

TOPIC:  
REQUIREMENTS FOR DESIGN OF  
ROADS AND TRAFFIC AUTHORITY  
ROAD LIGHTING INSTALLATIONS

Number
Date
File

## PURPOSE

This Direction specifies the current practice to be adopted for the design and installation of road lighting schemes throughout the Authority.

## BACKGROUND

The Authority meets the cost of the design and installation of road lighting on freeways and controlled access roads, certain facilities such as tunnels, major bridges and some exceptional channelised intersections in rural areas (such as areas where the roads are unlit). In these situations there is little benefit to Local Government from street lighting.

In the past, most road lighting designs have been prepared within the Authority by the Electrical Engineering Services Section. With regionalisation and the increasing use of consultants, some designs for the Authority's lighting installations are being prepared by external organisations.

Due to the lack of any formal instructions regarding the Authority's requirements for road lighting designs, the designs provided by external organisations have been deficient in some aspects. The designs have either not complied with the SAA Public Lighting Code or provided insufficient electrical information for the installation of the lighting equipment to be carried out by the Contractor responsible for the works.

The consequences of poor design may have an impact on road safety or result in unwarranted increases in costs for the construction contract.

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Amendment/Addition to

For attention of: Regional Directors, Zone Managers, District Engineers, Project Managers,  
Design Managers

Enquiries: Ted Losik

Location: Electrical Engineering Services, Rhodes

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## REQUIREMENTS

The following requirements are to be included in preparation of documentation for external organisations to undertake the design of road lighting installations.

1. All road lighting schemes shall comply fully with the requirements of Australian Standard 1158 SAA Public Lighting Code. For the Authority's road lighting standard, the applicable category is Category A2 lighting as defined in Clause 1.2 of AS1158.1-1986.
2. All road lighting schemes shall be designed for the use of specifically manufactured road lighting luminaires which provide for photometrically controlled light output distribution, satisfying the need to -
  - . illuminate an area of roadway to the minimum level of illuminance required by Category A2 in AS 1158.1-1986
  - . restrict glare discomfort to motorists
3. All road lighting design drawings shall contain the following information -
  - a) The location of all lighting columns together with details of the chainage, height, length of outreach, lamp wattage, circuit number and phase. The luminaire type shall be specified if not semi-cut-off type photometric distribution.
  - b) All cable routes with circuit numbers shown in the various sections of the cable route.
  - c) The location of all cable pits.
  - d) The location of the Street Lighting Supply and Control Cabinet.
  - e) A table showing circuit numbers, the general location of the lights on each circuit, cable and circuit breaker sizes and numbers, consumers mains cable and circuit breaker sizes.
  - f) A legend detailing symbols used on the drawing.
  - g) Notes detailing -
    - . the type of discharge lamps to be used
    - . luminaire photometric type on which the design is based, e.g. semi cut-off or cut-off
    - . cable type, e.g. SDI (single core double insulated)
    - . conduit size and type

- . distance of light columns from traffic lanes
- h) Any other information that may be necessary because of unusual or non-standard situations or conditions.

4. When the Authority engages an external organisation to prepare a design for a road lighting scheme for which the Authority will meet the cost, the completed design should be submitted to Electrical Engineering Services at Rhodes for a brief design review to ensure compliance with Authority requirements.
5. Following the closure of BME Services, Regions may also submit road design drawings to Electrical Engineering Services at Rhodes for road lighting designs as has been done previously.

Allan Kennedy  
Director,  
Technical Services