



Australian Government

Department of Defence

HMAS *WATSON* REDEVELOPMENT
SYDNEY, NSW

**STATEMENT OF EVIDENCE
TO THE
PARLIAMENTARY STANDING COMMITTEE
ON PUBLIC WORKS**

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HMAS *Watson* Redevelopment

1. The purpose of this Statement of Evidence is to provide information to the Australian public to comment on, and the Parliamentary Standing Committee on Public Works to enquire into, proposed works under the HMAS *Watson* Redevelopment Project (the Project).

Need for the Project

Aim of the Project

2. The aim of the Project is to address functionality deficiencies and capacity constraints in facilities and infrastructure at HMAS *Watson* which support demand levels greater than what they were originally designed for. The Project also aims to address high risk issues associated with non-compliant facilities, and reduce ongoing operating costs by rationalising and consolidating similar functions.

Location of the Project

3. The Project proposes to deliver works at HMAS *Watson*, which is located on a 14.6 hectares site off Cliff Street at Sydney's South Head in New South Wales. The site is approximately 11 kilometres from the Sydney Central Business District. Surrounds include the Sydney Harbour National Park, parklands, foreshore, and residential properties. There are strong interdependencies and functional linkages between HMAS *Watson*, HMAS *Waterhen* at Waverton, HMAS *Penguin* at Balmoral, the Navy Training Systems Centre - East at Randwick Barracks and the Major Fleet Unit vessels and capabilities based at Garden Island Defence Precinct. The HMAS *Watson* Location Plan and Existing Site Plan are included at Attachment 1.

Need for the Project

4. HMAS *Watson* is an enduring Navy base. It is the Royal Australian Navy's principal warfare and navigation training establishment and is primarily occupied and operated by Navy's Training Authority Maritime Warfare. Training Authority Maritime Warfare conducts a wide range of specialist warfare courses and tactical training for individuals, ship command teams, and bridge staff in a suite of sophisticated training simulators. The Base facilitates training for approximately 1300 personnel each year; with this number gradually increasing with the delivery of new capabilities. The Base also provides the living in requirements for staff and trainees.

5. HMAS *Watson* was established in 1945, prior to when technology was used as a training tool. Training methods have since evolved to meet the needs of a contemporary Navy. Greater complexity of combat systems and connectivity within the Defence environment has increased the reliance on technically skilled Sailors and Officers. Flexible modern learning centres are required to achieve the desired training and capability outcomes of a modern Navy. Whilst facilities at HMAS *Watson* have been maintained and adaptively reused, they have now reached the end of their design life and do not meet contemporary working, training or living standards, or are not fit for their current purpose. This represents a risk to Navy capability. Although isolated works have occurred at HMAS *Watson*, including in 2013 (Air Warfare Destroyer Command Team Trainer), and in 1994 (upgrading of accommodation), there has been no significant investment in training facilities in over 30 years.

6. The supporting base engineering services and facilities for accommodation and messing are also below the required standard to support the throughput of the Base. This is negatively impacting the delivery of training and requires additional management to mitigate the residual risk presented by their current condition.

7. Defence assessed the future of HMAS *Watson*, including potential relocation options. It was concluded that there would be no benefit in closing the Base and relocating its functions to other existing Defence sites.

8. The training provided at HMAS *Watson* is vital to maintaining Navy's capability. To ensure the Base continues to support high-end warfare and navigation training outcomes, facility solutions that appropriately support current and future training imperatives are necessary.

Training and Base Infrastructure Needs

9. The training and base infrastructure needs for HMAS *Watson* include:

- a. Training facilities;
- b. Base engineering services;
- c. Base boundary and security;
- d. Galleys;
- e. Living in Accommodation (including medical and enabling services); and
- f. Car parking.

Training Facilities Needs

10. Training at HMAS *Watson* is currently conducted in four main buildings (shown in Attachment 1):

- a. Captain Darling Building;
- b. Ritchie Building;
- c. Taylor / Navigation Faculty Building; and
- d. Newcombe Building.

11. Despite a number of commonalities, at present each building is individually supporting both theory and practical training in isolation, and have separate access requirements. This physical dislocation fails to capitalise on shared functions and restricts the ability for staff to find efficiencies in integrating training delivery.

12. The following key issues are impacting these four main training buildings:

- a. **Spatial/functional inefficiency in key training areas.** The training equipment at HMAS *Watson* mirror the on-board systems of the current Navy fleet of vessels. Examples of this training equipment includes: Bridge simulation (the Bridge being the room from which a ship is commanded / driven), Weapon System Command Team simulation (to simulate the work area from where maritime operations of a vessel are controlled), and several integrations of the team simulators that are fitted with equipment for training individuals. As the fleet is updated to include new ships, and the on-board systems of a ship class are modified through the life of its service, other modifications in the associated training equipment and facilities are also required. Adhoc spatial adjustments have been made to a majority of the functional training spaces. However, most simulators and training spaces are functioning using inappropriate floor areas with inefficient layouts.
- b. **Outdated working accommodation.** Working accommodation, such as office and workshop space, is compartmentalised and spread throughout each of the four training buildings. This fails to capitalise on the opportunity for a collaborative, “whole of school” culture, and is no longer suitable to the way that the Training Authority Maritime Warfare¹ operates.

¹ Training Authority Maritime Warfare plans, authorises and conducts a wide range of specialist warfare courses and tactical training for individuals, ship command teams, and bridge staff.

- c. **Degraded condition of key training buildings.** The four main training buildings range from 33 to 64 years old and are either nearing their design life or are beyond it. Elements of each building show signs of dilapidation and need to be replaced. Common examples include:
- (1) Precast façade and concrete roofs are in poor condition and show signs of concrete cancer,
 - (2) Mechanical, electrical and hydraulic services (including drainage) are all in poor condition with performance reducing and failures increasing,
 - (3) Buildings leak when it rains, and
 - (4) Internal finishes are also in poor condition.
- d. **Areas of non-compliance in main training buildings.** Each of the four buildings have multiple compliance issues associated with National Construction Code of Australia (NCC), *Disability Discrimination Act 1992 (Cth)* (DDA) and Department of Defence Manual for Fire Protection Engineering (MFPE). These include:
- (1) fire egress routes,
 - (2) fire separation,
 - (3) lift and DDA access, and
 - (4) provision of amenities.
- These non-compliance issues present a risk to Defence personnel and equipment, particularly in the event of an emergency.
- e. **Outdated and inefficient communications networks.** Technological advances in ship systems have called for ongoing and significant upgrades to the communications reticulation and server rooms within each of the training buildings. Server rooms that support training networks are significantly undersized and do not support the current nature of the classrooms. Adaptive re-use of other spaces (including training spaces) has been undertaken as work around measures to temporarily overcome the insufficient communications and server rooms.

- f. **Non-compliant security systems.** The electronic and physical security provisions of the existing buildings do not meet current Defence security requirements as outlined in the Defence Security Principles Framework or the Australian Security Intelligence Organisation Technical Notes. Alarm systems do not provide the correct coverage, are monitored locally to each building and have no connectivity to a central compliant monitoring location. None of the buildings have electronic access which significantly limits efficient use of spaces, as well as traceability of access.

13. **Inability to refurbish the existing.** A NCC/MFPE building audit determined that any alterations or refurbishment to the existing buildings, either structural or functional, would be considered a ‘Substantial Alteration’ under the NCC. This means that the whole building needs to be brought into compliance with the current regulatory and statutory provisions. The audit also confirmed that the buildings were constructed to meet less stringent earthquake resistance requirements than those currently applicable. In addition, the electrical and mechanical systems do not comply with current codes and standards including Work Health and Safety standards. The upgrade works associated with such alterations are considered cost prohibitive and do not represent value for money to the Commonwealth.

Base Engineering Services Needs

14. Certain engineering services at HMAS *Watson* are capacity constrained and do not fully support the current facilities which presents risk to the Defence estate. Existing Base infrastructure, including the incoming electrical infrastructure, fire / potable water system and communications infrastructure, have condition, capacity and compliance issues which require rectification. Base-wide engineering services upgrades are also required to support the new Training Precinct and Living-In Accommodation buildings proposed under the Project.

15. **Services Upgrades required to existing base infrastructure.** The Base-wide services infrastructure that require upgrade for compliance, condition and capacity include:

- a. **Base incoming electrical infrastructure requirement.** The incoming electrical supply provided by the Electrical Authority is sufficient to support the current and future planned load of the base. The Incoming Switching Station (ISS) switches power received by the Authority and distributes it to the Base substations. The equipment within the station currently limits the amount of

voltage able to be distributed. Upgrading the station will ensure enough power can be available to the newly proposed facilities. The Incoming Switching Station has also reached the end of its design life, and needs to be upgraded to address compliance and condition issues. The Switching Station is outside the Base security perimeter and should be rectified as part of any upgrade.

- b. **Fire ring main separation requirement.** Potable and fire water systems should be separated. There is currently only one piping ring main to service both potable water and fire water on Base. The water pressure that can currently be achieved through the existing piping ring main cannot meet the firefighting pressures required to meet current Australian Standards. In the event of an emergency, if pressure was “boosted” by Fire Rescue (New South Wales) pumps, the hardware currently connected to the potable water system (for kitchen equipment, bathroom, tapware and washing machines) is not rated to the higher pressure. This carries a high risk of failure. An upgrade is required to separate the potable water ring main from the fire water ring main. As part of any upgrade, hydraulics infrastructure will also require improvements to metering and isolation to bring the system up to current Australian and Defence Standards.

- c. **Base communications.** Currently HMAS *Watson* does not have a dedicated Defence Engineering Services Network. This is a fibre network that connects building emergency monitoring systems (those for fire, security, electronic access control, Closed Circuit Television Camera (CCTV), base area alert system) and building monitoring systems (such as air conditioning control, lighting control, lifts monitoring, electrical metering, water metering, and gas metering) to a centralised monitoring location. Monitoring of engineering services is currently transmitted over the Defence Protected Network infrastructure as a work around with a risk to information security. Introducing a dedicated Engineering Services Network will increase estate capability and allow future flexibility if other buildings are connected in the future. Several non-compliant communications pits, rooms and cabinets on the existing reticulation also need to be rectified.

16. **Services upgrades to support a proposed new Training Precinct and Living in Accommodation.** To address the training precinct and living in accommodation needs, complementary works on the supporting services are required and include:

- a. **Electrical network.** Each existing building is generally supported by an electrical substation. Power is distributed into the key facilities from these substations. With the potential demolition of the existing training and Living in Accommodation buildings and the construction of new facilities, existing substations will need to be demolished and new compliant substations will need to be installed in new locations. Of the Base's eight existing substations, four are proposed to be replaced, one is due to be significantly upgraded, and three can be retained.
- b. **Civil works infrastructure.** When constructing the new Training Precinct, considerable reshaping of the levels and civil infrastructure on the western side of the Base will be required for any proposed new facilities. Adjustments to and replacement of stormwater catchment areas, road networks, and car parking are needed to enable construction of new facilities due to new building footprints and construction staging. Contamination testing of the site indicates asbestos contamination will also need to be remediated.
- c. **Communications.** Key Base-wide communications installations (such as Base area network rooms, training communications rooms) are located within the existing training buildings. These rooms are inefficiently laid out, overcrowded, and are considered the base's highest priority communications upgrade items. As a result, new installations of these key rooms will need to be included within the newly proposed Training Precinct.

Base Boundary and Security needs

17. The Base boundary and security is made up of physical protection measures such as base entry, boundary fencing, and gates, and monitoring systems (eg. CCTV and a Base Alarm System). There are several key shortfalls within the current Base boundary and security system that require upgrading:

- a. **Base Entry.** The existing Base entry precinct does not provide an integrated security approach. It also has several significant shortcomings, including vehicle flow/congestion, lack of inspection space, limited temporary parking, and inadequate location of pass issue facilities inside the secure perimeter. A detailed summary is provided as follows:
- (1) Spatial/Functional inefficiencies. There is a restricted road leading into HMAS *Watson*, and a single point of entry. There are several spatial/functional requirements that need to be addressed:
 - i. Uncleared pedestrians currently enter the Base to be screened inside the guard house.
 - ii. Guards operating from the guard house cannot process/authenticate vehicles from outside the Base perimeter.
 - iii. Line of sight visibility of the vehicle entry and the guard house is restricted.
 - iv. Currently there is no vehicle pre-rejection facility where vehicles that have inadvertently approached the Base can safely turn around and depart.
 - v. There are no controlled vehicle rejection and searching areas.
 - vi. Vehicle and pedestrian congestion at peak times is of significant concern.
 - vii. Necessary security manning is too high due to the nature of facilities.
 - (2) Building condition. The building construction type precludes essential physical security upgrades, such as ballistic protection, access control, visibility and key security infrastructure.
 - (3) Building Compliance. The facilities do not comply with fire safety, earthquake, and disability access codes. Alteration to the existing buildings will trigger a 'Substantial Alteration' of that building and require it to satisfy current regulatory and statutory provisions. This precludes refurbishment of the existing buildings due to significantly increased costs.

- b. **Boundary fencing.** The Base is currently fenced using several fence types that are in varying condition and, along with compliance concerns, present a security risk. There is a requirement for a compliant and integrated perimeter.
- c. **Closed Circuit Television.** The existing system has condition and compliance concerns that affect the comprehensive security monitoring of the base. There is a requirement for compliance with current Defence security policy and appropriate coverage across the Base.

Galley needs

18. A galley is a kitchen that supports a dining hall within a Mess Building or a Wardroom. There are two galleys at HMAS *Watson*: one that supports the Junior and Senior Sailor's dining room, and one that supports the Officer's Wardroom. All trainees and most staff use these facilities every day for meals.

19. The Junior and Senior Sailor's Galley was constructed in the 1950s and the Wardroom Galley was constructed in the 1960s, and were last refurbished in the 1980s. Both galleys are currently functioning but are experiencing several non-compliances and Work Health and Safety issues.

20. Given their similarities in function, the galleys are considered together below. The need to upgrade them is based on the following key considerations:

- a. **Building Code and Work Health and Safety compliance.** Defence assessed the galleys and identified several non-compliances, including:
 - (1) Kitchen loading dock arrangement is non-compliant,
 - (2) Freezer and cool room available space and configuration is non-compliant,
 - (3) Floor and wall types are non-compliant and do not have appropriate slip treatments,
 - (4) Ventilation does not meet minimum code distance requirements,
 - (5) Wiring and conduit configurations do not meet current Australian Standards,
 - (6) Power isolators are located over hot and hazardous cooking equipment,

- (7) Food is transported from bulk stores through open air corridors where there is significant accumulation of debris and leaves, and
- (8) Ceilings are comprised of preformed drop-in panels which do not meet code compliance.

b. **Fittings and Equipment Condition.** Both galleys' fittings are aged and are at the end of their useful life. They are experiencing several condition issues with the fit-out and equipment, including:

- (1) Wall types have moisture and mould issues due to lack of ventilation,
- (2) Window frames have rusted filters,
- (3) Kitchens have significant dust collection points throughout,
- (4) Food storage and fridge/freezer storage available space is deficient, and
- (5) Equipment is old, non-compliant, performance is degrading or has reached the end of its life.

21. There are also several legacy issues to be addressed relating to efficiency and functionality, and to reduce additional associated Work Health and Safety risks to those discussed above. These include remediating the flooring, drainage, wall types, ventilation, and increasing both fridge and freezer spaces to ensure compliance with food storage standards. Addressing these issues will ensure the two galleys can service the current and future volume of users in a safe functional manner.

Living in Accommodation needs

22. The nature and duration of courses require students to be in location and close to training facilities, hence sailors posted to courses conducted at HMAS *Watson* are accommodated on the Base. Current trainee Living in Accommodation is provided within Buildings 6 and 7 (shown in Attachment 1). There are 94 single occupancy units within Building 6, and 132 single occupancy units within Building 7. The 2016 Defence White

Paper indicates a need to grow the ADF Workforce which will result in an increased requirement for training and accommodation. Although restricted by space, the HMAS *Watson* Redevelopment aims to maximise the number of trainee rooms to accommodate increased trainee numbers. HMAS *Watson* needs to have the capacity to accommodate a minimum 236 trainees in Level 3 Accommodation².

23. The trainee Living in Accommodation buildings were constructed in the 1950s and have had only minor internal fit out refurbishments since. They are at the end of their useful life and are below current training accommodation standards. The need to address the accommodation is based on:

- a. **Building condition.** A significant structural upgrade or complete replacement is well overdue. The buildings are approximately 60 years old, are in poor condition and have reached their design life. Key elements in disrepair and condition include: the brickwork façade, tiled roofing, windows, non-compliant engineering services, and the internal finishes.
- b. **Building compliance.** The buildings do not comply with NCC and DDA standards in relation to fire safety, earthquake code, lift and compliant DDA access, including access to amenities specifically. A NCC/MFPE building audit found that any alteration to the building, either structural or functional, would trigger a ‘Substantial Alteration’ of the building requiring it to satisfy current regulatory and statutory provisions. Further, the existing Living in Accommodation rooms and facilities do not meet the requirements of the current Defence Living in Accommodation policy for training accommodation. Any upgrade works associated with such alterations are cost prohibitive and hence not value for money.

24. **Consequential Work requirements.** Other than the existing Living in Accommodation units, there are several key functions located on the ground floor of Building 6. If Building 6 is to be demolished and new accommodation provided, the following functions also need to be addressed:

- a. **Medical Clinic.** The existing Medical Clinic facilitates medical, dental, psychological, physiotherapy, and rehabilitation services to Trainees and Staff on Base. This facility has significant spatial and functional constraints; rooms

² Level 3 Trainee Accommodation includes a single room, with access to common/shared ablutions, laundry and other amenities.

are poorly arranged and are significantly undersized. Whilst the facility is functioning in this substandard arrangement, if a new facility is constructed, the design will need to align with the required health infrastructure standards.

- b. **Enabling Services.** The enabling services facility within Building 6 facilitates personnel administrative and registry functions. Whilst the allocation of space within the existing facility is sufficient and functional, these spaces will need to be provided elsewhere.

Carpark needs

25. Car parking at HMAS *Watson* is constrained, and at peak training periods is in very high demand. As a result of the proposed works, there will be a need to construct some new facilities over existing carpark locations. This will occur on the western side of the Newcombe Building (building over 23 spaces), and at the proposed location for the new living in accommodation (building over 70 spaces). The minimum requirement for car parking is to replace the spaces lost due to the construction of the new facilities, and where possible, to increase the numbers of dedicated spaces to increase capacity.

Proposed Facilities Solution

Scope of Project Works

26. Defence undertook comprehensive master planning, site investigations, stakeholder consultation, whole-of-life cost analysis, and design development to establish the capital facilities and infrastructure works required under the Project to address each need.

27. The proposed scope comprises the following Work Elements:

- a. **Work Element 1:** Construct a new Training Precinct;
- b. **Work Element 2:** Upgrade and refurbish Base Engineering Services, including fire/potable water, communications networks, and civil infrastructure;
- c. **Work Element 3:** Install new Base Security Systems;
- d. **Work Element 4:** Refurbish the existing Galleys;
- e. **Work Element 5:** Construct new Trainee Living In Accommodation for at least 236 students, plus consequential works; and
- f. **Work Element 6:** Construct replacement car parking.

28. A visual overview of the proposed building and infrastructure works is provided at Attachment 2.

Options Considered to Fulfil the Identified Need

29. Three options were investigated to meet Defence's capability and estate requirements in under the Project. These options are to a P80 level of cost confidence, less Defence Contingency:

- a. Option 1 – Do nothing.
- b. Option 2 – Essential Scope with Limited Living in Accommodation Upgrade.
- c. Option 3 – Essential Scope plus full Living in Accommodation Upgrade and consequential works.

Option 1 – Do nothing

30. The do nothing option proposes no capital works be delivered. Some unacceptable risks of doing nothing includes:

- a. **Training requirements not achieved.** HMAS *Watson* has significant training limitations and constraints due to the inefficiencies in facilities. The pressure on Navy to continue to deliver training in inefficient facilities will result in a decreasing standard of training and restriction of available output. Defence considers the risk associated with doing nothing as unacceptable.
- b. **Buildings extended beyond their design life.** Several of the facilities proposed to be demolished and rebuilt under the Project (Building 6 and 7, Newcombe Building, Ritchie Building, and Taylor Building) are at the end of their design life. If not addressed as part of this Project, the risk would escalate to high.
- c. **Compliance concerns.** Several of the facilities proposed to be demolished and rebuilt under the Project have significant NCC, DDA and Defence MFPE non-compliance issues, including fire egress routes, fire separation, lift and disability access, and allocation of amenities. Whilst these non-compliances appear to currently have minimal affect to operations, the consequences of a risk materialising in the event of an emergency would endanger lives.

Option 2 – Essential Scope with Limited Living in Accommodation Upgrade

31. Option 2 incorporates the highest priority scope items, but only partially meets the new accommodation requirement, and would:

- a. Construct a new 24,500m² Training Precinct combining all training functions that are currently located within the four key training buildings.
- b. Partially upgrade Base engineering services, including installing a new fire ring main and a new Incoming Switching Station, and undertaking civil works for the Training Precinct.
- c. A minor upgrade of base security.
- d. Refurbishing both the Wardroom and the Junior and Senior Sailors Galleys.
- e. Construct at least 90 new Trainee Single Occupancy Units. This option does not replace the existing Buildings 6 and 7, and leaves Defence with the legacy of maintaining buildings that have reached the end of their serviceable life.
- f. Construct car parking to replace those over built by the works.

Option 3 – Essential Scope and Full Living in Accommodation Upgrade and Consequential Works

32. Option 3 includes the optimal scope to balance appropriate treatment of the need with value for money for the Commonwealth. Option 3 includes Option 2, and further works as follows:

- a. An optimum upgrade of the Base engineering services, including installing a new dedicated fire ring main and upgrading the potable water ring main, undertaking civil works for the Training Precinct; and a communications compliance upgrade.
- b. An optimum upgrade of the Base Security, including installing new fencing to the entire perimeter; installing new CCTV cameras to provide optimal coverage; and constructing a new front entry to the Base.
- c. Refurbishing both the Wardroom and the Junior and Senior Sailors Galleys as per Option 2.

- d. Constructing at least 236 new Trainee Single Occupancy Units, plus consequential works. This option includes demolishing the existing Buildings 6 and 7 and consequential works to replace medical and enabling services facilities.
- e. Construction of replacement car parking over built by the works.

33. **Preferred Option.** Option 3 represents the best value for money as it fully addresses functionality deficiencies in existing facilities, key engineering services high risk issues, and provides robust training facilities to meet the needs of Navy.

Detailed Description of the Works

34. A detailed description of the works proposed under Option 3 is provided below.

Work Element 1 – Training Precinct

35. All current training functions (Ritchie, CAPT Darling, Newcombe and Taylor / Navigation Faculty buildings) and staff be accommodated in a newly constructed 24,500m², four-storey training precinct, located over the existing Helicopter Landing Site and over the existing Newcombe and Taylor building site on the western side of the Base.

36. It is proposed to construct the new facility in two stages to enable continuity of training throughput. The first stage will be constructed over the existing Helicopter Landing Site. When Stage 1 is complete, the CAPT Darling Building and the Newcomb Building functions will be relocated into the newly built Stage 1 facility. The Newcombe Building will then be demolished, and Stage 2 construction can commence. This proposed staging minimises the impact on training throughput.

37. The upper level of the training facility is designated for staff office space and meeting rooms. The remaining three floors will incorporate all simulation (10 Full Mission simulators³, 3 Command Team Training operations rooms⁴, and 18 Emulation spaces⁵), 8 Navigational classrooms, 2 80 seat lecture theatres, a 120 seat Tactical Floor⁶, and several other workshop and supporting spaces. Shower and locker areas are also proposed throughout the facility. The works include demolition of the Taylor / Navigation Faculty building in preparation for replacement car parking delivered under Work Element 6 and demolition of the other replaced training buildings.

³ Simulation rooms for training Bridge teams in a variety of scenarios and sea states.

⁴ Operations rooms per ship type for training weapons systems command teams to ‘fight the ship’.

⁵ Emulation spaces for training groups of individuals on specific ships systems.

⁶ A tiered theatre around an open floor for demonstrating and modelling naval operations.

38. The facility solution is based on concepts detailed in the Planning and Design Concepts section of this statement. The proposed solution achieves the required consolidation of staff and training spaces, and will greatly enhance efficiency in training. Importantly, key secure training spaces will also be consolidated to allow for reduced security personnel and refined operating procedures on site.

39. Attachment 3 details the general arrangement and profile of the proposed Training Precinct.

Work Element 2 – Base Engineering Services

40. The proposed works for each key engineering service are as follows:

- a. **New Incoming Switching Station.** Install a new Incoming Switching Station within the security perimeter of the Base, adjoining the Base entry. This will increase the distribution of power to support the Work Element 1 Training Precinct and, Work Element 5 Living in Accommodation, and provide flexibility for demand.
- b. **Electrical secondary distribution upgrades.** Install five new substations to support the Training Precinct, the Living in Accommodation, and the new Medical Clinic buildings. The existing ring main will also be re-aligned to support the new facilities.
- c. **Dedicated fire ring main.** Install a new dedicated fire ring main which will connect to all buildings and provide new hydrants and boosting infrastructure as required by the relevant standards.
- d. **Potable water ring main upgrades.** Refurbish the potable water network to include new piping surrounding each new facility, replace ring main piping to key dilapidated areas, replace valving where required, enhanced isolation provisions to improve maintainability and improve metering.
- e. **Civil Infrastructure upgrades.** Upgrade the stormwater catchment and treatment system on the western side of the site to support Work Element 1 Training Precinct, and install new roads to support access to the car parking and emergency access to the Training Precinct.

- f. **Communications upgrades.** Install the Engineering Services Network which will connect all engineering monitoring to each new and some existing facilities. This will allow building services to be monitored remotely. Replace all non-complying pit lids on the existing fibre network, and replace non-complying racking in existing communications rooms.

41. Attachment 4 shows the proposed Base Engineering Services upgrades.

Work Element 3 – Base Security

42. The proposed works are:

- a. **Front entry.** Construct a new front entry precinct, including a new guardhouse, pass office, car park and base entry point. A queueing lane will be constructed for each direction and will be fitted with automatic electronic card access for Defence card holders. Construct a new guardhouse to monitor the entry and exit lanes. Install an automatic electronic pedestrian access turnstile. Construct a new pass office to process visitors and to house the engineering services and security monitoring head ends. Construct a five-space carpark on the outside of the perimeter for those accessing the pass office, and a three-space security contractor car park will be constructed on the inside of the perimeter.
Attachment 5 details the general arrangement for the proposed front entry.
- b. **Fencing upgrades.** Compliant security classified fencing will be installed for the Base perimeter.
- c. **CCTV.** New cameras are to be installed to enhance the coverage of the security monitoring to the high-risk areas. New cameras will allow for greater operator control and monitoring.

Work Element 4 – Galleys

43. Spatial layout upgrades are proposed without altering any of the structural elements. Install new compliant non-slip floor types. Replace non-compliant wall/ceiling types to ensure compliance, condition and ventilation. Install new mechanical ventilation systems throughout the galleys. Replace freezer and fridge spaces to improve efficiency and install new refrigeration equipment to address condition and to increase refrigerated volume. Install new lighting and power circuits for kitchen equipment and general-purpose outlets to address electrical safety non-compliances. Install power isolating switches. Upgrade fire

detection and suppression systems. Internal fit-out and new equipment are proposed for both the Wardroom, and the Senior/Junior Sailors Galleys. Attachment 6 details the proposed Galley upgrades.

Work Element 5 – Living in Accommodation and Consequential Works

44. The new Living in Accommodation will provide at least 236 Single Occupancy Units and will be constructed central to the Base in four new accommodation blocks. The blocks will be built in two stages: 96 single units in Stage 1, then Stage 2 will demolish Buildings 6 and 7 and construct the remaining units. Single rooms are serviced by common bathroom, laundry, storage areas, and common rooms in accordance with Defence accommodation standards. Attachment 7 details the proposed Living in Accommodation general arrangement and elevations, with the blocks generally in standard modules of eight units.

45. **Consequential Works.** Consequential relocation of the functions within Building 6 is required. It is proposed to relocate these functions into a newly constructed facility on the site of the existing CAPT Darling Building. The ground floor of the facility will incorporate the Medical Clinic, and the first floor will incorporate the Enabling Services. Attachment 8 details the proposed Medical and Enabling Services facility.

- a. **Medical Clinic.** The ground floor of the facility will include medical officer consultation rooms, a psychology consultation room, two general consultation rooms including audio testing facility, a dental unit, a physiotherapy unit, general office spaces, customer service areas, and waiting rooms. Dedicated side access to the facility will allow for ambulance loading. General entry to the Clinic will be located centrally on the ground level on the southern side. A car park will be constructed for general Clinic use.
- b. **Enabling Services.** The first floor of the facility will include the customer service shop front, a hot desk computer area for trainees to perform administrative functions, an open plan office for three staff, provision for archival storage, and unclassified meeting spaces.

Work Element 6 – Car parking

46. Construct a new 100 space carpark over the demolished Taylor / Navigation Faculty Building, to the west of the proposed Training Precinct. The new spaces will provide the required offsets for all carparks deleted through the proposed works under Work Elements 1 and 5. Attachment 9 details the proposed car parking location.

Planning and Design Concepts

47. The general philosophy for the design of the proposed works is based on:
- a. providing upgraded and refurbished base infrastructure to address condition, compliance and capacity issues;
 - b. providing cost-effective, functional, low maintenance, energy efficient design options compatible with proposed functions and existing aesthetics;
 - c. adopting where possible, conventional construction techniques and materials commonly used by the construction industry and consistent with those already used;
 - d. applying appropriate durability measures to reduce ongoing maintenance and achieve the proposed design life;
 - e. minimising the impact of the effect to Navy training through staging that will not affect the training through-put at HMAS *Watson*;
 - f. minimising the impact of the buildings on the views from adjoining residential areas, National Parks, beaches and sensitive Sydney harbour locations; and
 - g. HMAS *Watson* being the Centre of excellence for Maritime Warfare. The proposed modern and purpose-built facility design reflects the importance of the training conducted, aims to enhance training outcomes and student experience, and aids in engendering Navy core values and signature behaviours into trainees as they enter service in the Navy.

Relevant Legislation, Codes and Standards

48. The following legislation, standards, codes and guidelines are applicable:
- a. Defence Estate Quality Management System;
 - b. Defence Manual of Fire Protection Engineering (MFPE);
 - c. *Disability Discrimination Act 1992 (Cth)*;
 - d. *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*;
 - e. *Fair Work Act 2009 (Cth)*;
 - f. *Fair Work (Building Industry) Act 2012 (Cth)*;
 - g. Manual for Infrastructure Engineering Electrical (MIEE);

- h. National Construction Code – Building Code of Australia (NCC);
- i. Smart Infrastructure Manual; and
- j. *Work Health and Safety Act 2011 (Cth)*.

49. An accredited NCC and MFPE consultant will certify the compliance of the design and the works.

Land and Zoning

50. The works proposed are consistent with uses prescribed in relevant Defence zoning instruments, including the HMAS *Watson* Zone Plan 2012 and the Defence Estate Principles of Development. The Project has remained consistent with the principles of the Zone Plan and has enhanced the opportunity for future use on the very constrained and restricted HMAS *Watson* site. Examples of this are consolidating the training functions into one location within the Operational Zone and establishing future development locations.

51. The Project works are planned to be delivered within the Commonwealth land. The Project proposes to relocate the Incoming Switching Station from outside the Base security perimeter to within it.

Structure

52. The structural design for any new construction, upgrading or refurbishment works will be consistent with the HMAS *Watson* environmental and geotechnical conditions. Industrial type solutions have been developed, including precast panels and glazed curtain walls, and lightweight industrial cladding. Some specific structural design aspects have been identified as follows:

- a. **Training Precinct.** The proposed Training Precinct is a four-level facility, with the ground and first floors being excavated into the existing rock. Balance has been struck between the height of the building and the volume of rock to be excavated.
- b. **Living in Accommodation.** The proposed site has some structural challenges due to its slope. Whilst maintaining the modular nature of the structure which presents synergies in construction, each block has slight variations in elevation and footprint to account for site constraints.

Mechanical Services

53. The mechanical services have been designed according to the functions and needs of each building. The mechanical services proposed will meet specific user needs, relevant ventilation, thermal comfort and air quality requirements and the mandatory requirements of the NCC.

Hydraulic Services

54. It is proposed to extend existing natural gas, sewerage and storm water services to each facility to suit design requirements. Potable water will be connected to the existing supply via sub-metering to each new building. Roof water will be collected and stored in above ground storage tanks and plumbed for use in toilet flushing and landscape irrigation.

Electrical Services

55. Lighting, power and lightning protection will be provided in accordance with Australian Standards and Defence engineering requirements. Electrical infrastructure and switchboards will include capacity to allow for future growth. Sub-metering will be included to each re-used and new building. The meters will be monitored through a new building management system, which will support an active energy management program on the site.

Fire Protection

56. Fire protection has been addressed through compliance with the MFPE and the NCC. The asset classification and criticality was assessed to determine the fire protection requirements. Fire detection and protection will be through a combination of standard alarm, sprinklers and extinguishers.

57. Buildings with high value training simulators will have a higher level of detection and protection, including very early smoke detection alarming and gas suppression.

Security Measures

58. The security design significantly upgrades HMAS *Watson's* Base wide security system. The alarm system will comply with the Defence Security Manual. The Project will install a new Engineering Services Network and a new Security Head end. All new facilities will be installed with alarming systems commensurate to the classification of the spaces within them. Internal access systems will be upgraded to modern electronic access systems. CCTV coverage will be enhanced by installing additional cameras across the site.

Acoustics

59. The new facilities will comply with the National Construction Code and Australian Standards for noise and acoustics. Acoustic separation has been considered between rooms, and walls are being designed to meet user requirements.

Work Health and Safety

60. The Project will comply with the *Work Health and Safety (Work Health and Safety) Act 2011 (Cth)*, *Work Health and Safety (Commonwealth Employment – National Standards) Regulations*, and relevant Defence policies. In accordance with Section 35 (4) of the *Building and Construction Industry Improvement Act 2005 (Cth)*, project contractors will also be required to hold full work health and safety accreditation from the Office of the Federal Safety Commissioner under the Australian Government Building and Construction Work Health and Safety Accreditation Scheme. Safety aspects of this project have been addressed during the design development process. A Work Health Safety Plan will be required to be developed for the construction phase prior to the commencement of any construction activities.

Materials and Furnishings

61. External walls for new buildings will be a mixture of concrete precast panels and metal cladding with curtain wall glazing. External facades are designed to be visually recessive due to their prominence on the South Head land. A metal louvre sun screening system will be installed to improve environmental performance of the buildings. Where required, pre-finished steel roofing and rainwater fittings have also been selected for their resilience to a marine environment.

Landscaping

62. The proposed new landscape works will complement and enhance the character of the site. Design has focussed on a functional, low maintenance, water sensitive approach with the use of indigenous plants. Precautions will be taken to avoid compromising environmental sensitivities by adopting landscaping practices in accordance with local environmental conditions and the Base environment management plan.

Childcare Provisions

63. There is no requirement for childcare facilities under the Project. There are none now and no proposal to provide any.

Provisions for People with Disabilities

64. Access for people with disabilities will be provided in accordance with the NCC, Australia Standard 1428, and the *Disability and Discrimination Act 1992 (Cth)*.

Environmental Sustainability

65. Defence is committed to Ecologically Sustainable Development and reducing greenhouse gas emissions. The Project has adopted cost effective measures as a key objective in the design and development of the proposed works. These measures include:

- a. **Energy Targets.** The project design has identified energy performance targets which have been informed by the National Construction Code Section J – Energy Efficiency, the Defence Building Energy Performance Manual (BEPM), and the Defence Smart Infrastructure Manual. Dynamic 3D energy models have been developed for each applicable work element.
- b. **Measures to reduce energy and water use.** The project design includes the following measures to reduce energy and water use:
 - (1) **Architectural design & building fabric.** Passive thermal design principles have been incorporated including: high performance, optimised daylight use, and fixed shading design.
 - (2) **Building services design.** Building services design includes a high efficiency water cooled heating ventilation and air-conditioning system; efficient lighting design and associated controls to minimise energy usage (like Building Monitoring System, time controlled zones, motion detection), solar power supplementation, gas hot water (lower Green House Gas emissions profile), and minimum energy performance standards applied to specified appliances and equipment.
 - (3) **Hydraulics design.** Measures to reduce potable water demand include flow restrictions on fittings & fixtures, minimum performance water efficiency labelling for appliances, sub-soil irrigation supply for applicable landscape as well as water sensitive urban design.
- c. **Re-use of existing structures.** Opportunities for re-use of existing facilities was carefully considered. The substantial upgrades required to the key training facilities within the re-use option would trigger full compliance upgrades under the NCC and does not present value for money.

Refurbished Mess Facilities include reuse of existing building structure and assets. Upgrade works are designed to comply with applicable ecologically sustainable development and smart infrastructure requirements, and will include the following: new metering for both energy and water usage, heating ventilation and air-conditioning, and electrical services to comply with minimum NCC Section J performance standards, new hot water to be gas fuel source, material selection to focus on durability, efficiency and indoor environment performance. Water/Energy efficiency to be managed via flow restrictions and minimum performance standards on all appliances and equipment.

- d. **Demolition and disposal of existing structures.** Together with construction waste, this shall be managed by implementing a site-specific Construction Environmental Management Plan. The plan includes a target for reuse or recycling of a minimum of 90% of construction and demolition waste.

Potential Impacts

66. Defence has conducted assessments to identify potential environmental and local community impacts. Suitable mitigation measures include:

- a. **Visual Impacts:** A Visual Impact Assessment concluded that the majority of outlooks to the proposed work areas are screened by either vegetation, topography or buildings. The viewing relationship and amenity between Lady Bay Beach and the Training Precinct was considered during the design development to mitigate potential impacts. Height restrictions and external façade material selection has been influenced by the Visual Impact Assessment.
- b. **Noise Impacts:** Noise levels are expected to increase during construction, specifically in proximity to the existing facilities (e.g. the Senior Sailors Accommodation) during the proposed redevelopment of the office accommodation/training facility and car park at the north western end of the site. All noise impacts are considered to be temporary and localised, however further assessment of construction noise is being undertaken via a Construction Noise and Vibration Impact Assessment. The assessment will be prepared to identify specific noise criteria for construction activities, potential noise impacts to nearby sensitive receivers (if any), and outline specific mitigation measures to manage potential noise impacts.

- c. **Heritage Impacts:** A Heritage Impact Assessment has been undertaken which concluded that the proposed works will occur proximal to several listed historic and Indigenous heritage places. Mitigation measures, which include installing an exclusion zone and including particular sites on the Aboriginal Heritage Information Management System Register, have been developed.
 - d. **Traffic, Transportation and Road Impacts:** Traffic will increase during construction, however the impacts are considered to be temporary. Access to the Base is only possible via one route on Cliff Street. A Construction Traffic Management Plan is currently being prepared and, as part of this work, traffic tube counters on the external road network (mainly residential streets) are being used to understand the existing traffic volumes and assess the construction traffic impacts on local residential streets. Further assessment of the proposed construction routes will be undertaken, including swept paths at key pinch point locations to identify mitigation measures required as part of the Construction Traffic Management Plan. Likely mitigation measures will include maintaining compliance with construction hours, limiting heavy vehicle movements to outside peak traffic hours, and minimizing heavy vehicle movements on certain routes and local streets.
 - e. **Ecological Impacts:** The project's Environmental Report noted that the works are proposed to be constructed in a highly developed area with limited ecological value. The works are not expected to significantly impact matters of National Environmental Significance or other ecological matters.
 - f. **Contamination Impacts:** The project's Environmental Report noted that buried asbestos has been found on-site and may be encountered during construction. A significant provision is included to address asbestos and detailed arrangements will be implemented under a Construction Environmental Management Plan.
67. Defence has determined that the Project will not have a significant impact on existing environmental and heritage values, and is not required to be referred to the Minister of Environment and Energy under the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*.

Consultation with Key Stakeholders

68. Defence has developed a community consultation and communications strategy that recognises the importance of providing local residents and other interested stakeholders with an opportunity to provide input into, or raise concerns relating to, the proposed works.

69. Defence has engaged with a variety of internal and external stakeholders during project development to date, and further consultation will be conducted to support the Parliamentary Standing Committee on Public Works' inquiry into the Project. Consultation will include:

- a. Dave Sharma MP, Federal Member for Wentworth;
- b. Gabrielle Upton MP, State Member for Vaucluse;
- c. Peter Cavanagh Mayor of Woollahra Municipal Council;
- d. National Parks and Wildlife Service;
- e. Property NSW (formally Sydney Harbour Foreshore Authority);
- f. Sydney East Business Chamber;
- g. Watsons Bay Association;
- h. Leaflet drops for local residents; and
- i. Community Consultation Sessions.

Cost Effectiveness and Public Value

Project Costs

70. The estimated total capital out-turned cost of the Project is \$430.5 million (excluding Goods and Services Tax). This includes management and design fees, construction costs, information and communications technology (ICT), furniture, fittings, equipment, contingencies and a provision for escalation.

71. The operating costs of the completed facilities will increase by \$3.2 million annually, from \$9.0 million annually. This is due to:

- a. the maintenance costs to support the large increase in ICT hardware installed within the new facilities, and
- b. the additional facilities operations cost increase to account for the increased gross floor area across each work element.

Project Delivery System

72. A Managing Contractor form of contract is planned to deliver the Project. A Managing Contractor will be appointed to complete the design development, procure trade contractors, and manage the construction of the works. A Project Manager and Contract Administrator will be appointed to manage the Managing Contractor in the delivery of the works.

73. This form of contractor delivery provides the Commonwealth with buildability input into the design while promoting opportunities for small to medium enterprises by sub-contracting design services and construction.

Construction Program

74. Subject to Parliamentary approval, the project's design activities are expected to be completed by early 2020. Construction expected to commence by mid-2020 and be completed by mid-2026.

75. Staging the works is required to maintain Base operations, especially the training program. Both Work Element 1 the Training Precinct and Work Element 2 Living-In Accommodation are staged. All other work elements will progress within the Training Precinct and Living-In Accommodation construction duration.

Public Value

76. Defence has comprehensively assessed public value, opportunities and benefit to the community as a result of the proposed works:

- a. **Meeting capability needs.** The proposed scope of works will provide Navy with the ability to train and accommodate necessary trainee throughput for all current and future planned capability. The Project will reinstate the condition of key infrastructure and buildings, account for deterioration and dilapidation, and in turn provide fit-for purpose, compliant facilities and infrastructure at the lowest possible whole of life cost to the Commonwealth. The facilities are designed to be adaptable and flexible.
- b. **Employment opportunities.** It is anticipated the Project will generate direct employment opportunity to the local construction work force, and more broadly for the supply of materials, products and equipment during delivery of the works. It is also anticipated that the Project will procure approximately 100

subcontract packages from the Sydney market. The onsite construction workforce is expected to range between 50 and 250 people per day. It is expected that over the duration of the Project, approximately 20,000 people will carry out works onsite.

- c. **Economic impacts.** In the sustainment period, there will be no net increase or loss of personnel on Base. As such, it is assessed that economic impacts of the Project will be neutral.
- d. **Local industry and Indigenous business involvement opportunities.** The Project will aim to maximise opportunities to the local industry within the Sydney region. Sub-contractors will be procured through a two stage open tender process and packages will be advertised through newspapers and industry briefings. The works will be packaged to provide opportunities to small and medium sized business and Indigenous companies.

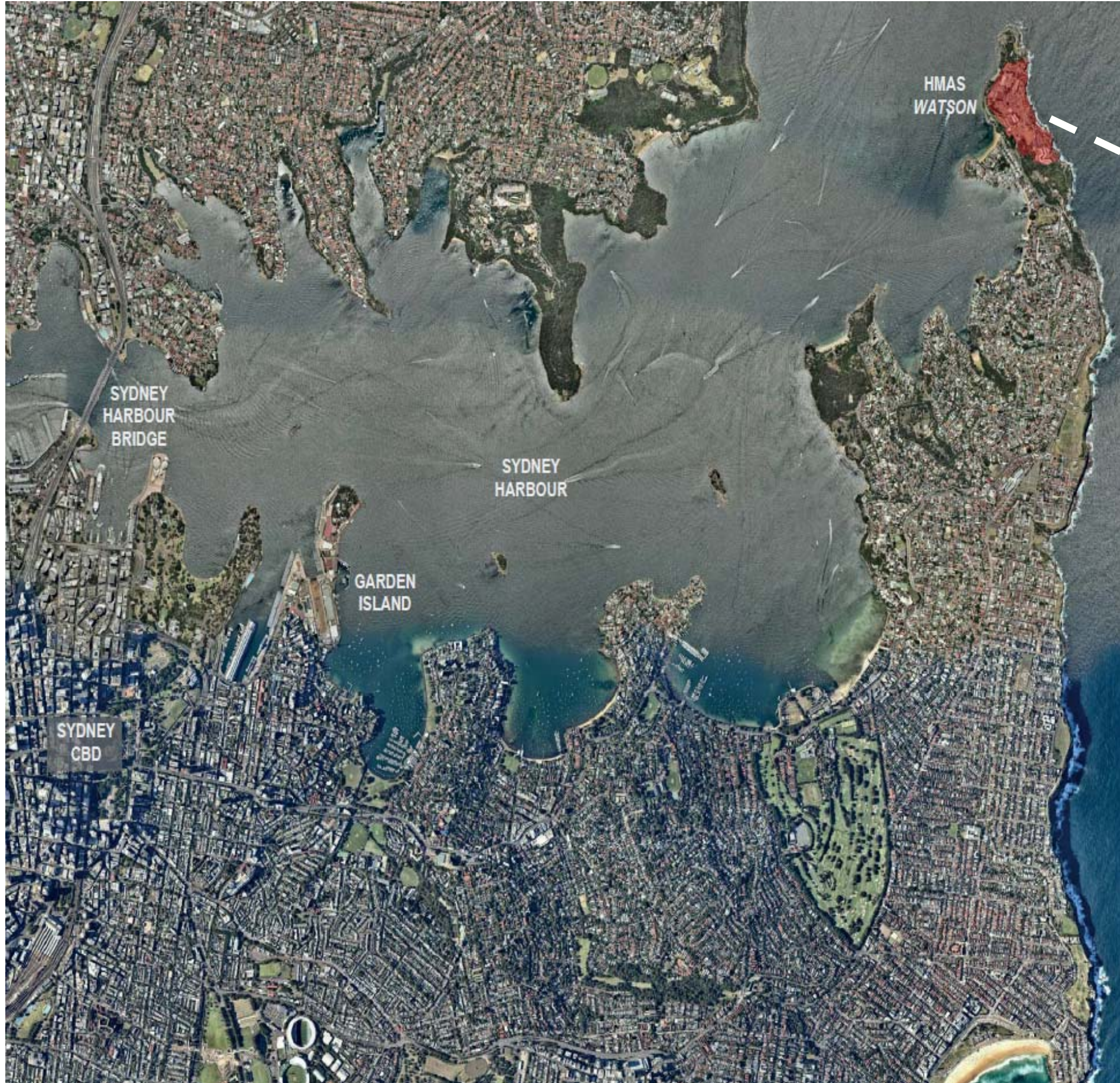
Revenue

77. No revenue is expected to be derived from the Project.

Attachments

1. HMAS *Watson* Location and Existing Site Plans
2. HMAS *Watson* Redevelopment Scope of Works Overview
3. Work Element 1 – Training Precinct
4. Work Element 2 – Base Engineering Services
5. Work Element 3 – Base Security – Front Entry
6. Work Element 4 – Galleys
7. Work Element 5 – Living in Accommodation
8. Work Element 5 – Consequential Works – Medical and Enabling Services Facility
9. Work Element 6 – Car parking

HMAS WATSON REDEVELOPMENT LOCATION PLAN



HMAS WATSON REDEVELOPMENT – EXISTING SITE PLAN



HMAS WATSON REDEVELOPMENT SCOPE OF WORKS OVERVIEW



WORK ELEMENT 1 – TRAINING PRECINCT – SITE PLAN



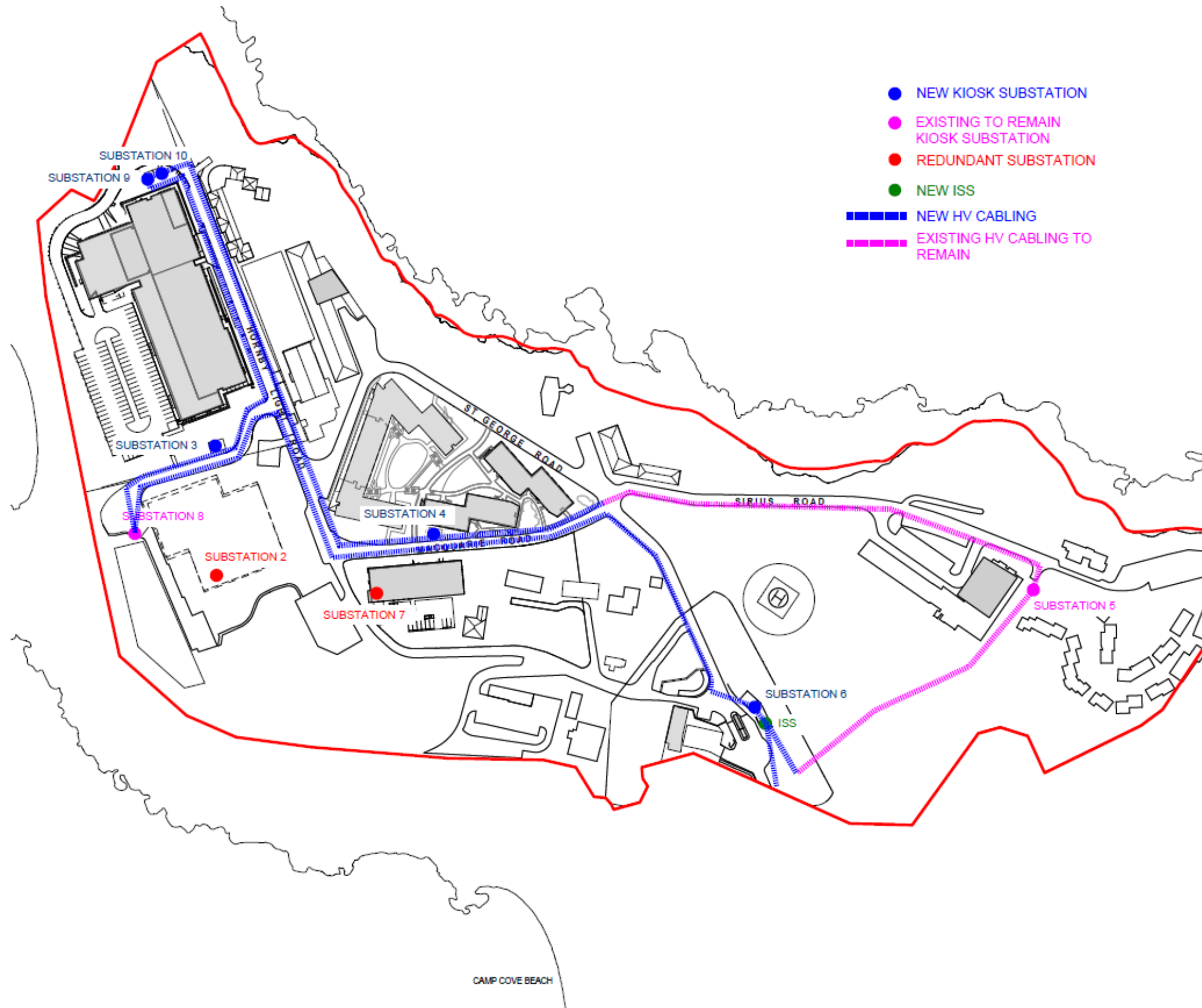
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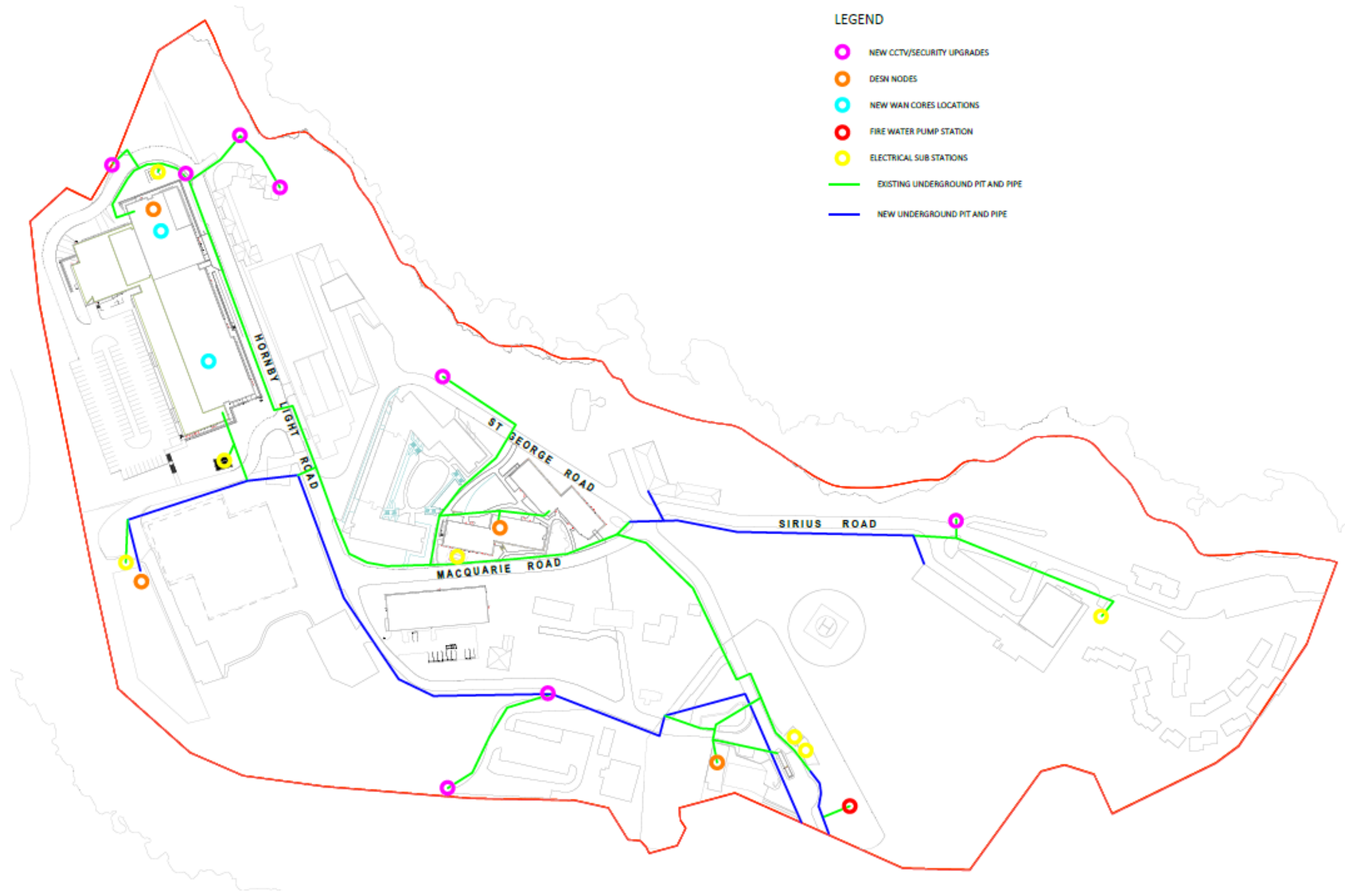
WORK ELEMENT 1 – TRAINING PRECINCT



WORK ELEMENT 2 – BASE ENGINEERING SERVICES – ELECTRICAL

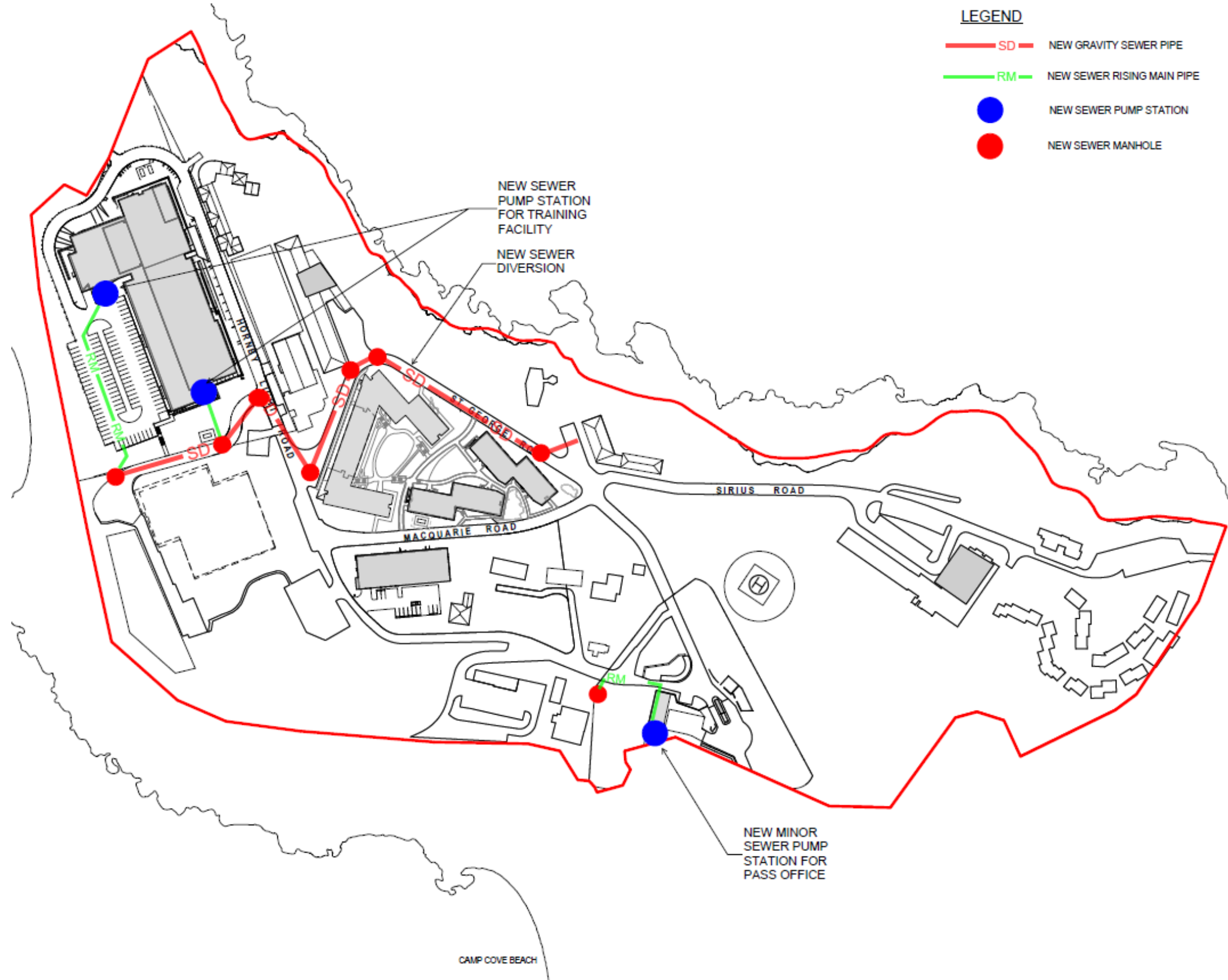


WORK ELEMENT 2 – BASE ENGINEERING SERVICES – COMMUNICATIONS

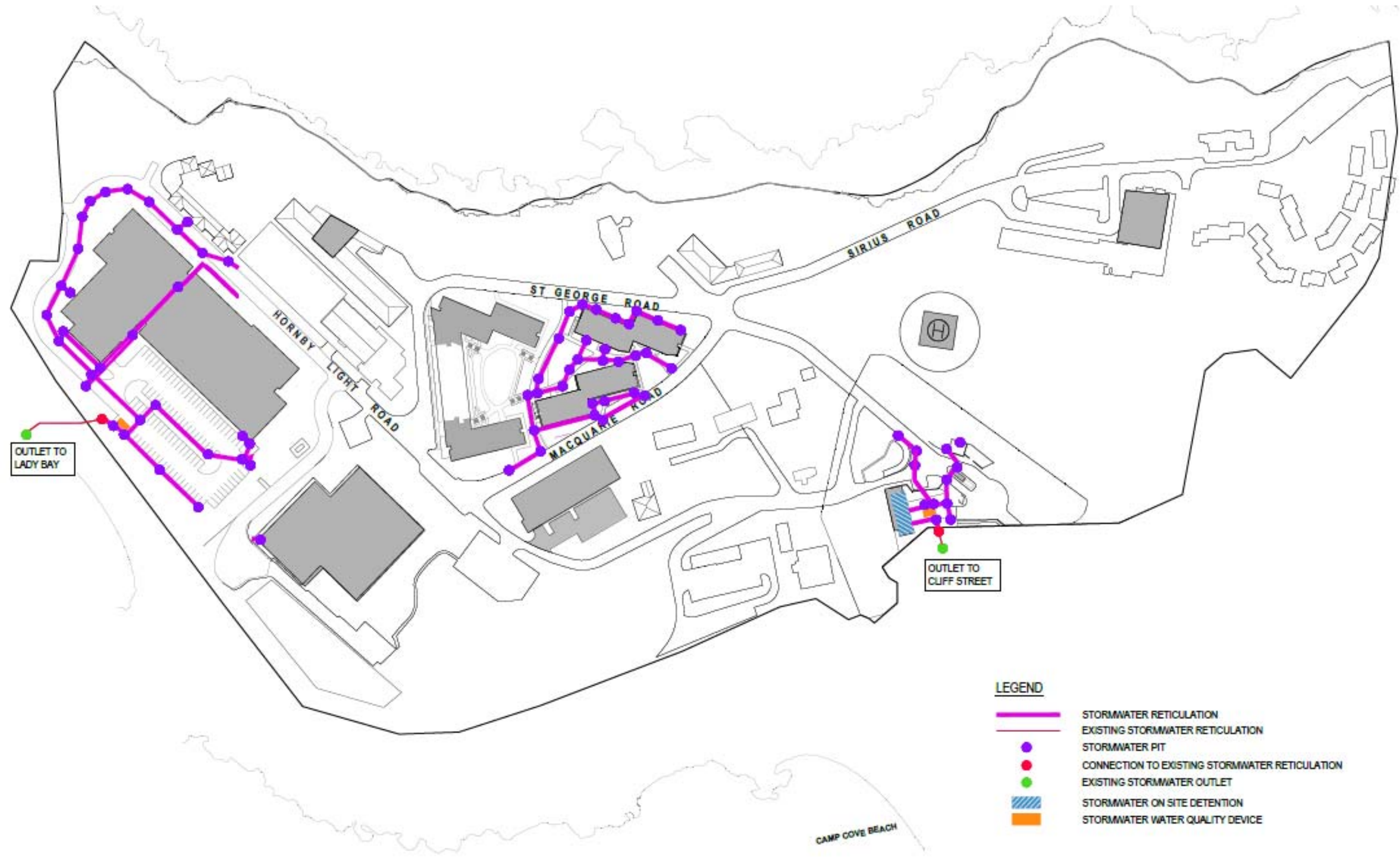


- LEGEND
- NEW CCTV/SECURITY UPGRADES
 - DESN NODES
 - NEW WAN CORES LOCATIONS
 - FIRE WATER PUMP STATION
 - ELECTRICAL SUB STATIONS
 - EXISTING UNDERGROUND PIT AND PIPE
 - NEW UNDERGROUND PIT AND PIPE

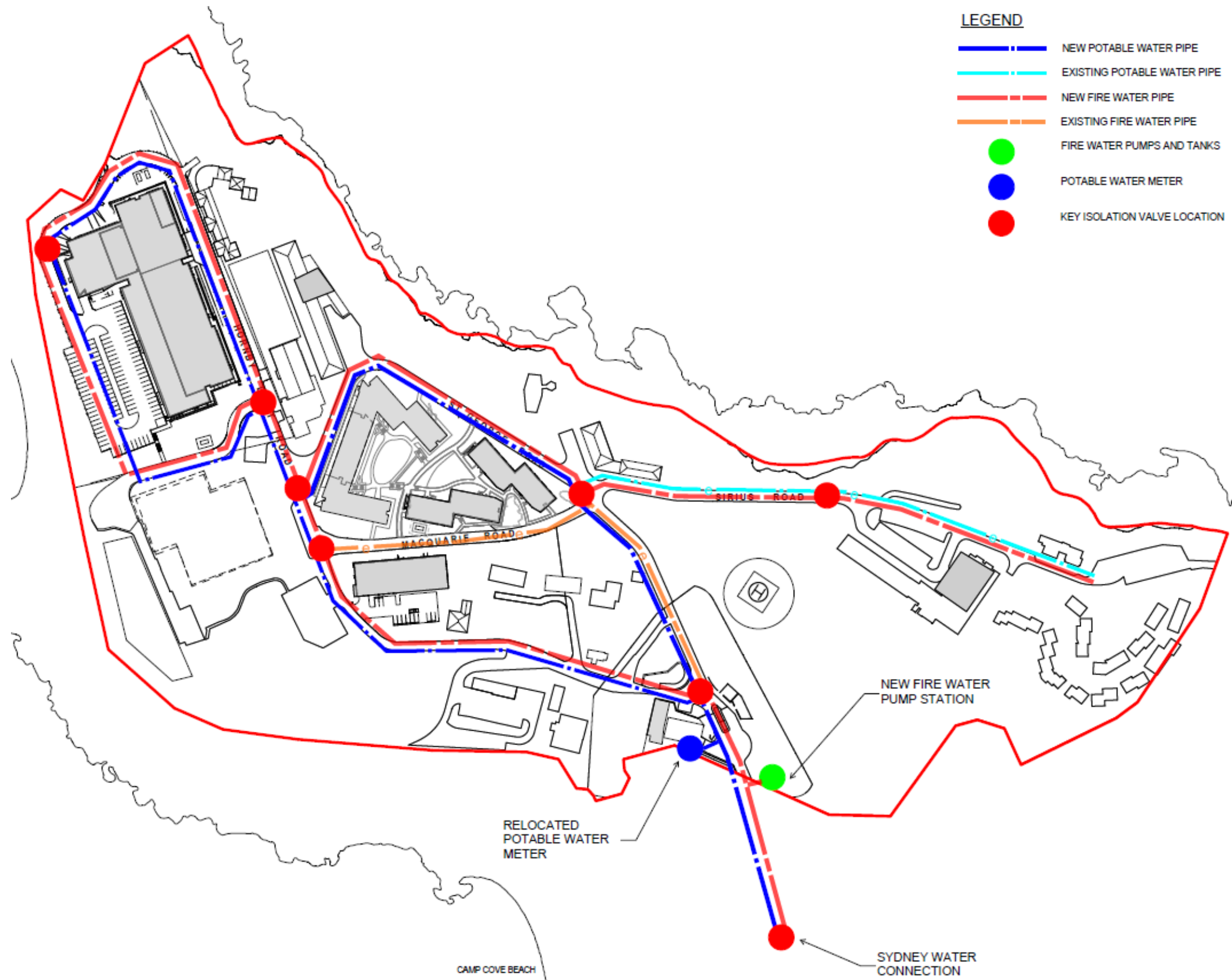
WORK ELEMENT 2 – BASE ENGINEERING SERVICES – SEWER



WORK ELEMENT 2 – BASE ENGINEERING SERVICES – STORMWATER



WORK ELEMENT 2 – BASE ENGINEERING SERVICES – FIRE RING MAIN

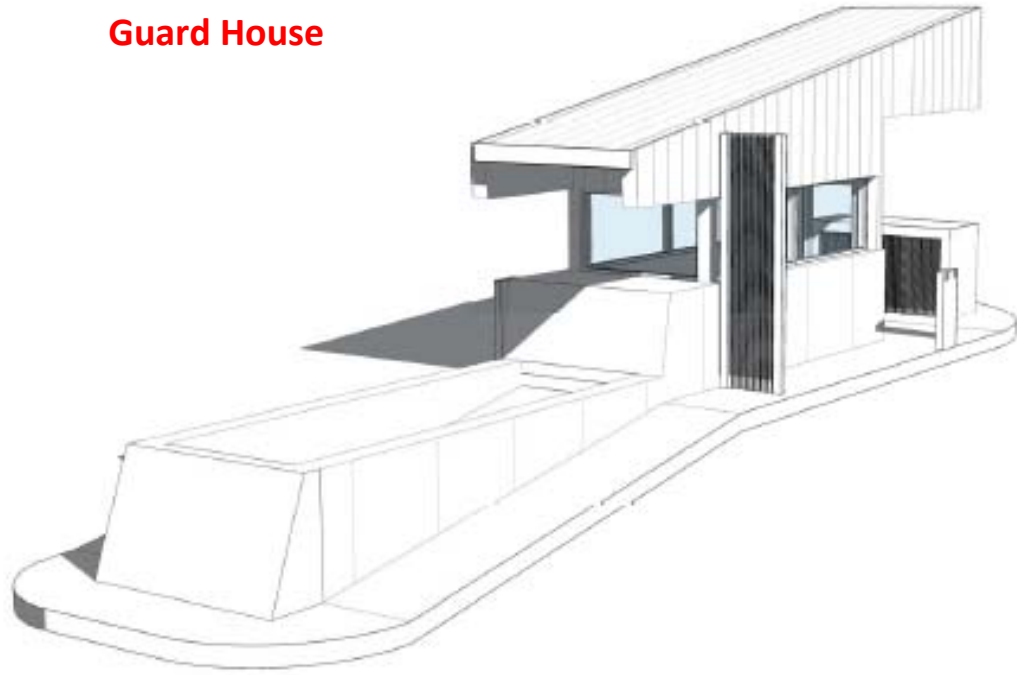


WORK ELEMENT 3 – BASE SECURITY – FRONT ENTRY



WORK ELEMENT 3 – BASE SECURITY – FRONT ENTRY

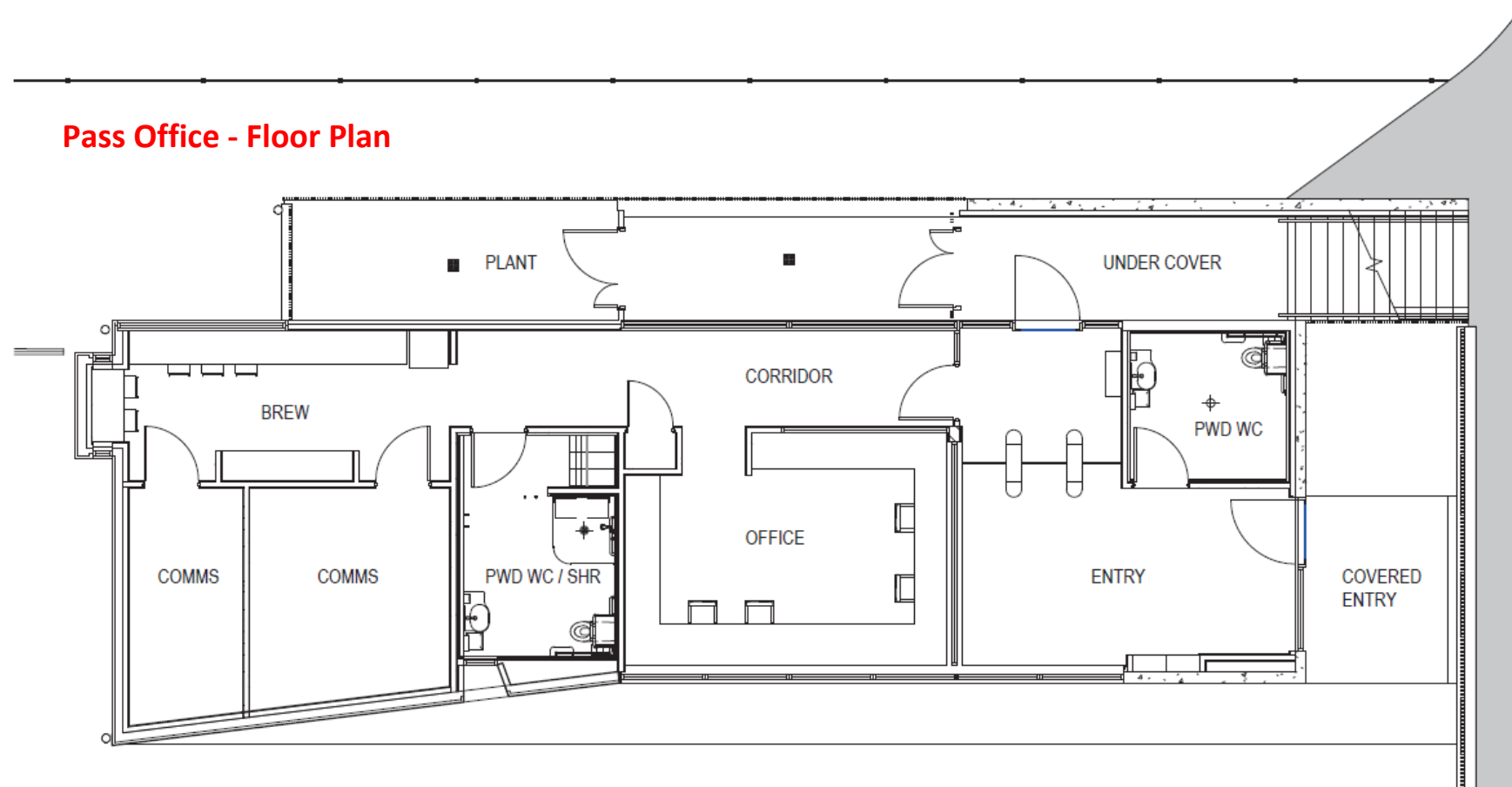
Guard House



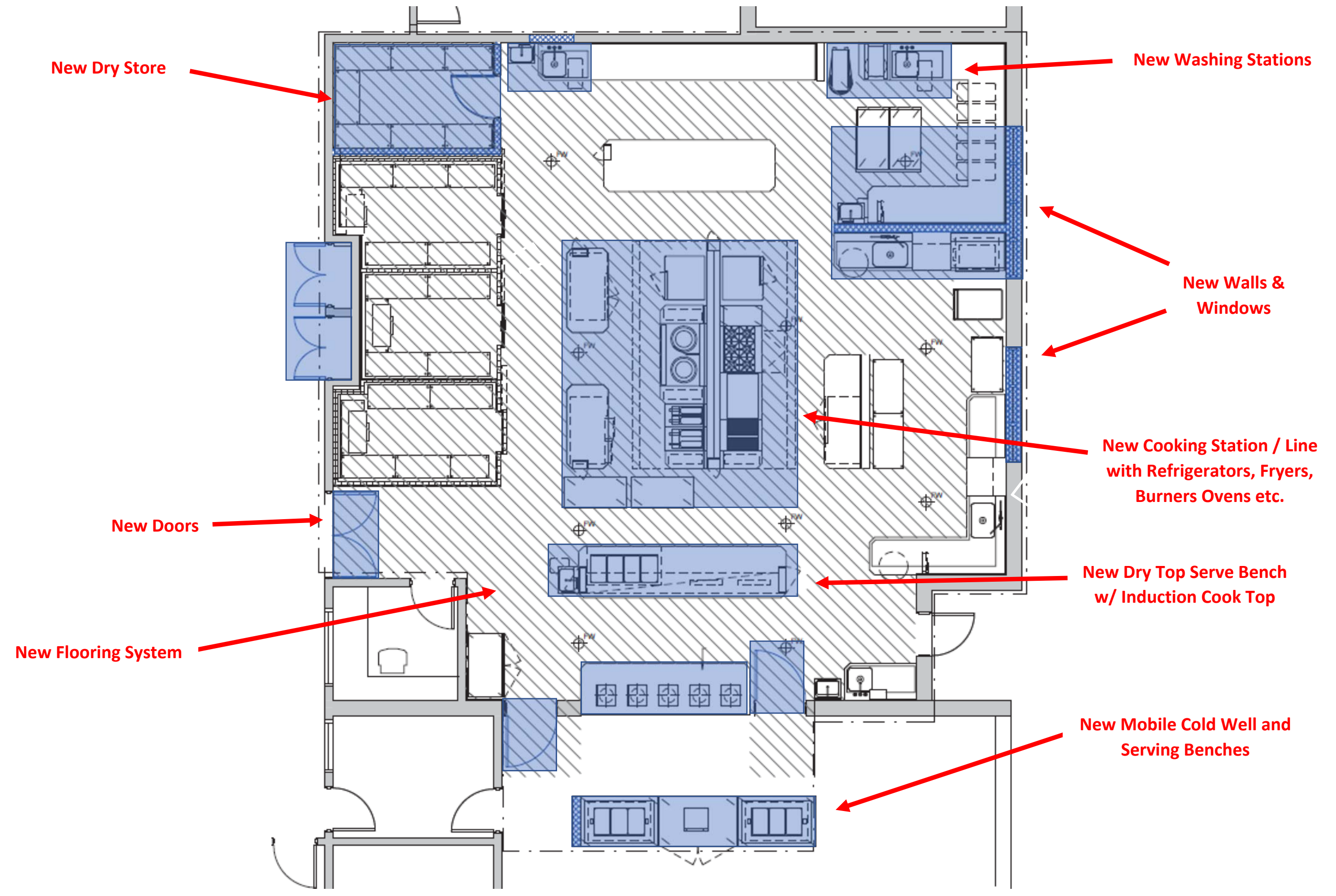
Pass Office - Perspective



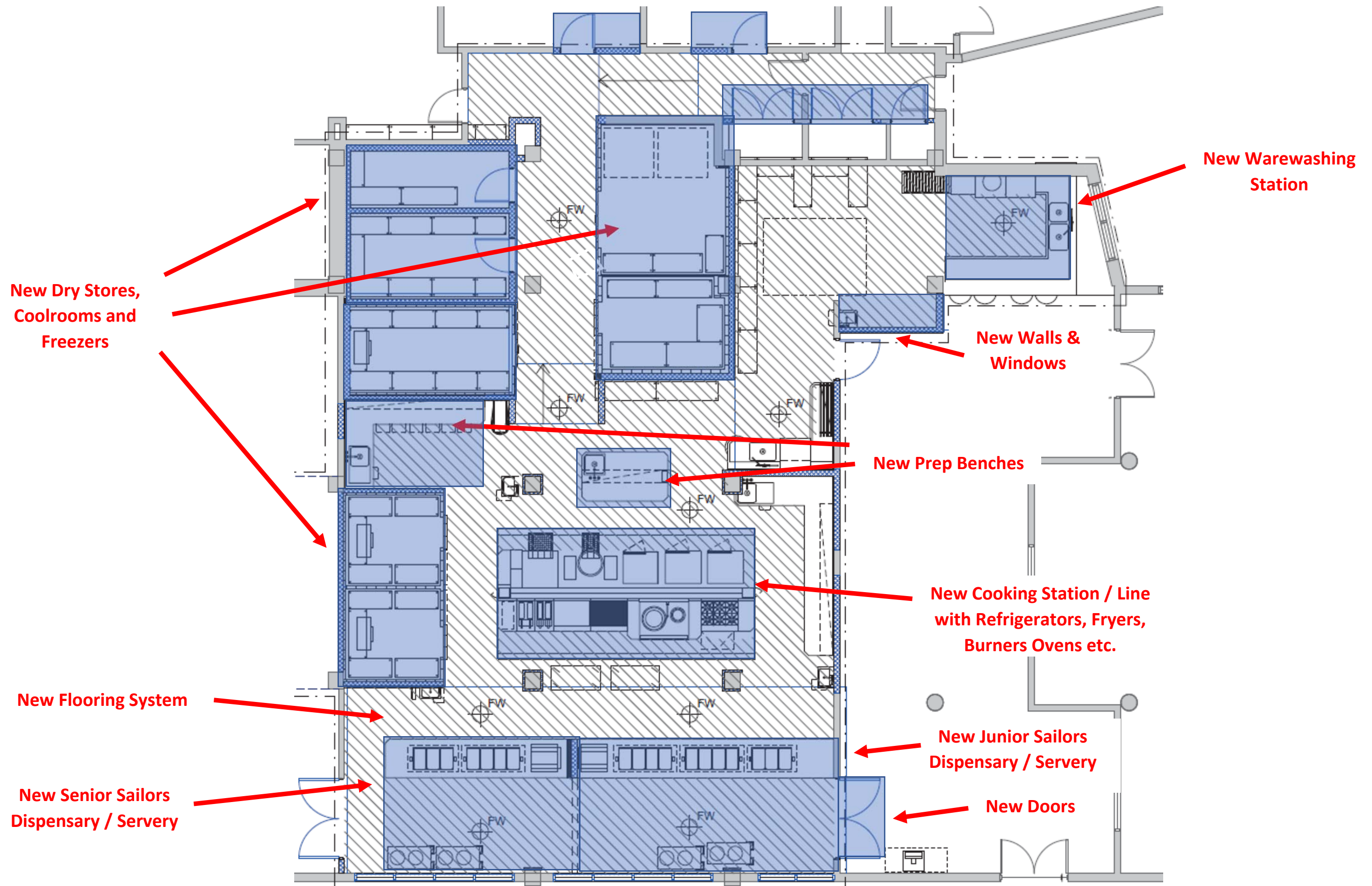
Pass Office - Floor Plan



WORK ELEMENT 4 – WARDROOM GALLEY FLOOR PLAN



WORK ELEMENT 4 – JUNIOR AND SENIOR SAILORS GALLEY FLOOR PLAN



WORK ELEMENT 5 – LIVING IN ACCOMMODATION – PRECINCT SITE PLAN



WORK ELEMENT 5 – LIVING IN ACCOMMODATION – ARTIST IMPRESSION



WORK ELEMENT 5 – LIVING IN ACCOMMODATION – TYPICAL BLOCK DETAIL



WORK ELEMENT 5 – CONSEQUENTIAL WORKS – MEDICAL AND ENABLING SERVICES FACILITY – SITE PLAN



WORK ELEMENT 5 – CONSEQUENTIAL WORKS – MEDICAL AND ENABLING SERVICES FACILITY



WORK ELEMENT 6 – CARPARKING



New Taylor Building
100 Space Carpark

Ritchie Building Site
Future Carpark
Development Site

WE06 Carparking