Esperance CCTV Strategy
Public Summary

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AVANTGARDE
TECHNOLOGIES

Client

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Executive Summary

Avantgarde Technologies (Avantgarde) has been engaged by Shire of Esperance (SOE) to create a CCTV design that will act as a Master Plan for the upgrade and roll out of the Shire's CCTV network. This document prepared by Avantgarde is in response to the "Develop Esperance CCTV strategy" document listed by SOE.

It is understood that SOE is looking to implement a CCTV solution that can provide local Police with high-definition video images in the case of theft/accidents or antisocial behaviour. The solution designed must have the ability to be implemented as one integrated CCTV solution throughout the SOE assets with options for future expansion. This will reduce the head-end equipment cost and provide a simple, efficient Video Management System (VMS) to manage and operate.

In response to these requirements, Avantgarde has designed an enterprise grade CCTV system that will provide the Shire of Esperance with a high-end video management system and be accessible from the local Police Station twenty-four hours a day, seven days a week. The design document will be broken into stages by priority order and provide SOE with accurate costings and time frames to complete the project.

This document prepared by Avantgarde covers:

- Client Objectives
- Solution Overview

Assumptions

In preparing this document, Avantgarde has assumed that the information supplied by SOE is accurate and complete. If significant omissions or inaccuracies are discovered during the project, the parties will negotiate in good faith to create an amendment to this proposal (e.g. changes in costs or scheduling) to address the impact of such omissions or inaccuracies. If the parties fail to reach an agreement with respect to such incorrect assumptions, Avantgarde may terminate this proposal with notice to SOE.

1.1. About Avantgarde Technologies

Avantgarde is a Technology Consulting Company based in Perth, Western Australia that offers customers tailored technical solutions for a range of products. Avantgarde is rapidly building a name as one of Perth's innovative solution providers having successfully demonstrated the delivery of a number of highly technical consulting projects for enterprise and carrier-grade environments. At Avantgarde, we pride ourselves on providing our customers with premium IT and integrated security solutions. Avantgarde deals with a wide range of clients from Small / Medium Enterprise, Large Enterprise, Government, Non-Profit Organisations and Carrier Grade Platforms. With extensive industry experience and a broad range of skills, Avantgarde is capable of designing an intelligent solution for whatever the business objective might be.

The team at Avantgarde is comprised of highly skilled individuals each with strong knowledge and experience in their field of expertise. Whilst we pride ourselves on being innovative thinkers, our consultants are up to date with current best practices for deploying leading vendor solutions to meet the customer's needs.

Avantgarde offers a range of Electronic Security and Communication services including but not limited to CCTV, Structured cabling solutions, Wireless communications, Alarm and Access control installation and configuration. Our security consultants and technicians have extensive experience and knowledge of the all enterprise CCTV vendors utilised within the Government CCTV environment.

With the two main VMS solutions utilised being:

- Genetec Video Management software
- Milestone Video management software

Avantgarde is certified to the enterprise levels in both product suites.

Avantgarde has a Security Agent's and Security Consultants license issued by the Western Australian Police (license number 51629) and all Security Technicians hold a valid Security Installer license.

In the IT space, whilst primarily focusing on the Microsoft core product suite, Avantgarde also has expertise in other areas including DELL EMC, Forcepoint, Microsoft, VMWare, Cisco and many more and has implemented solutions using technologies from all vendors mentioned above.

Our list of industry certifications and awards is extensive and includes many well-recognised industry credentials in the field. Our extensive list of IT qualifications include the Microsoft Certified IT Professional (MCITP) in six different areas, Cisco Certified Internetwork Expert (CCIE) Voice and Collaboration, Cisco Certified Network Professional (CCNP) in Routing and Switching, Microsoft Certified Solutions Expert (MCSE) in Server Infrastructure and the Microsoft Most Valued Professional (MVP) award.

2. Customer Objectives

Avantgarde has captured the following customer objectives for this project:

- Provide the framework and criteria for the strategic development and ongoing management of internal CCTV and external mobile CCTV systems that are owned by the Shire of Esperance and operated by the WA Police at the Esperance Police Station.
- Ensure the logical and systematic roll out of CCTV cameras and associated infrastructure throughout Township of Esperance public spaces, in order to assist with financial planning and grant funding applications to fund these infrastructure projects.
- Ensure that proposed solutions allow for upgrade to new technology as required.
- Ensure that all elements of the CCTV system will work and be compliant with each other.

3. Project Implementation Stages

The implementation stages for the SOE CCTV strategy are listed below in descending order of priority.

3.1. Stage One: Shire of Esperance CBD, Main server and Operational Control Equipment

- Andrew Street CCTV
- Caltex /Bus Stop Cameras
- McDonald's
- Pier Hotel CCTV
- Whale Tail Foreshore CCTV
- Police Station control center (Full operational control of the system)
- Administration Building (Main Server Infrastructure)

Optional CBD sites

- New Pub CCTV (Opposite Pier Hotel)

3.2. Stage Two: Pink Lake Road Area

- Harbor Rd/Pink Lake Road (License Plate CCTV)
- Pink lake IGA, liquor Land CCTV
- Johns Street/Pink Lake Road CCTV
- Nulsen Primary School CCTV
- Esperance Senior High School CCTV

3.3. Stage Three: Esperance Foreshore

- Tanker Jetty/Carpark
- Brazier BBQ Area
- Foreshore South Carpark
- Skate Park
- Adventure Land Playground Area

3.4. Stage Four: Mobile solutions for Beaches

- West Beach
- Twilight Beach

3.5. Stage Five: Esperance CBD additional sites

- Boulevard Shopping Centre
- Esperance Hospital
- Dempster St

3.6. Australian Standards

All work will meet Australian Standards, as per the below:

- Electrical Standards: As/NZS3000
- Data Cabling Standards AS/CA S009 2020
- CCTV Standards AS/NZS 62676

4. Camera Solution

The design proposed is to utilise two models of cameras to ensure the solution provides all the necessary requirements of high-quality images in both day and night environments. The strategically placed analytic cameras will provide Police with highly advanced forensic search capabilities when tracking suspects or incidents. The smart searching capabilities will be available directly through Genetec Security Centre.

4.1. Lowlight Camera Technology

With new, powerful chipset and processing technology, combined with industry leading lens technology, all cameras will achieve optimal performance in low-light conditions by capturing and producing crystal-clear images including true-colour images without IR LEDs, regardless of the environment or time of day.

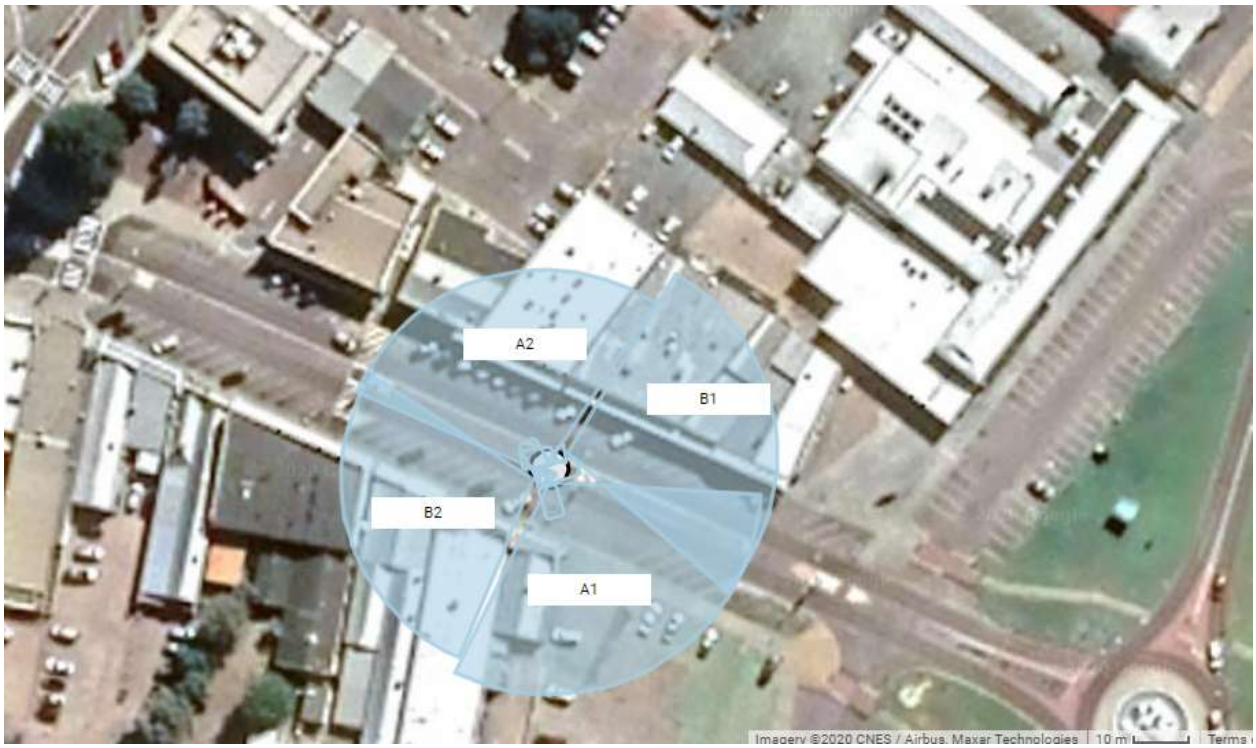
Conventional Camera with no lowlight capabilities

Ultra Lowlight Technology

5. Project Works Site by Site Installation - Stage 1

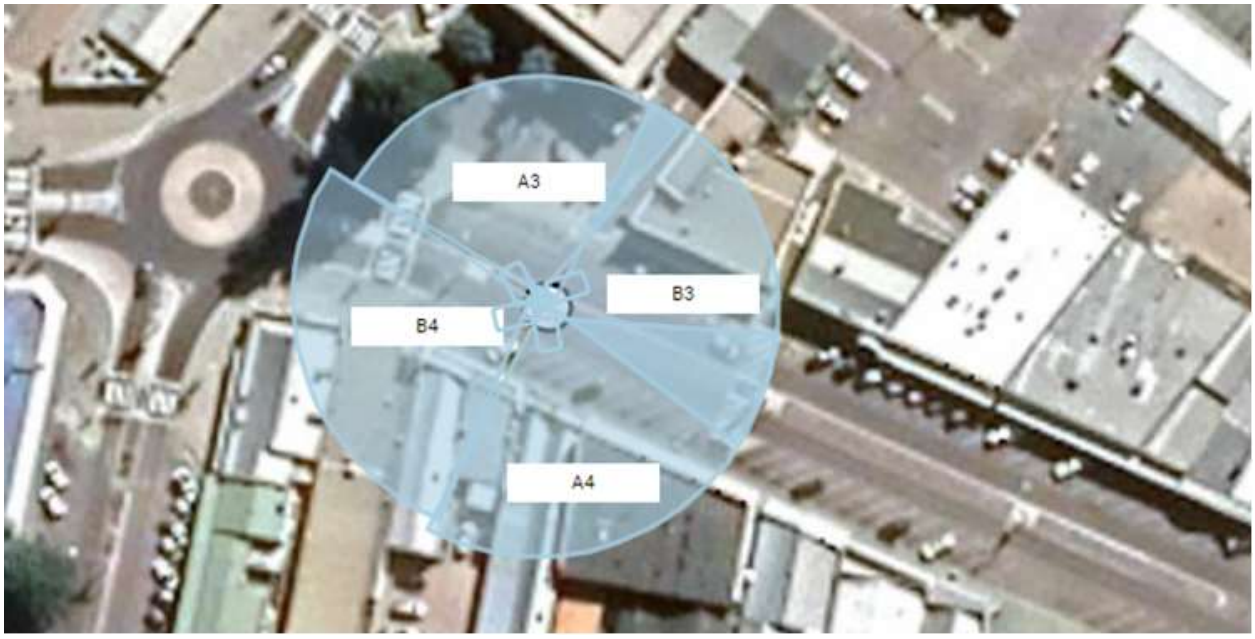
5.1. Andrews Street 1

Andrews Street 1 is a new location. A new 4m breakback pole will be installed in the middle of the road reserve. The 4m CCTV pole will have four cameras installed on it to provide 360 degrees of coverage. There will be two Analytic cameras installed looking to opposite sides of the roads to allow for target specification searching of both sides of the road. The other two cameras will utilize low light cameras.



5.2. Andrews Street 2

Andrews Street 2 is a new location. A new 4m breakback pole will be installed in the middle of the road reserve. The 4m CCTV pole will have four cameras installed on it to provide 360 degrees of coverage. There will be two analytic cameras installed looking to opposite side of the roads to allow target specification searching of both sides of the road. The other two cameras will utilize low light cameras.

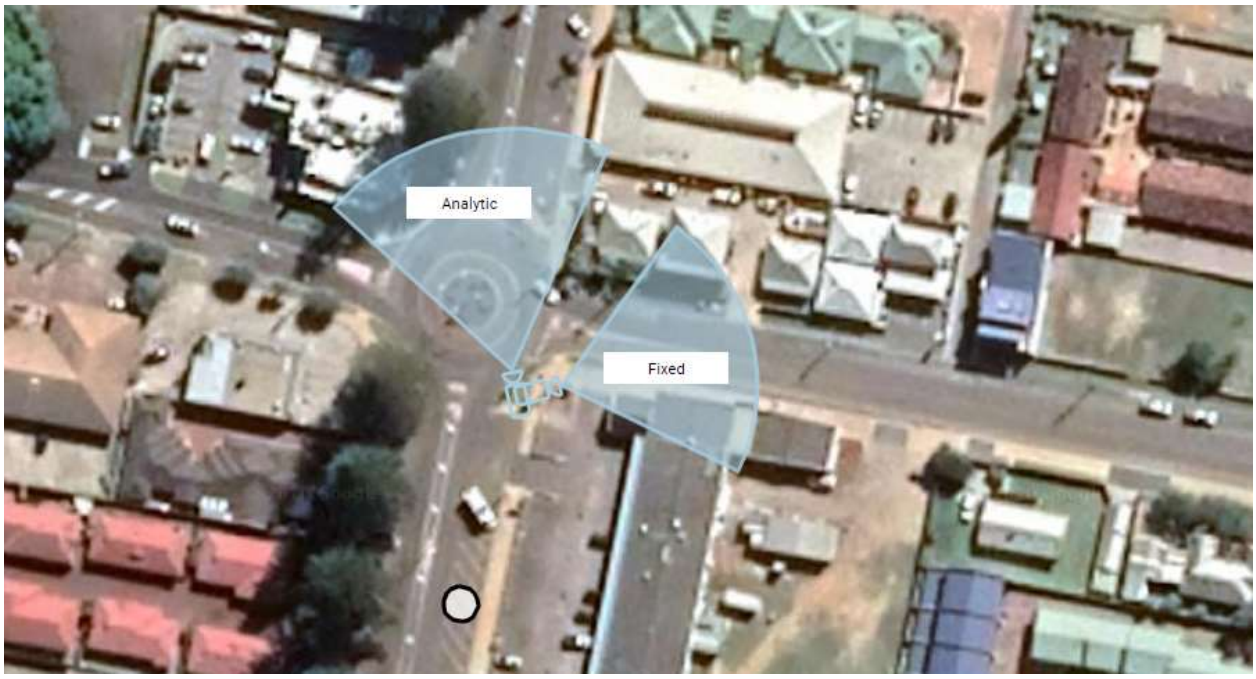


5.3. Bus Stop/ Caltex Service Station

A new 4m breakback pole will be installed to replace the existing CCTV pole. The 4m CCTV pole will have two cameras installed on it to provide coverage of the bus stop and Caltex service station. There will be one analytic camera installed looking at the bus stop to allow target specification searching of this area. The other PTZ camera will provide Police the ability to view any areas of interest inclusive of zooming into the Caltex service station area.

5.4. McDonalds

A new 4m breakback CCTV pole will be installed replacing the current CCTV pole. The 4m CCTV pole will have two cameras installed on it to provide overall coverage of the area and cover McDonalds as this was listed as a hotspot by local Police. There will be one analytic camera installed looking at the McDonalds entry allowing target specification searching. The other camera will provide an overview shot back down William Street.



5.5. Whale Tail Cameras

Whale tail cameras is a new location. The design incorporates utilizing the 10m CCTV pole that will be utilized as the bounce point for stage 3 Foreshore CCTV. A new 10m breakback CCTV pole will be installed in close proximity to the foreshore edge to ensure LOS to all subscriber sites. The 10m CCTV pole will have three cameras installed on it to provide overall coverage of the area. There will be one analytic camera installed looking to the carpark area and main walking footpath that will have target specification searching. The other two cameras will utilize low light cameras to provide coverage of both directions of the foreshore.

5.6. Pier-Hotel Cameras

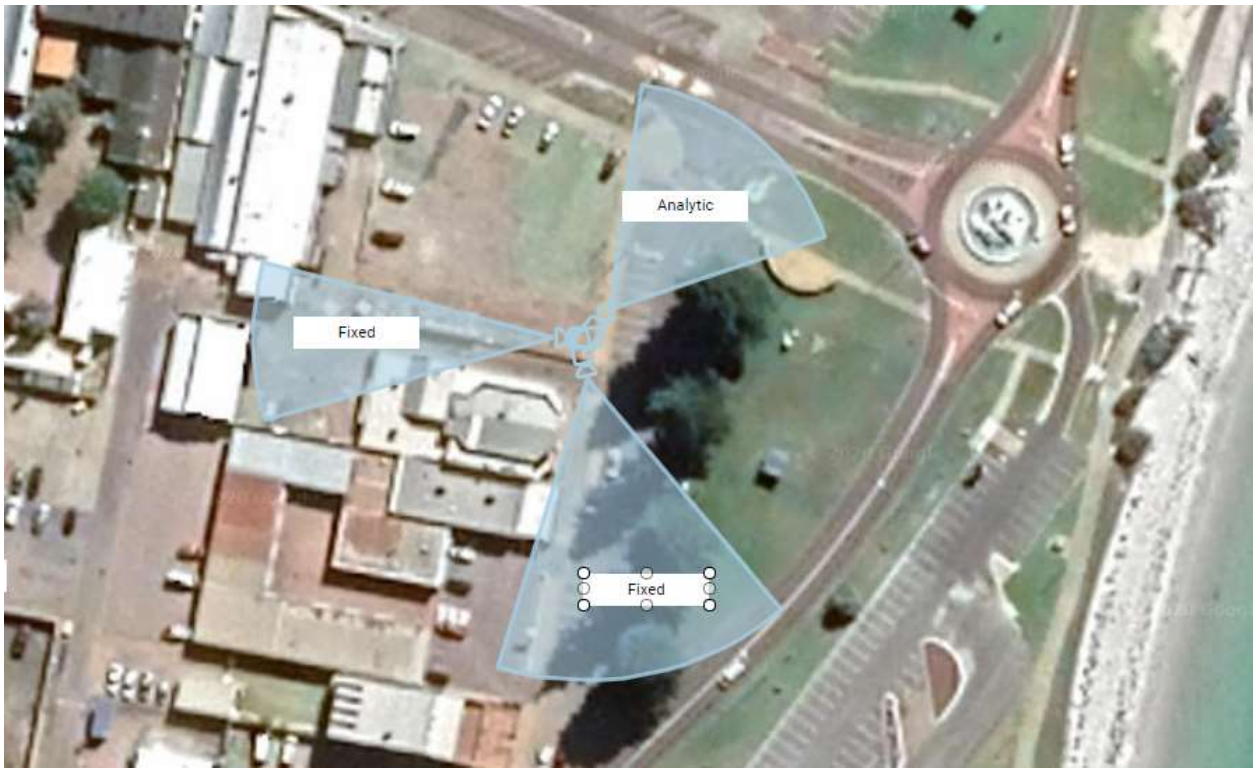
The Pier hotel cameras are critical to preventing antisocial behavior outside the main pub within the SOE. A new 6m breakback CCTV pole will be installed outside the Pier hotel. The 6m CCTV pole will have two cameras installed on it to provide overall coverage of the area. There will be one Pan Tilt Zoom (PTZ) camera installed looking into the bottle shop area which will also have the capability to be controlled from the local Police station so in the event of an incident it can be utilized to zoom and track offenders. One fixed camera will be utilized as an overview camera to provide fixed coverage of the Pier hotel carpark.

6. Additional Optional Sites (CBD)

There were numerous sites that were talked about in the design phase as hotspot locations. These locations have been broken down below with options and costing provided in the final investment summary.

6.1. Esperance (New Pub)

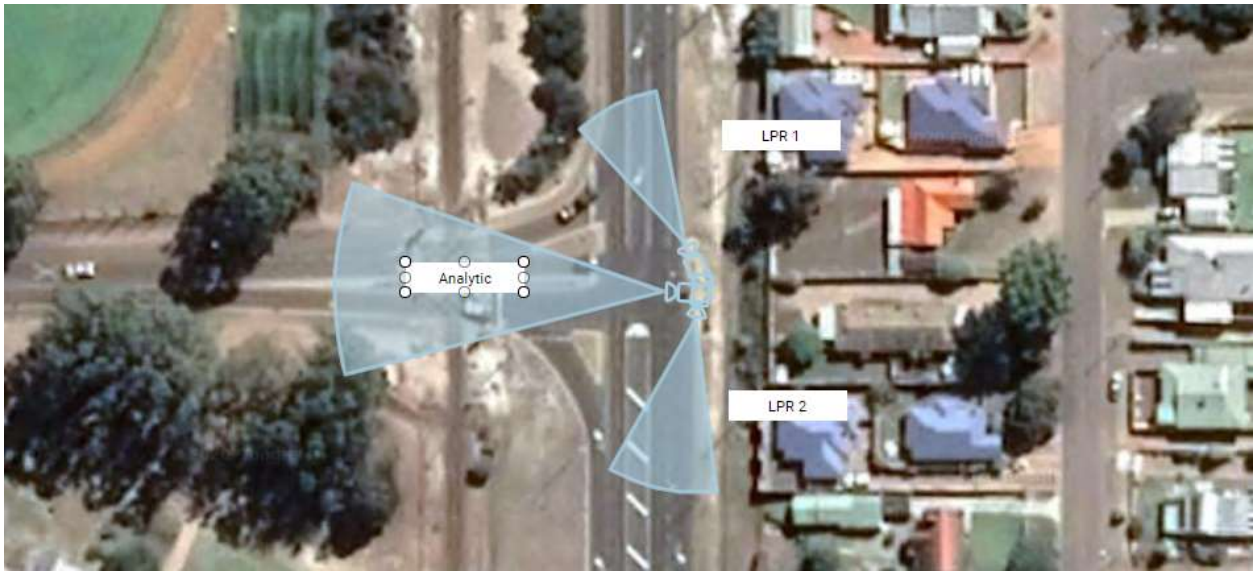
The new Pub location will be critical once this establishment opens for business. The cameras will assist in preventing antisocial behavior. A new 4m breakback CCTV pole will be installed outside the new pub. The 4m CCTV pole will have three cameras installed on it to provide overall coverage of the area. There will be two fixed cameras installed. One fixed camera will be utilized as an overview camera to provide fixed coverage of the new pub carpark. A second camera will be installed to look down the laneway to provide coverage of the rear entry. An analytic camera will be installed to capture people coming from the main street towards the pub. This strategically placed analytic camera will allow easy forensic searching for people of interest.



7. Project Works Site by Site Installation - Stage 2

7.1. Pink Lake/Harbor Road Intersection

Pink Lake/Harbor Road intersection is critical location for vehicles entering Esperance. The design incorporates installing a new 4m CCTV Pole and node cabinet. Two Licence Plate Recognition cameras will be installed to capture number plates in both directions. A fixed analytic camera will be utilized to cover all vehicles leaving Pink Lake road area.



7.2. Johns Street

Johns Street intersection is critical for SOE Police due to high crime rates within the area. The design incorporates installing a new 4m CCTV Pole. One analytic camera will be installed to capture human and vehicle movement within the area. A second overview camera will be installed to provide overview coverage of Pink lake road footpaths.

7.3. IGA/Liquorland (Pink Lake Road Shops)

IGA/Liquorland is critical location for SOE Police due to high crime rates within the area. The design incorporates installing a two new 4m CCTV Poles. Two cameras will be installed on each pole camera with the strategic positioning of analytic cameras monitoring both sides of the shopping complex.

7.4. Nulsen Primary/ High School (Pink Lake Road)

Nulsen primary and Esperance high school is critical location to help prevent antisocial behaviour within the area. The design incorporates installing a two new 4m CCTV Poles. Two cameras will be installed on each pole camera with the strategic positioning of analytic cameras monitoring both directions of Pink Lake Road.

8. Project Works Site by Site Installation - Stage 3 (Esperance Foreshore)

8.1. BBQ Area North (Brazier Street)

The existing solar light pole will be utilized to install the cameras and wireless unit. There will be one analytic camera installed looking at the north foreshore walkway allowing target specification searching. The other cameras will provide an overview of the south walkway footpath.

8.2. Tanker Jetty and Carpark

Two new CCTV poles will be installed to provide physical infrastructure for mounting the cameras. There will be two analytic cameras installed over the carpark as this is a very high traffic area and will be very useful with the forensic search. The Tanker jetty Pole will provide two overview cameras to provide general coverage of the area.

8.3. South Foreshore Carpark

A new 4m CCTV pole will be installed on the edge of the south carpark. There will be one analytic camera installed looking at the boat ramp and carpark. The second fixed camera will provide an overview of the carpark north.

8.4. Skate Park

The existing skate park light pole will be utilized to install the new cameras for this location. There will be one analytic camera installed looking over the skatepark allowing target specification searching. The other cameras will provide an overview of the north walkway footpath.

8.5. Adventureland Playground

A new 6m CCTV pole will be installed on the edge of the adventure playground. There will be one analytic camera installed looking over the basketball courts. Two overview cameras are to be installed to provide overview coverage of the playground area and the incoming foreshore walkway.

9. Mobile Solutions (Genetec Stratocast)

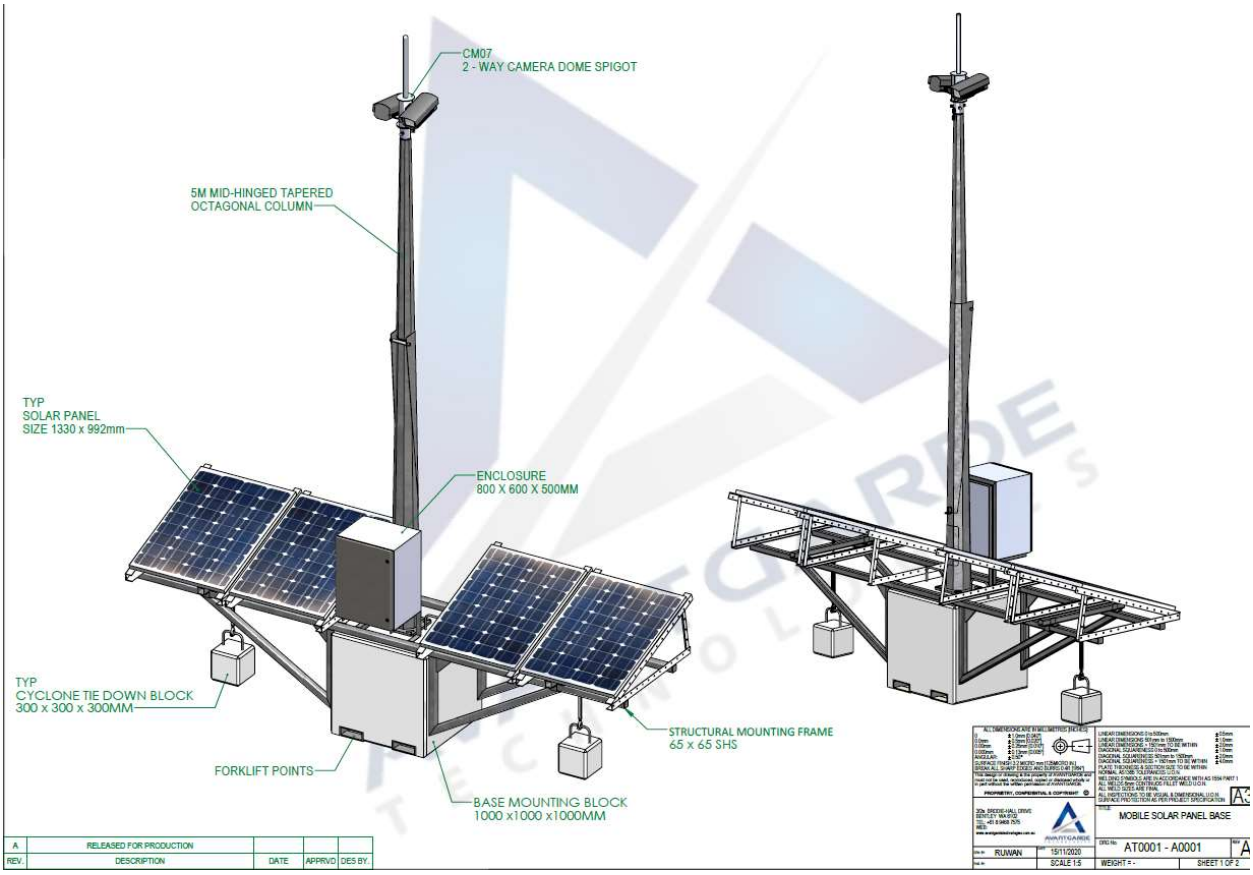
Multiple options were looked at when trying to achieve a CCTV solution for West Beach and Twilight Beach. The SOE mobile solution will utilise a combination of data transmission and secure on board data back-up by way of SSD.

This will allow operators on the SOE CCTV system to utilise the cameras as if they were on their local network however playback and live footage fluency will be dependent on 4G connectivity. The cameras will record locally for up to a week on motion utilising a full HD stream @ 15FPS.

9.1. Mobile Solar Pole Design:

The mobile solar pole option will offer a cost-effective solution in areas where 240v power is not available. The semi-movable solar pole also allows relocation with a forklift through dedicated forklift mount points to any location. These solar poles will utilise an IP controller so all charging and battery information is easily available from any web page on the network and visible via the cloud monitoring platform. We have designed the poles with four 300-watt solar panels and four 190AH batteries on a 24v system to allow for redundancy for up to two days with minimal to no sun.

Below is a conceptual solar pole design:



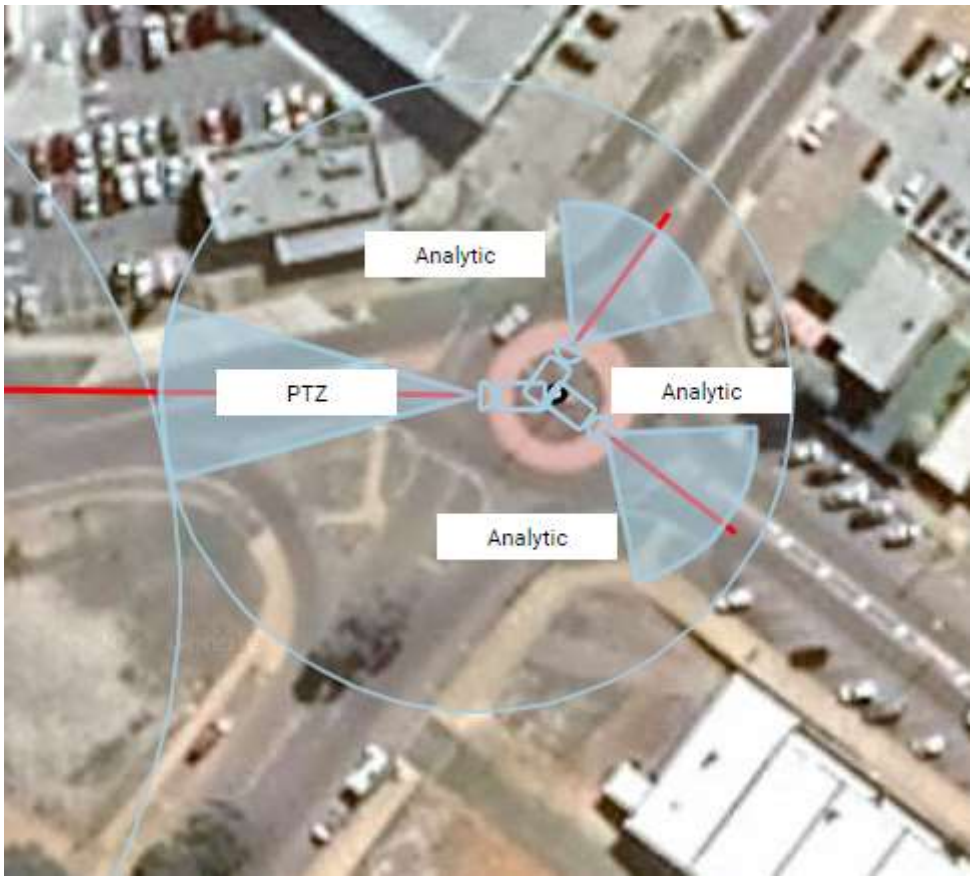
Solar Trailer Options

Solar Trailer options provide the shire of Esperance the flexibility to move the mobile camera solution with ease to any hotspots around town. The solar trailer solution has the same components as the Semi mobile CCTV pole and can be federated with the current police CCTV system. See below an example of previously built solar trailer option. Please note depending on specifications the overall concept is the same but each mobile solution is 100 percent customised to the customer's requirements.

10. Stage Five Additional CBD sites

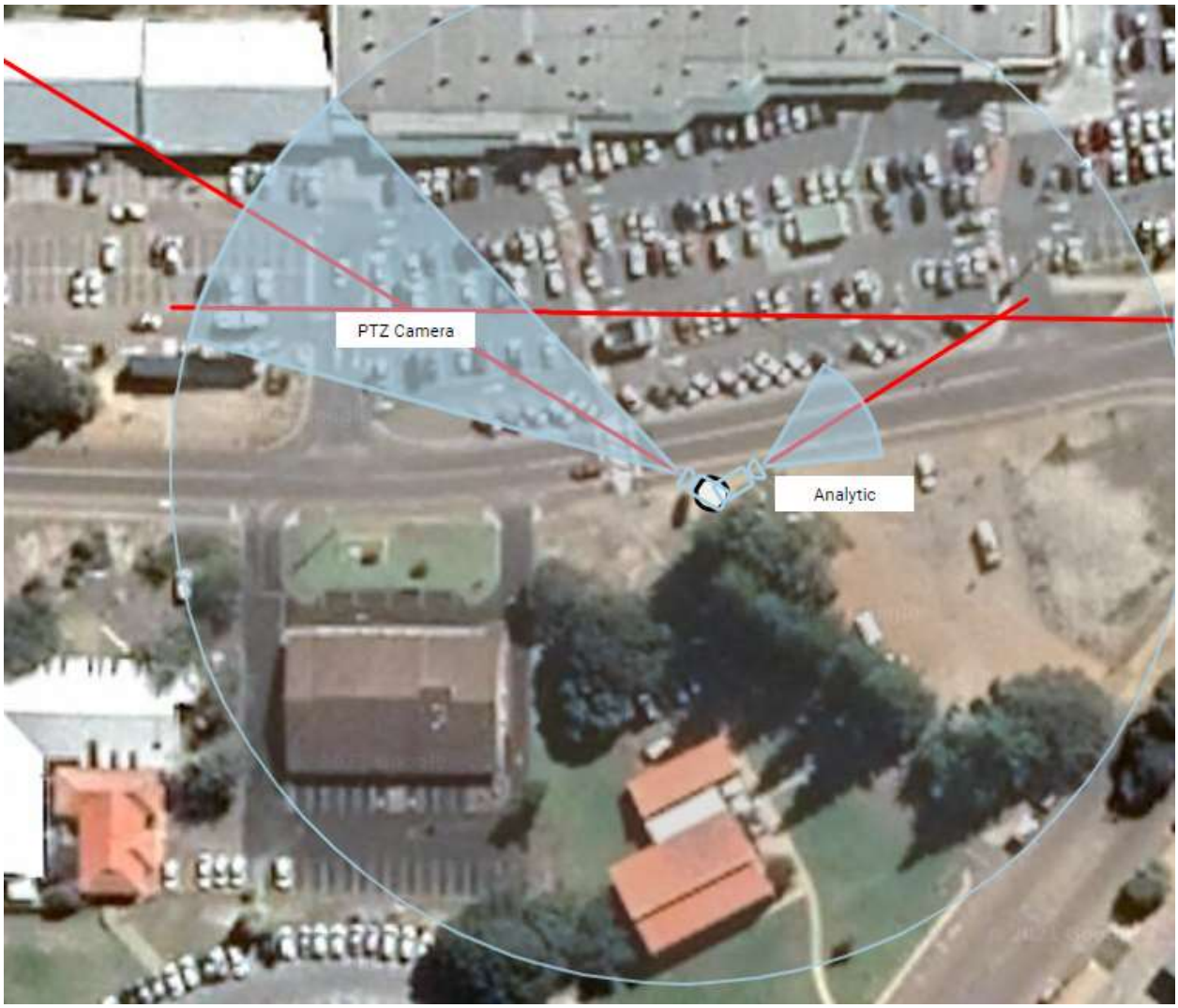
10.1. Boulevard Shopping Centre 1

The existing horizon power light pole will be utilized in the centre of the roundabout. A 240v power connection will need to be utilized from horizon power. There will be three analytic camera installed on the pole and one PTZ camera to allowing for pan tilt zoom capabilities (PTZ).



10.2. Boulevard Shopping Centre 2

A new 6m CCTV pole will be installed opposite the Boulevard Shopping Centre. There will be one analytic and one PTZ camera installed to provide coverage of shopping Centre carpark.

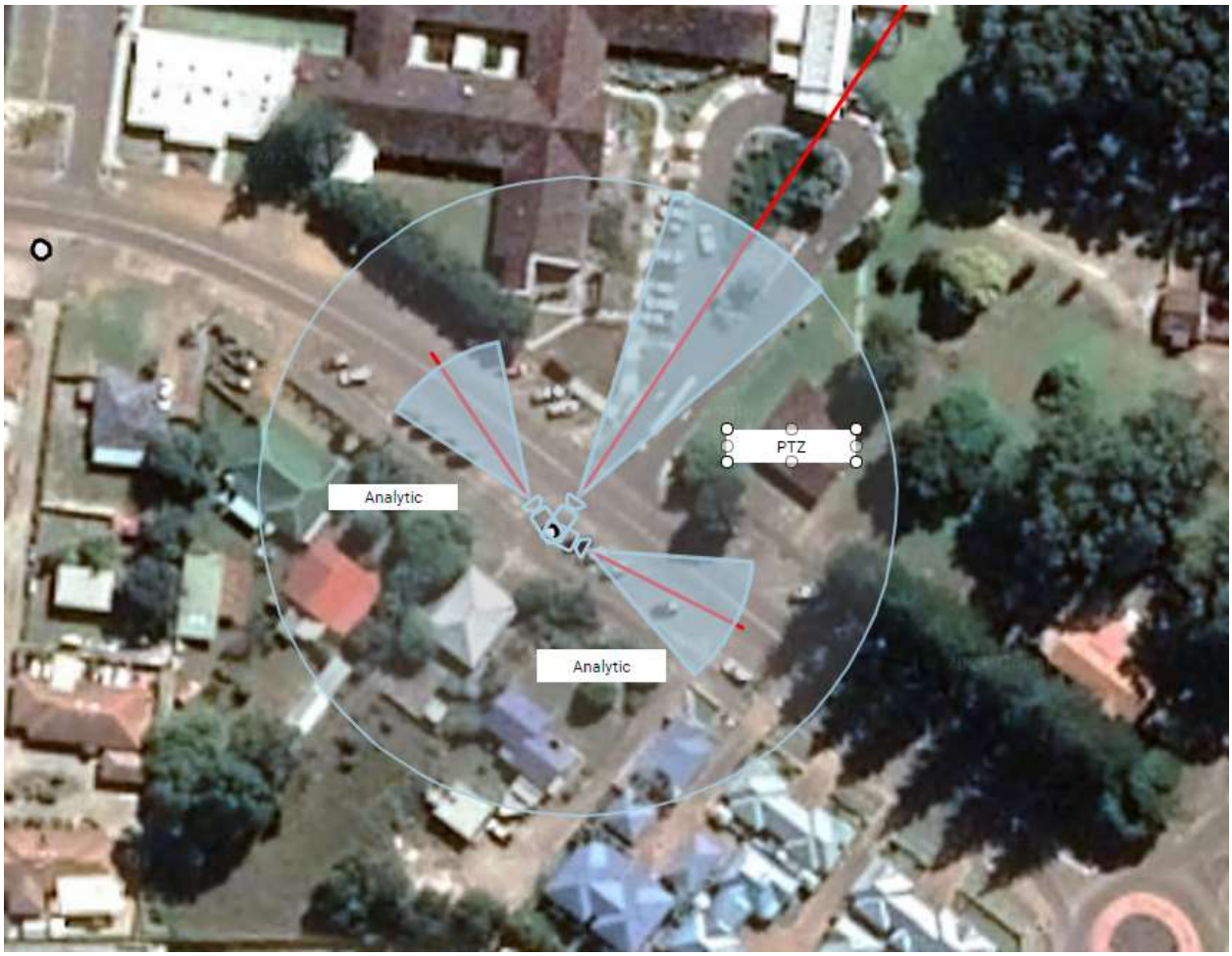


10.3. Hospital 1

A new 6m CCTV pole will be installed opposite the Hospital. There will be one analytic and one PTZ camera installed to provide coverage of the hospital and road and allow for the Police to move the camera for operational purposes when needed.

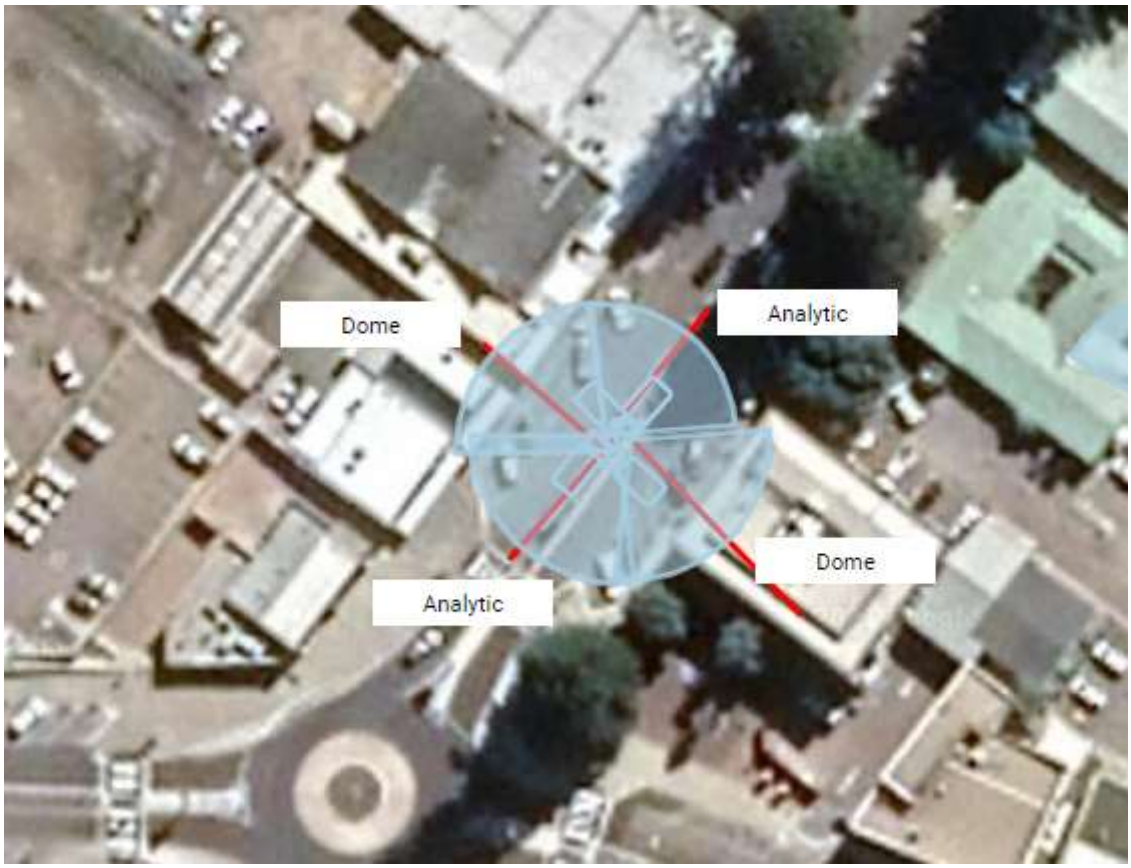
10.4. Hospital 2

A new 10m CCTV pole will be installed opposite the SOE Hospital this will provide line of site back to the roundabout CCTV pole and ensure a fluent network. There will be two analytic and one PTZ camera installed to provide complete coverage of the area.



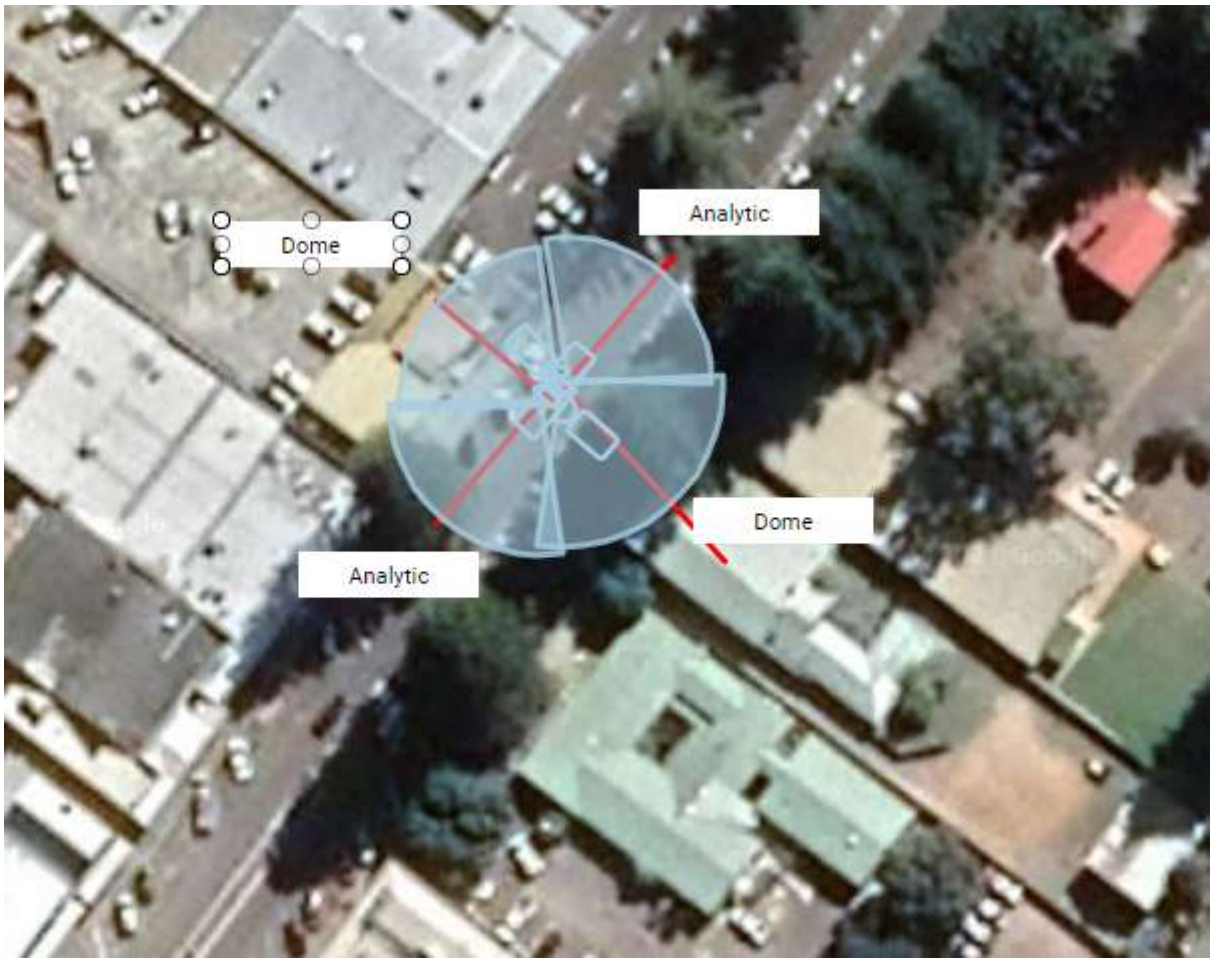
10.5. Dempster 1

The existing horizon power light pole will be utilized in the Centre of Dempster street. There will be two analytic camera and two non-analytic low light cameras installed on the pole. This will provide 360 degrees of coverage.



10.6. Dempster 2

The existing horizon power light pole will be utilized in the centre of Dempster street. Two analytic and two non-analytic dome cameras installed on the pole. This will provide 360 degrees of coverage.



11. Disclaimer

This proposal has been developed using information and specifications that have been conveyed to Avantgarde by the SOE. Consequently, while Avantgarde believes that its recommendations are sound; these recommendations cannot constitute express or implied warranties of merchantability and fitness for a particular purpose. The proposal is intended for use in helping the Client with the project defined herein. Avantgarde cannot be held responsible for misleading/incorrect information found within this proposal document.