Operational Update

Multi-Unit Residential, Commercial & Industrial
Energex Padmount Transformer Requirements

6/8/2021

Target Audience

Energex Design Consultants & Building Services Electrical Consultants

Introduction

The intention of this update is to ensure that Energex's padmount transformers are planned, Designed and Constructed in accordance with Energex policies and design criteria to ensure:

- The regulatory and statutory requirements for a safe and efficient underground electricity distribution system are met.
- The installations are carried out with due care with regard to workers and public safety, the environment and with minimum disruption to public amenity.

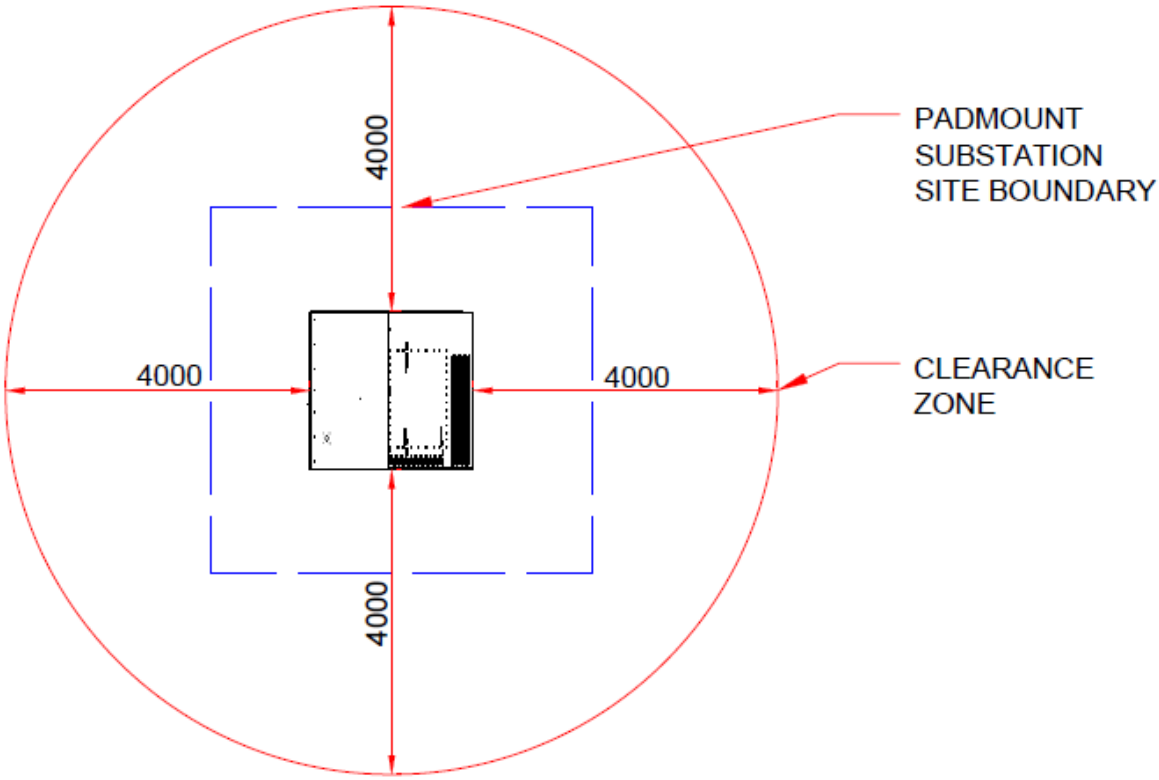
This update specifically relates to Multi-Unit Residential, Commercial & Industrial installations to define the distinct difference between the corresponding Operational Update Issue # C-0020 v2 – 16/11/2020, for Contestable works.

Padmount Transformer Clearance Zone

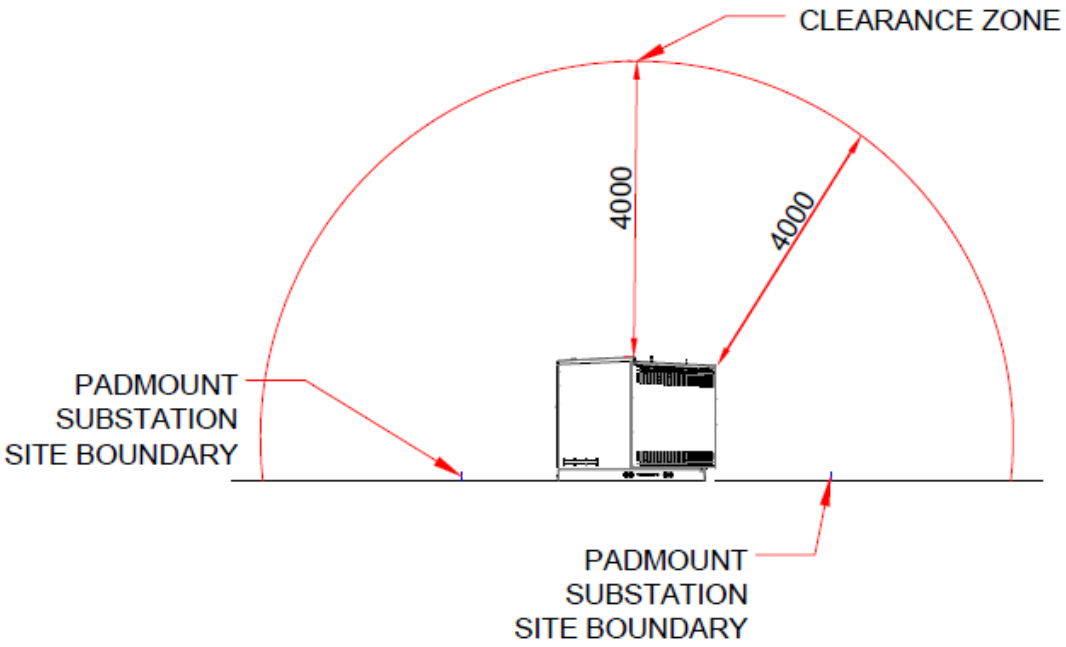
The Energex Underground Distribution Construction Manual (6229-A4) Section C3 Sub-Sect 1 Sheet 1 states that the edge of all Padmount Substation (PMT) enclosure shall be located a minimum of 4 m from the edge of a permissible residential dwelling construction area (to address noise, EMF and fire and explosion risk).

Due to the wording permissible residential dwelling, application of the 4 m clearance zone in Multi-Unit Residential, Commercial & Industrial situations has been ambiguous. For Multi-Unit Residential, Commercial & Industrial application the above clause shall be read as:

The edge of all Padmount Substations (PMT) enclosure shall be located a minimum of 4 m from the edge of Buildings or Building envelopes.



TOP VIEW



SIDE VIEW

If it is identified that this requirement is not achievable, Energex will consider the following:

EMF & Noise

The 4 m clearance requirement will apply to habitable rooms and areas for which human occupation can be expected for significant periods of time.

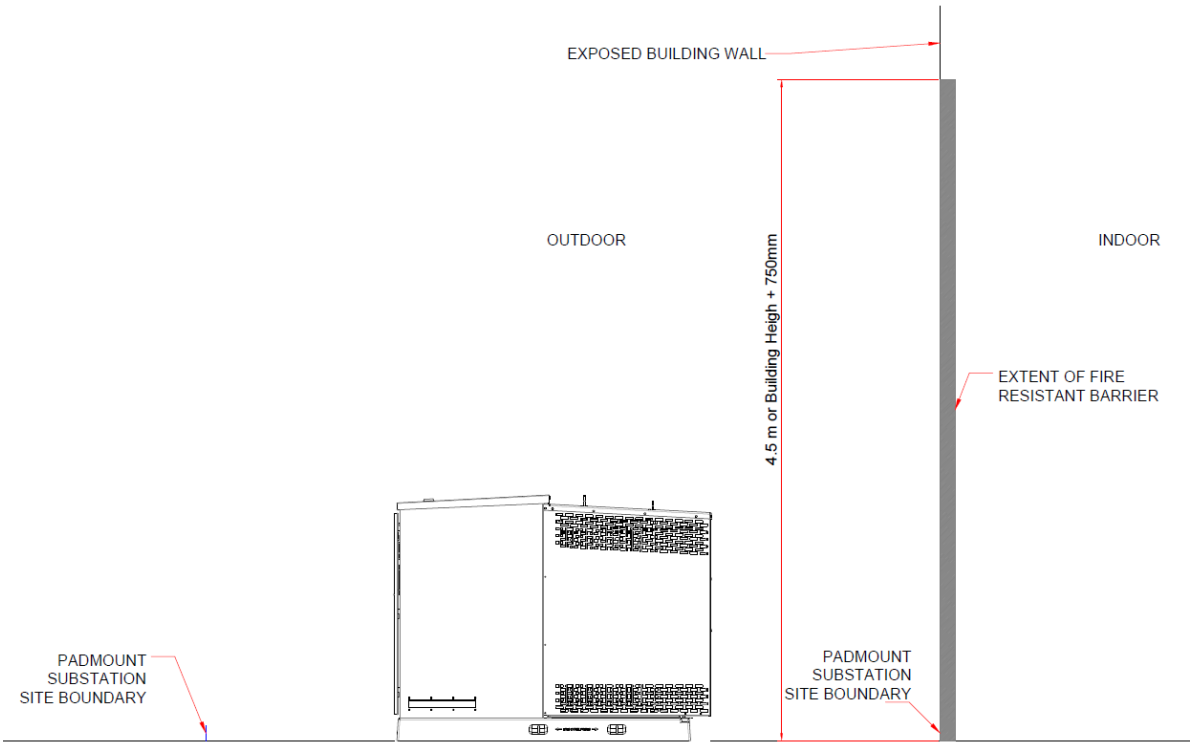
Habitable Room[1] means a room used for normal domestic activities , and –

a) Includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
b) Excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of specialised nature occupied neither frequently nor for extended periods.

Some areas excluded as habitable rooms may be considered areas for which human occupation can be expected for significant periods of time. For example a lobby is not a habitable room, however if there is a service desk in the lobby and this desk is attended by staff, the area would be considered an area for which human occupation can be expected for significant periods of time.

Fire & Explosion Risk

A barrier with a FRL of 120/120/120 shall be provided between the padmount substation and buildings. For buildings, the fire barrier can take the form of a fire resisting wall. The fire barrier or fire resisting wall section needs to extend in a vertical direction up to 4.5 m or to the building height plus a 750 mm parapet, whichever is less. The fire barrier or building fire resisting wall shall be located outside the padmount substation site, i.e. outside the 4.8m x 5.0m site.



[1] Definition taken from NCC Building Code of Australia 2019 Amendment 1

Submission Requirement

It is imperative that everything possible is done to achieve these outcomes at the Planning & Design phase of the project. It is important that the design consultant advises the developer or their representatives of the requirements associated with padmount substations.

For Multi-Unit Residential, Commercial and Industrial applications, if a suitable location cannot be achieved for a padmount transformer as part of the development, an indoor substation will be required in accordance with the Energex Commercial & Industrial Substation Manual.

To demonstrate due diligence has been taken to ensure Energex and future customers do not have clearance issues, Energex Connections team require the following documentation when submitting a proposal for Energex acceptance.

1. Drawings showing that 4.0 m clearance free of buildings or building envelopes (this may include properties outside the application, i.e. neighbouring properties); or if not achievable
2. Drawings showing the 4 m EMF & Noise clearance zone free of habitable rooms and areas for which human occupation can be expected for significant periods of time (including any neighbouring properties);
3. Drawings showing buildings within the 4 m clearance zone are protected by a fire barrier or fire resisting wall.

Implementation Date

Effective immediately for all projects that do not have an Energex accepted drawing submission.

For more information please email: ConnectionsCommunications@energyq.com.au