist of replacing the controlled pedestrian crossing facilities with toucan crossings, providing on-carriageway cycle lanes through the junction on the Quay Street and New Quay Street approaches and removing the refuge islands on both of these arms. As a result, the existing primary traffic signals that are located on these refuge islands could be relocated to offside carriageway positions at the stop lines. These new traffic signal positions would still have no interaction with the proposed globe media art wall in respect of approaching drivers, and there would be no safety conflict.

Pedestrian Environment

2.23 The signal-controlled crossings ensure that pedestrians can cross the New Quay Street / Quay Street / Gartside Street junction in a controlled and safe manner.

2.24 The pedestrian crossings on the three arms of the adjacent junction do not align with the proposed globe media art wall and therefore it is considered that there is no conflict in terms of pedestrian distraction. Also, the green and red man pedestrian signals are located on the signal poles next to each of the three crossing points, and the proposed art wall will not interact with the assimilation of the green and red man displays by pedestrians.

2.25 As described earlier in paragraph 2.1, due to the height of the proposed art wall on the building it will have minimal interaction with pedestrian movements through this area and there will be no safety conflict.

2.26 It is concluded that the proposed art wall would not raise any public safety issues for pedestrians.

Summary

2.27 The site assessment has reviewed the proposal site in the context of the key factors that are relevant in terms of the consideration of the acceptability of the site for a roadside LED art wall.

2.28 In summary, it is considered that the proposal to introduce a globe media art wall on the east side of No. 1 Quay Street:

i. Benefits from good sightlines on the Quay Street approach;

ii. Is in an acceptable location in terms of nearby traffic signal heads that control the operation of the adjacent signalised junction;

iii. Does not conflict with the New Quay Street / Quay Street / Gartside Street junction;

iv. Does not present any risk in terms of the pedestrian environment; and

v. Will not create an unacceptable impact in terms of driver distraction and risk to road safety for traffic passing the proposal site.

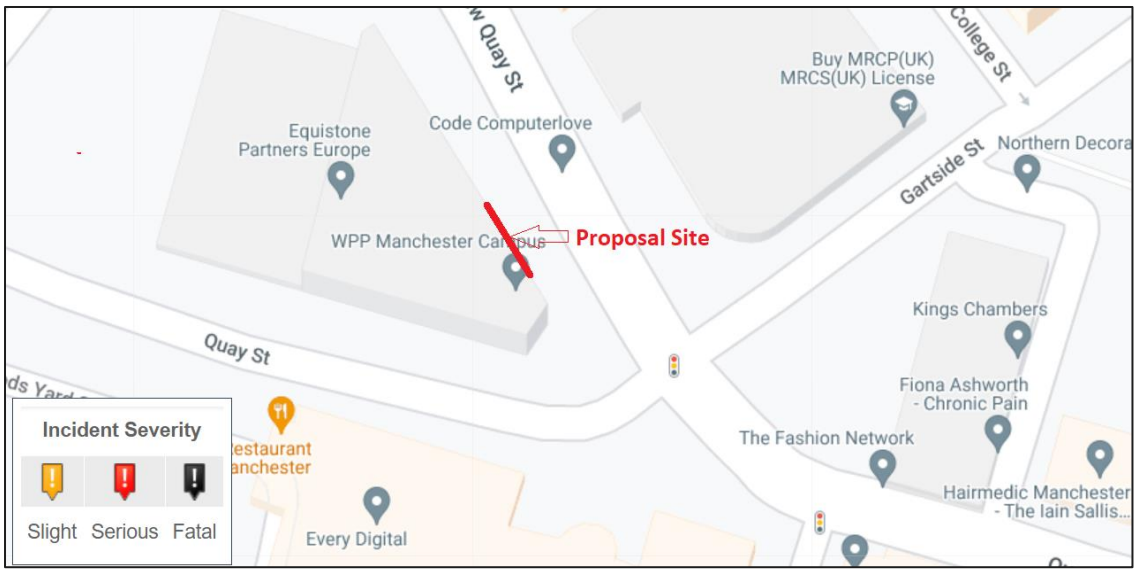
3.0 Accident Analysis and Examples of Roadside Schemes

Introduction

3.1 In order to examine whether the proposed globe media art wall is likely to cause a safety concern, accident data from the Crashmap database has been reviewed for the five-year period between 2018 and 2022.

3.2 A plan of accident locations within the five-year period reviewed is shown in **Figure 3.1.**

Figure 3.1 – Locations of Accidents in the Vicinity of the Proposal Site *Source: Crashmap*



Analysis

3.3 The accident data shows that no collisions have occurred in the vicinity of the proposal site during the five-year period from 2018 to 2022, and the New Quay Street / Quay Street / Gartside Street signalised junction has a very good recent safety record.

Accident Summary

3.4 It is considered that the proposal site for the globe media art wall is in a good location in terms of the recent accident record in the vicinity, and the accident data on Crashmap does not indicate any prevailing safety issues.

3.5 In summary, there will not be a conflict with the development proposal to erect an art wall at this location and it is not likely to cause a road safety problem.

Examples of Similar Roadside Schemes

3.6 This section provides some details on approved roadside schemes located within urban environments that comprise of the use of similar technology in their operation.

Land at Portland Tower, Manchester

3.7 This full-motion digital advertising display site is situated at the northeast corner of the Portland Street / Sackville Street signalised junction in Manchester. The sign consists of a two-sided full-motion digital advertising structure and both screens face towards oncoming vehicular traffic on Portland Street. The site's original application relating to the replacement of the existing landlord-branded advertising boards with digital signs (planning reference number: 097131/AO/2011) was refused based on highways safety grounds, with the following reasons given:

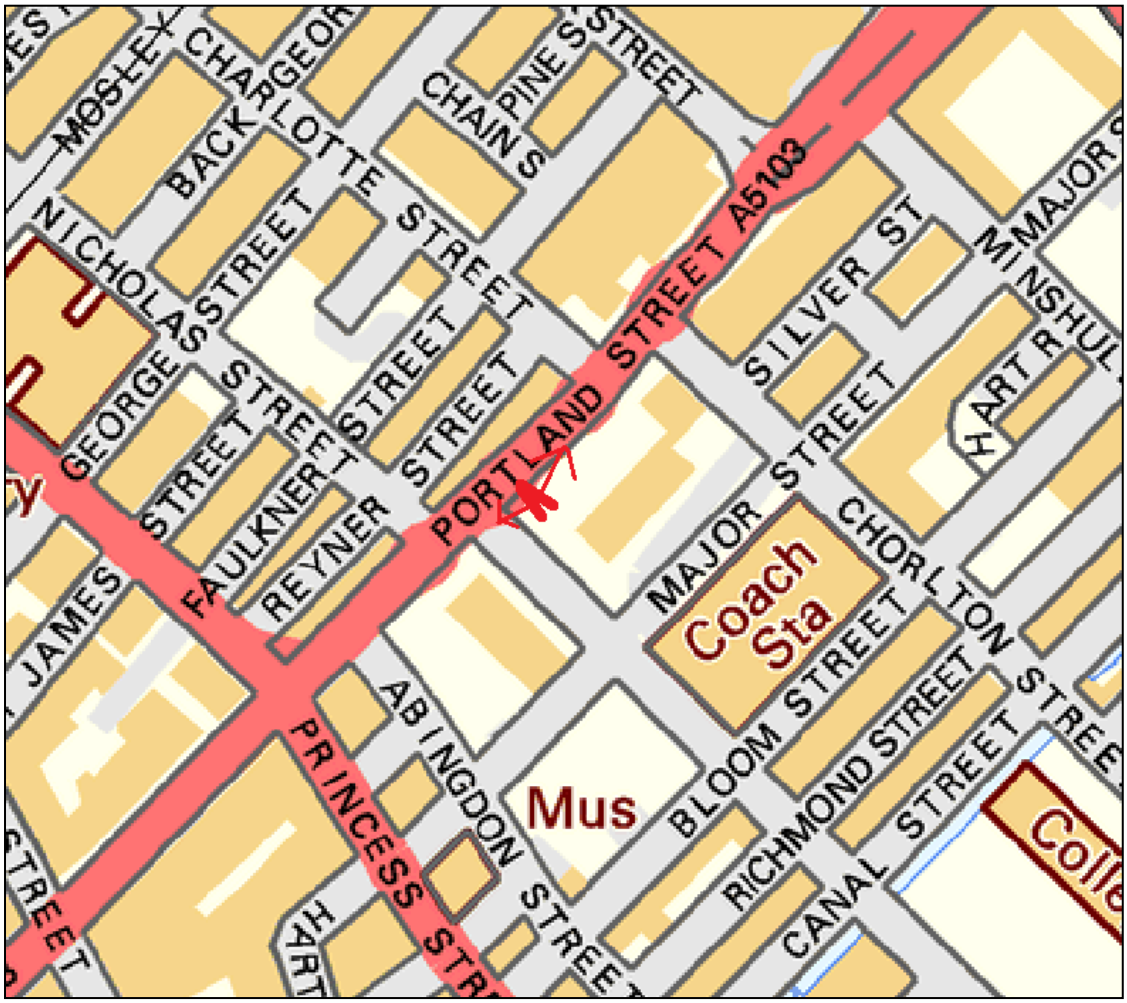
> *"This junction has high levels of bus traffic, long-distance coaches and very heavy footfall. Due to the combination of vehicular movements from a number of different directions and high volumes of pedestrians; the signage has the potential to cause distraction and therefore would be a safety risk in the proposed location".*

3.8 The application was successfully appealed against, with approval being granted on 7th January 2014 (planning reference number: APP/B4215/H/13/2203370). The sign and location can be seen in **Figures 3.2 and 3.3**.

Figure 3.2 – Portland Street / Sackville Street Junction Digital Advertising Display
Source: Google Maps



Figure 3.3 – Advertising Display Location at Portland Street / Sackville Street Junction



3.9 The Inspector included the following commentary in the Appeal Decision on the use of full-motion signs adjacent to busy carriageways:

> *"In the light of the evidence before me, I am satisfied that full-motion signs, can be operated without them necessarily having an adverse impact on public safety. Furthermore, as these signs become more commonplace, it means that they become more accepted and less of a distraction. Based on this, in my view, the position of this sign is such that the risks of an accident as a result of the full-motion screens is likely to be very small and not so significant to warrant the refusal of consent, or restricting the consent to a year, whilst further monitoring is undertaken. Consequently, for the reasons set out above I conclude that the upgrading of the existing digital displays to full-motion would not be detrimental to the road user safety and so the appeal should be allowed".*

3.10 This digital advertising sign was therefore considered not to present any risk to highways safety, despite being located adjacent to a signalised junction in a city centre like the proposal site.

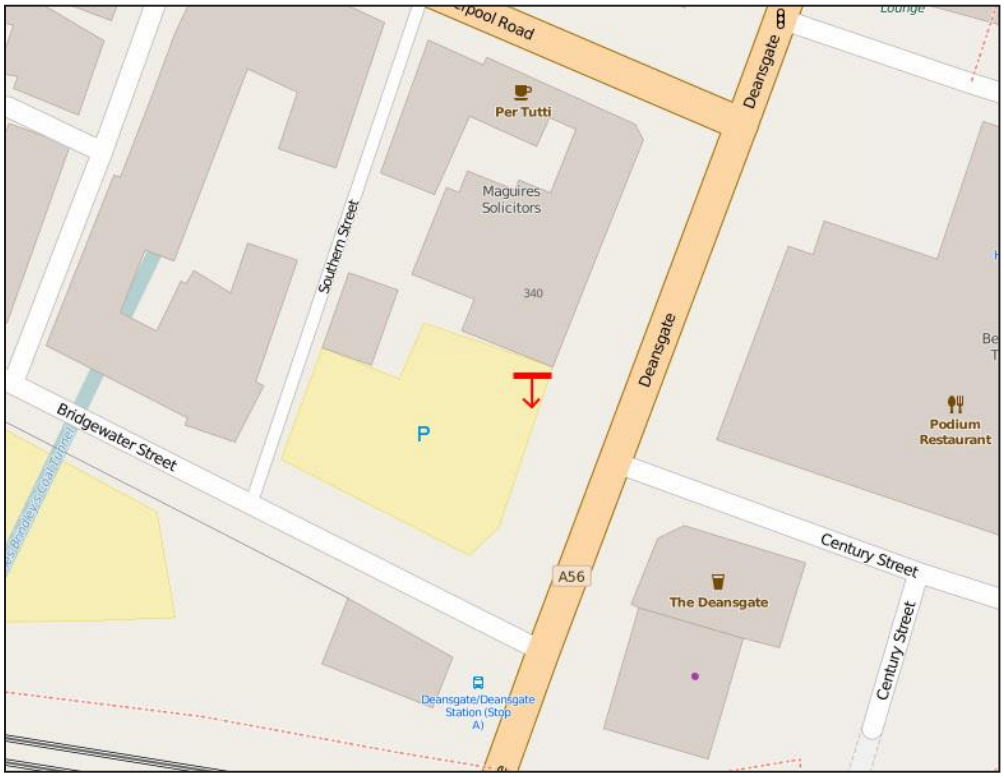
Deansgate Tower, Manchester

3.11 This digital advertising sign is located facing northbound traffic on Deansgate, one of the main routes through Manchester City Centre. The site displays full-motion images that are visible to passing traffic and active travel users. Both its size and positioning are similar to the proposal site associated with this report, in that there is a large junction a short distance along the carriageway on Deansgate. The sign and location can be seen in **Figures 3.4 and 3.5**.

Figure 3.4 – Deansgate Tower, Manchester Digital Advertising Display *Source: Google Maps*



Figure 3.5 – Advertising Display Location at Deansgate Tower on Deansgate



School of Digital Arts, Manchester

3.12 It is understood that similar technology is being utilised to provide an LED display feature at the School of Digital Arts in Manchester. The LED display is positioned on the north façade of the building and faces across the Boundary Street (W) / Higher Chatham Street junction, as shown in **Figures 3.6 and 3.7**.

Figure 3.6 – School of Digital Arts, Manchester LED Display
Source: Google Maps



Figure 3.7 – LED Display Location at the School of Digital Arts, Manchester
Source: Google Maps



Summary

3.13 This section has reviewed existing roadside schemes located within urban environments that comprise of the use of similar technology in their operation. It has been shown that there are examples of full-motion digital advertising displays in Manchester, which are in similar locations near to signalised junctions directed at traffic and in areas of high pedestrian activity, which have successfully gained planning permission, as well the School of Digital Arts in Manchester that comprises of an LED roadside display with a similar LED Mesh Curtain design with LED RGB nodes.

4.0 Summary & Conclusions

Summary

4.1 SLR has been commissioned by Alter-Projects Ltd on behalf of Manchester Quays Development (G&S) Ltd to produce a Highway Safety Report to support a proposal for the globe media art wall on the eastern façade of No. 1 Quay Street in Manchester (M3 4BN). This Highway Safety Report has been prepared to support an application to discharge planning conditions (CDN/23/0826) for the proposals at the above site in MCC.

4.2 The art wall will be 17m wide by 30m high, and it will be positioned approximately 12m above pavement level. The scheme comprises of a LED Mesh Curtain design with LED RGB nodes at 200mm spacings, and this will be mounted to stainless steel cables. The scheme will provide a digital piece of artwork on the side of the building at No. 1 Quay Street, which will display a series of moving iconic videos making references to the heritage of Manchester, Granada and other iconic TV moments, which effectively transition between each one. It will be installed onto the building at the southeast corner next to the New Quay Street / Quay Street / Gartside Street signalised junction.

4.3 The proposal site has been reviewed with due consideration given to the following factors, and the assessment has demonstrated that the proposed globe media art wall on the east side of No. 1 Quay Street:

i. Benefits from good sightlines on the Quay Street approach;

ii. Is in an acceptable location in terms of nearby traffic signal heads that control the operation of the adjacent signalised junction;

iii. Does not conflict with the New Quay Street / Quay Street / Gartside Street junction;

iv. Does not present any risk in terms of the pedestrian environment; and

v. Will not create an unacceptable impact in terms of driver distraction and risk to road safety for traffic passing the proposal site.

4.4 On review of the accident statistics in the vicinity of the proposal site, it is evident that the proposal site for the globe media art wall is in a good location in terms of the recent accident record in the vicinity and it is not likely to cause a road safety problem for road users. It is considered that the proposed LED roadside display will not conflict with highway safety in this location.

4.5 There are examples of existing roadside schemes located within urban environments in Manchester that comprise of the use of similar technology in their operation.

Conclusions

4.6 Taking into account the findings of this Highway Safety Assessment report, the applicant considers that the proposed globe media art wall would not have an unacceptable or severe impact on highway safety at this location and is therefore not contrary to the National Planning Policy Framework (December 2023).

4.7 In conclusion, the proposal for a globe media art wall on the eastern façade of No. 1 Quay Street in Manchester, M3 4BN, will not adversely impact on driver distraction, and so does not present a risk to road safety or a danger to road users. It is therefore considered that there are no significant transport reasons why the development proposals should not be granted planning permission.

Appendix A Planning Drawings

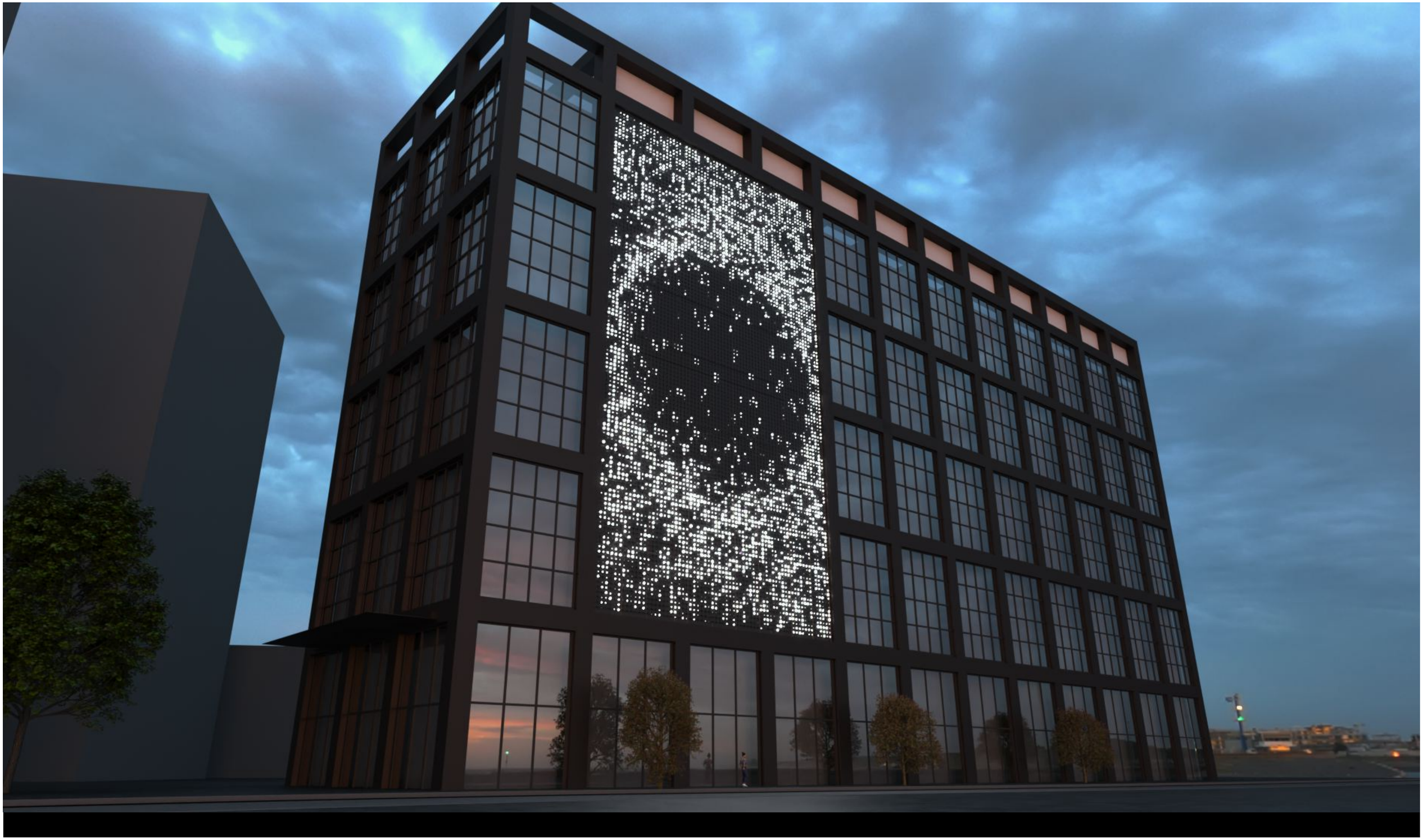


The Globe Art Wall Concept
St John's District, Manchester

CONCEPT DESIGN - FOR COSTING
19 December 2023 ver.1.4

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THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 2 of 15
Page : A3

Drawing title : RENDER
Scale : SHOWN @ A3 Date : 19-12-23

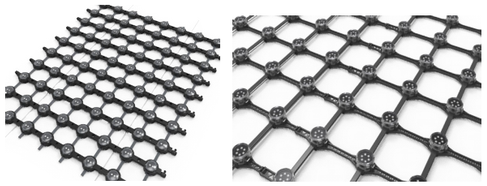
1.4

Shenzhen SH LED Technology Co., Ltd

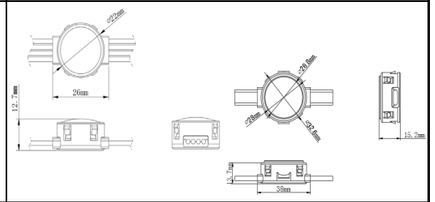
Product specification

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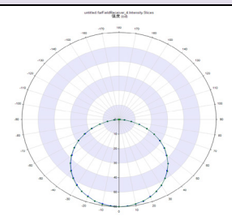
Product picture



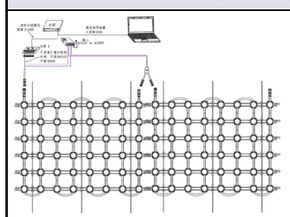
Size picture

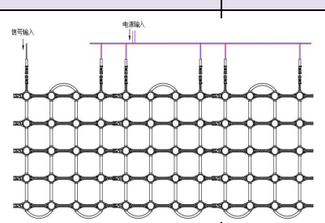


Electrical parameters		Light source parameters	
• Rated working voltage	DC12V/24V	• LED Qty	3535RGB*2/3535RGB*3/3535RGB*6
• Rated power	0.7/1.4W	• LED Brand	Epistar/Cree/Osram
•Lead wire specification	2*0.5mm²+2*0.3mm²/1.8mm and 2x0.75mm²+3x0.3mm²/2.9mm*9.7mm	• Light source life	≥30000 Hr
• Line sequence definition	Red: V+/ Green:A /Blue :B/White:PI/PO/Black:GND	**Optical parameters**	
• Optional spacing(mm)	P40、P50、P80、P100/P100 P150 P200	• Gray scale	8/16 Bit = 256/65536
• Lamps per square meter	625,400,156,100/100,44,25	• Brightness	/
• Control mode	RDMX512RGB £DMX512RGBW £DMX512W £ON/OFF £SPIRGB	• Luminous intensity	10.1lm,17.1lm,27.1lm/pixel (change by RGB*2/3/6)
• Control chip	UCS512B3/UCS512C4	• Wavelength	RGB(R:615-630nm G:525-545nm B:460-480n
•Pixel segment	R1 £6 £8 £10 £12 £14	• Color temperature	/
Mechanical parameters		• LED Beam	110°±10%
• Body	94-V0 Flame-Retardant PC	• Color rendering index	CRI 94 minimum with R9 > 85
• Cover	94-V0 Flame-Retardant PC	**Lighting Distribution**	
• Shell color	Black or Light grey		
• Net Weight(single pixel)	10.8gram/29.2gram		
Others			
• Oper Temp	-20℃~+60℃		
• Storage temp	-40℃~+75℃		
• Degree of Protection	IP67		



Installation method

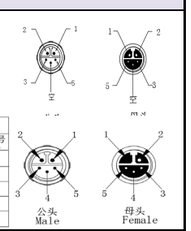




Wiring diagram

电线/脚位接线方式		
电线颜色	功能	序号
虚边	GND	1
印字	V+	2
靠近印字	DAT	3
/	B	空
靠近虚边	P1/P0	5

电线/脚位接线方式 Wire / pin connection mode		
电线颜色 colour	功能 Function	序号 No.
黑色 Black	GND	1
红色 Red	V+	2
绿色 Green	A	3
蓝色 Blue	B	4
白色 White	P1/P0	5



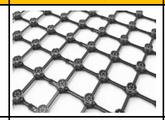
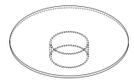
批准： 审核： 制表：王丝

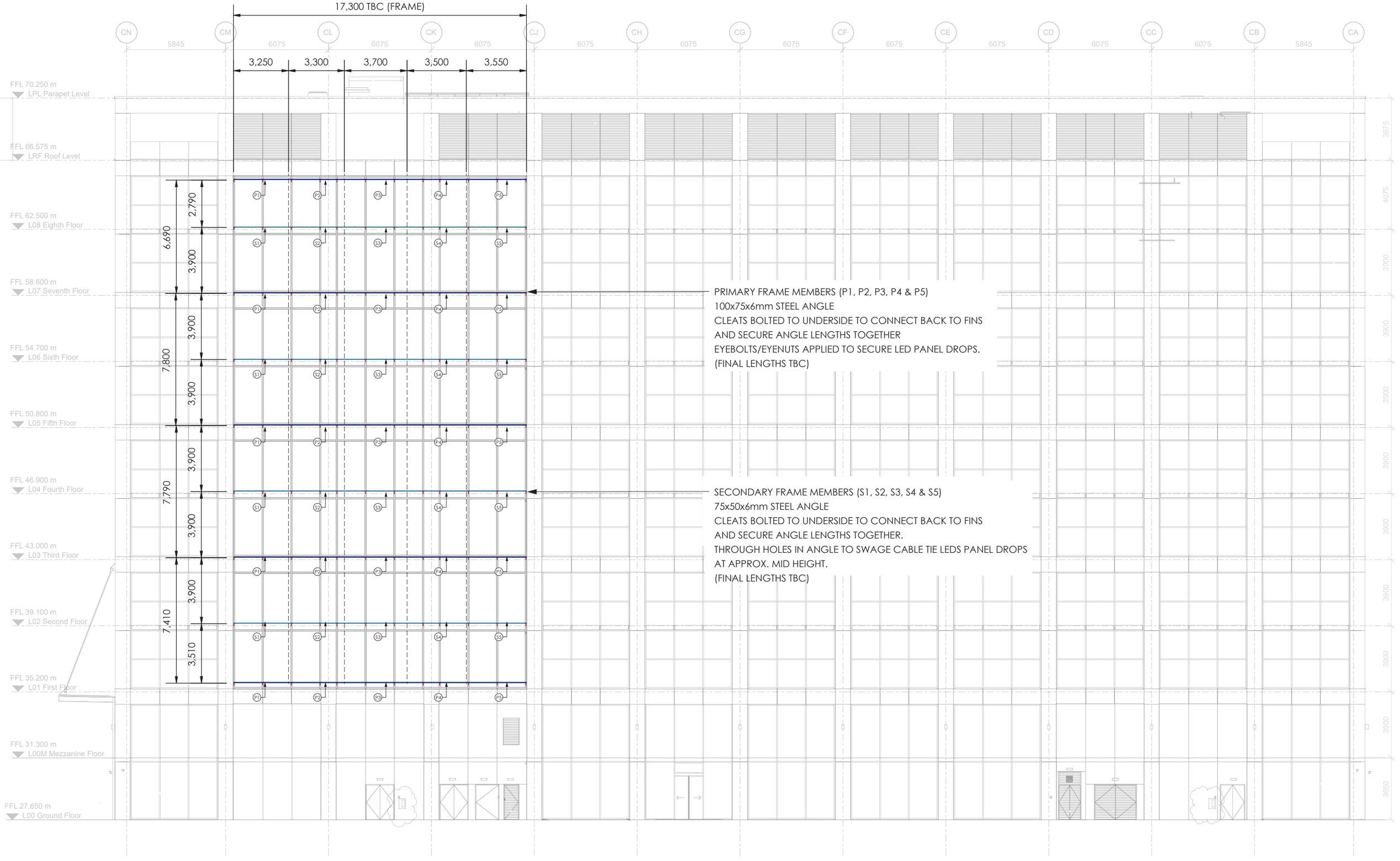
Shenzhen SH LED Technology Co., Ltd

TEL：0755-28015568 WEB：www.szshled.com

Project budget list - P200/HDMI

Client Name	ENESS	Project	
Link	James Ogilvie	SH Link	
Tel/email	james@eness.com	Tel	

No	Item	Pic ref,	Data	Unit	QTY
1	LED mesh screen - E33 P200		RGB-Cree chips*4/RGB/DMX/DC24V/1.2watt/200mm pitch/Input and output M16F 5 core male and female connector 150mm length/IP67/25dots each sqm and 13,500 dots in total	sqm	540
2	Mold cost of top cover		MATERIAL : MIRROR FINISH PLASTIC THAT ALLOWS LIGHT TO PASS THROUGH - RECOMMENDATIONS? REQUIREMENTS : PLASTIC TO BE UV STABLE AND WITHSTAND DIRECT SUNLIGHT OUTDOORS FOR 10 YEARS +	set	1
3	MR-MC02 Master Controller/HDMI input version	 	1. Applicable to projects with ultra-multiple points and HDMI/DVI control requirements. In actual projects, a single unit can load RGB within 2.3 million. 2. Universal HDMI master control, does not distinguish between DMX and TTL control methods. 3. It can be used as a single unit or multiple units through HDMI video splicer. 4. Can only be connected to a computer for playback, and cannot be played by inserting a card	set	1
4	228DW Sub Controller		DMX512/8 signal output port/input voltage AC110-240V	set	7
5	Power Supply		Mean Well/DC24v-320watt/waterproof	pc	93
6	Positive section open		Both ends of Male and Female connectors with 150mm length	pc	50
7	Female connectors		M16F 5pins type/PVC/150mm length standard	pc	48
8	Y slips		M16F 5pins/PVC/connected each string for power	pc	100
9	U-shaped latch		M3 type/304 stainless steel, locking wire rope	pc	800
10	Wire tightener		M4 type/304 stainless steel, used to fix the wire rope for tightening	pc	400
11	Coder/WT15		It is used to write a separate code for lamps for later maintenance	pc	1



NORTH EAST ELEVATION - FRAME
SCALE 1:200

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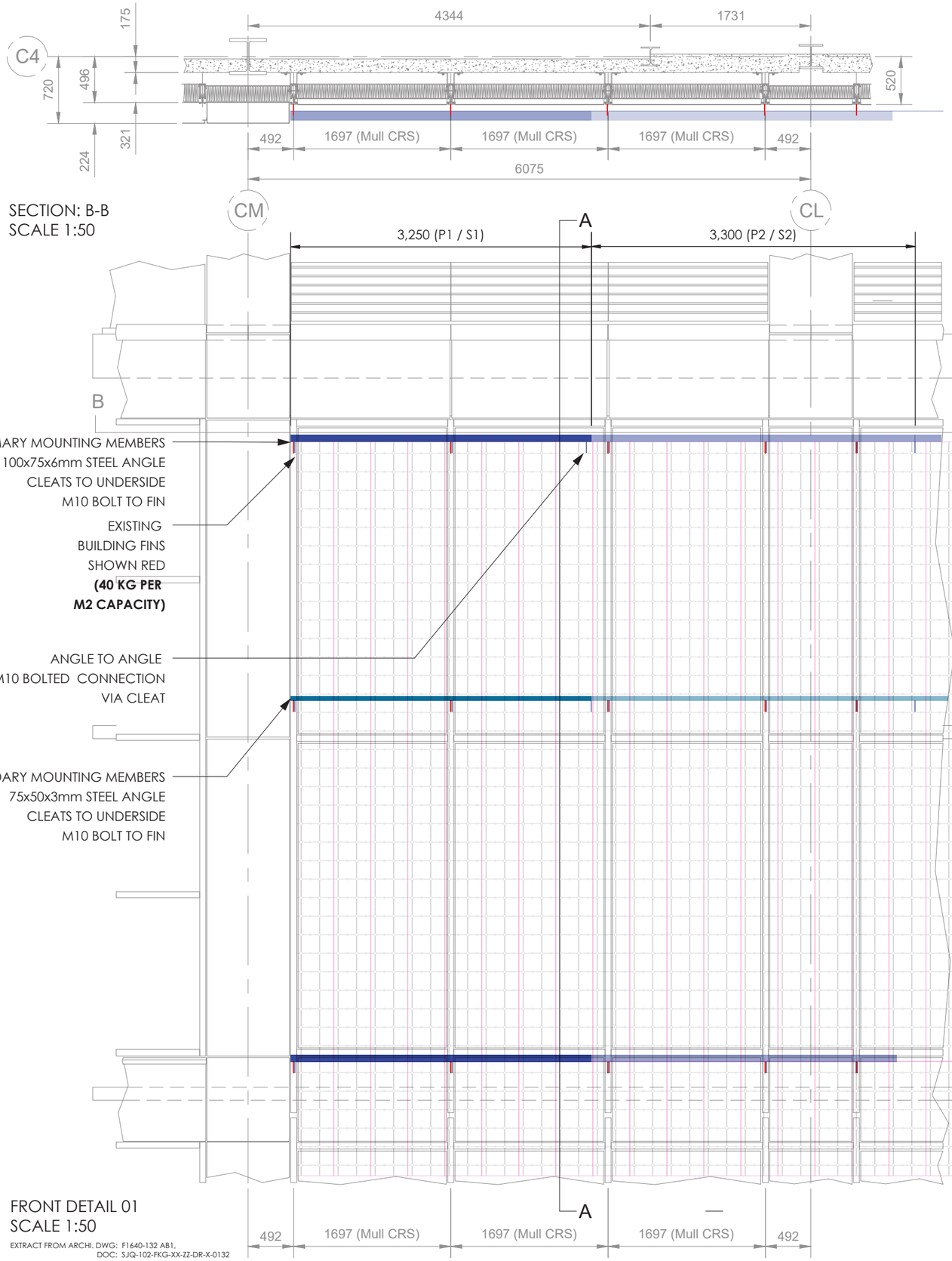
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 4 of 15
Page : A3

Drawing title : BUILDING ELEVATION - FRAMES
Scale : SHOWN @ A3 Date : 19-12-23

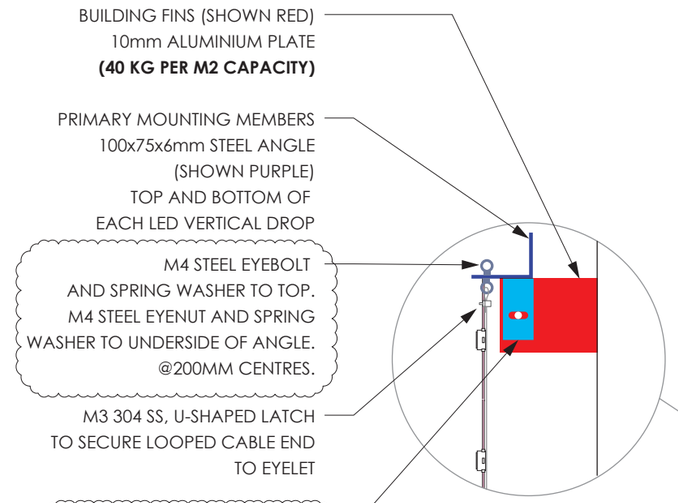
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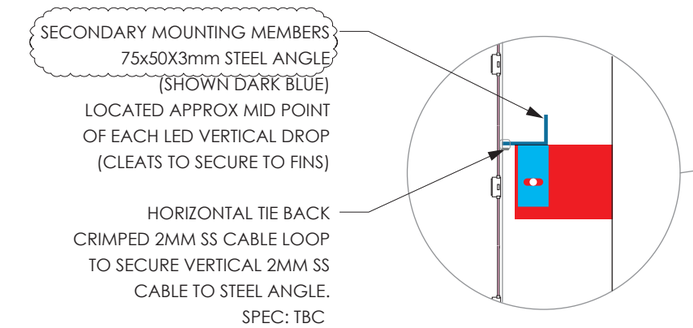
SECTION: B-B
SCALE 1:50

FRONT DETAIL 01
SCALE 1:50

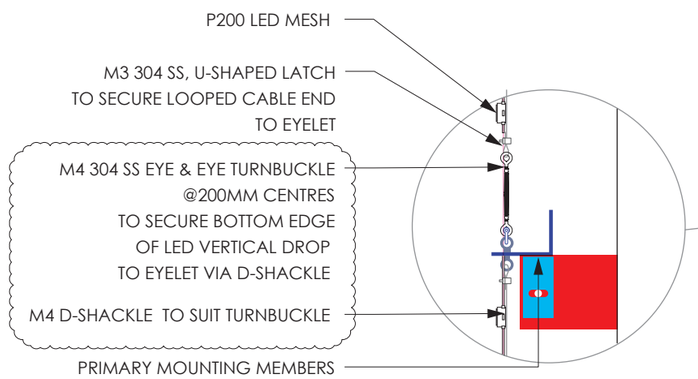
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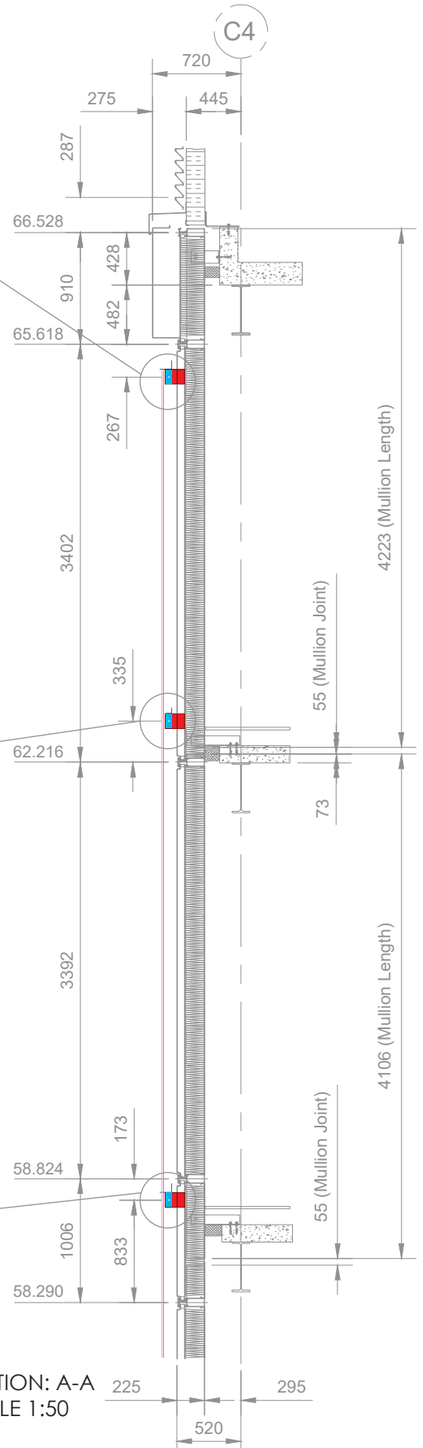
DETAIL: A3
SCALE 1:10



DETAIL: A2
SCALE 1:10



DETAIL: A1
SCALE 1:10



SECTION: A-A
SCALE 1:50

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THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

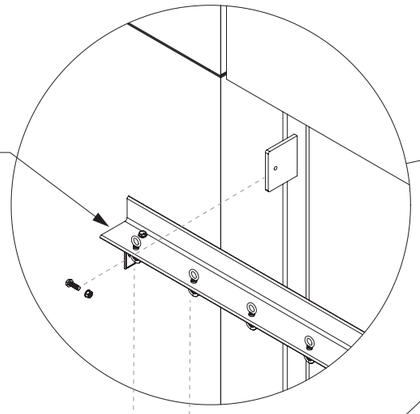
Sheet : 5 of 15
Page : A3

Drawing title : BUILDING FRAME - DETAILS
Scale : SHOWN @ A3 Date : 19-12-23

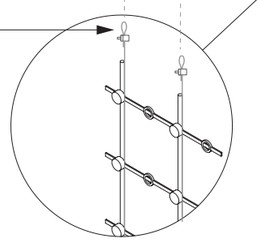
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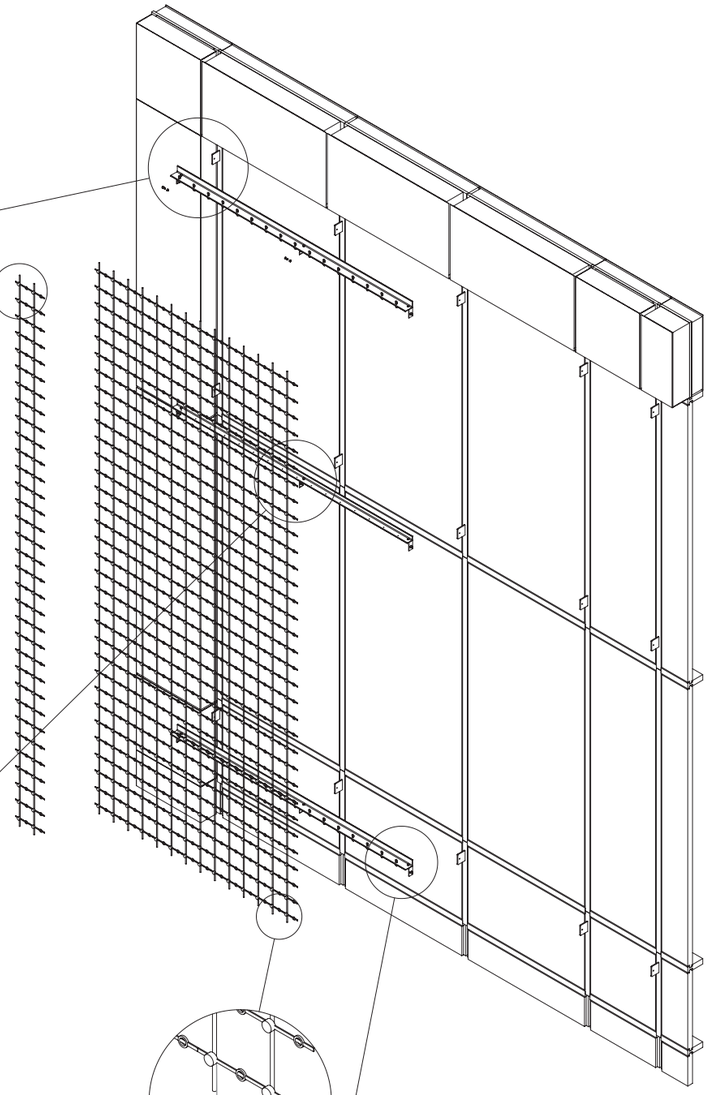
STEP 1.
SECURE MOUNTING ANGLES TO FINS,
VIA BOLTED CLEATS TO UNDERSIDE.
(CLEATS HAVE SLOTS HOLES AT
CONNECTION TO BOTH ANGLE AND FIN)
M10 BOLT ASSEMBLIES
(CLEAT QTY PER ANGLE LENGTH VARIES)

STEP 2.
SECURE ANGLE LENGTHS
TOGETHER AT ENDS
VIA BOLTED CLEATS TO UNDERSIDE.
M10 BOLT ASSEMBLIES

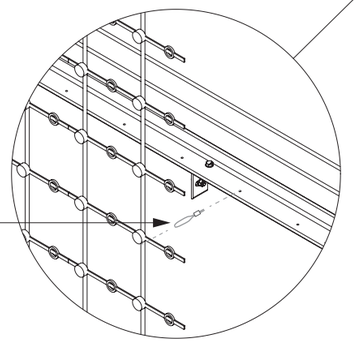


STEP 3.
SECURE LED MESH TO EYELETS
ALONG TOP SIDE OF EACH LED PANEL DROP
VIA 2MM STEEL CABLE
WITH LOOPED END AND U-SHAPED LOCKS
@200mm CENTRES

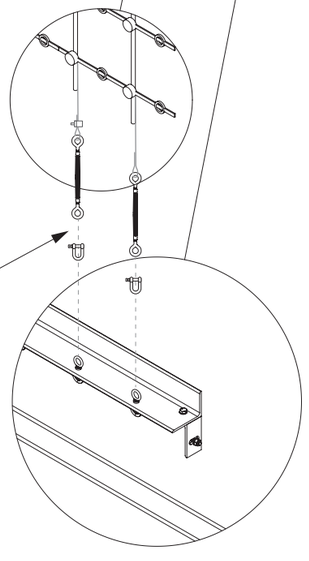




STEP 4.
SECURE LED MESH TO ANGLE
AT MID HEIGHT OF EACH LED PANEL DROP
VIA 2MM STEEL CABLE
WITH CRIMPED END
@200mm CENTRES



STEP 5.
SECURE LED MESH TO ANGLE
ALONG BOTTOM EDGE OF EACH LED PANEL DROP
VIA 2mm STEEL CABLE
WITH LOOPED END AND U-SHAPED LOCKS
AND TENSION EYE & EYE TURNBUCKLES AND D-SHACKLES
@200mm CENTRES



BILL OF MATERIAL

ITEM	DESCRIPTION	QTY
1.	2MM STAINLESS STEEL WIRE ROPE	3000M
2.	100x75x6mm ANGLE (VARYING L)	25
3.	75x50x3mm ANGLE (VARYING L)	20
4.	100x75x6mm STEEL CLEATS	180
5.	M10 BOLT ASSEMBLIES	360
6.	M4 STEEL EYEBOLTS	1584
7.	M4 STEEL EYENUTS	1584
8.	M4 D-SHACKLES	344
9.	CAMERAS	2
10.	PC	1
11.	42RU SERVER CABINETS	2
12.	RU CABINET SHELVES	80

ALL QUANTITIES APPROXIMATES ONLY.

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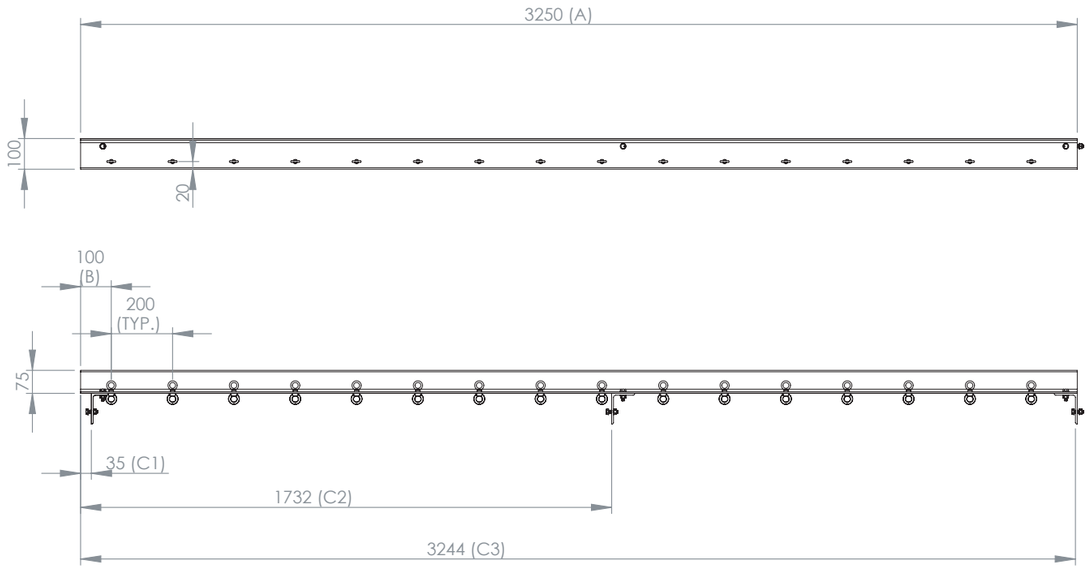
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 6 of 15
Page : A3

Drawing title : INSTALLATION OVERVIEW
Scale : SHOWN @ A3 Date : 19-12-23

1.4

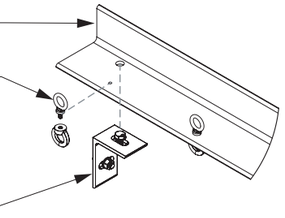


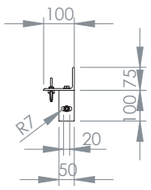
GENERAL ARRANGEMENT - PRIMARY MOUNTING ANGLE (PARTS: P1, P2, P3, P4, P5)
SCALE 1:20

100x75x6mm STEEL ANGLE

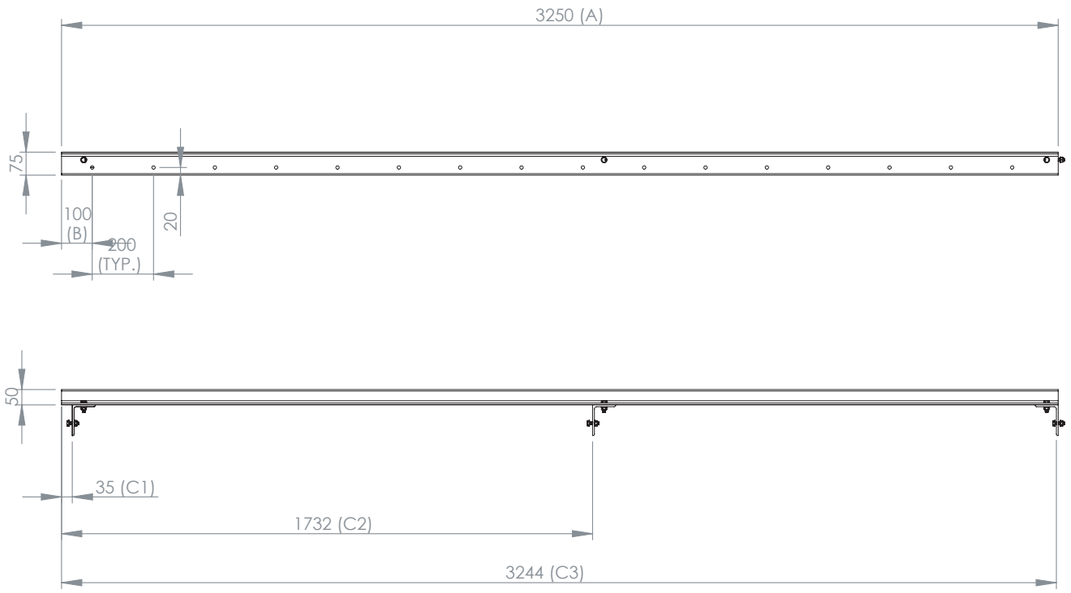
M4 STEEL EYEBOLT
AND SPRING WASHER TO TOP.
M4 STEEL EYENUT AND SPRING
WASHER TO UNDERSIDE OF ANGLE.
@200MM CENTRES.

CLEATS
100x75x6mm STEEL ANGLE (50MM STUBS)
M10 BOLTS TO UNDERSIDE OF ANGLE
M10 BOLTS TO SECURE TO FINS.
20mm L SLOT HOLES





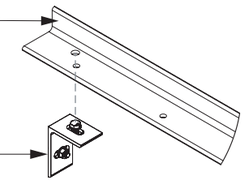
ALL SIZES APPROXIMATES ONLY.				CLEAT SETOUT					
ANGLE PART	ANGLE QTY	A	B	CLEAT QTY	C1	C2	C3	C4	C5
P1	5	3250	100	3	35	1732	3244	-	-
P2	5	3300	TBC	5	TBC	TBC	TBC	TBC	TBC
P3	5	3700	TBC	4	TBC	TBC	TBC	TBC	-
P4	5	3500	TBC	4	TBC	TBC	TBC	TBC	-
P5	5	3550	TBC	4	TBC	TBC	TBC	TBC	-

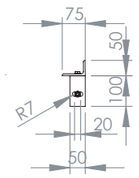


GENERAL ARRANGEMENT - SECONDARY MOUNTING ANGLE (PARTS: S1, S2, S3, S4, S5)
SCALE 1:20

75x50x6mm STEEL ANGLE

CLEATS
100x75x6mm STEEL ANGLE (50MM STUBS)
M10 BOLTS TO UNDERSIDE OF ANGLE
M10 BOLTS TO SECURE TO FINS
20mm L SLOT HOLES





ALL SIZES APPROXIMATES ONLY.				CLEAT SETOUT					
ANGLE PART	ANGLE QTY	A	B	CLEAT QTY	C1	C2	C3	C4	C5
S1	4	3250	100	3	35	1732	3244	-	-
S2	4	3300	TBC	5	TBC	TBC	TBC	TBC	TBC
S3	4	3700	TBC	4	TBC	TBC	TBC	TBC	-
S4	4	3500	TBC	4	TBC	TBC	TBC	TBC	-
S5	4	3550	TBC	4	TBC	TBC	TBC	TBC	-

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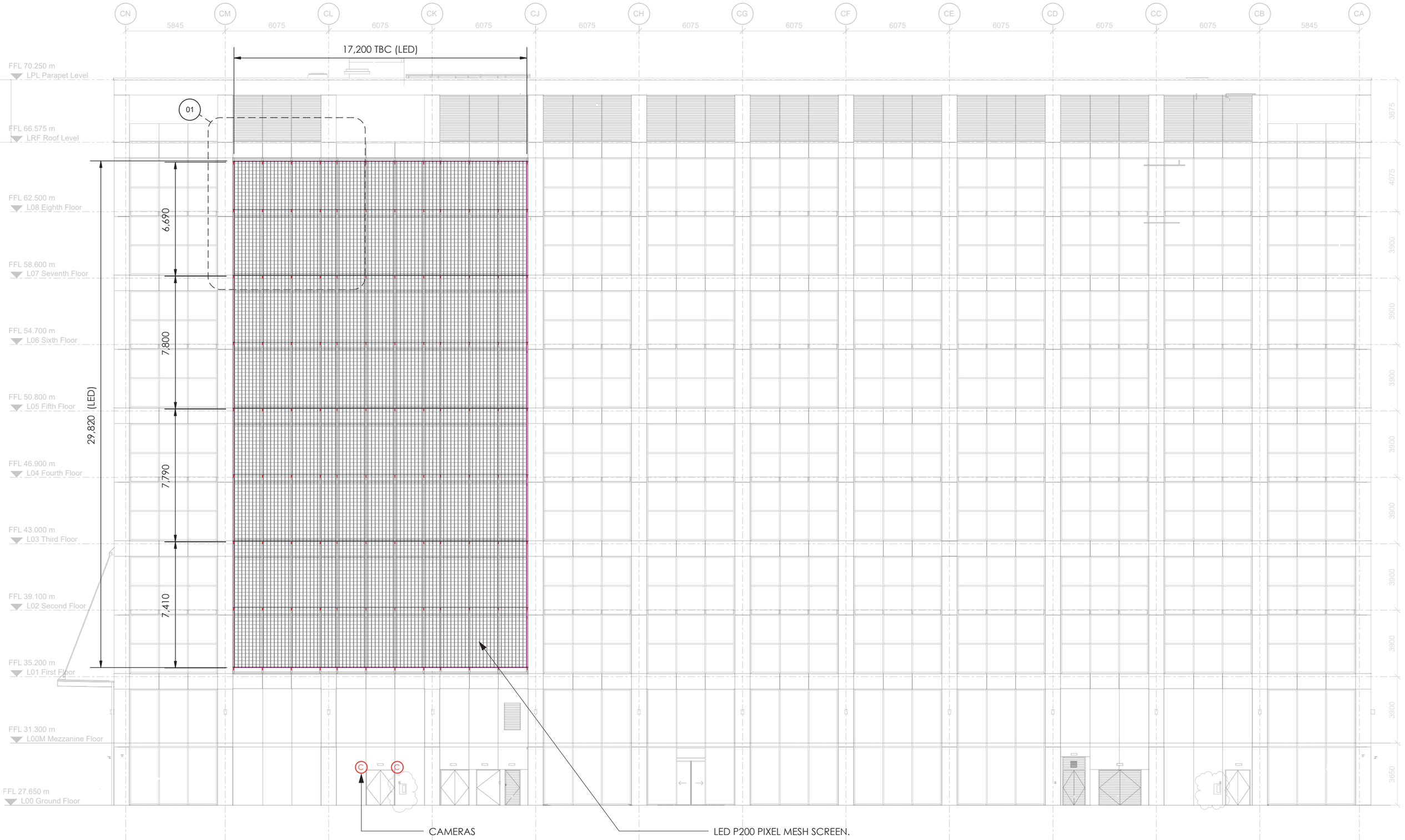
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 7 of 15
Page : A3

Drawing title : TYPICAL ANGLE DETAILS
Scale : SHOWN @ A3 Date : 19-12-23

1.4



CAMERAS
2 OFF.
SPEC: TBC
MOUNTED ABOVE ENTRY DOORS

LED P200 PIXEL MESH SCREEN.
SPEC: SH LED E33 P220
MADE IN PANELS, TENSIONED BETWEEN HORIZONTAL FRAMES
FIXED BACK TO EXISTING BUILDING FINS.

NORTH EAST ELEVATION - MESH LED
SCALE 1:200

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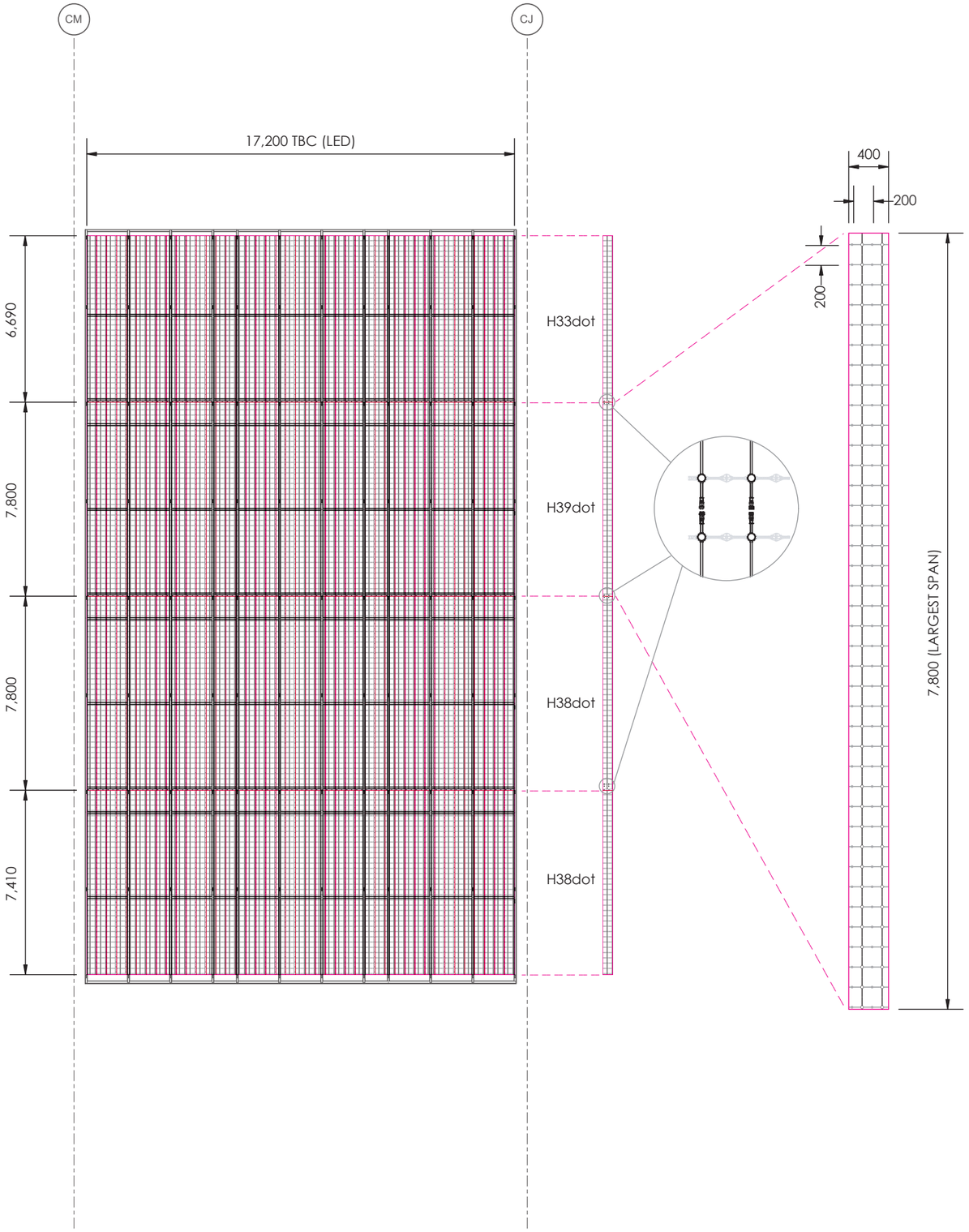
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 8 of 15
Page : A3

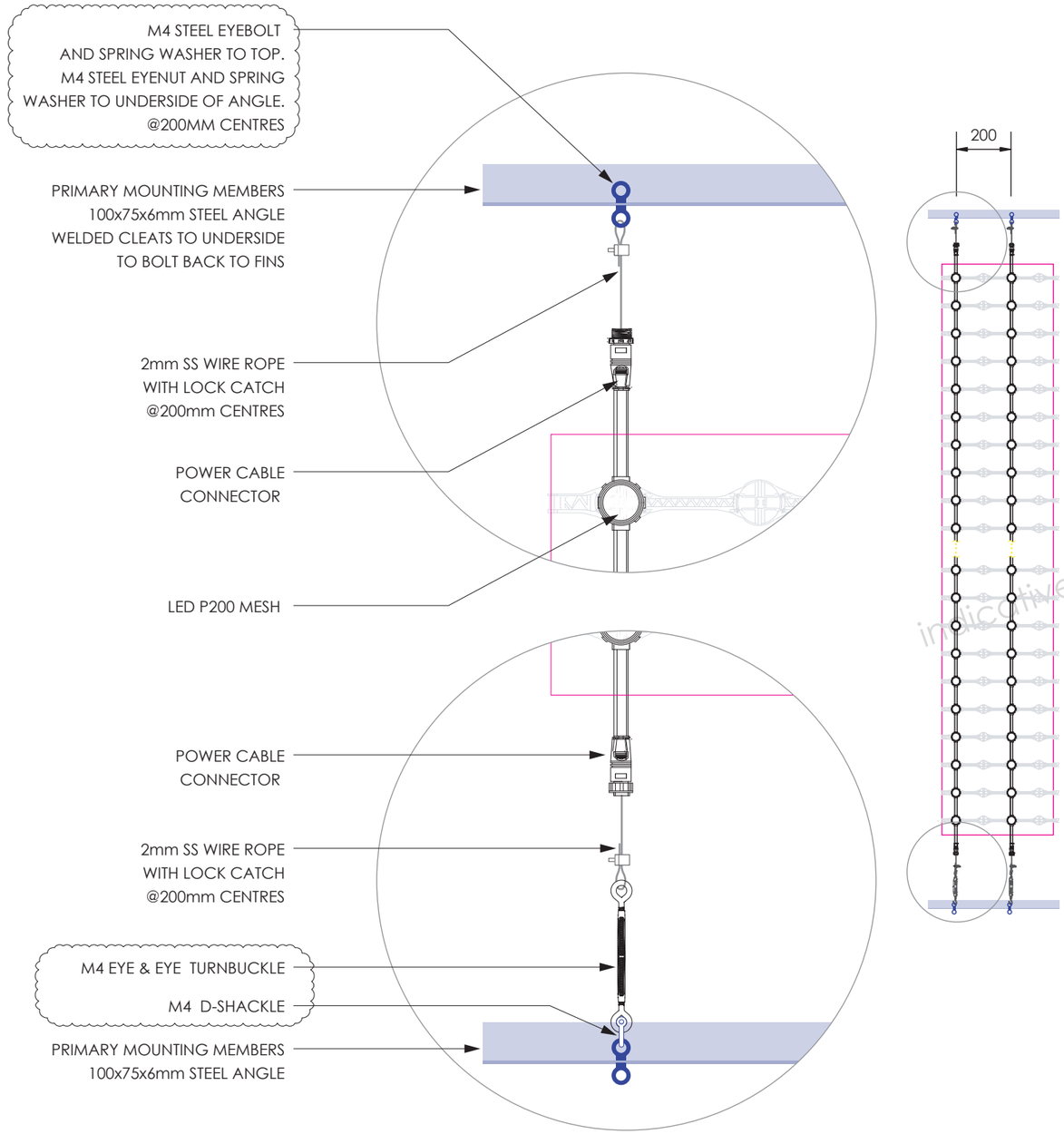
Drawing title : BUILDING ELEVATION - LED
Scale : SHOWN @ A3 Date : 19-12-23

1.4



FRONT ELEVATION - LED MEDIA MESH
SCALE 1:200

TYPICAL LED MEDIA PANEL
SCALE 1:50



TYPICAL CONNECTION DETAILS
SCALE 1:10

indicative

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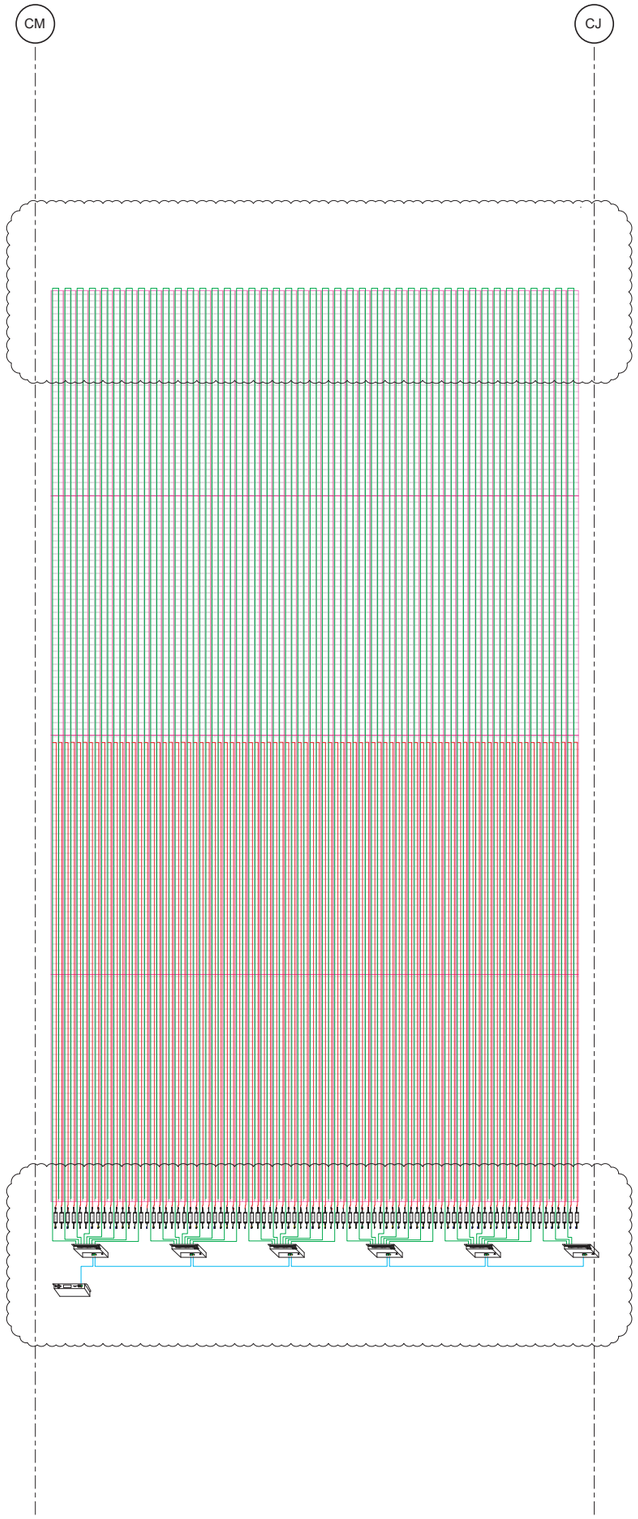
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

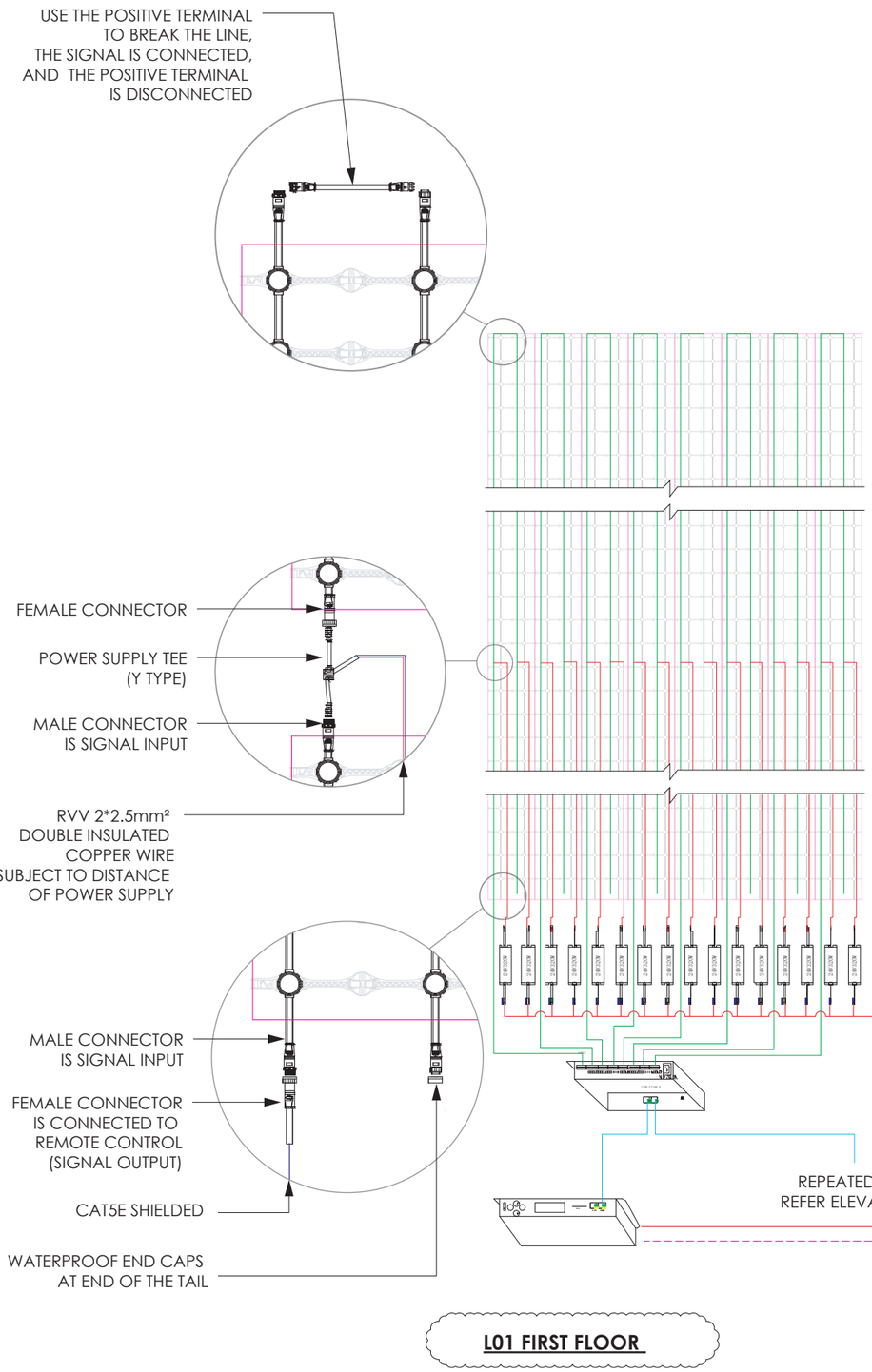
Sheet : 9 of 15
Page : A3

Drawing title : LED MESH DETAILS
Scale : SHOWN @ A3 Date : 19-12-23

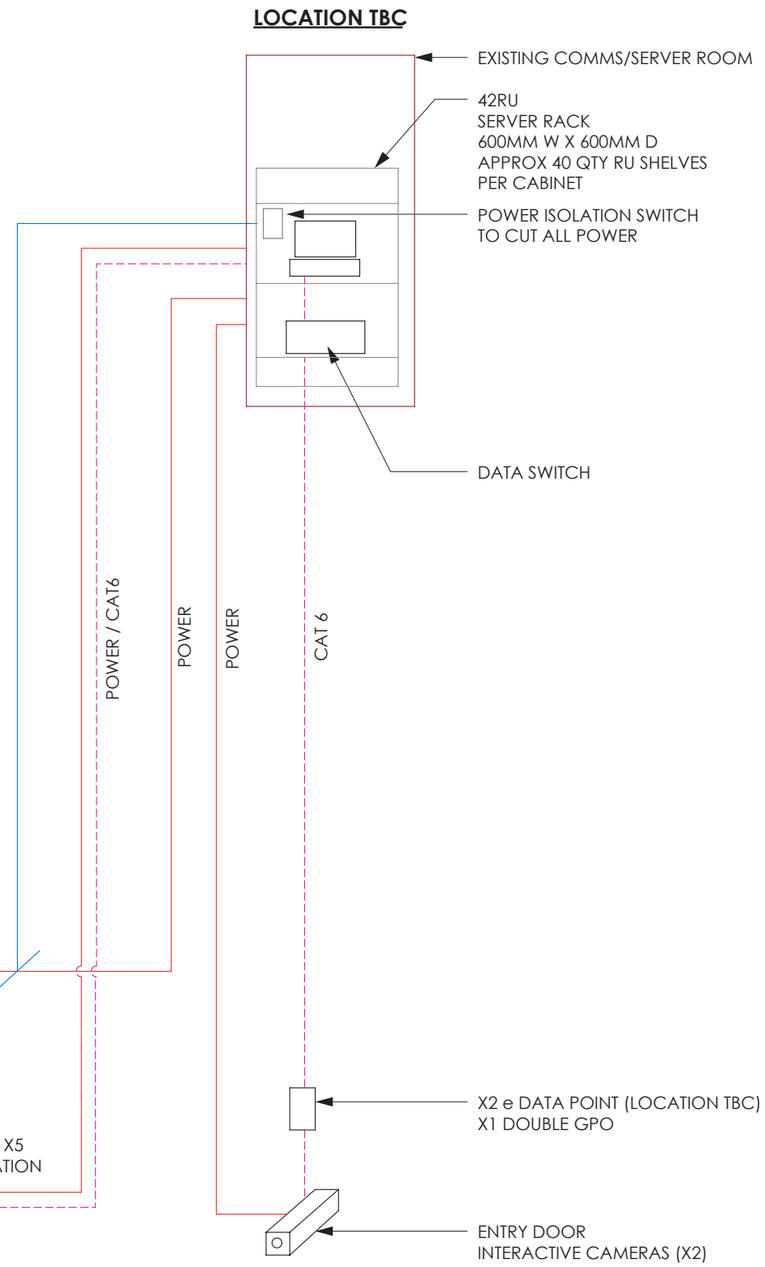
1.4



FRONT ELEVATION - WIRING
SCALE 1:200



L01 FIRST FLOOR



ENTRY DOORS

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THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

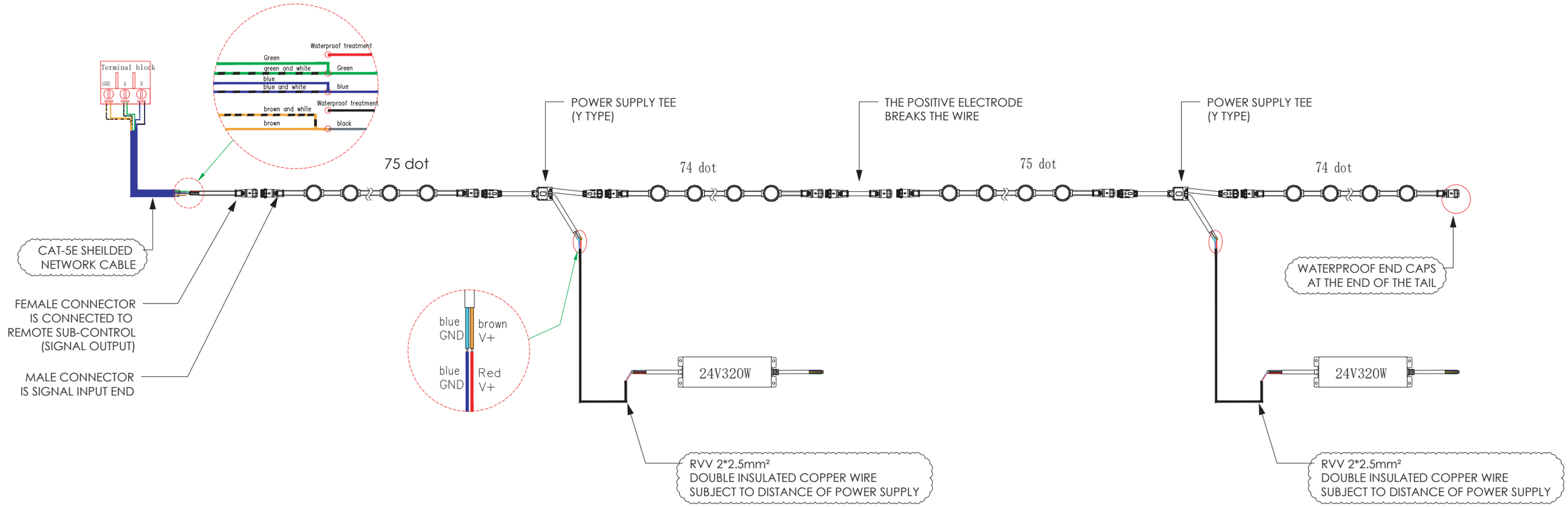
Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 10 of 15
Page : A3

Drawing title : ELECTRICAL LAYOUT
Scale : SHOWN @ A3 Date : 19-12-23

1.4

port number	1	2	3
port definition	GND	A	B
Docking network cable	brown and white brown	green and white green	blue and white blue
Docking lamps	black	green	blue



WIRING DIAGRAM: SUB CONTROL AND POWER SUPPLY

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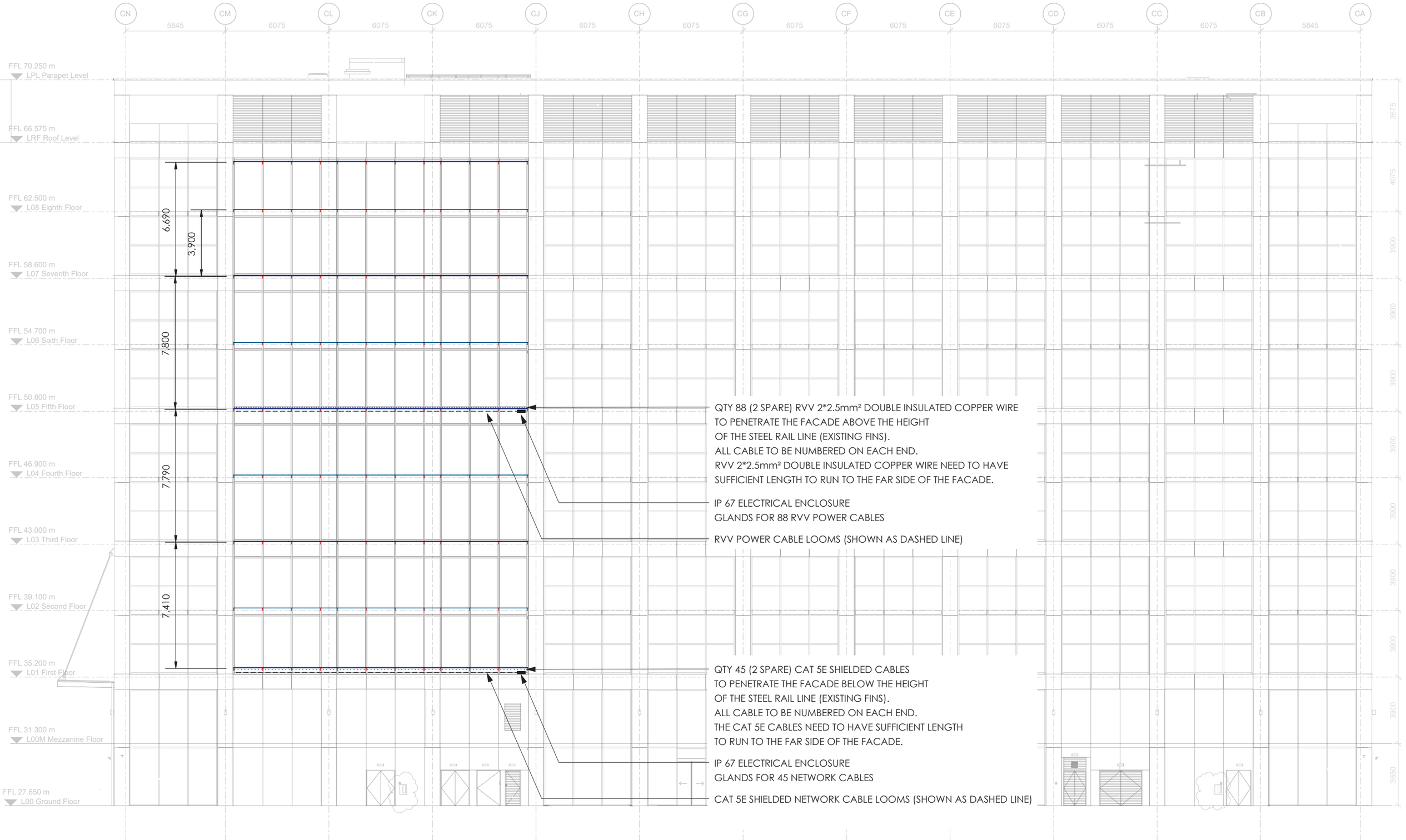
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

Sheet : 11 of 15
Page : A3

Drawing title : ELECTRICAL LAYOUT
Scale : SHOWN @ A3 Date : 19-12-23

1.4



NORTH EAST ELEVATION - WIRING
SCALE 1:200

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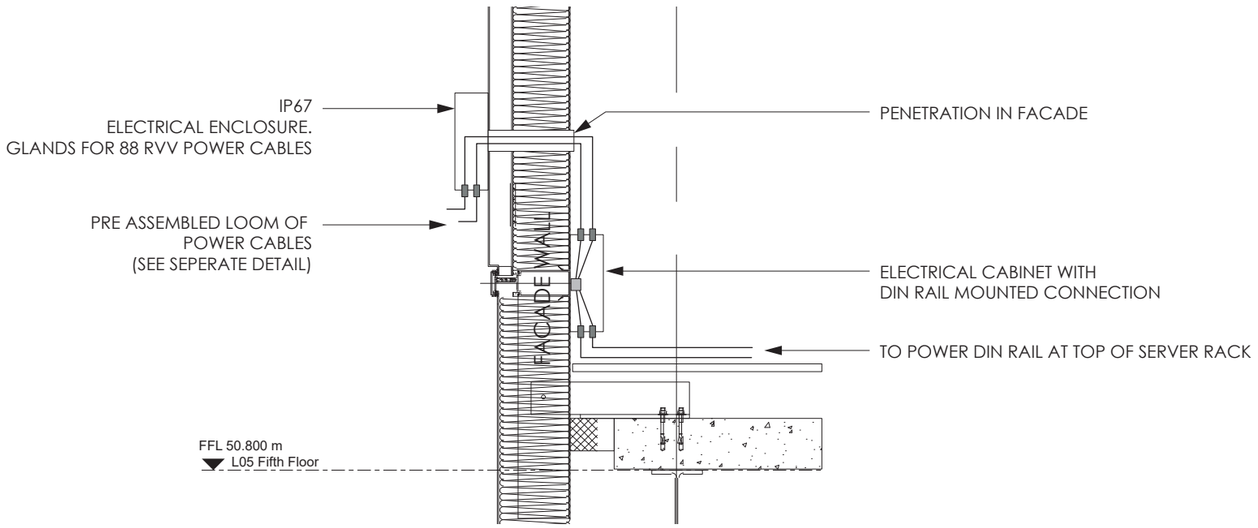
THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

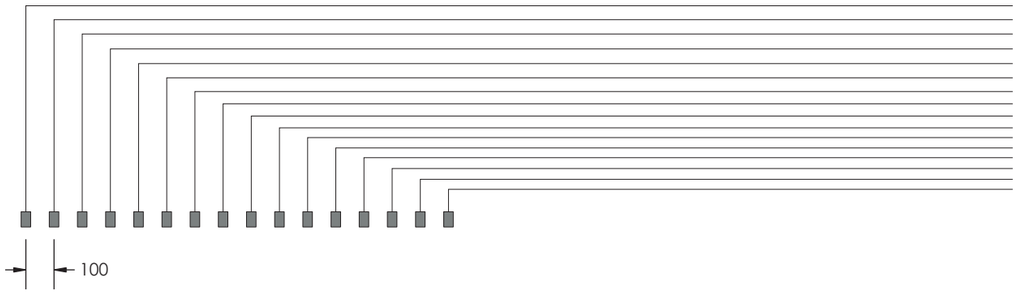
Sheet : 12 of 15
Page : A3

Drawing title : BUILDING ELEVATION - WIRING
Scale : SHOWN @ A3 Date : 19-12-23

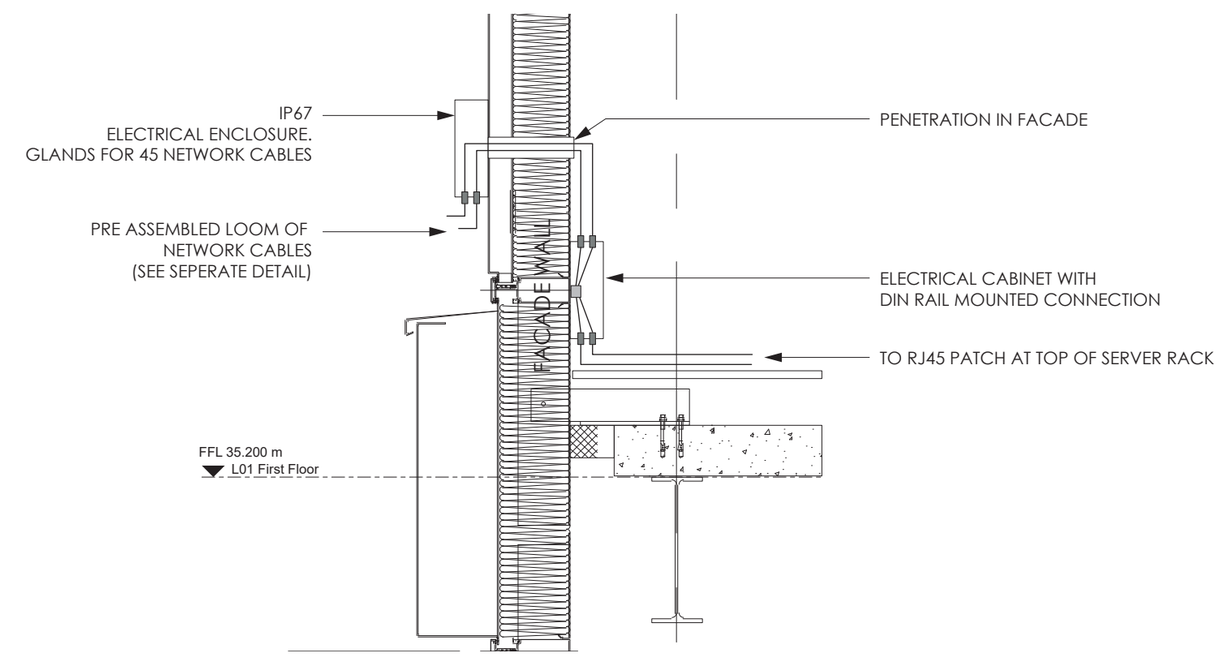
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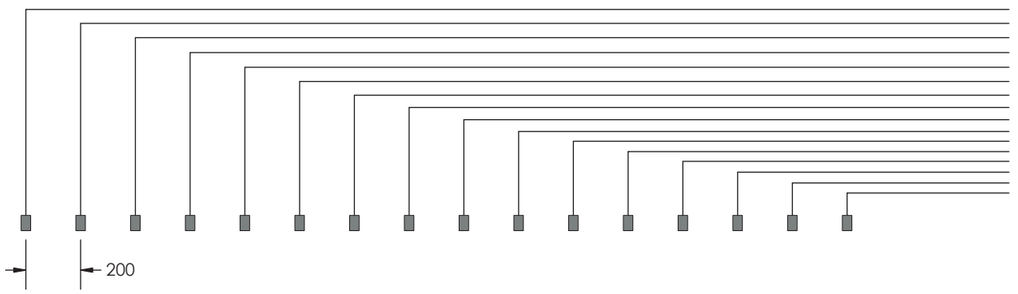
TYPICAL SECTION - LEVEL 5 FACADE CABLE PENETRATION
SCALE 1:10



RVV 2*2.5mm² DOUBLE INSULATED COPPER WIRE
16 CABLES @ 100MM SPACING
PRE ASSEMBLED FITTINGS



TYPICAL SECTION - LEVEL 1 FACADE CABLE PENETRATION
SCALE 1:10



SHIELED CAT 5E LOOM
16 CABLES @ 200MM SPACING
PRE ASSEMBLED FITTINGS

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THIRD ANGLE PROJECTION
UNITS: DIMENSIONS IN MM

Project : Manchester LED Mesh Wall
Status : Concept Design - For Costing

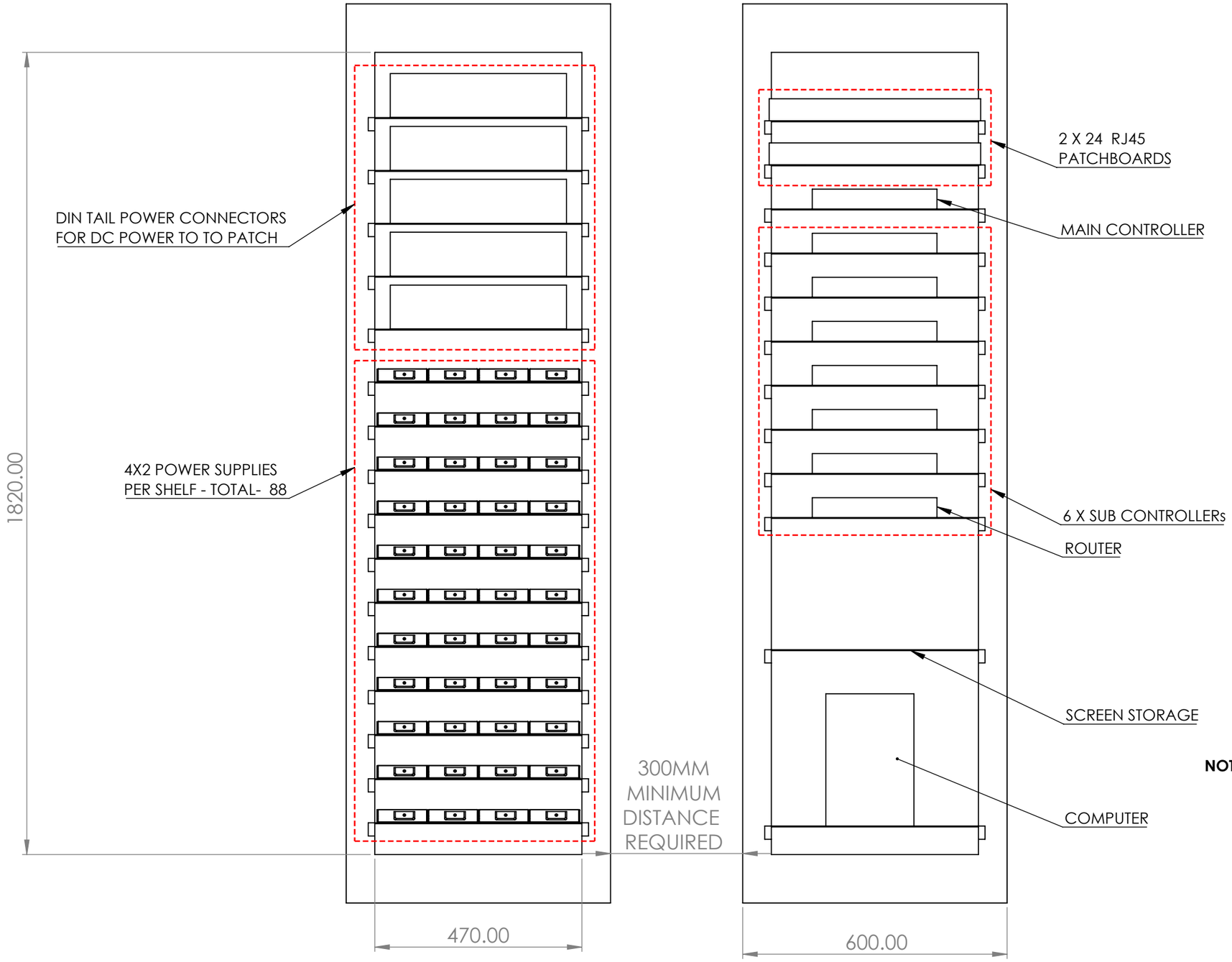
Sheet : 13 of 15
Page : A3

Drawing title : FACADE PENETRATION DETAL
Scale : SHOWN @ A3 Date : 19-12-23

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SERVER RACK 1

SERVER RACK 2



NOTE: - SERVER RACK DEPTH SHOULD ACCOMMODATE 550MM DEEP RACK SHELVING.

-30,000 WATTS MAX DRAW (RUNNING CONTENT WILL DRAW CLOSER TO 10,000 WATTS)

- SERVER RACKS SHOULD BE MINIMUM 300MM APART TO PREVENT INTERFERENCE.

- SUBSTANTIAL ACTIVE COOLING IS REQUIRED.

- 24 (4 PORT) POWER BOARDS REQUIRED.

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Sheet : 14 of 15

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Drawing title : SERVER RACK LAYOUT

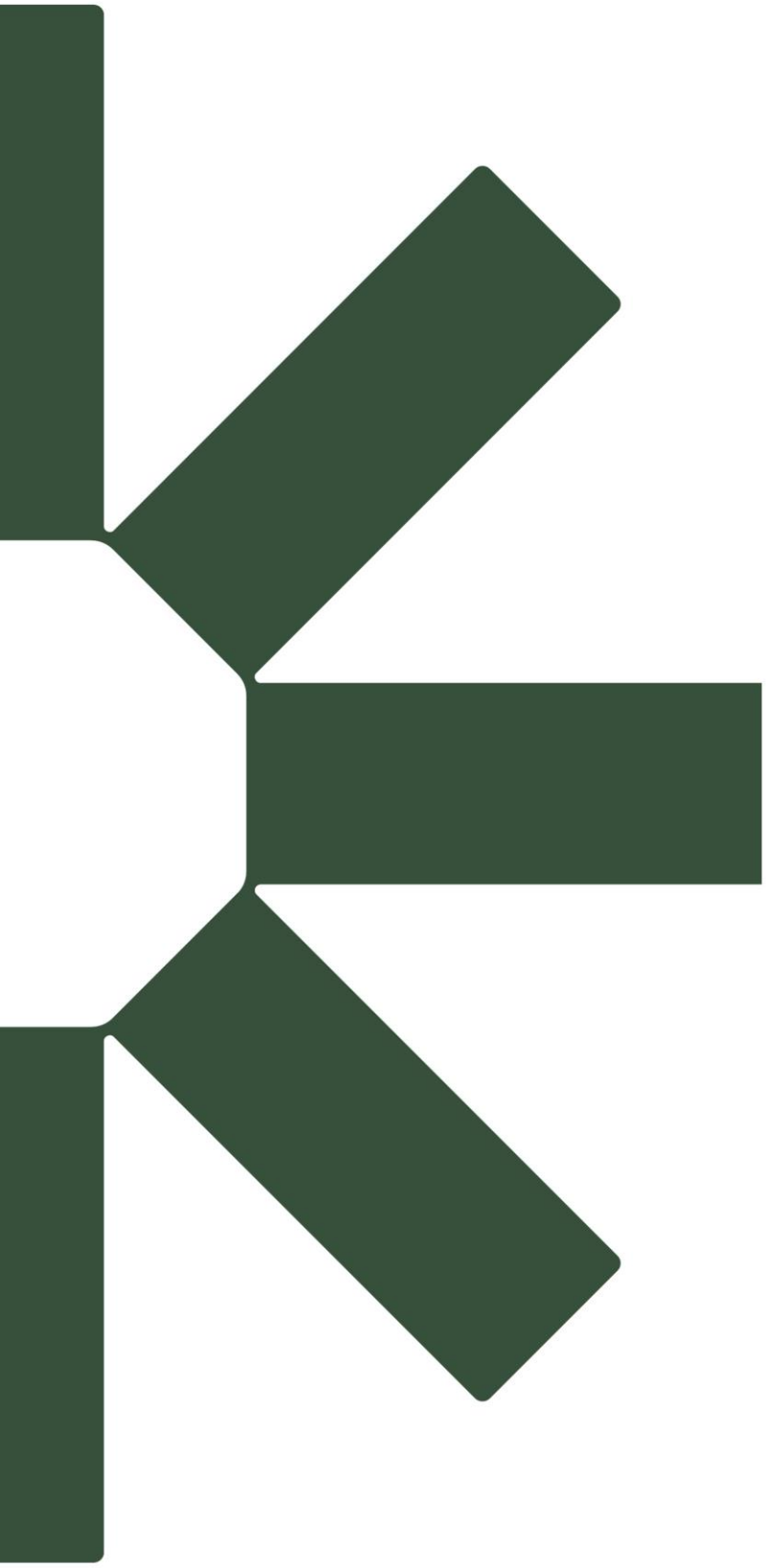
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