Early planning is essential when determining industrial and commercial site design and layout so that operational and maintenance needs, required separation distances, and safety and access issues can all be taken into account.

**COMMERCIAL AND INDUSTRIAL DEVELOPMENT**

What are the issues?
Commercial and industrial development can result in a number of issues for both the National Grid lines and the development. These issues were discussed in Section 2 of this guide. To recap, matters of relevance to commercial and industrial development include:

- increased risks of electrical hazards – buildings, construction, outdoor storage (such as containers), use of mobile plant and people working too close to lines and structures
- risks to the National Grid network – faults and power outages as a result of electrical hazards
- the need to maintain access to the lines and support structures
- in greenfield areas, the need to keep almost all buildings outside the National Grid Yard.

What are National Grid Yards?
The National Grid Yard is the area beneath and immediately next to National Grid lines (including their support structures). Incompatible activities and land uses need to be set back from National Grid lines as they can compromise the ongoing operation, maintenance, upgrading and development of the National Grid or the safety of those living or working around it.

For these reasons, Transpower seeks a 12 metre setback either side of the centreline of a National Grid line and 12 metres in any direction from the outer edge of a National Grid line structure. This is reduced to a 10 metre setback where the line is a single concrete/wooden pole line, although the distances from the structures remain the same.
How can these issues be managed?

**Ensure a clear National Grid Yard**

Plan your site layout to ensure that buildings and structures are not located directly under the lines or within the National Grid Yard. Use lower building heights nearer to the lines, and increase building height as distance away from the lines increases.

Develop land under and around National Grid lines with activities that are compatible with the operation of the lines and location of support structures. Make sure the risks associated with building and working in close proximity to the National Grid lines are known and understood and that measures are taken to ensure safety.

The area under the lines can be used, for example, for car parking or internal roads providing that the necessary separation distances are maintained and NZECP 34 is complied with. For commercial developments, this may be a suitable place for car parking, for internal roads or for outdoor amenity areas. For industrial development, the area could be used for low-level display and storage of (non-flammable and non-explosive) goods and wares, but particular care must be taken with the use of mobile plant (such as, cranes or forklifts). If a support structure is near a proposed road or car park, adequate setbacks and protection for the structure will be needed to ensure that it is not damaged and remains accessible. When designing roads or car parks around support structures, ensure vehicle movements are directed away from the structure.

Refer to Sections 4-5 for some design tips.

Please contact us for assistance with the correct NZECP 34 safe distances for your site: transmission.corridor@transpower.co.nz
Comply with NZECP 34

Always ensure that any activities, buildings and structures comply with the safe separation setbacks required by NZECP 34. The safe distances in NZECP 34 that apply to your site will depend on the voltage of the line and the length of the span crossing your site.

Where you have a tower or steel monopole on site, you must set back any buildings or structures a minimum of 12 metres from the outer edge of the structure. For wooden/concrete poles, the required setback is 8 metres.

Do not attach anything to a tower or pole, and make sure access for maintenance is preserved. If fences or bollards around towers or poles are proposed, these must be set back in accordance with NZECP 34 and must be removable for when Transpower needs to access the structure for maintenance.

If stockpiling soil or similar materials make sure that any change to the ground level beneath the National Grid line does not encroach into the separation distances required by NZECP 34. Similarly, avoid excavating adjacent to towers or poles as this may undermine the stability of the towers or poles.
Preserve access to lines
Locating activities such as car parking or access roads under the lines to keep the National Grid Yard clear will assist in meeting the separation distances required by NZECP 34 and maintaining vehicle access to support structures. Remember to ensure adequate setbacks and protection is provided for National Grid support structures to ensure that they are not damaged and remain accessible.

Consider your building materials
Long sections of metal roofing or walls parallel to the National Grid lines can act as a circuit – these should be broken up by inserting sections made of non-conductive materials (such as, timber). Ensure metal buildings and structures, including building cladding, are earthed or bonded. A specialist engineer can advise on safe and compliant development.

Also consider construction methodology, in particular, the use of cranes. Large sections of concrete wall or roofing may not be able to be safely put in place while maintaining safe clearance distances from the lines and towers/poles. Always consider whether construction will comply with NZECP 34.
EMPHASISE

cross movement and access to open space to mitigate the effects of the corridor.