

BUILDING SERVICES REPORT



AUSTRALIAN INSTITUTE OF POLICE MANAGEMENT NORTH HEAD NSW

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SECTION 1 INTRODUCTION

1.01 PREAMBLE

This report has been prepared by Medland Metropolis at the request of the AFP to provide details of the ESD principals that have been adopted for the following building services for this project:

- Mechanical Services
- Electrical Services
- Hydraulic Services
- Lift Services

SECTION 2 MECHANICAL SERVICES

2.01 GENERAL

The Mechanical Services for this project comprise the following elements:

- Air conditioning to each class room, office, residential unit, library extension, senior common room and dining room. Changes will also be required to the existing library air conditioning system.
- Mechanical exhaust will be provided to all bathrooms, ensuites, WC's and laundries in accordance with AS 1668.2.
- Wine store plant to ensure that this critical area is retained at 16°C and 65% RH.

2.02 ESD DESIGN PRINCIPALS

The following principals have been adopted in undertaking the design of the Mechanical Services:

- The new air conditioning to the site is a combination of VRV (variable refrigerant volume) and inverter driven split air conditioning systems. Both systems provide significant reductions in energy consumption over conventional air conditioning, as they are able to reduce their energy demand in response to reduced cooling requirements.
- The exhausts systems are linked to the room lighting controls, so that they are switched off when the rooms are not occupied, after a short run-on period.

SECTION 3 ELECTRICAL SERVICES

3.01 GENERAL

The Electrical Services for this project comprise the following elements:

- Consumer Mains from the existing substation to the Main Switchboard.
- Submains.
- Main Switchboard and Distribution Boards.
- General Power.
- Internal Lighting.
- External Lighting.
- Communications cabling.
- Provision for connection to relocatable standby power plant to the computer room, food storage facilities and security.

3.02 ESD DESIGN PRINCIPALS

The following principals have been adopted in undertaking the design of the Electrical Services:

- The internal and external lighting has been designed in accordance with the requirements of Section J.6 of the BCA.
- External lighting is controlled by a combination of photoelectric cell and time clock to ensure that lighting is only operated when it is required.
- Electronic ballasts have been specified to light fittings to minimise energy consumption.
- The lighting and tower rail heaters to each of the residential unit are automatically switched off when the residence is unoccupied.

SECTION 4 HYDRAULIC SERVICES

4.01 GENERAL

The Hydraulic Services for this project comprise the following elements:

- Sanitary plumbing and drainage
- Storm water drainage
- Rainwater harvesting
- Trade waste
- Domestic cold water
- Domestic Hot Water
- Fire Hose Reels
- Fire Hydrants
- Gas reticulation

4.02 ESD DESIGN PRINCIPALS

The following principals have been adopted in undertaking the design of the Hydraulic Services:

- Rainwater is being harvested from the stormwater drainage from the Residential building which will be used to supply water to the water closets within the Residential buildings. Rainwater is also being harvested from the existing Main Heritage Buildings with this water being used for water closets within.
- The existing grease arrestor serving the existing kitchen is not fully sealed and there exists a risk of spillages to the local area. In addition, its location is in conflict with the re-establishment of the existing natural overland water course. A new below ground grease arrestor is to be installed in and adjacent location to address these issues.
- Domestic hot water has been provided to the site using electric hot water systems. The new hot water systems to the residences will be gas boosted solar hot water systems, significantly reducing the energy used to provide hot water.
- A bulk water tank is to be provided on site for the fire hydrant system, which will result in a reduced drain on the water supply to North Head in the event of a bush fire.

SECTION 5 LIFT SERVICES

5.01 GENERAL

The Lift services to this project comprise the following elements:

- A passenger lift to the Administration Building.
- Staff lift to the double storey residential buildings.
- Lifting Platform to the entrance adjacent existing Kitchen

5.02 ESD DESIGN PRINCIPALS

The following principals have been adopted in undertaking the design of the Lift Services:

The Administration Building lift is a new generation electric lift, which consumes significantly less power than a standard hydraulic lift that would traditionally served a building of this size. In addition to the reduced energy consumption, there is no requirement to store and eventually dispose of hydraulic oil, which has a long term environmental benefit.

The lifts to the double storey residential building are provided to assist in the cleaning and movement of luggage to these buildings. These lifts will be very slow and the residents and staff will be encouraged to make use of the adjacent stairs.