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Fortezza da Basso • FLORENCE (Italy)

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Adoption of a National One call Service in New Zealand

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# Introduction New Zealand



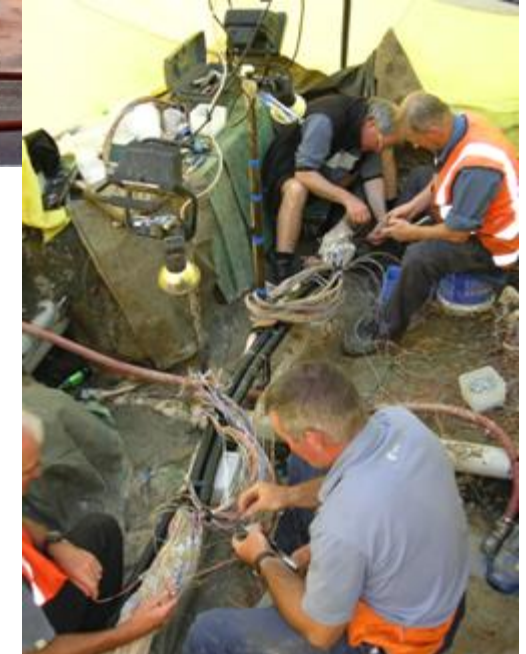
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# PelicanCorp mission: protect the underground infrastructure



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# Introduction

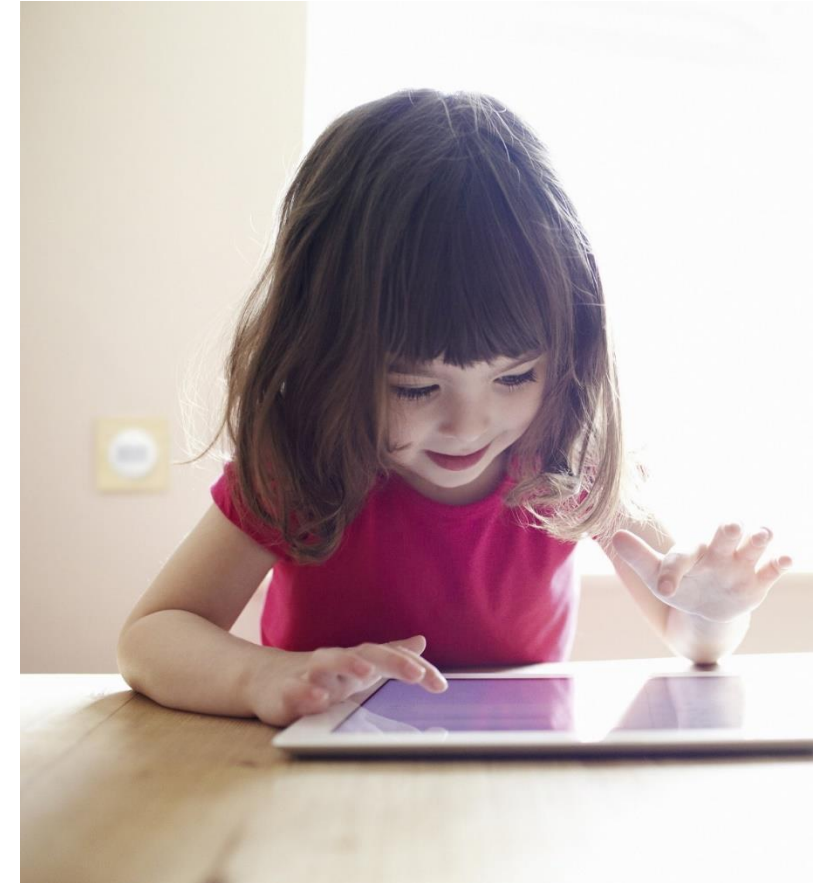


- PelicanCorp has been providing before you dig services to asset owners and councils for more than 30 years.
- We operate global **beforeUdig** solution in New Zealand, Australia, UK, USA, Canada, Ireland and Singapore.
- Our mission is to protect **lives** and the underground infrastructure



# Essential infrastructure, every day at risk!

- We take it for granted...
- We don't think about the infrastructure unless it is broken.....
- ....with our connected cities, houses, businesses we are not prepared to live without.....
- ..day in, day out it is exposed to risk of damage by excavation and risk of fatalities.



# Why damage prevention?

## Gas High Pressure, Gellingen, Belgium

- 24 fatalities and 132 injuries
- Explosion of high pressure gaspipe after hit by excavator
- Explosion near highway
- 3 persons sentenced for accidental killing
- Big impact on the industry image



# Why damage prevention?

## Amsterdam - MV Cable Strike

- 3rd degrees burns to person
- 30.000 properties no electricity for 24 hours
- Museums in the area had to close
- Tram system not able to drive
- (small) businesses had to close shops (payment systems not working)
- Reputational damage of the city
- Cost of damage > 1 Mio



# Why damage prevention?

## Berlin, HV Cable Strike

- 32,000 properties
- 31 hour outage
- Traffic lights off
- Schools closed
- Businesses closed
- Heating off in cold of winter
- Massive social media coverage / reputation damage



# United Kingdom – Health and safety impacts

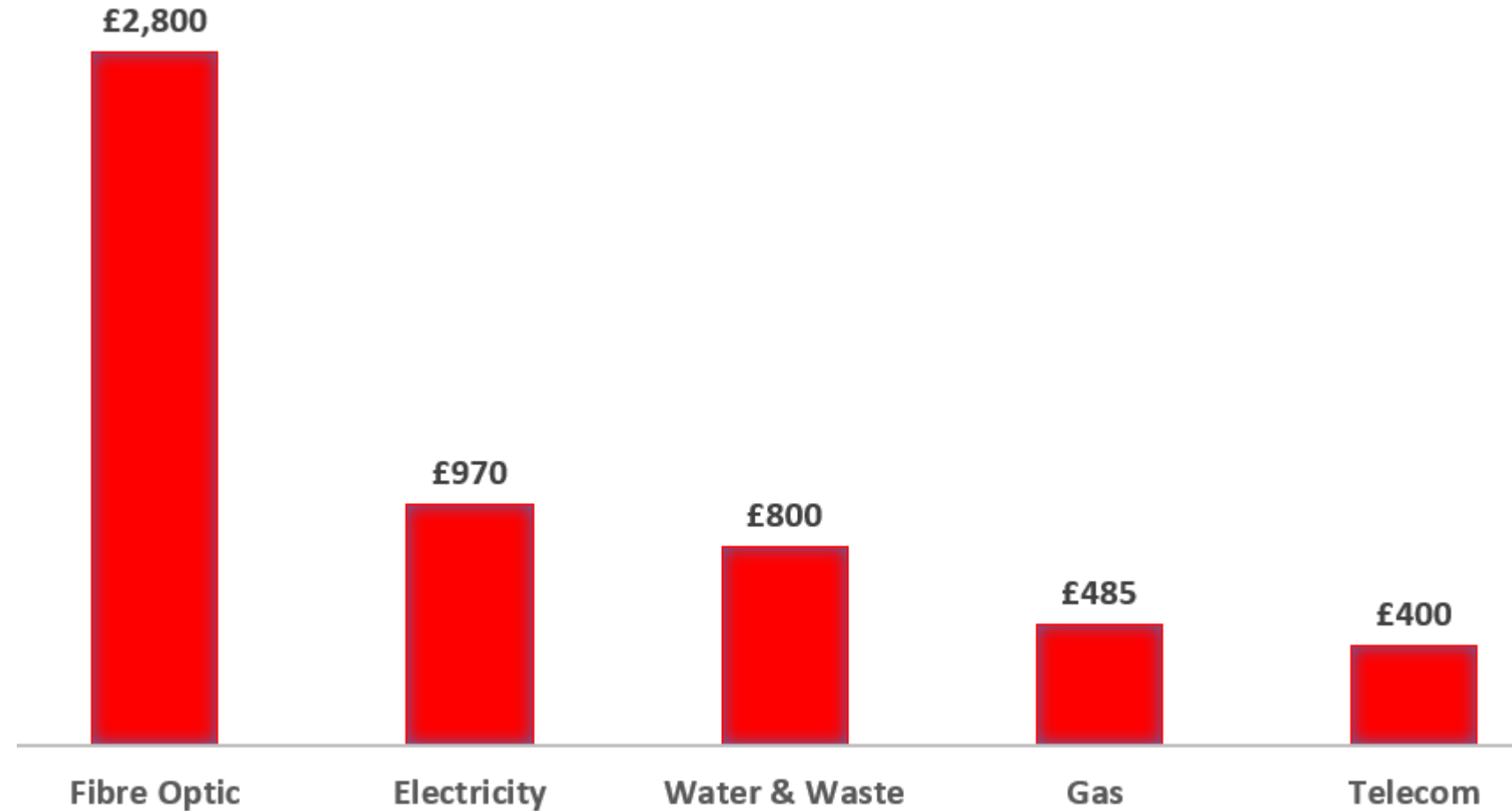
- 2013 to 2018 there were **28** fatalities from electrical contact alone .
- 300+ annual reports of injuries from electrical cable strikes
- **Employer Liability** – Workplace manslaughter sentences increased up to 18 years.
- **Financial Cost** – Expensive repair costs and insurance claims
- **Damage to Reputation and Relationships** – Damages often reported in the (social) media



# United Kingdom – Direct cost of strikes

- Rapid Response
- Materials
- Labour
- Traffic Management
- Street Works Permits

**Average direct Cost £1091**



## Social and Economic

- Traffic disruption
- Lost custom
- Injury and health
- Closure of schools and business

## Injury and Health

- Lost time injuries
- Stress
- Medical system downtime
- Reduced quality of life

For Every Strike £1,000 Direct Costs

**£29,000**

## Indirect Costs

*\*Report by University of Birmingham 2016 'What Do Utility Strikes Really Cost'*

*authors*

*Dr. Lewis Makana, Dr. Nicole Metje, Prof. Ian Jefferson, and Prof. Chris Rogers*

# United Kingdom total annual cost of damages



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- Number of excavations – 2.6 Million *\*source linesearchbeforeUdig*
- Damages Incidents – 150,000 *\*estimate based on USAG and international damage rates*

## Direct Costs

**£164  
Million**

## Indirect Costs

**£4.4  
Billion**

# 2005 Increasing infra structure capital works

NZ asset owners recognised the need to implement systems to protect their infrastructure from future increased demand from excavation

- Ageing Utilities – Replacement and reinforcement
- Roading Upgrades – Demand
- New Infrastructure – Fast Fibre Rollout
- Housing Construction
- Underground City Rail Link



# The challenge of New Zealand's networks

- Damage rates and interruption of service
- Injuries and Fatalities
- Excavators not requesting and digging without plans
- Repair costs in excess \$50 million NZD (~ 30 million euro)
- Negative public and media coverage from outages
- Regulatory investigations



# Cross industry problem

- No cohesive national safe digging message
- Excavation information not shared
- Utilities 'Doing their own thing'
- Complex and time consuming
- General public excluded
- Training not effective
- Ineffective engagement



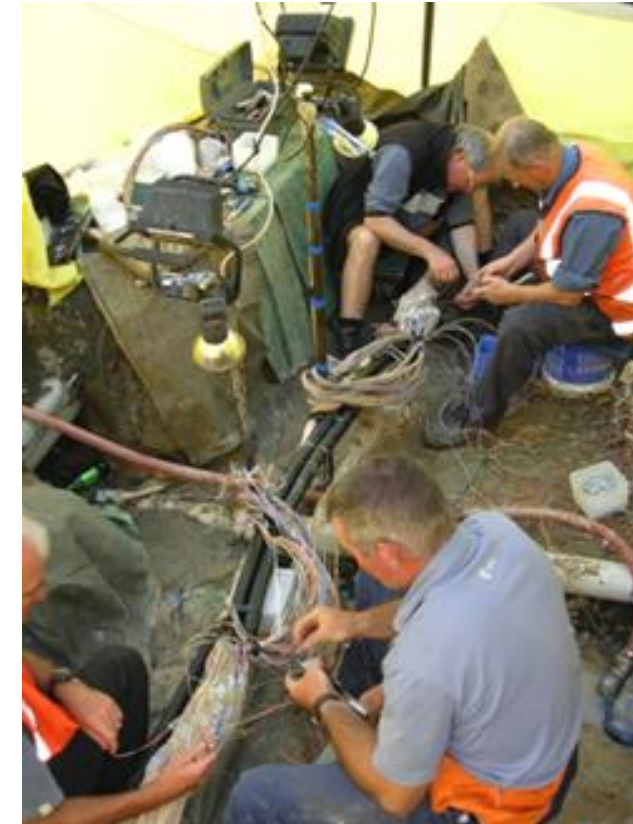
# Case study – Vector Ltd, Auckland

- 18,000 km of electricity
- 13,000 km LP/MP gas distribution
- 3,000 of HP gas transmission
- 3000km of fibre optic cables
- **1600** damages per year
- **11** serious injuries
- **1 to 2** fatalities
- \$5 Million repair costs



# Case study – Telecom NZ

- 250,000km + cables and assets
- Very high damage rates **1000+** incidents per month
- Contractors damaging and covering up
- High repair costs in excess **\$10 million NZD**



# beforeUdig – what did it bring

- A shared platform
- Unified safe digging message
- A single enquiry platform for all utilities that are member
- Informs all assets owners in a consistent process flow
- Time saving – reduces manual work
- 24 hours, 7 days a week



# The early adopters



Critical infrastructure  
early adopters

- largest
- Government
- Ex – Government  
Privatised
- large/national footprint
- Electricity
- Telco



# The New Zealand portal



- Use the beforeUdig website to get information on assets present
- Available 24 x 7 online
- Mobile website using GPS
- iPhone App
- Responds within minutes
- FREE to use for excavators



# The outcome for Vector and Telecom NZ

## Massive improvements:

- **31%** decrease in damages incidents
- **100%** decrease in fatalities
- **45%** Decrease in Injury rates
- 36% Increase in excavation enquiries
- 26% Decrease in repair costs
- 61% Decrease in plant protection costs



# Fatalities – underground cable strikes



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# ZERO

# beforeUdig in 2018



- 162 utilities & asset owners
- 92% of utility network length covered
- 172,000 excavation enquiries
- 672,000 notifications to asset Owners



## Certified Locator Programme

- Next step in safe digging
- Ability for contractors to certify and distinguish from DIY
- Self learning & online assessment
- Field based practical exam

## beforeUdig Certified Locator Programme



# Conclusions



- The adoption of a national Onecall system resulted in **significant** reduction of damages
- Most important was the reduction of **injuries** and **fatalities**
- For the digging industry it resulted in a **significant** time saving in searching for plans
- The collaboration of multiple utilities in a single system resulted in **more** searches for each utility compared to the traditional process
- Increase **awareness** of safe digging and the infrastructure
- Efficiency gain for utilities in **workflow** management and automation

# Questions?



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Protecting Lives, Cables and Pipes