HOARE LEA

Mayfield - Threshold.
Manchester.
Landsec U+I.

SECURITY
SECTION 278 - SECURITY SPECIFICATION
TRAVIS ST & BARING ST
REVISION 02 – 13 NOVEMBER 2024

Audit sheet.

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Executive summary

Overview

This document contains herein the performance requirements to be met for the additional security measures to be installed for the Landsec, U+I owned site of Mayfield, Manchester.

As the Mayfield site continues to evolve and grow, there is a need to further enhance the site's security stance to meet current and future threats.

This phase of the project is focused on the North-West region of the Mayfield site (Threshold area), in particular the vehicle traffic routes of Travis Street and Baring Street.

Requirement

To provide a greater level of pedestrian safety to the public foot traffic in the area, it is proposed to install active vehicle control and passive protection measures to Travis Street and Baring Street. This will require a section 278 agreement with the Greater Manchester City Council in accordance with the Highways Act (1980) to make the necessary alterations to the roadway areas. This is in response to a credible threat from the use of a Vehicle as a Weapon (VAW) attack scenario.

Hoare Lea have previously carried out a Vehicle Dynamic Assessment of the Mayfield threshold area. This detail is shown below in section 2 of this document. Therefore, the solutions being proposed are required to be impact-rated to PAS 68: 2013, or IWA 14-1:2013 standards.

In coordination with the project design team Landscape Architects (Studio Egret West) and site wide infrastructure team, (Buro Happold) a robust design has been developed to ensure that public and pedestrian safety have been placed at the forefront of the proposed solution.

Solution

The roadway areas of Travis Street and Baring Street are proposed to have Active sliding bollards installed to the roadway, with adjoining static passive bollards forming a fully impact rated surround of the pedestrian walkway areas.

Travis Street will have a dual-sliding bollard system within the roadway which will enable a road width opening of 4.1 metres.

Baring Street will have a dual-sliding bollard system within the roadway which will enable a road width opening of 4.1 metres.

Each active barrier locations will have electronic access control fitted. This allows for local operation, and IP video intercom devices will enable remote operation and communication with the Mayfield estate Security Control Room (SCR). These devices will be mounted to dual-height pedestals for ease of vehicle access.

Video surveillance cameras will also be added to the Depot building facade to monitor the vehicle control points, to be monitored by the Mayfield estate security team within the SCR.

Fig. 1 – Mayfield Estate Project Scope Areas



Abbreviations

ATTRO	Anti-Terrorism Traffic Regulation
BS	British Standard
CTSA	Counter Terrorism Support Advisor
EACS	Electronic Access Control System
FOV	Field of View
GMP	Greater Manchester Police
HVM	Hostile Vehicle Mitigation
INT	Intercom
IP	Internet Protocol
IWA	International Workshop Agreement
MCC	Manchester City Council
ISO	International Standards Organisation
NPSA	National Protective Security Authority
OR	Operational Requirements
PA	Public Address
POD	Prohibition of Driving Order
PTZ	Pan, Tilt, Zoom Camera
SCR	Security Control Room
VAW	Vehicle as a Weapon
VDA	Vehicle Dynamic Assessment
VMS	Video Management System
VSS	Video Surveillance System

Reference Standards

NCP 104	NSI Code of Practice for Design, Installation and Maintenance of CCTV systems
ICO	In the picture: A data protection code of practice for surveillance cameras and personal information
GDPR	General Data Protection Regulations
BS EN 50130-4:2011+A1:2014	Alarm systems. Electromagnetic compatibility. Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems
BS EN 50132-5-3:2012	Alarm systems. CCTV surveillance systems for use in Security applications. Video transmission. Analogue and digital video transmission
BS EN 62676-1-1:2014	Video surveillance systems for use in security applications. System requirements. General
BS EN 62676-1-2:2014	Video surveillance systems for use in security applications. System requirements. Performance requirements for video transmission
BS EN 62676-2-1:2014	Video surveillance systems for use in security applications. Video transmission protocols. General requirement
BS EN 62676-2-2:2014	Video surveillance systems for use in security applications. Video transmission protocols. IP interoperability implementation based on HTTP and REST service
BS EN 62676-2-3:2014	Video surveillance systems for use in security applications. Video transmission protocols. IP interoperability implementation based on Web services
BS EN 62676-3:2015	Video surveillance systems for use in security applications. Analog and digital video interfaces
BS EN 62676-4:2015	Video surveillance systems for use in security applications. Application guidelines
BS 7958:2015	Closed Circuit Television (CCTV), Management and operation code of Practice
BS 8418:2015	Installation and remote monitoring of detector-activated CCTV systems. Code of practice
BS 10008:2014	Evidential weight and legal admissibility of electronic information
BS EN ISO 22311:2014	Societal security. Video-surveillance. Export interoperability
Home Office Surveillance Camera Code of Practice	Nov 2021 Amended Version
BS EN 50132	Alarm Systems – CCTV Surveillance Systems used in security applications
BS8243:2010	ACPO Policy on police response to security systems
BS EN 60529	Degree of ingress protection by enclosure (IP Code)
BS EN 62262	Degree of protection provided by enclosures for electrical equipment against external mechanical impact (IK Code)
IEC/EN 50486	Equipment for use in audio-video door-entry systems
PAS68	Publicly available specification for impact-testing and rating hostile vehicle mitigation products
PAS69	Publicly available specification providing guidance on the selection, installation, and use of Vehicle Security Barrier Systems
LPS 1175	Requirements and testing procedures for the LPCB approval and listing of intruder resistant building components, strongpoints, security enclosures and barriers
BS EN 60839-11-1:2013	Electronic Access Control Systems. System Components
BS EN 60839-11-2:2015	Electronic Access Control Systems. Application Guidelines
BS EN 60839-11-31:2016	Electronic Access Control Systems. Core Specification
BS EN 60839-11-32:2016	Electronic Access Control Systems. IP Interoperability
IWA14-1	International Workshop Agreement Part 1: Performance requirement, vehicle impact test method and performance rating
IWA14-2	International Workshop Agreement Part 2: Application, provides guidance for the selection, installation and use of vehicle security barriers (VSBs) and describes the process of producing operational requirements (ORs). It also gives guidance on a design method for assessing the performance of a VSB.

1. Introduction.

1.1 Overview.

Hoare Lea have been appointed to the Landsec, U+I project for the Mayfield Development to provide security advice and expertise regarding the North-West plot boundary area, which culminates at the intersecting junction of Travis Street and Baring Street, Manchester.

Presently this area of the development is used by a locally renowned nightclub, operating within The Depot building. With this activity and associated large gatherings of the public when attending events at The Depot, the Mayfield Partnership are seeking to submit a Section 278 (Highways Act 1980) application to enhance the physical protection measures in the area in to promote safer public occupation, and mitigate any potential risks associated with the use of vehicles as a weapon/ vehicle as nuisance.

This document is intended to provide an understanding of the project requirements for a final design solution to be proposed by an appointed contractor.

This performance specification is to be read in conjunction with the following drawings:

Table 1 Associated drawings

Drawing No.	Description
25/25607-HLEA-XX-ZZ-DR-SC-754001	Security - HVM Setting Out - Travis St and Baring St - S278 Works
25/25607-HLEA-XX-ZZ-DR-SC-754002	Security - Electronic Security Systems Travis St and Baring St - S278 Works
25/25607-HLEA-XX-XX-DR-SC-754004	Security - Matador Sliding Bollard Installation detail – MAT4

1.2 Background.

In reference to the Baring and Travis Street areas of the Mayfield Park development, Manchester City Council have required that any deployed Hostile Vehicle Mitigation (HVM) should be security rated (PAS 68 / IWA 14-1) due to the existing and future planned requirements of the area; in particular the potential for crowds to gather outside The Depot nightclub, which has an event capacity of up to 10,000 people.

It is understood that The Depot will continue to operate as a venue under a lease that does not expire for a further 5 years.

Currently, The Depot utilises a city centre wide Anti-Terrorism Traffic Regulation (ATTRO) to deploy temporary protective measures (Hard-staff type concrete blocks) when events are planned.

It is Hoare Lea's understanding that Greater Manchester Police (GMP) consulted the GMP Counter Terrorism Security Coordinator (SecCo), Manchester City Council (MCC), and MCC highways regarding the ATTRO.

Hoare Lea also understand that the Counter Terrorism Security Advisor (CTSA) has previously commented that introducing a Prohibition of Driving Order (POD) on the specific proposed areas of Baring St and Travis St would ensure that pedestrians have priority, but emergency and maintenance vehicles must have access as and when required.

The GMP have therefore recommended that any HVM measures to be deployed must meet PAS 68 or IWA 14-1 standards, with the rationale that the roadway areas be gated and/or active retractable measures are specified (e.g. bollards).

1.3 Operational assumptions.

- Temporary Hostile Mitigation Measures (HVM) measures currently in place on the island area between Fairfield Street and Travis Street being used as part of the currently ATTRO are to be retained in place until such time as that area of the site is further progressed with a permanent solution.
- Active vehicle control points will operate via the following methods:
  - Local Activation – Via Electronic Access Control system (EACS)
  - Remote Activation – Via release from the Mayfield estate Security Control Room (SCR)
  - Emergency Override – Manual override in the event of power failure
- Operational security policies and procedures to be developed by the Mayfield site security team, ensuring a holistic and inclusive approach is adopted to the Threshold area.
- Active vehicle controls are anticipated to be in the closed position permanently and only opened when authorised.
- Electronic access control system enrolment and credential control will under the control of the Mayfield estate security team.
- Emergency services access will be coordinated with Mayfield estate security team.

2. Threat and risk analysis.

2.1 Design Basis Threat vehicle types.

Hoare Lea are proposing two Design Basis Threat vehicle types as part of this analysis. The rationale is based on a higher likelihood of 'vehicle as a weapon' being used for the basis of attack, where ease of obtainability is increased, whilst still being able to deliver a substantial effect as a threat. The two vehicle categories are:

1. Category N1G 4x4 / Pick Up (2,500kg).
2. Category N2 Day Cab Lorry (7,500kg).

The 2,500kg (N1G) 4x4 pick-up has become an increasingly popular vehicle and with approximately an extra 1000kg of weight compared to a standard vehicle (car), this increases the impact, via weight and load capability, against a target either on or off road.

Fig.2 2,500kg (N1G) 4x4 pick-up (image-NPSA)



The 7,500kg (N2) 2-axle rigid lorry is a commercial vehicle typically of flat bed, curtain sided, or box container body style. Whilst it has limited off road capability and slow acceleration it has the capability of storing a large mass which can significantly increase the impact upon a target.

Fig. 3 7,500kg (N2) 2-axle rigid lorry (image-NPSA)



2.2 Risk analysis.

The below tables highlight the most likely perceived threats to the Mayfield Development area, and the following risk analysis:

Table 2 Risk assessment summary (part 1)

What do we need to protect?		
Asset	People	Specifically, people traversing though the public realm and existing highways (of some which will become pedestrianised)
What do we need to protect against?		
Design Basis Threat	VAW (Vehicle as a Weapon)	Accidental Intentional
Threat actor	Terrorist Unstable and fixated individuals Accidental driving (including Drunk/Disorderly)	
Where is the protection needed?		
Travis Street		

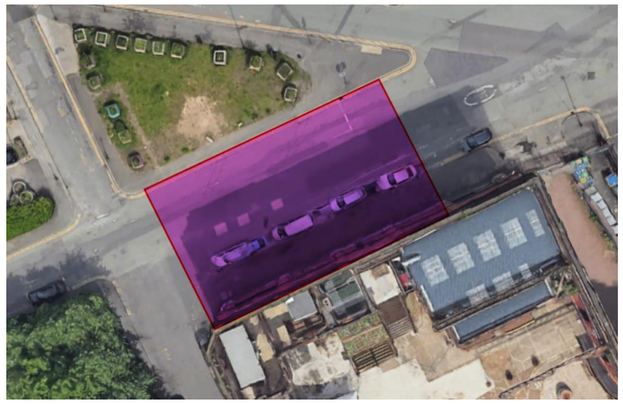
Baring Street	

Table 3 Risk Score A (Events – crowded spaces)

ID	Gross Risk – Planned Events / Crowded Space					Risk Treatment
	Threat	Vulnerability	Likelihood	Impact	Level	
R01	VAW	Baring Street	MED	V HIGH	V HIGH	(See Risk treatment recommendations below)
RO2	VAW	Travis Street	MED	V HIGH	V HIGH	(See Risk treatment recommendations below)

Table 4 Risk Score B (non-event – average realm population)

ID	Gross Risk – No Events / Normal Average Realm Population					Risk Treatment
	Threat	Vulnerability	Likelihood	Impact	Level	
R01	VAW	Baring Street	LOW	HIGH	HIGH	(See Risk treatment recommendations below)
RO2	VAW	Travis Street	LOW	HIGH	HIGH	(See Risk treatment recommendations below)

Risk is variable based upon the use of pedestrianised spaces. For example, should the realm be used for Christmas markets / concerts or other events that may attract more condensed / populated crowds then an adversary's intent for carrying out a threat against a crowded space will increase the Likelihood score and Risk score (A).

Alternatively, if the realm's general moving footprint is more dispersed as would be on a typical day, then the likelihood will decrease and so will the Risk Score (B).

Table 5 Risk assessment summary (part 2)

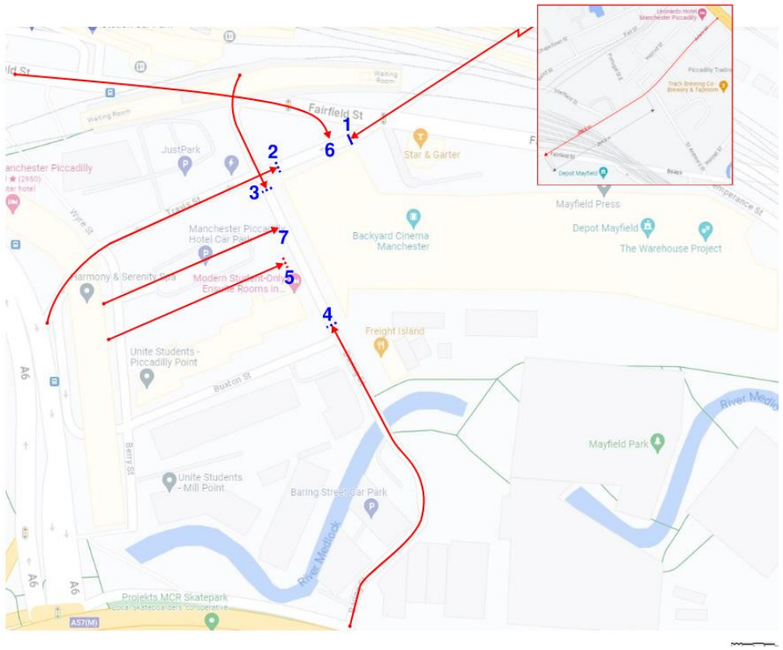
How do we propose to protect it?	
Travis Street	Vehicle Security Barriers / Hostile Vehicle Mitigation to BS ISO 22343-1, PAS 68: 2013, or IWA 14-1:2013. HVM solutions are to be measures such as automated bollards (sliding/ retractable) and passive measures to extend the protection line to a solid foundation. Passive measures will be in the form of static fixed bollards (with existing temporary HVM block units remaining along the Travis St. northern boundary) Interface with Video Surveillance Systems monitoring active barriers. Interface with Access Control and Intercom Systems controlling and communicating with active barriers.
Baring Street	Vehicle Security Barriers / Hostile Vehicle Mitigation to BS ISO 22343-1, PAS 68: 2013, or IWA 14-1:2013. HVM solutions are to be measures such as automated bollards (sliding/ retractable) and passive measures to extend the protection line to a solid foundation. Passive measures will be in the form of static fixed bollards. Interface with Video Surveillance Systems monitoring active barriers. Interface with Access Control and Intercom Systems controlling and communicating with active barriers.

3. Vehicle dynamic assessment (VDA).

3.1 Approach routes

The following routes have been analysed to calculate maximum impact speeds against proposed HVM points and points of interest that are vulnerable outside of the current proposals for protecting the area from a threat vehicle.

Fig. 4 VDA approach routes



3.2 VDA results.

VDA calculations were based upon the proposed routes and points of security interest. The summary performance requirements, to inform the security design team responsible for HVM design delivery, are as below, and are based upon PAS 68:2013.

Table 6 VDA results.

ROUTE 1- Adair St travelling south-west to Travis St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	97 kph (60 mph)	899	V/2500 (N1G)/80/90:0/0[1]
N2 Day Cab Lorry (7,500kg)	80 kph (50 mph)	1874	V/7500 (N2)/80/90:0/0
ROUTE 2- A6/Travis Road intersection heading north-east crossing Baring Road			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	72 kph (45 mph)	506	V/2500 (N1G)/80/90:0/0
N2 Day Cab Lorry (7,500kg)	68 kph (42 mph)	1322	V/7500 (N2)/80/90:0/0
ROUTE 3-Manchester Piccadilly Platform under-space travelling south across Travis St to Baring St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	56 kph (35 mph)	306	V/2500 (N1G)/64/90:0/0
N2 Day Cab Lorry (7,500kg)	50 kph (31 mph)	720	V/7500 (N2)/64/90:0/0
ROUTE 4-Baring St South/Mancunian Way travelling north past intersection with Buxton St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	62 kph (39 mph)	380	V/2500 (N1G)/64/90:0/0
N2 Day Cab Lorry (7,500kg)	52 kph (33 mph)	816	V/7500 (N2)/64/90:0/0
ROUTE 5-Berry St (University Accommodation Vehicle Entrance) travelling east to Baring St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	57 kph (36 mph)	324	V/2500 (N1G)/64/90:0/0
N2 Day Cab Lorry (7,500kg)	43 kph (27 mph)	546	V/7500 (N2)/48/90:0/0
ROUTE 6-Fairfield St travelling south-east towards Travis St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	62 kph (39 mph)	380	V/2500 (N1G)/64/90:0/0
N2 Day Cab Lorry (7,500kg)	64 kph (40 mph)	1199	V/7500 (N2)/64/90:0/0
ROUTE 7- Berry St (Manchester Piccadilly Hotel Car Park) travelling east to Baring St			
Threat Vehicle Type	Impact Velocity	Impact Energy (kJ)	Impact Performance Rating
N1G 4x4 Pick UP (2,500kg)	57 kph (36 mph)	324	V/2500 (N1G)/64/90:0/0
N2 Day Cab Lorry (7,500kg)	43 kph (27 mph)	546	V/7500 (N2)/48/90:0/0

4. Proposed solutions.

4.1 Physical security measures – performance requirements.

The proposed Physical Security measures are to be deployed to the Travis St. and Baring St. areas in accordance with the setting out detailed in drawing 25/25607-HLEA-XX-ZZ-DR-SC-754001

All impact rated measures (e.g., PAS 68:2013, or IWA 14-1) must be installed according to the corresponding standard (e.g., PAS 69:2013, or IQA 14-2). All impact rated measures will leave a gap between measures no greater than 1.2m.

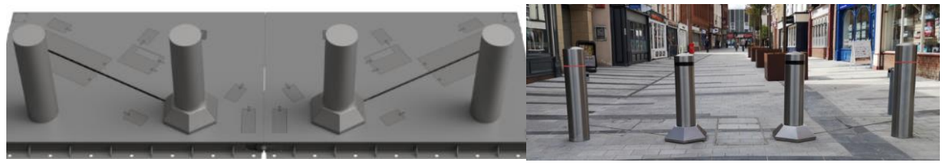
4.1.1 Active impact-rated bollards

An active sliding bollard system is to be deployed to the site location in accordance with setting out drawing 25/25607-HLEA-XX-ZZ-DR-SC-754001

For indicative purposes the currently solution has been designed using the Heald Matador solution (Types MAT4) however other systems of equal performance may be proposed in the final contractor design solution.

The active solution is required to be rated to PAS 68: 2013, or IWA 14-1:2013 to withstand a 7.5 tonne vehicle at 40mph.

Fig. 5 active impact rated bollard examples



Activation and control of the system is to be configured for both local activation (via the integration with the Mayfield estate electronic access control system (EACS) and remote activation (via the deployment of video intercom system that will communicate to a receiver location within the Mayfield estate Security Control Room (SCR).

Deployment positions at the intersection of Travis Street/Fairfield Street and at the south of Baring Street are to be provided with dual height vehicle pedestals to mount EACS card readers and Video Intercom unit.

All locations will require fully functional traffic signal control and sounders to activate upon operation to protect pedestrians and provide active wayfinding to vehicles accessing the area.

In the event of power loss, the bollards will remain in place, however there should be a manual override function that will allow the bollards to be manually operated if required.

4.1.1.1 Coordination requirements.

Each deployment location will require a min-pillar location to locally house power and data connections to the Mayfield site (locations to be finalised with coordination by final contractor design). Mini-pillar enclosure dimensions provided by the active HVM bollard manufacturer are 1300x1000x500mm.

The installing contractor will be responsible for coordinating all power, data, and civil works required to enable the fully functional deployment of the security systems.

4.1.2 Passive / static impact-rated measures

To achieve a fully secure line at each of the active impact-rated bollard deployments, passive/static measures are required as adjoining measures.

The passive static measures are required to be rated to PAS 68: 2013, or IWA 14-1:2013 to withstand a 7.5 tonne vehicle at 40mph.

An indicative detail drawing has been provided as part of the tender pack, assumed on a product by ATG, however equal approved manufacturers may be suggested by the contractor team.

Final design decisions on bollard design type, and finishes are to be agreed with the end client, however units are to be price based upon stainless steel (RAL7001).

Fig. 6 passive / static impact rated bollard example.



4.1.2.1 Coordination requirements.

The installing contractor will be responsible for coordinating all civil and landscape works required to enable the fully functional deployment of the security systems.

4.1.3 Non-rated measures.

Non-rated passive/static bollards are planned to be deployed along the corner area adjacent Travis St and Baring St as future proofing of the area for Taxi rank queuing and to prevent vehicles being able to park up on the pathway.

Manually removable bollards are planned to be installed on Baring Street adjacent to the current student accommodation vehicle exit gate, as a means of controlling vehicle access to the Baring St. pedestrianised area.

Non-rated street furniture will be deployed in the form of planters, benches, and bike rack in accordance with the Landscape Architects design. (Please reference Landscape Architect design for further details)

4.1.3.1 Coordination requirements.

The installing contractor will be responsible for coordinating all civil and landscape works required to enable the fully functional deployment of the security systems.

4.2 Electronic security measures.

To form a holistic approach in providing improved security to the Travis St. and Baring St pedestrian areas the physical vehicle control measures above are to be supported by additional electronic security measures.

These measures will allow remote monitoring of video surveillance from the Mayfield estate SCR and enable remote communication with the HVM barrier positions via the use of video intercom units at each road position. The estate SCR will also remotely operate the active HVM bollards to allow vehicle access/ egress as required.

Each HVM barrier position is also to be supplied with EACS and will operate via the presentation of a valid access control credential.

4.2.1 Video surveillance system (VSS).

All cameras will align with existing deployed manufacturer technology on the Mayfield estate. Camera capability will match or exceed existing deployed technology and will be capable of integrating with existing Video Management System (VMS) utilised on site.

Camera Field of View (FOV) and Operational Requirements (OR) are as per section 5 and to be confirmed by the install security specialist contractor with the client to provide a functional VSS with defined FOV's.

The nominated camera types for this project are:

- Pan, Tilt, Zoom (PTZ) Camera
- Fixed Bullet Camera

For indicative camera locations, please refer to drawing 25/25607-HLEA-XX-ZZ-DR-SC-754002

All final camera locations are to be agreed with the site security team prior to installation.

4.2.1.1 Camera colour and fixings.

All cameras required for this deployment will match the colour of existing deployed camera technology across the Mayfield development. Final approval is to be sought with the client team before units are purchased and installed.

All camera mounts and associated fixings will match camera colour type.

4.2.1.2 Camera mounting.

For this area of the Mayfield development all VSS camera devices are to be building mounted to The Depot building. Manufacturer specified mounting equipment only is to be used to wall mount devices.

Final locations and heights will be confirmed by the installing security specialist contractor.

Camera heights are not to clash with lighting fixtures and are to be placed a minimum distance of 1 metre away to limit glare and reflection effects on the VSS cameras and images.

4.2.1.3 Power and data requirements.

All cameras are required to be powered via PoE via the deployment of new CAT6 cable infrastructure. All cables will be surface mounted external grade data cable, installed from the existing estate SCR (located on top of the depot building) to each VSS device location. All cabling is therefore required to have adequate environmental containment measures provided. (IE Galvanised conduit)

Two (2) pan-tilt, zoom (PTZ) camera located adjacent Travis Street may require local LV power supplies and PoE midspan units due to their power draw. This element is to be confirmand by the installing security specialist contractor and requirements coordinated with other disciplines as required.

4.2.1.4 VSS Storage

Additional video recording storage is to be provide to the existing estate system. Cameras are required to retain images for a period of 31 days. Camera frames rates are to be based on 20 frames per second (FPS), continuous record, using H.264 compression. Final recording settings are to be confirmed by the installing security specialist contractor in accordance with the client's security team requirements.

4.2.2 Access control system (EACS).

An Access Control System, (EACS) is required to permit or prevent persons / vehicles entering the Mayfield development. Active HVM measures, in the form of moving bollards, are to be installed to prevent unauthorised vehicles entering the plot areas. An EACS is required to provide authorised users with the ability to enter site via the access points as per the locations on drawing 25/25607-HLEA-XX-ZZ-DR-SC-754002

4.2.3 EACS requirements.

Card Readers and local ACU units will be required to be fitted to the active HVM measures to allow authorised users to prevent a valid credential to enter and exit site.

Readers will be mounted to dual height vehicle pedestals, with ACU units housed within local mini-pillar units adjacent.

For EACS locations, please refer to drawing 25/25607-HLEA-XX-ZZ-DR-SC-754002

Final EACS and pedestal locations will be coordinated and confirmed by the installing security specialist contractor.

The existing Mayfield site is currently running a Paxton Net2 system, therefore two options are required to be priced for.

Option 1 – Costs for any new access control points to be added to the existing Paxton Net2 system.

Option 2 – Costs for a new access control platform in compliance with the Landsec U&I Security standards. (see section 6.3 below)

4.2.4 Intercoms.

Intercoms on the access and egress areas from site are required to allow visitors and those not in possession of a valid credential to communicate with the Mayfield SCR to request entry. Intercoms will be video and audio capable with full integration capability with the existing Video Management System (VMS) utilised on site.

Intercoms will be mounted to dual height vehicle pedestals with the proposed card readers.

For indicative Intercom locations, please refer to drawing 25/25607-HLEA-XX-ZZ-DR-SC-754002

Final Intercom and pedestal locations will be coordinated and confirmed by the installing security specialist contractor.

4.2.4.1 Power and data requirements.

New underground ducting will be required to provide power and data transmission to the EACS. Separate ducts are required for power and data transmission. New ducting routes will feed from and in to existing ducting routes on site.

Local power will be provided from the local street supply via a metered supply to each local mini-pillar unit adjacent each active HVM location. Power to be supplied will be a min required of single-phase 20A supply per mini-pillar location.

New comms ducting is to be provided linking each HVM mini-pillar location along Travis and Baring Street and directed back down Baring Street to terminate at the current Mayfield Gate-house position currently linking fibre and data connection to the SCR, In accordance with drawings produced by Buro Happold coordinating whole area underground services.

All civils, electrical and landscape elements will be coordinated and confirmed by the installing security specialist contractor.

4.2.5 Public address (PA) system.

A Public Address (PA) System is required to allow the Mayfield SCR operators to communicate with persons within the Mayfield development boundaries in the event of an incident occurring.

4.2.5.1 PA requirements.

Internet Protocol (IP) Speakers will be required and mounted to the proposed camera columns to support the VSS. IP Speaker technology will align with existing deployed manufacturer technology on the Mayfield site and will be capable of integrating with existing Video Management System (VMS) utilised.

Currently units installed within the Mayfield estate are by Axis communications.

For indicative IP Speaker locations, please refer to drawing 25/25607-HLEA-XX-ZZ-DR-SC-754002

Final IP Speaker locations will be coordinated and confirmed by the installing security specialist contractor.

4.3 Interdisciplinary coordination.

The installing security specialist contractor is to be responsible for ensuring that all inter-disciplinary coordination elements are effectively managed and communicated.

Discipline coordination will be required, but not limited to:

- Civils
- Landscaping
- Architecture
- MEP
- IT.

5. Operational requirements.

The below tables highlight the operational requirements for the Security systems to be fitted to the Tavis St and Baring St. areas:

HVM Measures

Table 7 – HVM Performance Requirements

Location ID	Site Location	Performance Rating	Access Control	Intercom
VE-00-01	Travis St/ Fairfield St	IWA 14:1 213 Bollard V/7200(N2)/64/90:1	Card Reader In/ Card Reader Out	Dual Height entry
VE-00-02	Travis St. West	IWA 14:1 213 Bollard V/7200(N2)/64/90:1	Remote access/ Automated egress	N/A
VE-00-03	Baring St North	IWA 14:1 213 Bollard V/7200(N2)/64/90:1	Remote access/ Automated egress	N/A
VE-00-04	Baring St South	IWA 14:1 213 Bollard V/7200(N2)/64/90:1	Card Reader In/ Card Reader Out	Dual Height entry
VE-00-05	Baring St Central	Removable static bollard set	n/a	n/a

Video Surveillance

Table 8 – VSS Performance Requirements

Device ID	Camera Type	Location	Camera Field of View (FoV)	Image Operational Requirement (OR)
VSS-00-01	Fixed Static - External	The Depot Building – North East corner	Travis Street VE-00-01 Barrier entry area	Observe
VSS-00-02	Fixed Static - External	The Depot Building – North façade	Travis Street VE-00-01 Barrier area	Observe
VSS-00-03	Fixed Static - External	The Depot Building – North façade	Travis Street VE-00-02 Barrier area	Observe
VSS-00-04	PTZ - External	The Depot Building – North façade	Controllable view of the Travis Street overall area	Identify (when controlled)
VSS-00-05	Fixed Static - External	The Depot Building – North Western corner	Baring Street VE-00-03 Barrier entry area	Observe
VSS-00-06	Fixed Static - External	The Depot Building – North Western corner	Travis Street VE-00-02 Barrier area	Observe
VSS-00-07	PTZ External	The Depot Building – Western Façade	Controllable view of the Baring Street overall area	Identify (when controlled)
VSS-00-08	Fixed Static - External	The Depot Building – Western Façade	Baring Street VE-00-03 Barrier entry area	Observe
VSS-00-09	Fixed Static - External	The Depot Building – Western Façade	VE-00-05 Barrier area	Observe
VSS-00-10	Fixed Static - External	The Depot Building – Western Façade	Baring Street VE-00-04 Barrier area	Observe
VSS-00-11	Fixed Static - External	The Depot Building – Western Façade	Baring Street VE-00-03 Barrier area	Observe

Note: VSS Image Requirements are based upon BS6267:2 2015

Table 9– DORI Matrix

Screen Capture Req.	Pixel Per Metre (Px/M)
Detect (10%)	25
Observe (25%)	63
Recognise (50%)	125
Identify (100%)	250

6. Contractor scope of works.

6.1 Required deliverables.

The following items will need to be delivered to provide a fully detailed and coordinated design which will include, but not be limited to the following: -

1. Security system and sub-system documentation
2. Security system and sub-system calculations
3. All detailed drawings
4. All detailed schematics
5. Validation of products
6. Supply of all related security systems, sub-systems, and components
7. Pre-assembly of all systems, sub-systems, components, and integrated parts
8. Installation, termination, and integration of all related security elements
9. Design and engineering (to include any bespoke security elements)
10. Factory acceptance testing
11. Site acceptance testing
12. Software, licenses, firmware, security, and software patches / plugins
13. Graphical maps and symbols
14. Operator training
15. Component and system warranties
16. Maintenance provision(s)
17. Witness testing, commissioning, and handover
18. Operation and Maintenance (O&M) manual for security systems, sub- systems, and components

6.2 Design requirements.

6.2.1 Design intent methodology.

A design intent methodology will be submitted for review prior to commencement that describes the contractor's own interpretation in layman's terms of how the security system and sub-systems will function and how the operators will use the security system on a day-to-day basis.

6.2.2 Cable runs, ducting, and containment (containment and tray)

A complete plan clearly showing all intended main cable and duct routes, as well as any underground routes throughout the site which pertain to the building security services will be submitted for review prior to commencement of works for coordination with the incumbent MEP consultant/contractor.

6.2.3 Detailed control and server room equipment layout.

A complete plan clearly showing the layout of the rack(s) and control equipment for the security system and/or sub-systems will be submitted for review prior to commencement of works.

The plan will encompass all loading requirements for power and cooling which will be coordinated with the MEP consultant/contractor.

6.2.4 Detailed End User Location Layout

A complete plan including elevation drawings of all the intended security related equipment for each end user location as detailed in Section 5.1 will be submitted for review prior to commencement of works.

The drawings will encompass all loading requirements for power and cooling and demonstrate that all relevant health and safety practices for users have been incorporated into the design.

6.2.5 Video Surveillance Fields of View and Coverage

Calculation sheets pertaining to the focal length required and detailing the target information to include height, distance, final pixel count and a screenshot for maintenance or future camera replacement will also be included.

6.2.6 Electrical Power

A complete plan showing all power requirements including the number and type of supplies required for the security system and/or sub-systems will be submitted for review prior to commencement of works.

The requirements detailed in this plan will be coordinated with the MEP consultant/contractor.

6.2.7 Detailed Schematic Drawings

Detailed schematic drawings will be submitted for review prior to commencement of works showing all major system components, including their interconnection to each other and any connections to external communication paths/lines.

6.2.8 Detailed Connection Schedules

Detailed connection schedules showing all connections at the control equipment, field devices, and junction boxes will be submitted for review prior to commencement of works.

6.2.9 Design Risk Assessments

A continued and detailed design risk assessment covering all elements pertaining to the design, installation, and maintenance of the entire security system and/or sub-systems will be submitted for review prior to commencement of works.

The design risk assessment will be constantly updated and maintained to comply with the CDM 2015 regulation.

6.3 EACS implementation

Contractor should consider the following options and discuss with the client which option to proceed with prior to the commencement of any detailed design.

6.3.1 Option 1

Expansion of the existing EACS manufacturer to the proposed locations where hardware is required, as detailed above. The current manufacturer is Paxton, with the Net2 system in operation across the wider Mayfield development.

Contractor shall utilise this preferred manufacturer, ensuring consistency with hardware choice and installation methods to align with the wider Mayfield development project.

6.3.2 Option 2

Provide the client with an alternative EACS manufacturer for the newly proposed locations detailed within this scope and supporting drawings, further upgrading the existing EACS manufacturer at all locations through the wider Mayfield Project.

Should option 2 be the preferred path forward, contractor shall:

- Survey all existing EACS points across the development.
- Detail and log all hardware across the development, providing a complete asset register of all EACS hardware to the client.
- Ensure any new EACS system has integration capability with all other electronic security systems and software across the development.

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