

AUG 2009


# we\* all need to work safely

around Wellington Electricity's network



we\*

\* wellington electricity™



**we\*** want to keep  
all contractors,  
customers and the  
general public safe  
around electricity.

Whenever you are digging on private or public property, or working near overhead lines, there can be a serious risk to life and property.

This booklet is a guide to safe working practices when working near our electricity network in Wellington and provides information about the services we have to help you.

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# Before you start work

To find out where we\* have our electricity assets, call us toll free on  
**0800 B4U CUT (0800 248 288)**

This number is a quick and easy way to use all the services we provide:

- \* Reference maps which show the location of our underground electricity cables.
- \* Mark outs for cable and pipe locations.
- \* On-site supervision for work near sub-transmission (22,000 volts and above) electricity cables.
- \* **Close Approach Consents** and guidance for work near our overhead lines and power poles.
- \* **High Load Permits** – we will check your route to make sure it's safe.



**0800 B4U CUT (0800 248 288)**

# Planning your work

It takes time to arrange these services, so plan your work carefully and call us in advance. Allow:

- ✦ Two working days for reference maps, on-site supervision and **Close Approach Consents**.
- ✦ Four working days for requests for mark out services.
- ✦ Up to five working days for **High Load Permits**.

## Other networks

Please be aware that other organisations have underground assets and infrastructure in the Wellington Region. If you are unsure or wish to double check please phone **0800 B4U DIG (0800 248 344)**.



## Your legal requirements

The Department of Labour has set down minimum safe work practices for carrying out any work near electricity networks. See their “Guide for Safety with Underground Services” ([www.dol.govt.nz](http://www.dol.govt.nz)) for further details.

There are also laws and regulations that specify safe working practices which must be followed:

- \* Electricity Act 1992 and amendments.
- \* Health and Safety in Employment Act 1992 and amendments.
- \* NZECP 34:2001 Electrical Safety Distances.
- \* Hazards from Trees Regulations 2003.

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# The dangers



**If you hit an electricity cable or overhead line there is a risk of:**

- \* Electrocution
- \* Flash over
- \* Explosion
- \* Fire

It's not always necessary to touch a live cable or overhead line to be electrocuted. At the moment of contact, a machine, tool, or person is live at the same voltage as the cable or wire.

If an electricity cable is cut by an excavator, or contact is made with an overhead line, anyone touching the machine is likely to be electrocuted.

Electricity can also travel through the ground or tree, causing the ground or vegetation to become live.

# Working safely

we\* have one golden rule:

**Safety First**  
**Treat all lines & cables as live at all times**

Safety for yourself, your co-workers and the public must never be compromised. Everyone on a worksite is responsible for making sure that safety is maintained.



## When digging:

- \* Always find out first where network cables and pipes are as well as the location of overhead lines – get reference maps, or have us mark out the locations for you.
- \* You require a permit if your excavation requires equipment or machinery to work within 4.0 metres of an overhead line.

*Before you start work find out where network cables and pipes are and note the position of overhead lines.*



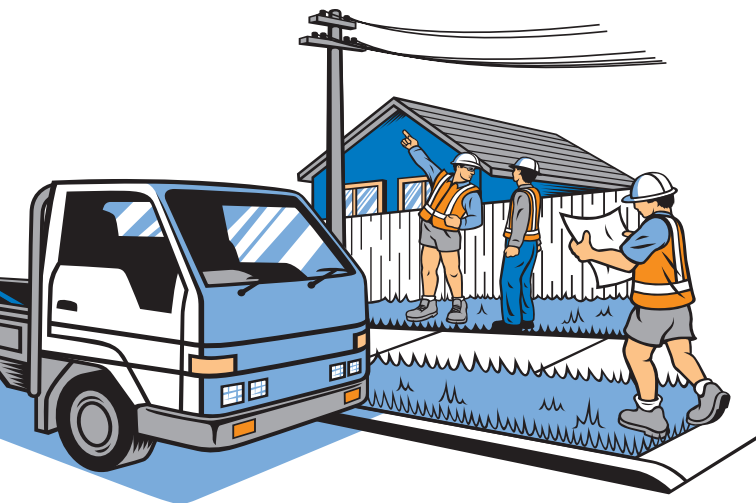
**0800 B4U CUT (0800 248 288)**





## When working near overhead lines:

- \* Keep a careful watch and make sure that you maintain a safe working distance from overhead lines at all times:
  - at least 4.0 metres when operating machinery, such as a digger or crane, near lines.
  - at least 4.0 metres when erecting buildings, signs or scaffolding.
  - and do not excavate within 5.0 metres of a power pole (see pages 15-17 for details).



# Safe digging

## Before you begin

Find out where our electricity cables are. Just because there are overhead lines in the area doesn't mean there won't be underground cables as well!

### Step 1: Get free reference maps

Call us at least two days before you begin work on 0800 B4U CUT (0800 248 288), and we'll provide **free reference maps** showing underground cable locations. We may be able to provide these maps in less than two days to meet an urgent request, but a charge will apply.

## Free reference maps

- ★ Are **valid for 14 days** from date of issue. After 14 days you must request new maps.
- ★ The accuracy of our maps cannot always be guaranteed. Road realignment, reconstruction, alterations to ground cover and property boundaries can all affect accuracy. You must hand dig to confirm the location of our cables within your worksite before you start work.



0800 B4U CUT (0800 248 288)

## Step 2: Mark out the locations

Use the reference maps to mark out the location of all cables on the worksite before you break ground. Maps are a **guide only**.

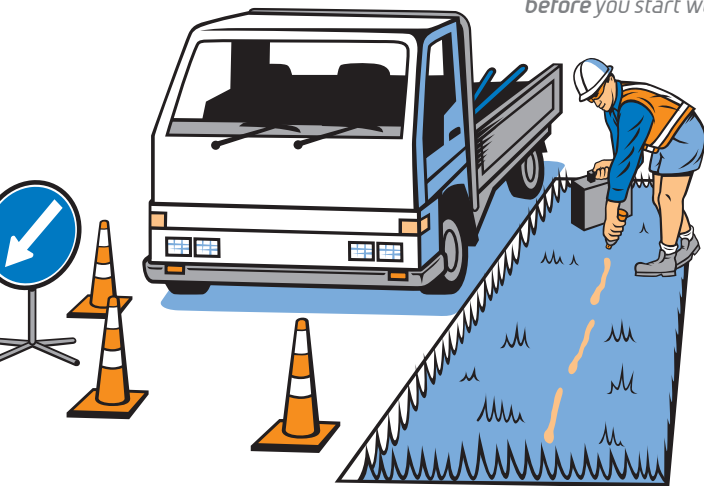
Use an electronic cable locator whenever possible.

For high voltage cables, pot hole to locate their route before excavation (refer to the Department of Labour's "Guide for Safety with Underground Services" at [www.dol.govt.nz](http://www.dol.govt.nz)).

Alternatively, we can provide a mark out service for you.

See page 13 for details.

*Mark out all cable locations  
before you start work.*



### Step 3: Hand dig to expose cables and pipes

Why hand dig? Hand digging is less likely to cause serious damage to cables and serious harm to you. You must dig with caution for your own safety. Any damage to a cable should be reported to Wellington Electricity immediately. See page 26 for contact details.

**Remember to watch out for services coming off a main cable.**



**0800 B4U CUT (0800 248 288)**

# Cable depths

Our cables are laid at different depths in the ground, varying from 400mm to over 1200mm.

Alterations to the ground cover may **reduce** or increase the depths. We cannot guarantee the depth of any cable. Expect a cable to be at any depth.

Don't rely on finding buried marker tape when you dig as this may have shifted over time.



# Close Approach Consents

Because some electricity assets are critical, we will contact you if any **core** network cables or pipes are shown on the maps you have requested. We will arrange for the appropriate **Close Approach Consents** to be issued and advise whether on-site supervision is required.

For safety reasons **Close Approach Consents** are required for **all works**:

- \* Near sub-transmission (22,000 volts and above) electricity cables and lines.
- \* Excavating within 5.0 metres of a power pole.

**NOTE:** **Close Approach Consents** are only valid for the dates applied for and the location and type of works as agreed on the Consent.

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## Our mark out services

We can provide electricity cable mark outs on your worksite. One of our representatives will indicate the location of cables by marking the ground to provide a digging guide.

**Mark outs are a guide only. It is your responsibility to identify hazards within your worksite. You must hand dig to confirm the location of all cables and pipes *before* you start work.**

All mark outs in the road reserve are provided free and all requests for this service will take up to four working days to process.

Because we do not own private service cables, there may be a charge for mark outs for customer owned electricity services.



**Electricity cable mark outs will have the letter “E” beside them.**



A single orange line shows an individual cable, and you must hand dig within 300mm each side.

A double orange line (corridor marking) shows a raft of cables between the lines. You must hand dig between the two lines.



One of our representatives will supervise your work if it takes place near any core electricity cables.

*Do not dig within 5.0 metres  
of a power pole.*

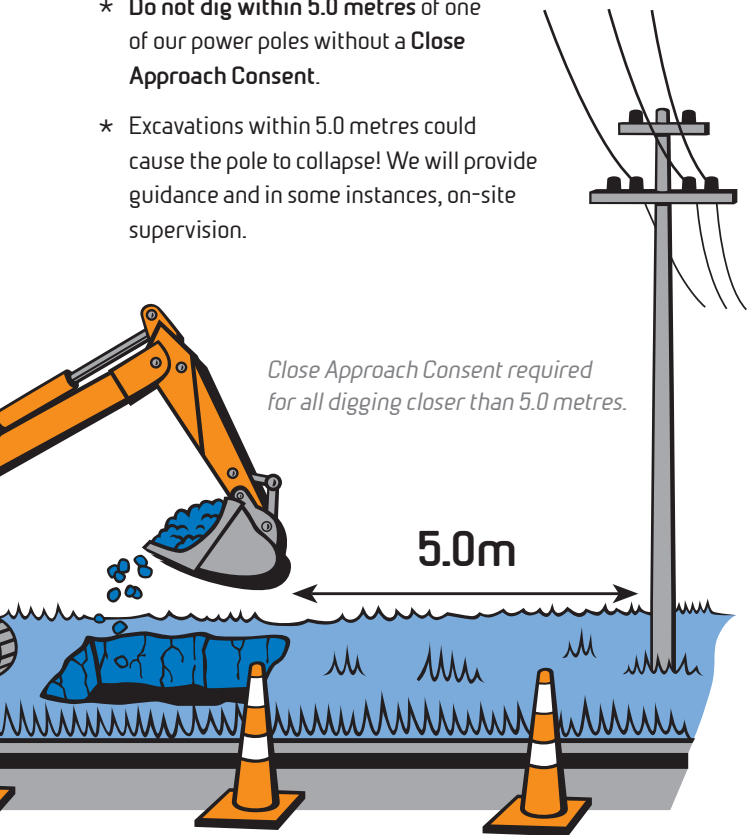


**0800 B4U CUT (0800 248 288)**



## Excavating near power poles:

- ★ **Do not dig within 5.0 metres** of one of our power poles without a **Close Approach Consent**.
- ★ Excavations within 5.0 metres could cause the pole to collapse! We will provide guidance and in some instances, on-site supervision.



# Safe digging – REMEMBER:

- ✓ Get reference maps before you start work.
- ✓ Don't forget about customer's services.
- ✓ If our maps show electricity cables you must locate them before you start work.
- ✓ The actual location and depth of cables and pipes can differ from what's on our maps because other earth works can change these.
- ✓ On-site mark outs are a reference guide only – always hand dig to confirm the location of all cables.
- ✓ You must obtain a Close Approach Consent for all works near:
  - \* Sub-transmission (22,000 volts and above) electricity lines or cables.
  - \* All excavations within 5.0 metres of a power pole.
- ✓ Follow the Department of Labour's "Guide for Safety with Underground Services" ([www.dol.govt.nz](http://www.dol.govt.nz)).

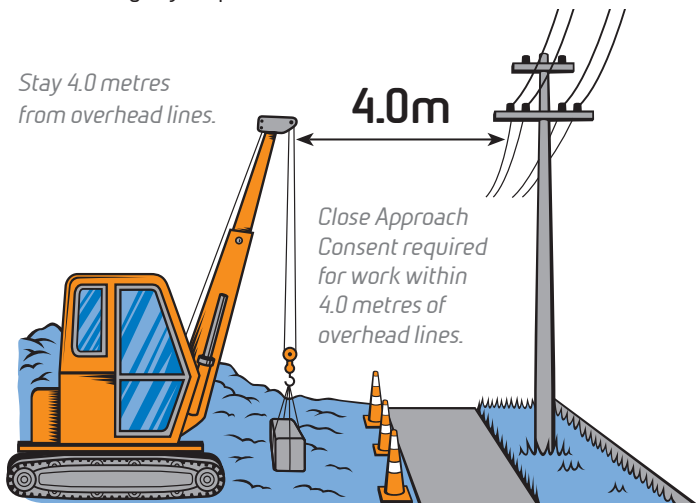
0800 B4U CUT (0800 248 288)

# Working safely near overhead lines

When you plan to work near overhead lines or power poles it is a legal requirement that you follow the minimum safe distances as set down by New Zealand Electrical Code of Practice – NZECP 34:2001 Electrical Safety Distances.

**Follow the 4.0 metre rule:** All work activity must be kept at least 4.0 metres from overhead lines. If you need to work closer to our overhead lines you must get a **Close Approach Consent**. It takes two working days to process this consent.

*Stay 4.0 metres from overhead lines.*

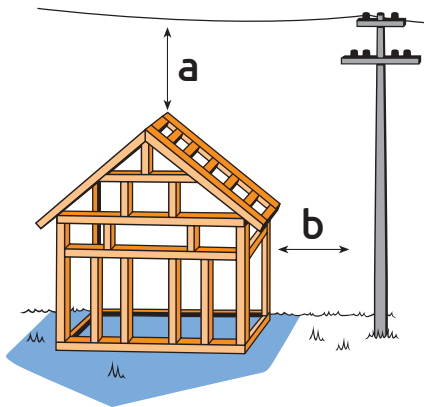


## Building near overhead lines:

You must ensure that structures such as garages and extensions to houses remain well clear of overhead lines.

The NZECP 34:2001 has set down minimum distances allowed between any new buildings and overhead lines. The minimum safe distances differ depending on the voltage of the overhead lines.

If you need to build closer to overhead lines on a private property, the electricity lines may need to be placed underground. A specialist contractor can do this – call us for advice on 0800 B4U CUT (0800 248 288).

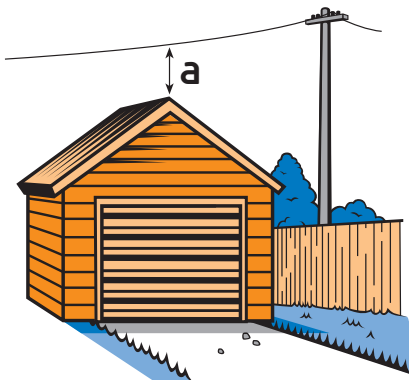


**0800 B4U CUT (0800 248 288)**

## Minimum safe distances from buildings to overhead lines

Voltage	“a” (distance) <i>Minimum distance beneath conductors in metres</i>	“b” (distance) <i>Minimum distance to side of conductors in metres</i>
Not exceeding 1kV	4.0m	3.5m
Exceeding 1kV but not exceeding 11kV	5.5m	5.0m
Exceeding 11kV but not exceeding 33kV	7.0m	8.5m
Exceeding 33kV but not exceeding 110kV	7.5m	9.5m

Overhead conductors sag more when warm. Call 0800 B4U CUT (0800 248 288) for more information and to find out the voltage of the lines that you plan to build near.



## Free temporary electricity disconnection service:

Repairs to roofing, spouting, painting, water-blasting, tree trimming and scaffolding can be dangerous if carried out close to overhead service lines (the lines connecting a home or business to the lines and poles in the street).

Call your electricity retailer to have the power temporarily disconnected when working near overhead service lines.

For your safety, your service line can be arranged for a free power disconnection (isolation) while you carry out the work.



0800 B4U CUT (0800 248 288)

## Working safely near overhead lines – REMEMBER:

- ✓ Note the position of all overhead lines and power poles on a worksite and in the area.
- ✓ **Follow the 4.0 metre rule:** All work activity must be kept at least 4.0 metres from overhead lines – get a **Close Approach Consent** if you need to work closer.
- ✓ **Do not excavate within 5.0 metres** of one of our power poles – get a **Close Approach Consent** if you need to dig closer.
- ✓ **Close Approach Consents** take two working days to process.
- ✓ Follow the NZECP 34:2001 Electrical Safe Distances when building near overhead lines. Contact the Energy Safety Service for more information ([www.ess.govt.nz](http://www.ess.govt.nz)).
- ✓ If you are working near overhead electricity service lines or a service connection have the **power disconnected for free before you start work**.
- ✓ Contact your electricity retailer to arrange the power to be disconnected.

# Free disconnection before you remove or demolish a building

For your own safety, you must have the electricity, gas and communications services disconnected before you demolish or remove a building.

Call 0800 B4U CUT (0800 248 288) and allow two working days to process the request for electrical services to be disconnected. This service is free.

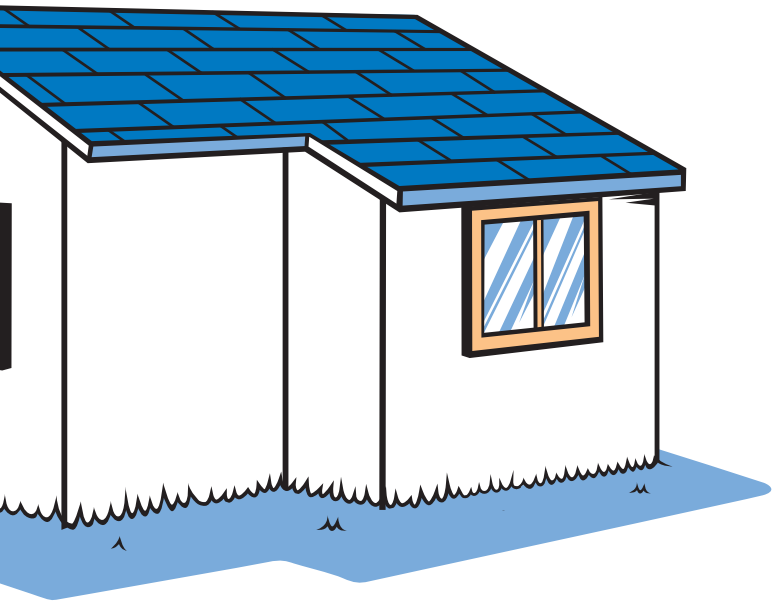
Call your gas & communications retailer to arrange disconnection of these services.



0800 B4U CUT (0800 248 288)



*When removing or demolishing a building have all electricity services disconnected for free by Wellington Electricity.*



# Travelling with high loads

You must apply for a **High Load Permit** if you plan to move any tall structure such as a house or a boat. Call 0800 B4U CUT (0800 248 288) and allow up to five working days to process the permit.

## Loads between 4.75 and 5.4 metres high:

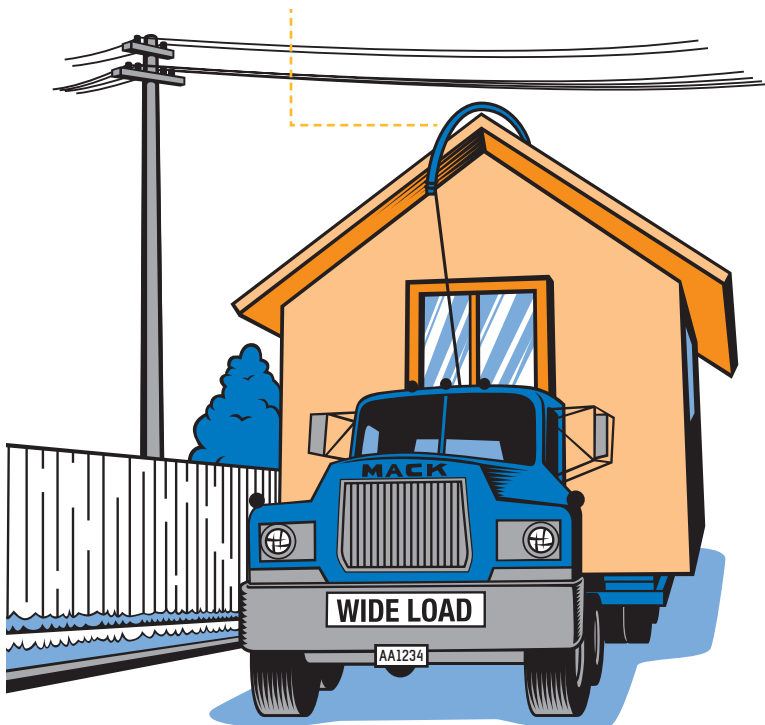
- \* We will check the proposed route.
- \* If the route is clear to the height required, a permit will be issued.
- \* If there are low lines we will arrange to escort the load at no cost.

## Loads 5.4 metres high and over:

- \* We will check the proposed route.
- \* If the route is clear to the height required, a permit will be issued.
- \* If the route is not clear we will arrange an escort. A charge will apply.
- \* If disconnection is necessary, a 15 day notice period is required so we can inform customers who will be affected.

**0800 B4U CUT (0800 248 288)**

*Insulated safety guide rail (may be required).*



# What to do in an emergency



If you hit an electricity cable or overhead line:

- \* Treat the cable or overhead line as live – get back at least 10 metres.
- \* Evacuate the immediate area.
- \* If you are in a machine, stay there.
- \* If you are at serious risk from another hazard, such as fire, and **must** leave the machine, jump well clear. Do not touch the machine and ground at the same time.
- \* DO NOT cover up a broken cable or try to fix it yourself.

Call Wellington Electricity immediately on our Emergency Number:

**0800 248 148**



*Evacuate  
immediate area.*

**Wellington Electricity Emergency Number:**



*Stay inside  
the machine.*

*Call us  
immediately.*

0800 248 148



## About us

Wellington Electricity own and operate the electricity distribution network in the Wellington region.

The Wellington region includes Wellington City, Upper Hutt, Lower Hutt and Porirua areas.

### **Our service providers and representatives.**

We have several service providers who install and help maintain our network cables.

**For more information about Wellington Electricity visit [www.welectricity.co.nz](http://www.welectricity.co.nz)**

**Wellington Electricity Main Office Number:**

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# Our network

