Building Services Design Statement

Meinhardt Consulting have been engaged to design building services for the proposed new Sanctuary Point Library.

The building services comprises of the followings components:

- Electrical Services
- Mechanical Services
- Hydraulic Services
- Fire Services
- Fire Sprinkler

Electrical

- Investigations have been undertaken with Essential Energy and it has been determined that sufficient spare capacity exists in the existing pad mounted substation located to the north of this site to supply the new Library building.
- A new connection will be made at this substation, with an underground supply installed underneath Paradise Beach Road to a new pillar to be established with the property boundary of the new Library. Underground cabling will then be installed from this pillar to the site Main Switchboard. These works will be undertaken by a Level 1 Electrical contractor.
- Power conserving light fixtures will be used through out the building whenever possible.
- Photo voltaic roof solar panels incorporated.
- · Communication The building voice and data cabling system will comprise the following main elements:
 - Communications rack to house the horizontal cabling patch panels and the client's active equipment.
 - · Communications outlets in designated locations.
 - · Communications outlets for wireless access points (provided by client).

The horizontal cabling will be to Category 6a standard. It is noted that the NBN network is live in this area.

- · Connection for free to air Tv and pay tv will be incorporated.
- A proximity card security access system will be installed to allow access via each entrance to the building and to monitor the building entrances and exits. The security system will be interfaced to the FIP to release any doors that are secured in the path of egress. A silent duress alarm system will be provided to the Customer Service Area and the AWC.
- An IP CCTV system is proposed to cover the public internal and external areas to the library to enhance security for the public and staff.
- · Lift type: A motor room less passenger lift to meet AS 1428.1 will be incorporated.



Mechanical

- Displacement air conditioning supply air via floor plenum system to Library spaces.
- · Combination of VRF system using isolated AHU cupboards and Central Cooling/Heating units system.
- Mechanical ventilation to enclosed areas that are not naturally ventilated.
- Toilet exhausts
- Building Management System (BSM).
- Central Mechanical Plant Room will contain the heating, cooling and hot water plant for the building. Heat recovery chiller to be located in an external plant room for heat rejection to atmosphere.Mechanical
- Displacement air conditioning supply air via floor plenum system to Library spaces.
- · Combination of VRF system using isolated AHU cupboards and Central Cooling/Heating units system.
- Mechanical ventilation to enclosed areas that are not naturally ventilated.
- Toilet exhausts
- Building Management System (BSM).
- Central Mechanical Plant Room will contain the heating, cooling and hot water plant for the building. Heat recovery chiller to be located in an external plant room for heat rejection to atmosphere.

Hydraulic

- Existing sewer pipe runs across the site from the east to Kerry Street on west. This will need to be re diverted along Paradise Beach road back to Kerry Street
- Water and gas supply will be brought into site from authority main along Kerry Street.
- Water conserving fixtures will be used through out the building whenever possible.
- Rain water re use will be fed from a rainwater tank provided by the Civil engineer. The system will be pressurised through a pump and filter system to serve the WC's, Urinals and external hose taps for landscape irrigation.

Fire Measure

- Building Occupant Warning System (BOWS) will be provided to activate speakers to sound throughout the building. The sounding devices will be provided throughout the building, and connected directly to the BOWS Control Panel facility incorporated in the FIP and to the hearing loop system to ensure the alarm is heard by any visitors with impaired hearing.
- · New fire hydrant booster and external hydrants will be required.
- Fire hose reels will be incorporated within the building.
- Portable extinguisher and blankets will be incorporated within the building.
- · Fire sprinkler system is not required by NCC but will be incorporated within the building.
- Automatic fire detection and alarm system will be incorporated within the building. A Fire Indicator Panel (FIP) will be installed and located adjacent the main entrance. Point type smoke detectors will be provided throughout the building including concealed spaces where required.

Fire Sprinkler

- As the building is classified as a Class 9b Assembly building under the NCC which is less than 25m in effective height, sprinkler protection is not required. Though it is a requirement of Shoalhaven Council that this buildings is provided with an automatic fire sprinkler system throughout the building to the requirements of the BCA and AS2118.1.
- The water supply will be from the Shoalhaven Water reticulated water supply system (a direct supply from a single town main). The water supply to the site will be extended to a fire brigade booster assembly in accordance with AS2118.1 and NSW Fire and Rescue requirements.
- The sprinkler alarm valve assembly shall be wall mounted within a purpose made enclosure (box) with direct egress to a road or open space.
- The sprinkler design will be based on a Light Hazard rating, on the understanding that there are no stack rooms in the library and that no part of the facility is considered to be a theatre, cinema or public entertainment area. Fast response sprinklers will be provided throughout the building below and above ceilings and to all exposed areas without ceilings.
- From the pressure and flow data that has been provided from the Shoalhaven Water, the water supply is adequate for a Light Hazard rating without the use of pumps operating at a minimum head pressure of 70kPa.
- The automatic sprinkler system will be interfaced with the building's main fire indicator panel (FIP), which will activate the buildings occupant warning system, any smoke hazard management system and send a transmission to a fire brigade receiving centre in the event of a sprinkler discharge occurring.