FNQROC DEVELOPMENT MANUAL

DESIGN MANUAL

D8

UTILITIES

Version No. 03/17

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GENERAL

D8.01 SCOPE

1. This section sets out the minimum standards for the provision of utility services within new subdivisions and developments.

2. The designer needs to coordinate the provision of services within the confines of the road verge in consultation with and to the requirements of the Service Authorities/Providers.

D8.02 OBJECTIVE

1. The objective of the Manual is to assist the designer in making provision for the following utility services within the design of new subdivisions and developments:
   - Telecommunications
   - Electricity Supply
   - Road Lighting
   - Gas

D8.03 REFERENCE DOCUMENTS

Note: Where *Acts* or reference documents are updated, reference should be made to the current version.

AS/NZS 1158 "Lighting for Roads and Public Spaces"

AS 1158 "Lighting of Pedestrian Crossings"

Electricity Authority's Standard Drawings

- Standard Drawing 5162/1 - Joint Electricity, Gas and Telecommunications
- Standard Drawing 5162/2 - Joint Electricity, Gas and Multiple Telecommunications

Civil Aviation Safety Authority Australia – Manual of Standards Part 139 Aerodromes

Electricity Authority's Lighting Construction Manual

Electricity Authority's Underground Construction Manual

G645:2011 Fibre Ready Pit and Pipe Specification for Real Estate Development Projects /

NBN Co Installing Pit and Conduit Infrastructure – Guidelines for Developers

D8.04 SERVICE AUTHORITY'S GENERAL REQUIREMENTS

1. Prior to an application to reconfigure a lot, the Service Authorities should be consulted to confirm that the provision of services to the proposed development would be provided. Eg Telstra, Ergon and NBN Co.

2. Following receipt of Development Approval from Council the designer shall make application to both Authorities for "Offer of Connection Services" for electricity and telecommunication services.

3. Approved proposal plans shall be supplied to both Authorities, for staged developments, this shall include an overall concept layout outlining stages and expected timing for each stage.

4. Should any amendment occur in the design, both Authorities are to be notified immediately together with an amended plan.

5. Where a development includes lots that may have higher service demands (i.e. Industrial, Commercial, Multi Residential etc.), details of the expected yields and the maximum permissible development yield for each lot in accordance with its current zoning shall also be provided to both Authorities.

6. Underground telecommunication services shall be provided to all new developments.

7. Unless otherwise approved by Council, an underground electricity supply is to be provided to all new developments and all new consumer mains connections to developments to be supplied from a pillar.

8. The designer shall be responsible for coordinating and checking the locations of all telecommunication and electrical services to avoid conflicts with other services (i.e. Stormwater pits etc).

9. Layout plans for telecommunication and electrical services including the road lighting design shall be submitted to Council with the design submission.

10. Evidence of the agreement to provide a electricity supply and telecommunication services must be given to Council prior to the sealing of plans of survey.

D8.05 TELECOMMUNICATION SERVICES

1. Installing of underground telecommunication conduits shall be in accordance with the Service Authority's requirements.

2. Consideration shall be given to the location of any roadside cabinets, pillars and pits within the subdivision design.

3. Where an underground telecommunication service is to be provided, telecommunication conduits shall be placed in a shared trenching arrangement, Refer Ergon Energy Standard Drawings 5162/1 and 5162/2 for shared trench arrangement that incorporates telecommunication, electrical and gas services.

4. Unless approved otherwise by Council, all telecommunication services shall be located within the road reserve at a distance of 0.3m – 1.2m from the property boundary.

5. The developer is responsible for the provision of telecommunication conduits across roads, existing roads are to be bored.

6. Permanent non-ferrous cable markers are to be installed in the kerb to mark the location of all road crossings.

D8.06 ELECTRICITY SUPPLY

Underground Supply

1. Unless otherwise approved by Council, electricity reticulation is to be placed underground.

2. Where an underground electrical service is to be provided it shall be placed in a shared trench arrangement. Refer relevant Ergon Energy Standard Drawings for shared trenching arrangements that incorporates telecommunication, electrical and gas services.

3. Sharing of trenches with sewerage and water mains shall not be permitted. Where existing or proposed services are likely to impede on standard electricity alignments, Council and the Electricity Authority are to be consulted to confirm service alignments and clearances.

4. Unless approved otherwise by Council, all electrical services shall be located within the road reserve at a distance of 0.3m – 1.2m from the property boundary.

5. The developer is to liaise with the Electricity Authority in relation to any requirement for an electrical substation with a view to providing sufficient suitable land on which to site the infrastructure.

6. Where a padmount substation is to be located within the frontage of a proposed or existing parkland, the location shall be subject to Council's approval.

7. No other services shall pass beneath the Electricity Authority's pillars or substations.

8. The developer is responsible for the provision of electrical conduits across roads, existing roads are to be bored.

9. Permanent non-ferrous cable markers are to be installed in the kerb to mark the location of all road crossings.

10. Electrical pillars shall generally be located at an alternate boundary to water meters and gas service crossings. Exceptions may be considered in individual circumstances were unusual conditions or lot layouts exist and where approved by Council and the Electricity Authority.

11. Pillars shall be located at property boundaries, exceptions can occur where there are stormwater easements or other constraints. The Electricity Authority should be consulted to determine alternate locations in these cases.

12. The Electricity Authority's conditions of connection including contributions for initial cable installation works shall be met prior to the acceptance of the works "On Maintenance" by Council.

13. Where advised by the Electricity Authority an additional communication conduit supplied by the service provider shall be laid to the Electricity Authority's requirements.

Overhead Supply

1. The overhead electrical reticulation shall be designed in accordance with the Electricity Authority's requirements.

2. Power poles shall be placed on an appropriate alignment as approved by Council and the Electricity Authority.

D8.07 ROAD LIGHTING

1. All road lighting designs shall be prepared by an approved Engineering Consultant i.e. a Registered Professional Engineer Queensland and shall be included in the design submission for acceptance by Council.
2. Road lighting design must be in accordance with this manual and AS/NZS 1158 (Road Lighting Standards) and the Electricity Authority's Lighting Construction Manual and Underground Construction Manual. Specific consideration must be given to identification and lighting of Local Area Traffic Management devices (LATM's) and intersections.

3. All light columns, luminaries and lamps are to be specified from the Electricity Authority's Lighting Construction Manual and Underground Construction Manual.

4. All installation works shall be in accordance with the Electricity Authority's Lighting Construction Manual.

5. Lighting on declared roads shall be designed and installed to the requirements of the Department of Main Roads.

6. It is a Council requirement that road lighting be installed under Rate 2 conditions of Tariff 71 - Public Lamps at all new subdivisions and developments.

7. The required lighting category for a particular road hierarchy shall be determined from Table D8.1.

8. Lighting shall be provided at the following locations in accordance with the development approval conditions and AS 1158 “Lighting of Pedestrian Crossings”:

   a. Straight Sections;

   b. Curves;

   c. Intersections and Junctions;

   d. Pedestrian Refuges;

   e. Cul-de-sacs;

   f. Local Area Traffic Management Devices including Roundabouts. (The maintained horizontal illuminance is not to be less then 3.5 lux)

   g. Depending on the traffic generated by the development, at least two spans of lighting on each approach leg of an existing road leading to an access driveway or intersection constructed to provide the ingress/egress for a new development, as determined by Council..

   Note: Where a pedestrian crossing has been installed it shall be lit in accordance with AS 1158.4 – 1987, “Supplementary Lighting at Pedestrian Crossings.”

9. Lighting of entry points to pathways and cycleways shall be achieved by the selected placement of a road light nearby.

10. Additional lighting shall be provided at a designated bus stop facility; the design shall include the entry and exit lengths of the bus stop.

Table D8.1 Lighting Categories Please see commentary

Category	Application[1]	Luminaire Type	Lamp Type	Rate[2]
V3	Sub Arterial Road	Sylvania Roadster Aeroscreen	150 – 400 Watt HPS	2
V5	Major Collector Road	Sylvania Roadster Aeroscreen	150 - 400 Watt HPS	2
P3	Minor Collector Road	Sylvania Urban Aeroscreen	70 Watt MH	2
P4	Residential Street Access Street Access Place	Sylvania Street LED Mk2 Aeroscreen Or Nostalgia NOS1	17W (14 Watt LED) Or LED 30 Watt L30	2
P4	Low Density Residential	Sylvania Street LED Mk2 Aeroscreen	17W (14Watt LED)	
P3	Industrial Collector Street Industrial Access Street	Sylvania Urban Aeroscreen	70 Watt MH	2
P1 – P3	Pathway and Cycleway	Beacon Viper S Aeroscreen	LED	2 or 3
P3	Bus Stop (Minor Road)	Sylvania Urban Aeroscreen	70 Watt MH	2

Note:

1. Roadway Classifications are contained in Table D1.1 “Street and Road Hierarchy – Deemed to Comply Requirements” of Design Manual “D1 Road Geometry”. Where discrepancies exist between No. of Dwellings, Traffic Generation and Roadway Classification, lighting design shall be based on the Council designated Roadway Classification.
2. Rate 2 – Lighting owned and maintained by the Electricity Authority.

   Rate 3 – Lighting owned and maintained by Council
3. The Nostalgia street light is only to be used for Category P4 lighting on a residential access street and/or access place road. Installation of the Nostaliga street light is not permitted on a Minor Collector Road other than to finish an uncompleted stage.
4. .
5. In general, street lighting poles are to be located opposite common allotment boundaries, to minimise potential interference with vehicle access, access to services (i.e. hydrants) and glare complaints from residents. It is desirable that poles not be located opposite boundaries of “battle axe” allotments due to a higher potential for vehicle collision.
6. Council may consider a lesser standard for subdivisions with lots greater than 4000m^2 and outside the designated urban footprint. e.g. Category P5 or lighting at intersections, cul-de-sac’s and other hazardous locations.

11. Lighting columns are to be offset a minimum of 820mm (+/- 20mm) from the invert of kerb and channel to centre of the pole. For a road with a flush kerb or a rural residential road that has a table drain instead of layback kerb and channel, the lighting column is to be offset 1300mm (+/- 20mm) from the outer edge of traffic lane to centre of the pole.

12. Where required to clear conflicts e.g. stormwater, sub-soil drain flushing points, water supply infrastructure, sewerage infrastructure, lighting columns can be located up to 0.5m in either direction from boundary prolongation along the roadway and at an alignment up to 1.1m from the invert of the kerb and channel.

13. The placement of lighting columns shall not occur within 1m of any water main that crosses the road.

14. Lighting columns that are to be installed at all new subdivisions and developments are to be a four hole base plate mounted steel pole as specified in the Electricity Authority's Lighting Construction Manual.

15. When joining to an existing installation or extending a subdivision in stages, lighting columns and luminaires shall match as near as possible with the existing infrastructure.

16. The use of aeroscreen luminaires may be required when road lighting is installed near airports, refer to the Civil Aviation Safety Authority Australia – Manual of Standards Part 139.

17. Documentation shall be submitted to Council with the design submission demonstrating compliance with the AS/NZS 1158, "Lighting for Roads and Public Spaces".

18. Foundation footing for minor road lighting must be cast in situ, a precast concrete foundation is not permitted without prior approval of council.

19. Existing timber street light poles are to be replaced with a steel lighting column when overhead powerlines are augmented underground.

20. The edge of a new driveway shall be no closer than 1.0m to any power pole or street light pole.

21. The preferred lighting arrangement for roundabouts with a central island diameter of 6m or greater is a centrally located short arm high mast lighting column.

22. An offset of 1.12m from invert of kerb to centre of pole shall apply to light poles in the vicinity of corners, in accordance with AS/NZS 1158. This is to allow for the possibility of long vehicles riding up over the kerb whilst turning.

D8.08 PARK LIGHTING

1. Lighting requirements in parks will be advised by Council in accordance with the classification of the park.

2. A point of supply is required to all parks, location will be advised by Council in consultation with Electricity Authority.

3. Pathways or cycleways within parks that require lighting shall be lit to the minimum lighting category P3 or above as deemed appropriate from the selection criteria tabled in AS/NZS 1158, "Lighting for Roads and Public Spaces".

4. If reticulated electricity is not readily available, if approved by council, the use of luminaires powered by alternative power source e.g. solar panels, wind turbine technology can be considered as an alternate power source in parks or remote / isolated locations provided the lamp output is appropriate and the system is of sufficient capacity to ensure a reliable energy supply for the lamp to operate from sunset to sunrise seven days a week with an autonomy of 5 to 7 nights.

D8.09 GAS

1. Gas reticulation within a new subdivision or development may be installed subject to Council's approval.

2. Where reticulated gas is approved by Council, the gas service shall be located in the shared trench arrangement. Refer Ergon Energy Standard Drawings 5162/1 and 5162/2 for shared trenching arrangements that incorporates telecommunications, electrical and gas services.

3. The location of a central storage facility shall be on a separate freehold parcel of land with appropriate security to the satisfaction of the Council.

4. The Developer shall be responsible for obtaining all relevant approvals and licences necessary for installation.