Development adjoining or in proximity to a substation: standard requirements

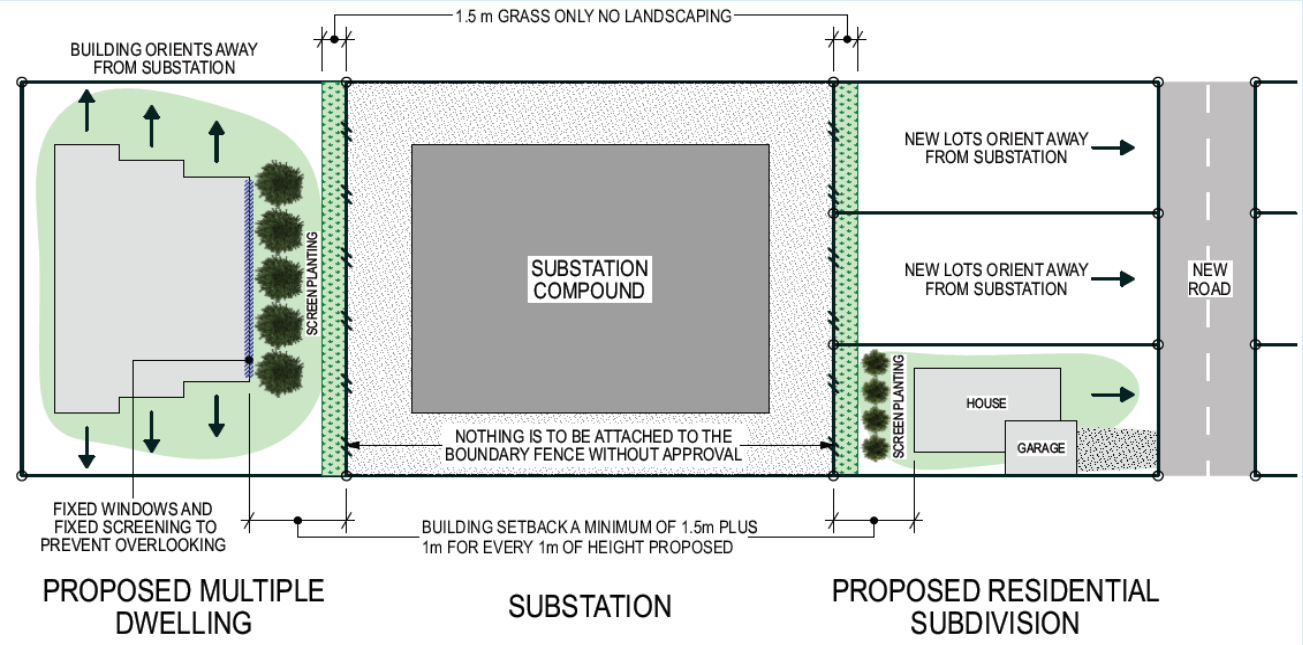
21 April 2021

Part of Energy Queensland

Under the *Planning Regulation 2017*, we are triggered as a Referral Agency for a development application for:

- Material change of use if all or part of a premises is within 100 metres of a substation site
- Reconfiguration of a lot where part of the lot is within 100 metres of a substation site
- Operational work that is filling or excavating where all or part of the work is within 10 metres of a substation site.

There are a number of considerations when developing land adjoining or in proximity to a substation, as illustrated by Figures 1 & 2 below.



** AN EMF REPORT IS REQUIRED TO CONFIRM THE ACCEPTABILITY OF THE DEVELOPMENT IN RESPECT OF EMF IMPACTS. THE FINDINGS OF THE REPORT MUST INFORM THE DEVELOPMENT LAYOUT*

** DEVELOPMENT MUST ASSESS THE EXISTING AND FUTURE ACOUSTIC IMPACTS OF THE SUBSTATION ON THE DEVELOPMENT AND INCORPORATE APPROPRIATE MITIGATION MEASURES*

Figure 1: Key design parameters for residential development proposed adjoining a substation

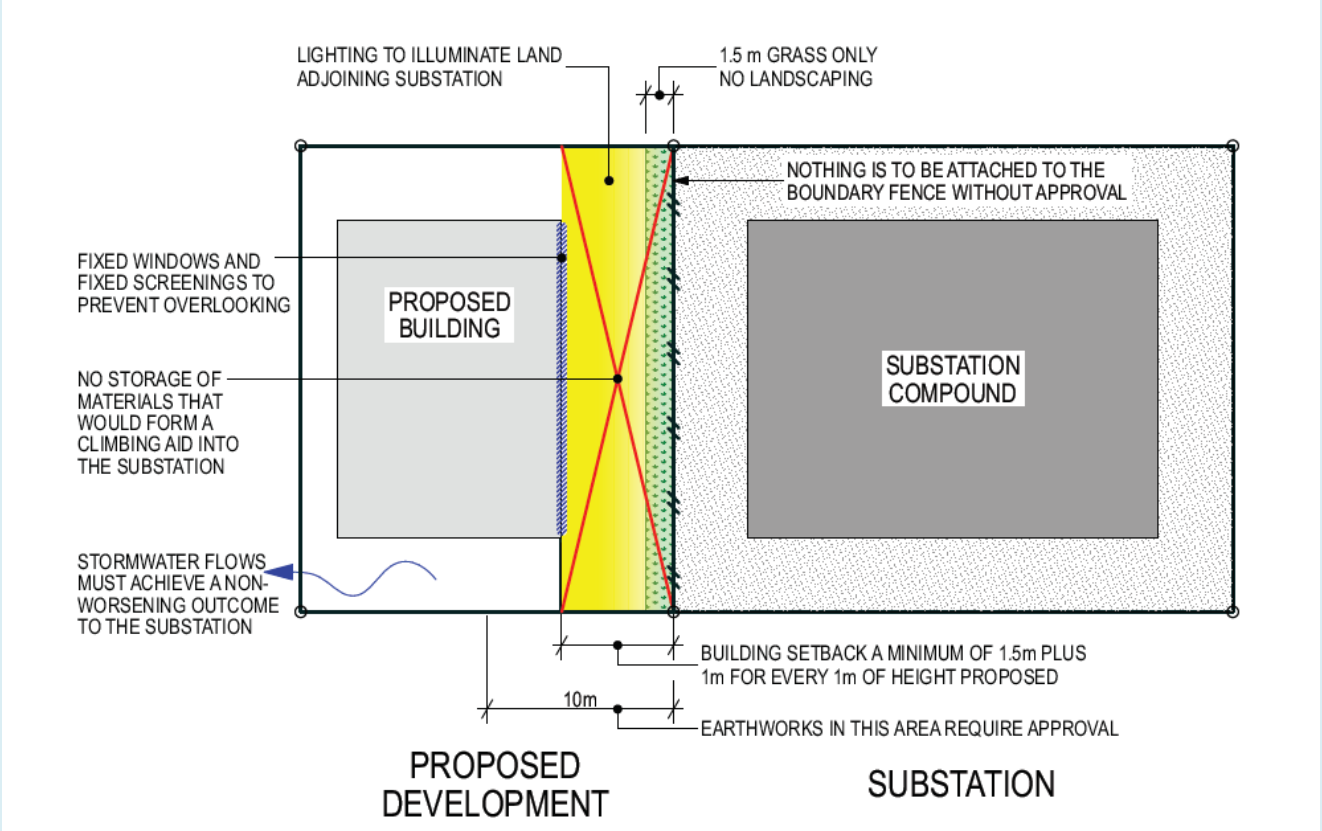


Figure 2: Key design parameters for general development proposed adjoining a substation

Development requirements

The following list is a guide of our requirements when designing and planning for such development:

1. Proposed landscaping, structures and buildings must be setback from the substation boundary by a minimum of 1.5 metres and then 1 metre for every 1 metre of height proposed.
2. Buildings proposed on land adjoining substations must have no openings that face the substation (i.e. fixed windows only).
3. Landscaping (with the exception of grass) is not permitted within 1.5 metres of the substation boundary.
4. Lighting that illuminates the area of land adjoining the substation boundary should be installed by the development.
5. Nothing is to be attached (i.e. fencing) to the substation boundary fence without our approval.

6. The development must not install any site improvements adjoining the substation fence that may form a climbing aid into the substation (i.e. fencing, landscaping, structures).

7. The development must not store materials/items adjoining the substation fence that may form a climbing aid into the substation.

8. Where sensitive uses (i.e. residential) are proposed adjoining or in proximity to a substation, the developer must provide an Electro Magnetic Field (EMF) Report prepared by a suitably qualified RPEQ Electrical Engineer to us for review and approval. The findings of the EMF Report must inform the development layout.
    - The EMF Report must assess the development and its compliance with the concept of prudent avoidance, using an approach consistent with the Energy Networks Association (ENA) Policies and Guidelines in relation to prudent avoidance, including an assessment of:
        - Current levels of EMF at the property boundaries in relation to the proposed use and the substation
        - Future levels of EMF at the property boundaries in relation to the proposed use and the substation
        - Compliance with applicable standards for EMF (i.e. ARPANSA and other international standards)
        - Measures to reduce EMF, where required, to meet the concept of prudent avoidance.
    - Upon request by the Electrical Engineer, we will provide the following information for input to the EMF Report:
        - Feeder loading information including Time Weighted Average load (feeder/ substation as appropriate using a typical load duration curve)
        - Forecasted Feeder Loading Information including Time Weighted Average load (feeder/ substation as appropriate using a typical load duration curve) for the ultimate development of the substation/ feeders
        - Future development plans for the substation
        - Phasing arrangements and other network data as applicable.

9. Proposed sensitive uses adjoining or in proximity to a substation must minimise the impacts on amenity by:
    - Orientating lots, living environments and building openings away from the substation
    - Using landscaping for screening and buffering
    - Incorporating fixed screening onto the building to prevent overlooking
    - Utilising reasonable building setbacks.

10. Proposed sensitive uses adjoining a substation must undertake an Acoustic Assessment to determine the existing and future acoustic impacts on the development from the substation. The development must incorporate design outcomes such as setbacks, building orientation and acoustic treatments, to resolve any acoustic issues.

11. The installation of swimming pools in close proximity to any electrical equipment may result in unsafe voltages in and around the pool under certain situations. If a proposed development adjoining a substation is to include a swimming pool (inground or above ground) advice must be sought from us regarding any specific requirements for the site.

12. Any earthworks and/or retaining walls proposed within 10 metres of the substation site boundary require approval from us. Such works must not alter the ground levels in a way that reduces the effective height of the substation security fence.

13. Any roadworks must not alter our existing access arrangements into the substation.

14. Development proposing earthworks or alterations to ground levels must not reduce the flood immunity of the substation.

15. Development must achieve a non-worsening outcome to the substation with regards to the management of stormwater. Damming or pooling of stormwater, concentration of stormwater flows, or new points of stormwater discharge on, to, or affecting the substation are not permitted.

16. For development adjoining a substation, an Electrical Impact Study must be undertaken by a suitably qualified RPEQ Electrical Engineer which considers any electrical risks that might be created by the proposed development and the construction methods. This study must be provided to us for review and approval prior to the commencement of construction works. The study must consider:
    - Ground potential rise during faults
    - Touch potentials on the substation fencing and impact on the earthing
    - Electrostatic induction into the buildings
    - Electro magnetic fields.

17. The proponent is responsible, in accordance with Section 30(1) of the *Electrical Safety Act 2002*, to ensure that their business or undertaking is conducted in a way that is electrically safe.

Contact us

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