37TH INTERNATIONAL NO-DIG FLORENCE 2019

Fortezza da Basso • FLORENCE (Italy)

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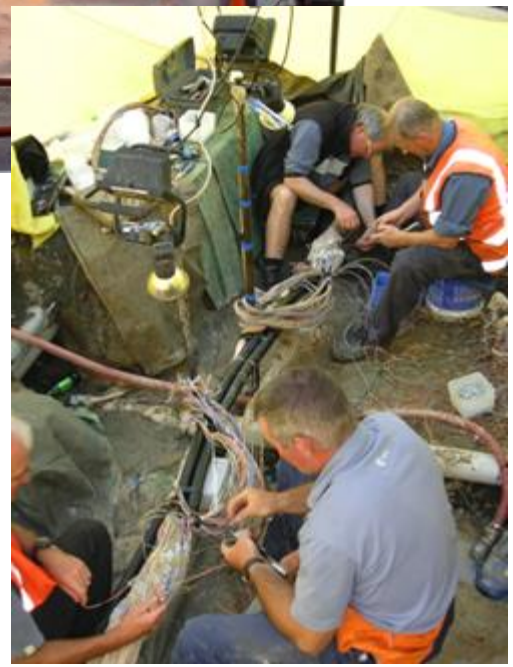
Adoption of a National One call Service in New Zealand

Jan-Willem Nijman

Introduction New Zealand

PelicanCorp mission: protect the underground infrastructure



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 electricty 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

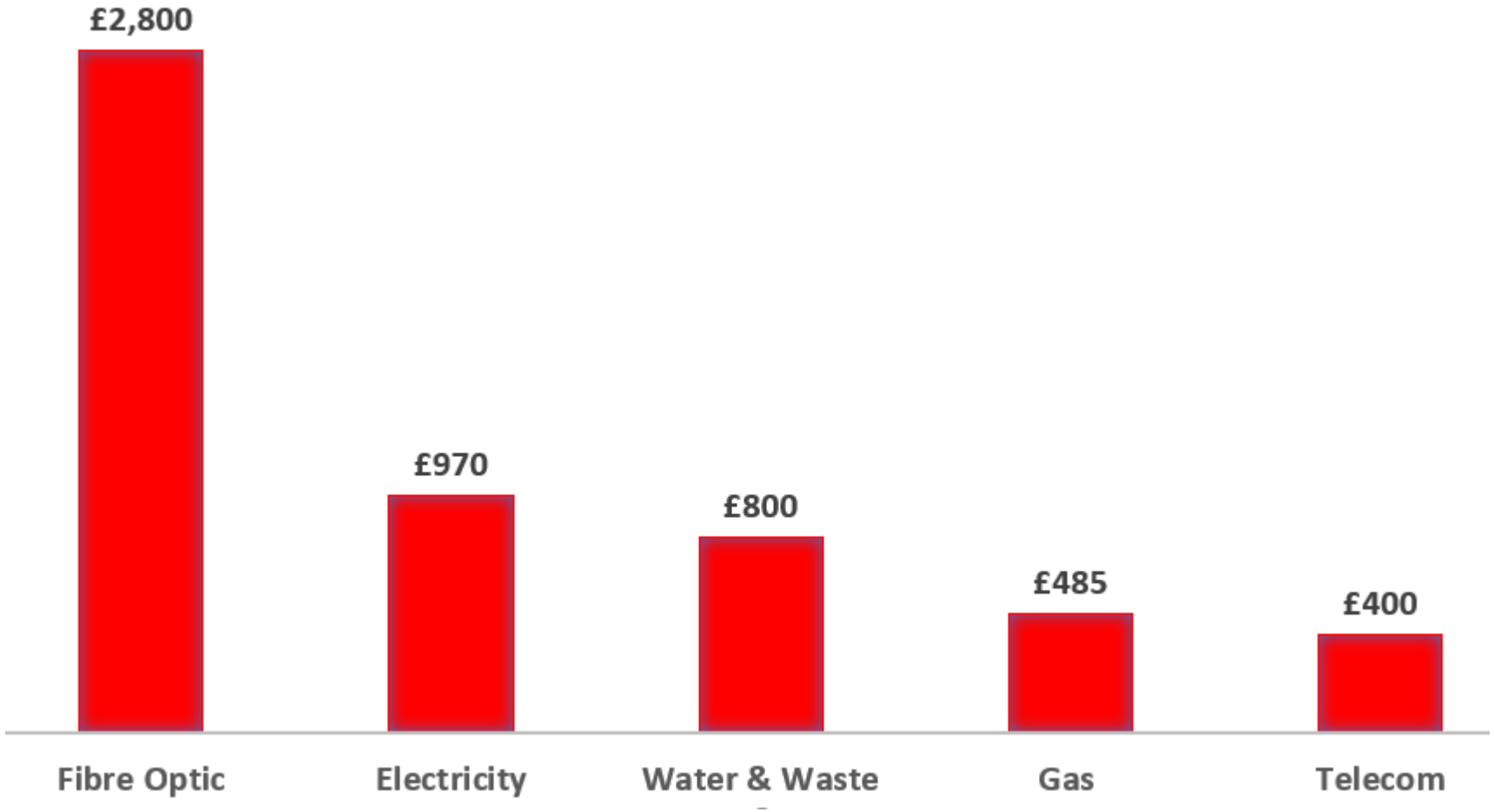
United Kingdom – Health and safety impacts

- 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



United Kingdom – Indirect cost

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

- 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 Zealands 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

30 flee Orewa gas-leak fireball

by Cathy Aronson

Thirty residents in a quiet Orewa street were evacuated yesterday after gas leaking from a pipe erupted into a spectacular fireball.

A lineman contracted to Telecom suffered minor burns to his face and was in shock after retreating from the pipe an instant before flames shot 6m into the air at 12.45pm.

The lineman, who had been down a hole sealing a broken cable with a gas torch, clambered away after hearing a strange noise.

Barbara Patterson was also lucky to escape the fireball.

The lineman had been working in her driveway. Moments before the gas erupted she had offered him a cup of tea and some lunch.

He declined and the next instant the 68-year-old widow heard a blast.

"It was a loud bang, a rushing of a noise," she said.

"Then I saw flames as high as my house coming towards me in a huge rush."

In a panic she shut her windows, grabbed a few possessions and headed out her back door.

A few minutes later she was helped over a neighbour's fence by a police officer.

Mrs Patterson was taken to nearby St John's Church with the other people evacuated from the 15 homes in Frances Skilton Place.

"I thought the worst," she said.

"I thought my house was going to burn down and that poor man was hurt but I couldn't help him."

About 10 firefighters spent the next hour preventing the blaze from burning nearby properties while UnitedNetworks shut down the gas main.

Silverdale fire station officer Brenden Wood said: "If you put the fire out but the gas is still leaking it will find its way to another source of ignition and flash back to the pit — and you're back to square one."

Telecom spokesman Andrew Bristol said the lineman was using gas detection gear and a safety blanket. It was not known whether the lineman had accidentally holed the pipe or his torch ignited the

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

Telecom NEW ZEALAND

Vector®

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

ZERO

beforeUdig in 2018

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

New Zealand at 2019

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

beforeUdig CERTIFIED LOCATOR / CERTIFIED LOCATOR

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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beforeUdig™

Protecting Lives, Cables and Pipes