

# The importance of Underground Service Detection Equipment

# The Risk

- **Underground utilities can be encountered whenever the ground is disturbed.**
- **This includes during site preparation work, erecting site signage and fencing, fitting street furniture, repaving or resurfacing work, as well as during deeper excavations in utilities, civil engineering or construction work.**
- **Contact with underground utilities such as electricity, gas, water, fuel pipelines and telecommunications services can cause significant disruption, damage, injury and even death.**
- **Leading insurance company Zurich have identified service strikes as being a potential financial disaster area for any construction company that breaks ground.**

Working on behalf of

# The Risk

- With an estimated 120 fatalities and 600,000 serious injuries attributed to contact with the electricity network alone each year it is imperative that better quality detection equipment is developed.
- The more we continue to build and grow as a country the more services that will be fitted underground and therefore the greater the possibility that these figures will increase.
- In fact, buried utilities are so common that it is safest to assume that they are present until demonstrated otherwise.
- Lets not roll the dice when dealing with underground services.



# We don't want this to happen.



**The result of incorrect Stats Drawings**

**The picture opposite is the aftermath caused by a farmer driving in fence posts into a field and hitting gas pipe. The resulting explosion destroyed 5 homes and melted the tarmac across 4 lanes of a dual carriageway.**



**Balfour Beatty Mott MacDonald**



# Area 10 Network



- 520Km of Motorway & Major 'A' Roads



Working on behalf of

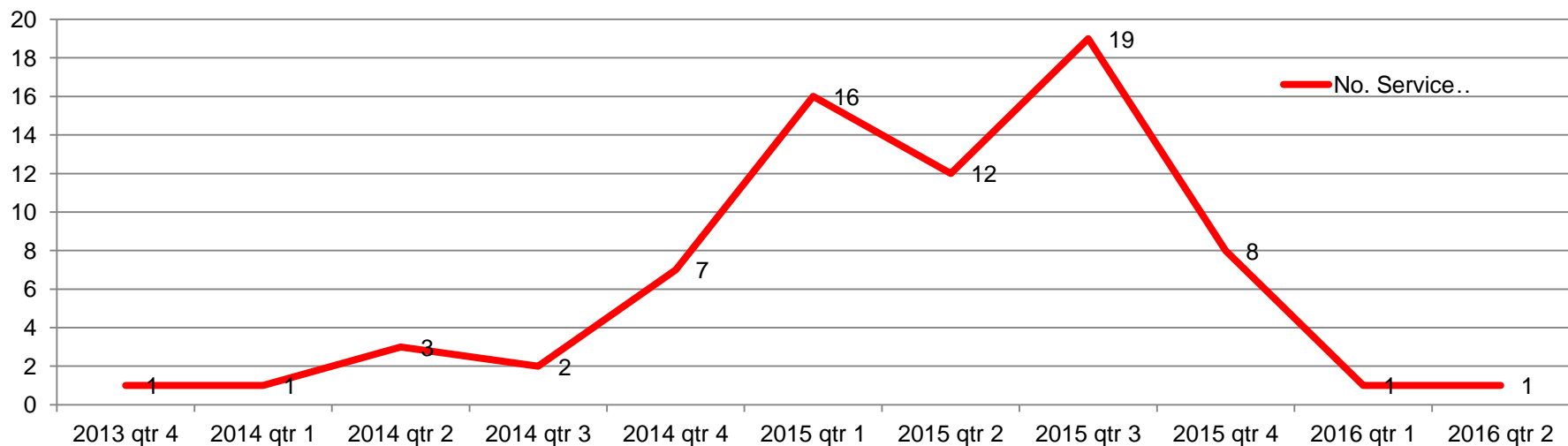
**Balfour Beatty Mott MacDonald**

# Asset Support Contract



- **Delivery of around 350 Schemes per year**
- **Damage to Crown Property (DCP) repairs**
- **Asset Maintenance**
- **All of which require a significant amount of breaking ground**
- **Since the start of the contract in 2012 there have been 71 Service Strikes, Including; an 11Kv Cable Strike, 5 x fibre optic strikes and a Fuel Line.**

## Quarterly Service Strikes Contract To Date



Working on behalf of

**Balfour Beatty Mott MacDonald**



# What happens after a service strike.



- For each strike to be investigated it requires
  - The permits reviewed
  - Method statements checked
  - Competencies checked
  - Team re-briefed
  - Costs and delays whilst damage is repaired
- Add to this the Reputational Damage, and the price of the charges levied against us, a typical investigation and repair can cost an average of £10000 in lost time, efficiency and revenue.
- Between the two parent companies there had been more than 1000 service strikes during the last 12 months prior to the project.
- Fortunately there had been no injuries.



Working on behalf of

**Balfour Beatty Mott MacDonald**



# The EZiCat Story

- An Improvement project was undertaken following Area 10 August 15 Stand down.
- Studies conducted ascertained that the current CAT & GENNY system being used was failing.
- More than 15 different models were tested and scored across 5 categories including, ease of use, build quality, capabilities etc
- Following on from successful trials of the EZiCat I750 model a business case was put forward.
- Area 10 took the decision to purchase 20 EZiCat I750 models and deploy across the contract.
- 120 Operatives Trained

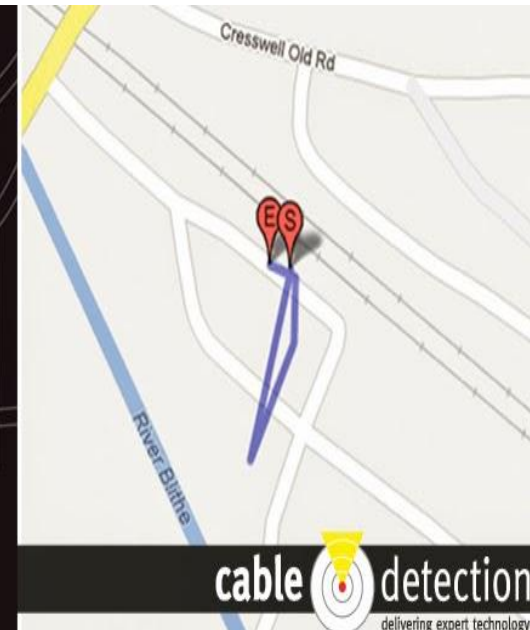
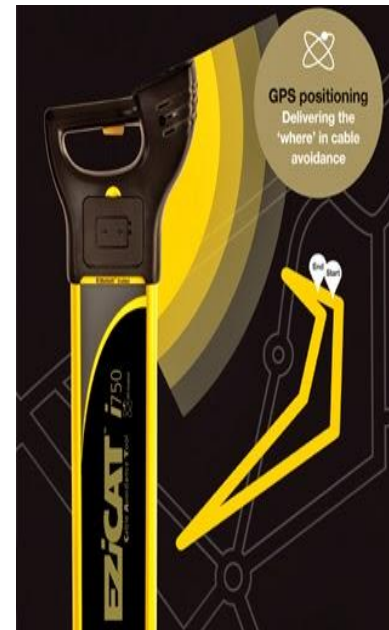
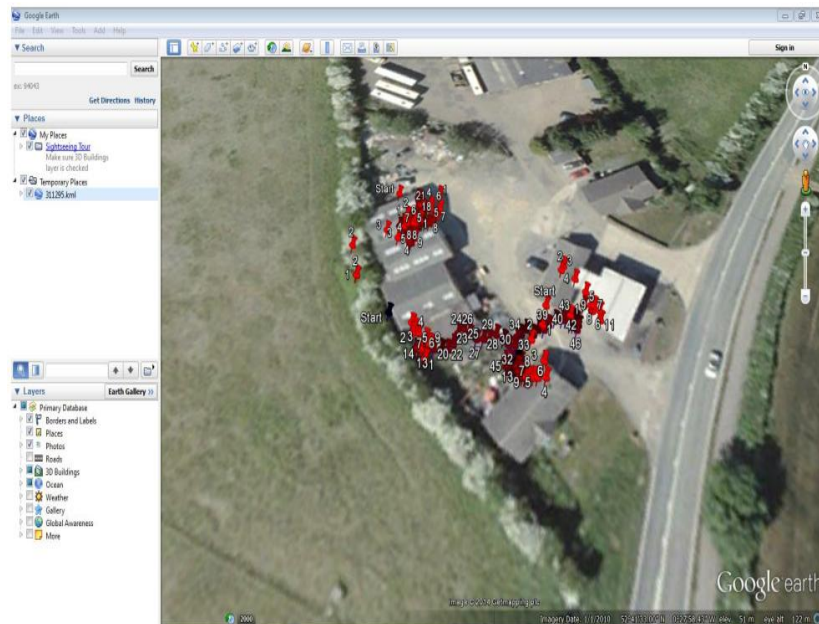


**Balfour Beatty Mott MacDonald**

# So why did we choose the EZiCat i750 cable detection system?



- Providing a unique data capture and on board memory function.
- Information can be extracted such as time and date of use, user identification and detection mode used.
- GPS Positioning can now be tracked providing for the 1<sup>st</sup> time the 'where' in cable avoidance.
- The I750 also enables operators to determine the depth of the buried utility.



**Balfour Beatty Mott MacDonald**



# LOGiCat Cloud Application

## LOGiCAT Logbook

UK 01782 384630

Logbook

Photo Gallery

Sitemap

Frequency Report

Datasheets

Upload page

Your Account

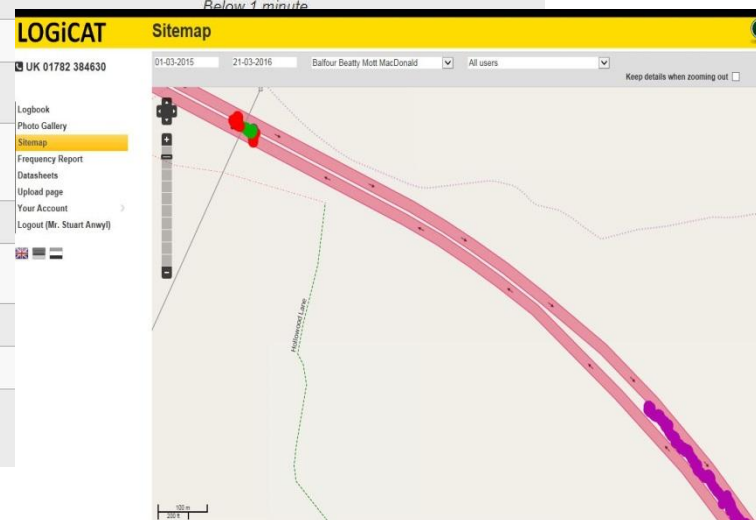
Logout (Mr. Stuart Anwyl)



01-03-2015 Balfour Beatty Mott MacDonald  
21-03-2016 All users & devices

Date

Date	User	Device	Address	Duration	Remark	Photo Manager
Jan 21, 2016	Jennifer Young	318671 750	M6, Knutsford	20 min		
Jan 19, 2016	Jennifer Young	318671 750	Address unknown	6 min	Minor Genny usage	
Jan 19, 2016	Jennifer Young	318671 750	Address unknown	22 min		
Dec 16, 2015	Spencer House 3	317915 750	Address unknown	22 min	Minor Genny usage	
Dec 9, 2015	Spencer House 3	317915 750	Address unknown	34 min		
Dec 8, 2015	Spencer House 3	317915 750	Search modes	1 min	Power lines only Minor Genny usage Below 1 minute	
Dec 3, 2015	Spencer House 3	317915 750	Address unknown			
Nov 18, 2015	Spencer House 1	318662 750	Search modes			
Nov 18, 2015	Spencer House 3	317915 750	Search modes			
Nov 9, 2015	Spencer House 2 1x extern	318667 750	Alpha Drive, Eaton Socon			
Nov 5, 2015	WH 1	318672 750	Search modes			
Nov 5, 2015	OGGY	318672 750	Search modes			
Nov 5, 2015	WH 1	318672 750	Search modes			
Nov 5, 2015	HD 1	318661 750	Search modes			



Working on behalf of

**Balfour Beatty Mott MacDonald**

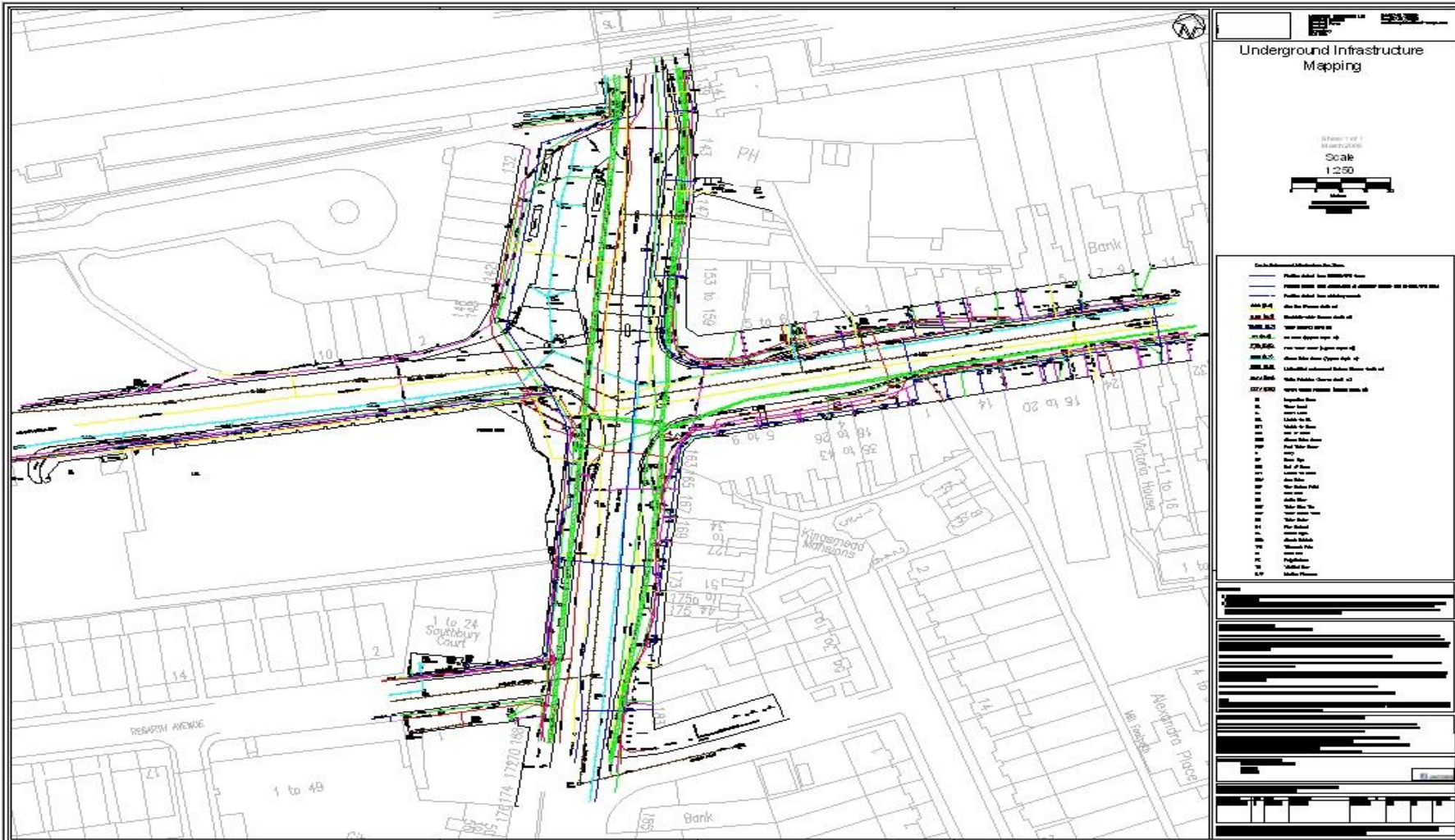




# The next step in GIS Mapping

**Balfour Beatty Mott MacDonald**

# Creating better quality Stats drawings.



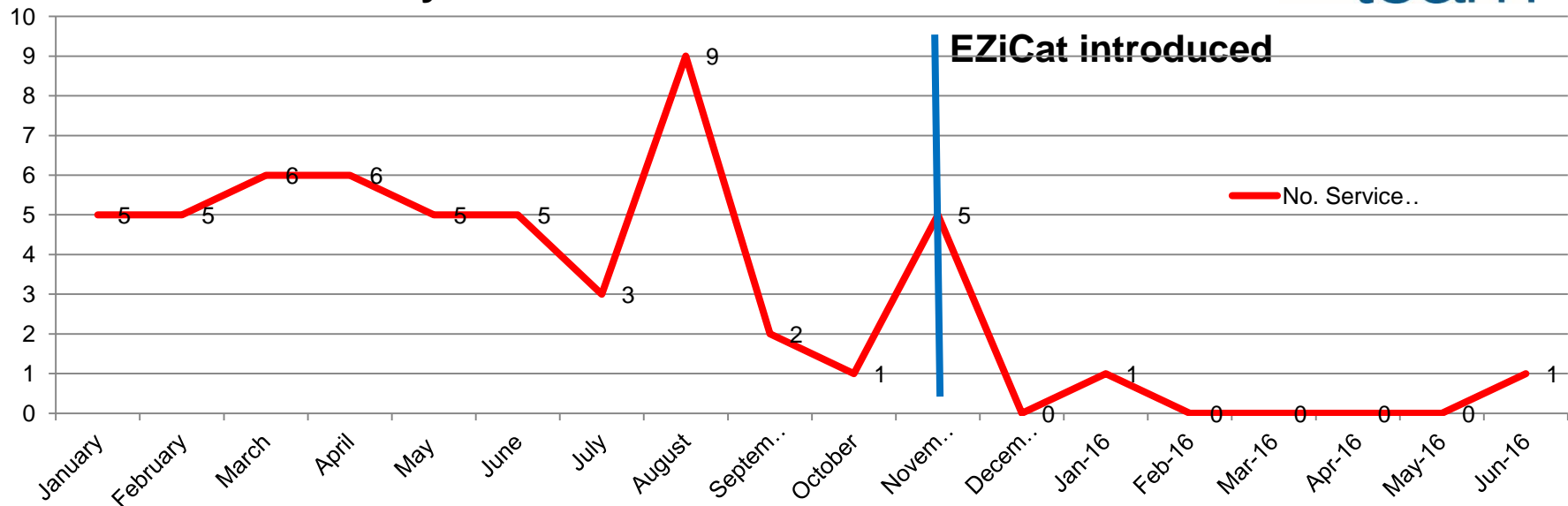
**Balfour Beatty Mott MacDonald**



# What that means for Area 10



## Monthly Service Strikes Since Jan 15 To Date



- No service strikes on any site using EZiCat since November 2015.
- In the last 9 months there have been 2 strikes; One of which was a sub-contractor who had use a different system which didn't pick up the service yet when the EZiCat was used it located it. The 2nd was a water pipe that was disturbed when lifting a slab of concrete, not really a service strike but is classed as one.

Working on behalf of

**Balfour Beatty Mott MacDonald**



# EZiCat Financial Benefits

- Financial saving to date of around £45k against rental costs.
- Cost avoidance of around £700k from the reduction in cable strikes. Based upon an average of 1 cable strike per week at an average cost of circa £10k.
  1. Loss of production and workforce downtime.
  2. Wasted Traffic Management.
  3. Resulting extensions and delays caused to the scheme.
  4. Investigation time by Health & Safety department.
  5. Time with Senior Leadership Team and Contract Director reviewing investigation findings.
  6. The actual cost of the repair imposed by the applicable Utility Supplier.
- Potential estimated savings to the end of the contract of nearly £2m with a conservative estimate of £1m with a 50% reduction in service strikes.
- More than 120 operatives trained at **NO COST** to use the EZiCat System

## EZiCat benefiting those around us

By reducing the number of service strikes we have

- Reduced risk for the Area 10 team due to improved detection capability
- Eliminate need for additional TM to repair damage – minimising disruption to customers
- Reduce the number of complaints through the NCC and time and effort to respond
- Minimised reputational risk with Highways England

Working on behalf of

# EZiCat and the wider community



To help promote best practice across the highways community, EZiCat presentations have been given to a number of sub contractors and other Area teams.

EZiCat has now been mandated across the whole of Area 10 for all of the supply chain who break ground.

- 9 Sub Contractors have invested in EZiCat systems
- 30 Sub Contractor staff trained at no cost to use the system.

Balfour Beatty are also currently reviewing the HSEN-PC-0017 Managing the Risk of Underground Services procedure to include EZiCat as the preferred method of service detection.

Further information is available in the form of;

- A knowledge transfer pack.
- A business case template and Area 10 data.
- EZiCat presentation.
- Training material.

**Balfour Beatty Mott MacDonald**



# Recognition



**In recognition of the benefits of the system to not only Area 10 but also the wider Highways Services Community, BBMM recently won the**

- CIHT Award for 'Safety Project of The Year'.**



**Balfour Beatty Mott MacDonald**

Working on behalf of

