Large-scale new residential development will provide greater opportunities for the National Grid Yard to be appropriately accommodated than in smaller-scale developments, without impacting on property yield.

What are the issues?
Most development issues were discussed in Section 2 of this guide. To recap, matters of relevance to large-scale residential development include:

- increased risks of electrical hazards to people and buildings
- risks to the National Grid network – faults and power outages as a result of electric hazards
- the need to maintain access to the lines and their support structures
- the need to keep sensitive activities outside the National Grid Yard
- the need to keep almost all buildings outside the National Grid Yard in new development areas
- noise and visual effects.

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

New areas of development provide maximum opportunities for design and layout that is compatible with the National Grid. Layouts and how a National Grid line can best be integrated into future development should be considered at master plan, structure plan or concept plan stage.

- Use the National Grid Yard for open-space corridors, footpaths, cycleways and roads, drainage systems or open space in larger lots.
- Design subdivisions to avoid future pressure for buildings within the yard.
- Ensure access to National Grid line support structures is maintained and remains convenient where they are not part of an open space or road system.

Concept plan showing the use of the National Grid Yard for access lanes and car pads with housing either side.

Concept plan showing the use of the National Grid Yard for roads and pedestrian paths.
Site layout

Any potential visual impacts of the lines can be reduced by early planning taking into account the presence of the lines (and their support structures).

Development can be oriented away from the lines (or their support structures) or to look under lines at views beyond. Gardens within the National Grid Yard can become the focus of close views from main windows.
Building design

For all new residential buildings close to lines, outlook and orientation should be considered at the design stage.

- If possible, orient main living areas away from close views of National Grid lines and especially support structures.
- Design living area windows to look under conductors to views beyond or to open spaces and gardens within the National Grid Yard.
- Where bedrooms are close to National Grid lines or substations, consider reducing the size of windows facing in that direction, using opaque glass and/or double glazing windows to reduce noise.

When deciding where entranceways and windows should be placed in a new house, consider where views of the line are and noise from the line. Consider smaller windows, double glazing or acoustic glass where bedroom windows are close to and/or facing the line. If an outlook is not important, consider the use of opaque glass.

Don't forget

Construction must also comply with NZECP 34.

Views of towers tend to be more dominant than views of conductors only.
Comply with NZECP 34

In addition to the National Grid Yard, buildings and structures must always comply with the minimum safe clearance requirements within NZECP 34. Sometimes, NZECP 34 requirements require setbacks or clearances that may overlap or be greater than the National Grid Yard. If you’re in doubt or need further assistance, contact us directly.

NZECP 34 specifies minimum safe separation distances for people, buildings/structures, mobile plant and earthworks from National Grid lines and their support structures. Also consider construction methodology (ie how things are built and erected), as this must also comply with NZECP 34, not just the finished product. The safe distances in NZECP 34 that apply will depend on the voltage of the line, the position of the support structures, the length of the span crossing your site and the topography.

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Beyond our minimum requirements in the National Grid Yard to prevent underbuild and protect the network, we believe developers can more positively integrate National Grid lines within their developments without compromising property yield.

Quick tip. Look to

INTEGRATE

positive spaces into the corridors