

## ***TECHNICAL SUBMISSION***

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***Video Surveillance System P9803 – 6 Weldale Street, Reading RG1  
7BX.***

## **IP Video Surveillance system**

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## 1. System Overview

Proposed is a digital internet protocol (IP) format video surveillance system manufactured by Hikvision consisting of network a video recorder and cameras interconnected over a dedicated local area network.

System utilises an Ethernet infrastructure, IEEE 802.3 for the transmission of H.265 encoded video signals from the cameras to the recording equipment. An Ethernet network switch will provide the relevant power to the IP cameras utilising IEEE 802.3af PoE.

## 2. Strategy

High quality images of the communal areas within the development will be recorded for the purposes of public safety and crime prevention. Cameras will be placed as indicated in the supplied tender drawings. Additional external camera cover is indicated on the attached NACD design drawings and shown within green clouds, please note these cameras do not form part of the tender design and are shown for information only.

| C# | Block    | Level | Location      |
|----|----------|-------|---------------|
| 1  | A1 North | LG    | Lobby         |
| 2  | A1 North | LG    | Lobby         |
| 3  | A1 North | LG    | Bin Store     |
| 4  | A1 South | LG    | Lobby         |
| 5  | A1 South | LG    | Bin Store     |
| 6  | A2       | LG    | Lobby         |
| 7  | A2       | LG    | Kitchen       |
| 8  | A2       | LG    | Lounge        |
| 9  | A2       | LG    | Car Park      |
| 10 | A2       | LG    | Cycle store   |
| 11 | A2       | LG    | Car Park      |
| 12 | A2       | LG    | Car Park ANPR |
| 13 | A2       | LG    | Car Park ANPR |
| 14 | A2       | G     | Reception     |
| 15 | A2       | G     | Reception     |
| 16 | A2       | LG    | Binstore      |

### **3. Performance criteria**

All cameras are vandal resistant mini dome with true colour reproduction in daylight switching to black and white at low light levels with integral infra-red LED illumination. Recorded data from each camera will be 8MP resolution, 12 images per second on motion detection. Recordings will be retained for a period of 31 days on the recorders internal hard disk drive, with the facility to back up and export incidents via network or USB connected portable storage devices.

Recorded image data will achieve the objectives below:

- Identify unknown person- 250pixel/m, 6-12m distance.
- Recognise known person- 125pixel/m, 13-23m distance.
- Observe characteristic detail- 62.5pixel/m, 25-47m distance.

The installation will conform to the NSI code of practice for the design installation and maintenance of CCTV systems NCP 104 issue 3, and BS EN 50132-7.

#### **4. Equipment**

##### **Recording and monitoring**



##### **32-ch 1.5U 4K NVR**

- Up to 32 channel IP cameras can be connected
- Up to 1-ch@32 MP/2-ch@12 MP/16-ch@1080p decoding capacity
- Support 2 HDMI and 1 VGA interfaces, and HDMI interfaces support independent video output
- 4 HDDs for continuous video recording
- Supports various special function cameras, including thermal camera/fisheye/people counting/heatmap/ANPR (automatic number plate recognition)
- Advanced streaming technology enables smooth live view and data self-correction in poor network conditions
- Supports dual-stream recording to save time and bandwidth.

The NVR will be housed in a 19" rackmount data cabinet located in a secure BOH area.



**25 YEARS**

**X WR**

**Environ WR390 Wall Rack 9U x 600 mm Wide x 390 mm Deep - Black**

Part Code: WB9.390SG-BK

The Environ WR is a range of wall-mounted 390mm wide racks designed for the installation of both cabling and equipment, suitable for a wide range of applications including local area networking (LAN) cabling and hardware, and the housing of security, audio and visual equipment.

## Offsite system monitoring by third party control room

Offsite system monitoring will be via web interface to the dedicated security Local Area Network. The cameras support various common protocols including TCP/IP over network IPv4 and IPv6, Multicast, PPPoE, Open Network Video Interface protocol, and MJPEG via HTTP, ensuring that any third party operated CCTV control room will be able to monitor the local camera feeds if they have been provided with secure user account and log in information.

IMPORTANT COMMUNICATIONS REQUIREMENTS FOR REMOTE SYSTEM OPERATION (TO BE ORDERED BY SITE & TO BE LIVE PRIOR TO COMMISSIONING) 1no with broadband internet service subscription static IP address and broadband router.

## Power and signal

Proposed cameras are all extra low voltage and are connected to the long range (up to 250m) network switch via 1no Cat5e cable. The camera will request power from the switch (PoE IEEE 802.3af). IP address information to join to the proprietary network will be assigned by NACD.

## Internal Cameras



### 4K Fixed Dome Network Camera

- High quality imaging with 8 MP resolution
- Efficient H.265+ compression technology
- Clear imaging against strong back light due to 120 dB true WDR technology
- -S: audio and alarm interface available
- Water and dust resistant (IP67) and vandal proof (IK10)
- Robust structure design with full metal materials.

4K

H.265

SD

WDR

IP67

IK10

- **Image Sensor** 1/2.5" Progressive Scan CMOS
- **Min. Illumination** Colour: 0.01 lux @(F1.2, AGC ON), 0 lux with IR
- **Shutter Speed** 1/3 s to 1/100,000 s
- **Day & Night** IR Cut Filter
- **Wide Dynamic Range** 120dB
- **DNR3D DNR**
- **FOV** 2.8 mm, horizontal field of view: 102
- **IR Range** 30 m

## ANPR Camera



### 2 MP DeepinView ANPR Moto Varifocal Bullet Camera

- High quality imaging with 2 MP resolution
- Excellent low-light performance via DarkFighter technology
- Clear imaging against strong back light due to LightFighter technology
- License Plate Recognition
- Efficient H.265+ compression technology to save bandwidth and storage
- Advanced streaming technology enables smooth live view and data self-correction in poor network
- 5 streams and up to 5 custom streams to meet a wide variety of applications
- 6 behavior analyses, 3 exception detection, and face detection
- Water and dust resistant and vandal proof (IP67 and IK10).

- **Image Sensor** 1/1.8" Progressive Scan CMOS
- **Min. Illumination** Colour: 0.002 Lux @ (F1.2, AGC ON), 0 Lux with IR
- **Shutter Speed** 1 s to 1/100,000 s
- **WDR** 140 dB
- **Day & Night** IR cut filter
- **Lens**
- **FOV** 2.8 to 12 mm: horizontal FOV 103.3° to 38.6°, vertical FOV 54.2° to 21.9°
- **IR Range** up to 50 m

Fixing method is to be determined once the building fabric type has been determined in each area. The ANPR camera will utilise a metal backbox bracket which ensures both its vandal resistance and ingress protection (IP rating). Final camera locations will be selected to provide an unobstructed field of view.

## **5. Commissioning and Handover**

On completion the system will be visually and functionally tested by the installation technician to ensure that it meets the agreed specification and that the standard of workmanship is high.

At handover all aspects of the system operation will be demonstrated and the user(s) will be trained in its correct operation and made aware of any adjustments or precautions necessary to ensure that the system is correctly maintained.

All documentation will be provided to enable the user(s) to operate and maintain the system including; site specific drawings detailing all equipment locations, make and model number of all items and manufacturer user manuals.

## **6. Attachments**