

# Report

Building Services

MACQUARIE CENTRE REDEVELOPMENT STAGE 1 CONCEPT DA  
AMP Capital Investors Ltd

# Report

CONFIDENTIAL

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# 1 INTRODUCTION

## 1.1 Background

This report has been prepared on behalf of AMP Capital (AMPC) in support of a Stage 1 Development Application (DA) to be submitted to the City of Ryde Council. The Stage 1 seeks concept plan approval for the expansion of Macquarie Centre by establishing:

- Building envelopes and design parameters for future development on the site, including the proposed uses within the podium and tower components.
- The distribution of floor space across the site.
- Future pedestrian and vehicle connections to and within the site.

This report supports the proposed future expansion of Macquarie Centre in relation to the provision of the necessary building services components required for the expansion.

## 1.2 Site Description

Macquarie Centre is approximately 11.25 hectares in area and is located at the corner of Waterloo Road, Herring Road and Talavera Road, Macquarie Park. The site is legally described as Lot 100 in DP 1190494.

Located within the Macquarie Park Corridor, the site has excellent access to public transport, situated immediately adjacent the Macquarie University Railway Station and the Herring Road Bus Interchange. Located between the M2 Hills Motorway and Epping Road, the site also enjoys excellent vehicle connectivity.

Macquarie Centre originally constructed in 1981 is currently the largest suburban shopping centre in NSW with the most recent stage of development opening in October 2014. The shopping centre spans 5 levels accommodating 368 stores, including major retailers such as David Jones, Myer, Target, Big W, Coles and Woolworths. The centre also houses a large number of mini major international retail stores including H&M, Zara, Uniqlo, Forever 21, GAP and Sephora. A number of entertainment offerings exist in the centre including a cinema complex and ice skating rink.

## 1.3 Development Proposal

The Stage 1 DA design for the Macquarie Centre comprises:

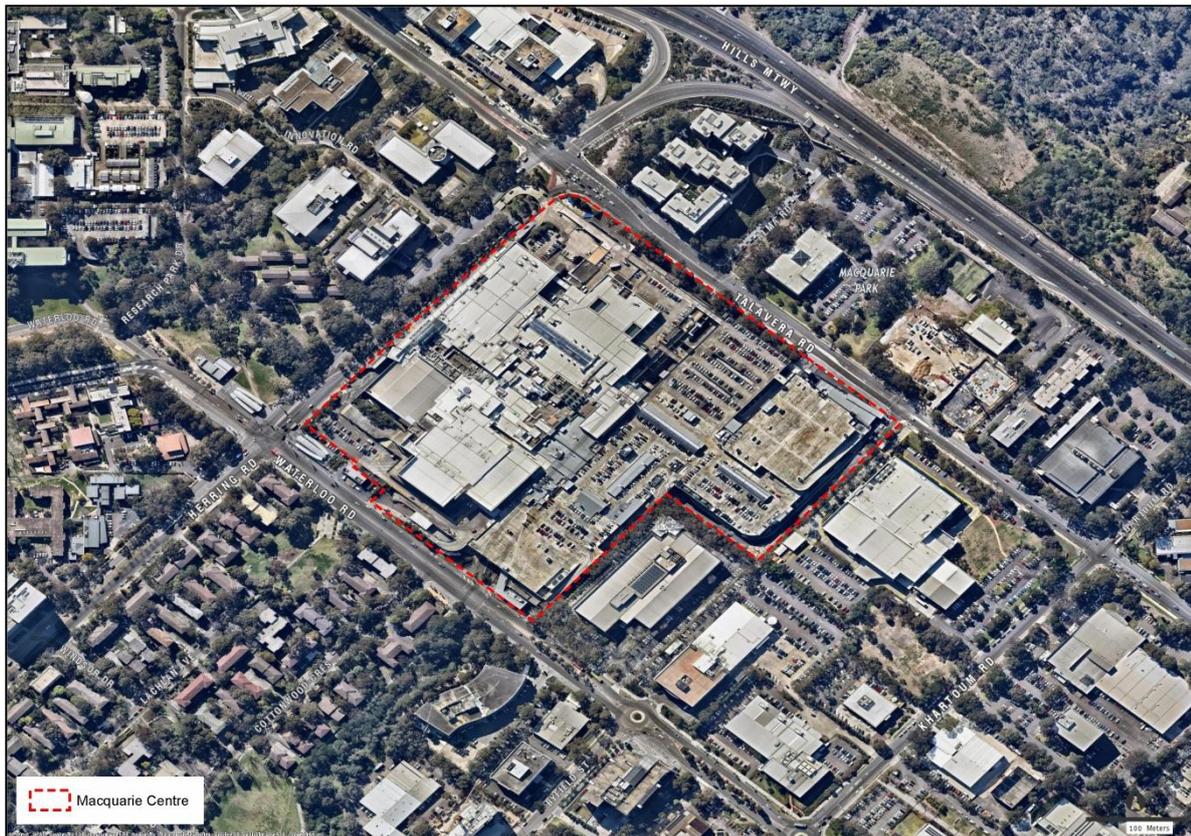
- A new commercial/retail podium towards Herring Road to replace the existing structure. This will provide an active frontage with separate pedestrian entries to Herring Road, the creation of a vibrant atrium space and new active retail, commercial and community uses.
- Building envelopes for four towers fronting Herring Road, with maximum heights ranging from 90m and 120m above existing ground level. The uses in each tower include:
- Tower 1: Mixed use development comprising commercial and/or residential above a retail podium.
- Towers 2, 3, 4: Mixed use development comprising residential apartments and/or serviced apartments and/or student housing, above a retail podium.
- Maximum additional gross floor area (GFA) of 148,000sqm.
- The creation of 'Station Plaza' between the train station and shopping centre, framed by active uses and a landmark building for community purposes.



- Basement and rooftop car parking envelopes to accommodate a maximum of 2,195 additional car spaces.
- New vehicle and pedestrian access points.

The Stage 1 DA does not seek approval for demolition or construction works. Such approvals will be sought via subsequent detailed development applications following completion of the Stage 1 DA.

FIGURE 1: AERIAL PHOTOGRAPH





## 2 BUILDING SERVICE PROVISIONS

### 2.1 General

As part of the consolidated Stage 1 Development Application Submission we provide an overview for the proposed mechanical, electrical, communications, security, fire protection and hydraulics services provisions.

As this is an application for concept design, it is difficult to determine future load requirements and we shall commence discussions with Supply Authorities (Ausgrid, Sydney Water, etc) during the development of the design.

### 2.2 Mechanical services

The proposed mechanical services will be designed to comply with the relevant National Construction Code of Australia (NCC) standards, Australian Standards and regulations, council conditions and associated fire engineered solutions.

The mechanical provisions will incorporate the following:

- Energy efficient air conditioning systems serving retail areas, commercial areas and residential apartments.
- Exhaust ventilation to amenities, utility areas, car parks/loading docks, pump rooms, garbage rooms, commercial building, residential apartments and miscellaneous areas.
- Supply air ventilation where required, to car parks/loading docks, switch rooms, fire control rooms, pump rooms, utility areas, fire stairs, garbage rooms and miscellaneous areas.
- Kitchen exhaust to food court, restaurant and residential kitchens incorporating specialised filtration systems where located close to residential apartments.
- Stand alone air conditioning systems for areas operating 24 hours including communications/UPS and switch rooms.
- Smoke hazard management systems.

### 2.3 Electrical services

To provide electrical supply to the extended shopping centre and the Residential/Commercial Towers, four (4) new chamber type substations will be established. The exact locations of the substations will be developed in co-ordination with the project team and complying with Ausgrid Network standard requirements.

Contact will be made with Ausgrid in the next design phase for the proposed supply arrangement taking into consideration the zone substation capacity and HV network modification requirements.

All new substations and proposed modifications to the Ausgrid high voltage network will be carried out complying with Ausgrid Network standards.

The proposed electrical services within the extended/refurbished centre and within the residential/commercial towers will be designed to comply with the relevant National Construction Code of Australia (NCC) standards, Australian Standards and regulations, council conditions and associated fire engineered solutions.



The electrical provisions will incorporate the following:

- New Main switchboards separate for retail, commercial and residential areas (each residential tower will have a separate main switchboard).
- Unmetered tenant distribution boards to supply the retail tenancies.
- House services distribution boards for the common areas of the retail centre, and the residential and commercial towers.
- Distribution boards within each accommodation units for residential towers.
- Unmetered Tenant distribution boards on each level of the commercial tower.
- Electricity retailers meters for the common areas.
- Submain cables to other services e.g. Mechanical, hydraulics, fire protection and lifts.
- General lighting and power throughout the development.
- Lightning protection system.

## 2.4 Communication services

The proposed communications services will be designed to comply with the relevant National Construction Code of Australia (NCC) Standards, Australian Standards, Telecommunications Authorities Standards and regulations and council conditions.

The communications provisions will incorporate the following:

- Lead-in cables to each MDF room in the commercial and residential towers (by authorities)
- New Distributed Antenna System (DAS) room to provide mobile coverage to the commercial tower
- All carriers cabling to commercial tenants (by tenant).
- Dedicated cabling riser for communications use in accordance with NBN requirements as a minimum for residential towers.
- Dedicated cabling riser to be provided for tenant only use for the commercial tower (i.e. separate to base building communications risers).

## 2.5 Security services

The proposed security services will be designed to comply with the relevant National Construction Code of Australia (NCC) Standards, Australian Standards and regulations and council conditions:

The security provisions will incorporate the following:

- CCTV coverage for commercial tower and residential towers, in particularly the car park entry, main lift lobby, loading docks, building entry points, etc.
- CCTV coverage for the retail extension areas, in particularly at all entry points, general mall areas, loading docks, etc.



- Electronic Access Control (EACS) for retail, commercial and residential towers, in particularly the main entry points, main lift lobby, communications room, etc.
- Intercom within all residential apartments and interfaced to the lift system.

## 2.6 Fire protection services

The project will be designed to satisfy the following Australian Standards and the National Construction Code (NCC).

Fire Services system requirements have been established on the premise that the building is classified as Class 2, Class 6 and Class 7a per NCC Part A3.

Information provided in this report is reliant on the finalisation of a Fire Engineering Report or per the determinations of a Building Certifier.

The fire protection provisions will incorporate the following:

- Hydrants
- Fire Hose Reels
- First Aid Fire Protection
- Automatic Fire Sprinklers
- Smoke Detection
- Sound System and Intercommunication System for Emergency Purposes
- Mimic Panels
- Fire Control Room
- Fire Brigade Booster Points

## 2.7 Hydraulic services

The proposed hydraulic services will be designed to comply with the relevant National Construction Code of Australia (NCC) standards, Australian Standards and regulations and council conditions.

The hydraulic provisions will incorporate the following:

- Sanitary drainage and Sanitary Plumbing provisions to the residential and commercial towers and the retail area;
- Trade waste drainage and treatment provisions to the retail area;
- Domestic Cold Water provisions to the residential and commercial towers and the retail area;
- Domestic Hot Water provisions to the residential and commercial towers and the retail area;
- Non Potable Cold Water provisions to the residential and commercial towers and the retail area;
- Natural Gas provisions to the residential and commercial towers and the retail area; and



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- Roof water provisions to the towers and the retail area.



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