



8 June 2017
PM/KG: 6910-L2

Strata Plan 64622
3 Kings Cross Road
RUSHCUTTERS BAY NSW 2011

Attention: Mr Kevin Wellington

Dear Sir

**ALTAIR APARTMENTS, 3 KINGS CROSS ROAD, RUSHCUTTERS BAY
ELECTRICITY SUPPLY**

We refer to the advice from Ausgrid that the building is supplied by means of an 800 amp rated distributor from Substation No, S673. Ausgrid also advised that their records indicate the maximum demand on the supply is 450 amps per phase and that there is capacity in the substation to serve a projected load of 800 amps per phase. In view of this advice, we note the following:

Direct Distributor

The existing 800 amp rated distributor is the maximum rating of a direct distributor generally available from an Ausgrid substation. Should it be necessary to require additional supply, it is probable that Ausgrid will require the establishment of a substation within the building. This would involve loss of valuable space and considerable expense.

On this basis, the 800 amp rated supply should be considered the practical limit.

Capacity of Supply

Based on the number of apartments in the building and the average loads used to calculate the maximum demand of residential buildings, we calculate the maximum demand of the building with all apartments equipped with air conditioning to be 840 amps per phase. The figures used in making this calculation are deliberately conservative and we therefore believe that the actual load will be less than 800 amps per phase.

However, the figures indicate that the supply capacity will be limited and the installation of air conditioning within the building will need to be monitored and managed to ensure that the supply is not overloaded.

Works Necessary to Increase the Capacity of the Building Reticulation System

Whilst the incoming supply to the building is rated at 800 amps per phase, the electrical reticulation system within the building is not rated to deliver the full capacity to the apartments. Issues which need to be addressed are:

- The additional load may increase the voltage drop in the consumers mains to an unacceptable level.
- The rising submains to the apartments are not rated to suit the additional load
- The Main Switchboard will need to be upgraded to enable the additional supply to be delivered to the apartments
- Because new work is being carried out on the building, Ausgrid will require the installation of a Service Protection Device.

A detailed explanation of each of these measures is given below:

1. Service Protection Device

At the point where the Ausgrid supply cable enters the building, Ausgrid will require the installation of a Service Protection Device (SPD). An SPD is a circuit breaker designed to limit the amount of current drawn through the supply and to protect the consumers mains cabling between the Point of Supply and the Main Switchboard.

The SPD will need to be enclosed in a fire rated cupboard / enclosure.

2. Augmentation of Consumers Mains

Subject to voltage drop calculations, it may be necessary to augment the size of the existing consumers mains cabling by installing an additional set of cables in parallel with the existing.

3. Main Switchboard

The busbar system in the Main Switchboard is not rated to carry the required additional supply to the outgoing submains serving the apartments. Rectification of this issue will require extensive modifications / replacement of the switchboard.

4. New Submains

The apartments are served by two rising submains (East Riser and West Riser) each rated at 250 amps. It will be necessary to install an additional submain in each riser to reduce the number of floors served by each submain from sixteen to eight.

Supply to Apartments

Supply to each of the individual apartments is rated at 63 amps, single phase. This supply should be adequate to serve the installation of air conditioning and does not require replacement.


Budget Costs

Our preliminary estimates of the probable costs of the required works are as follows:

• New Service Protection Device (including fire rated cupboard)	\$22,000.00
• Upgrade of Consumers Mains	\$48,000.00
• Modifications to Main Switchboard	\$55,000.00
• New submains cabling	\$50,000.00

We trust that this information is of assistance and await your further instructions.

Yours faithfully
SHELMERDINES



Peter W. Matthews