

# Polygon Leak Detection

Trace & Access Services

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# Polygon Trace & Access

## Agenda

- Introduction to LD
- How we find leaks
- Case study
- IOT – Preventative Technology
- Questions





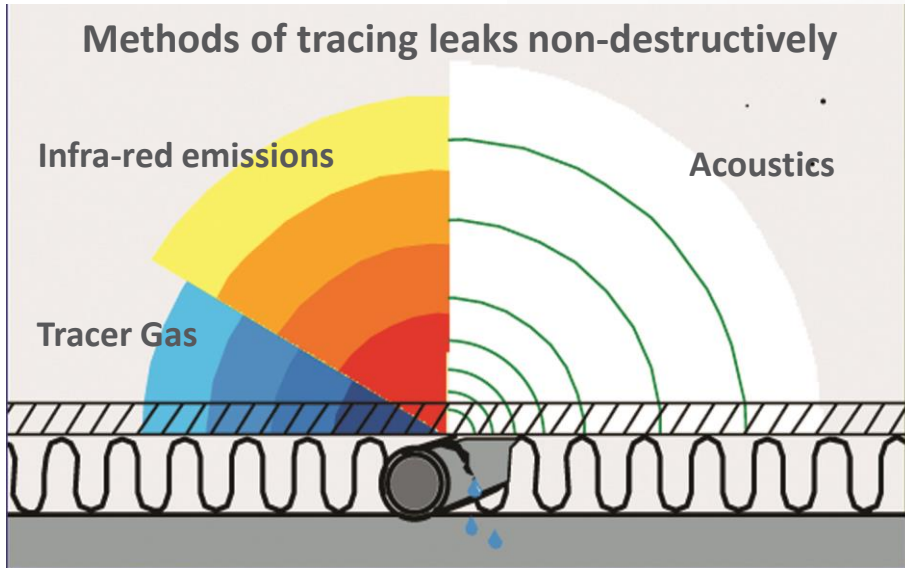
# Flaws in traditional methods of finding leaks

- Traditional methods are often destructive, labour intensive and unsuccessful resulting in numerous “dry holes”
- Secondary damage can be caused during location of the original leak (damage to the building fabric and hidden pipe work)
- Destructive methods can not identify smaller leaks (disguised by larger leakages) imposing additional costs for second and subsequent visits
- Poor claim journey and multiple failure demand likely.



# How do Polygon find leaks?

- Polygon use technology to locate leaks non-destructively
- Reducing costs of access/excavation
- Reducing reinstatement costs

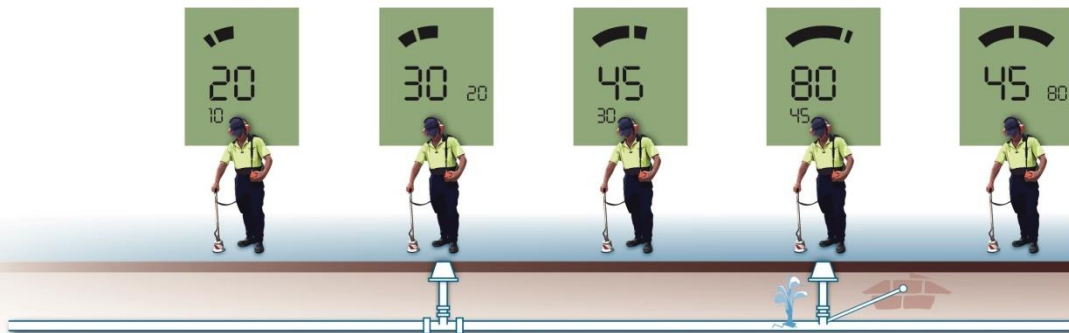


- **Acoustics:** Noise or “bodysound”
- **Infra-red:** Energy patterns
- **Tracer Gas**



# Acoustic Sound Profiling

- Works on the principle of body sound (noise)
- Leaks are accurately detected through pipe mapping, pre-location and ground sound profiling
- Tests to 10ft through any surface (concrete, wood, soil, Tarmac etc.)
- Used on internal or external pressurised systems
- Distribution or network pipes
- Main Supply
- Mains feed (internal)





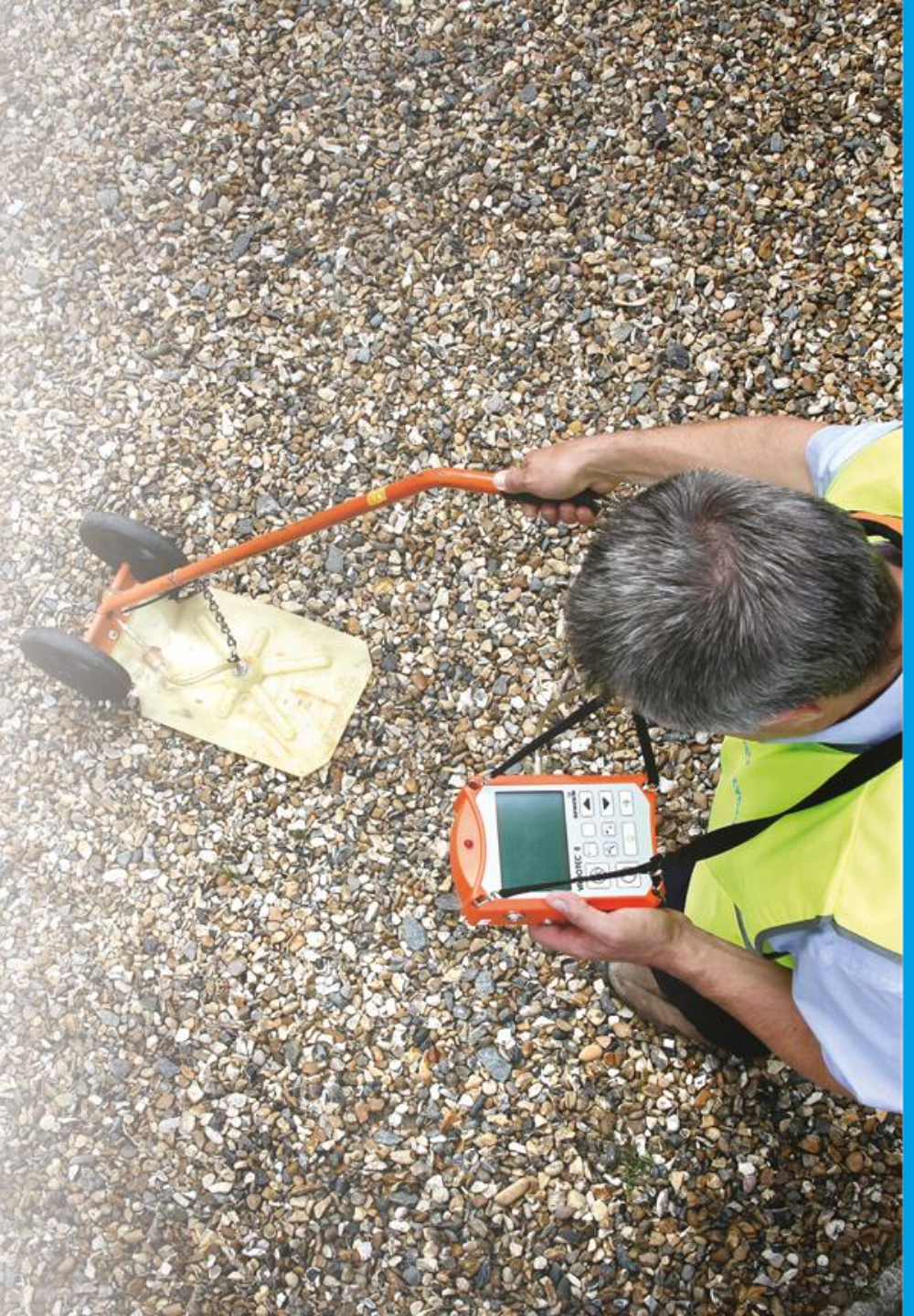
# Thermography

- Works on the principle of visual patterns of energy loss (heat and water)
- Leaks detected by plotting temperature changes of the hot pipe work against the cooler surrounds
- Large surface areas can be assessed in shorter timeframe
- 'Hot spots' are often the area of leakage (to the trained eye)



# Tracer Gas

- Used in situations where leaks are particularly difficult to locate
- Technician decommissions system, and purges with specialist gas
- Gas detected above the ground as it escapes, locating leak
- Used on internal or external applications;
  - Distribution pipe work
  - Main Supply
  - Mains feed or heating systems (internal)
  - Flat Roofs





# Supporting Methods

- Moisture Measurement
- Water analysis
- Salts analysis
- Dye testing
- Video Endoscopes





# Case Study's



**Birmingham  
Insurance Institute**  
Chartered Insurance Institute

# Case Study

## Scenario:

- 65m2 tiled floor, HNW Individual
- Customer first noticed water damage to skirting board
- Customer stressed they wanted minimal disruption
- Customer advised by plumber to use specialist leak detection service
- Polygon instructed to conduct survey under Trace & Access cover
- Leaking pipe from heating circuit located under kitchen floor
- Floor tiles carefully removed with minimal disruption
- Concrete slab excavated to expose leaking pipe
- Leak fixed, and hole made safe
- Time taken – 1 day

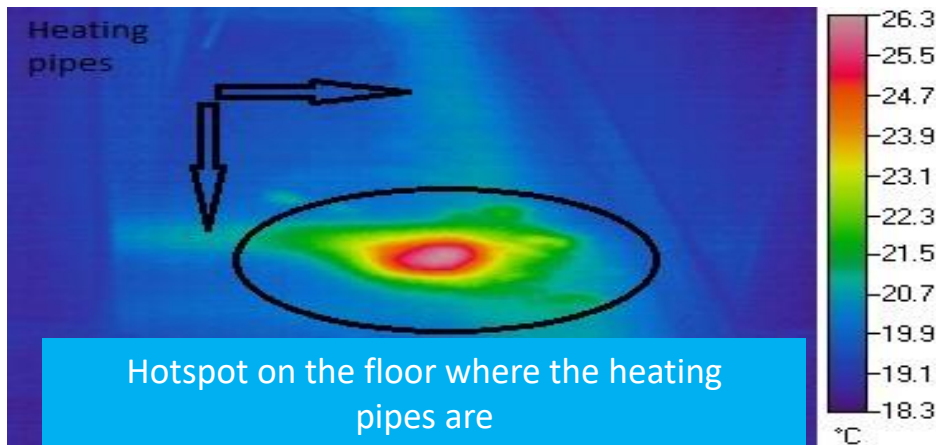




# Case Study

## Heating/Hot Water Pipe Leaks

- Thermal cameras are very effective on identifying where there are central heating pipes, and where there are hotspots (leaks)
- Thermal tracking is most effective where the pipes are in concrete or inaccessible voids (e.g. floating floors)
- Effective even when there is no apparent damage to the solid wooden floor.



# Case Study

## External Leak Detection

### Problem

- Homeowner received a water bill for £3,800
- Initial investigation by water company identified a leak between internal stop tap and the water meter located on the roadside
- The solution at that stage would have been to dig up the driveway to locate the leak.





# Case Study

## External Leak Detection

### Solution

- Polygon's methods to locate the leak included acoustic profiling and tracer gas
- The external mains feed pipe was pressurised using a standard mix of 5% hydrogen and 95% nitrogen tracer gas
- The drive was then walked using a sledge to detect the gas escaping from the ground.

### Result

- Leak located within 2 hours and fix made
- Non-destructive survey testing ensured that excavation work was minimised
- Speed of detection and subsequent repair resulted in less interruption to the property owner and potential savings if the leak had been left.



# Case Study

## The Cube Spa Birmingham

### Problem

- On-going issues with a leak previously suspected that this could be the Saniflow
- Standing water within the false floor void customer constantly pumping waste water from the void
- Treatment rooms effected in the basement area
- High moisture levels found throughout the basement area
- Mould Appearing in the treatment rooms
- Business interruption due to the facilities out of use





# Case Study

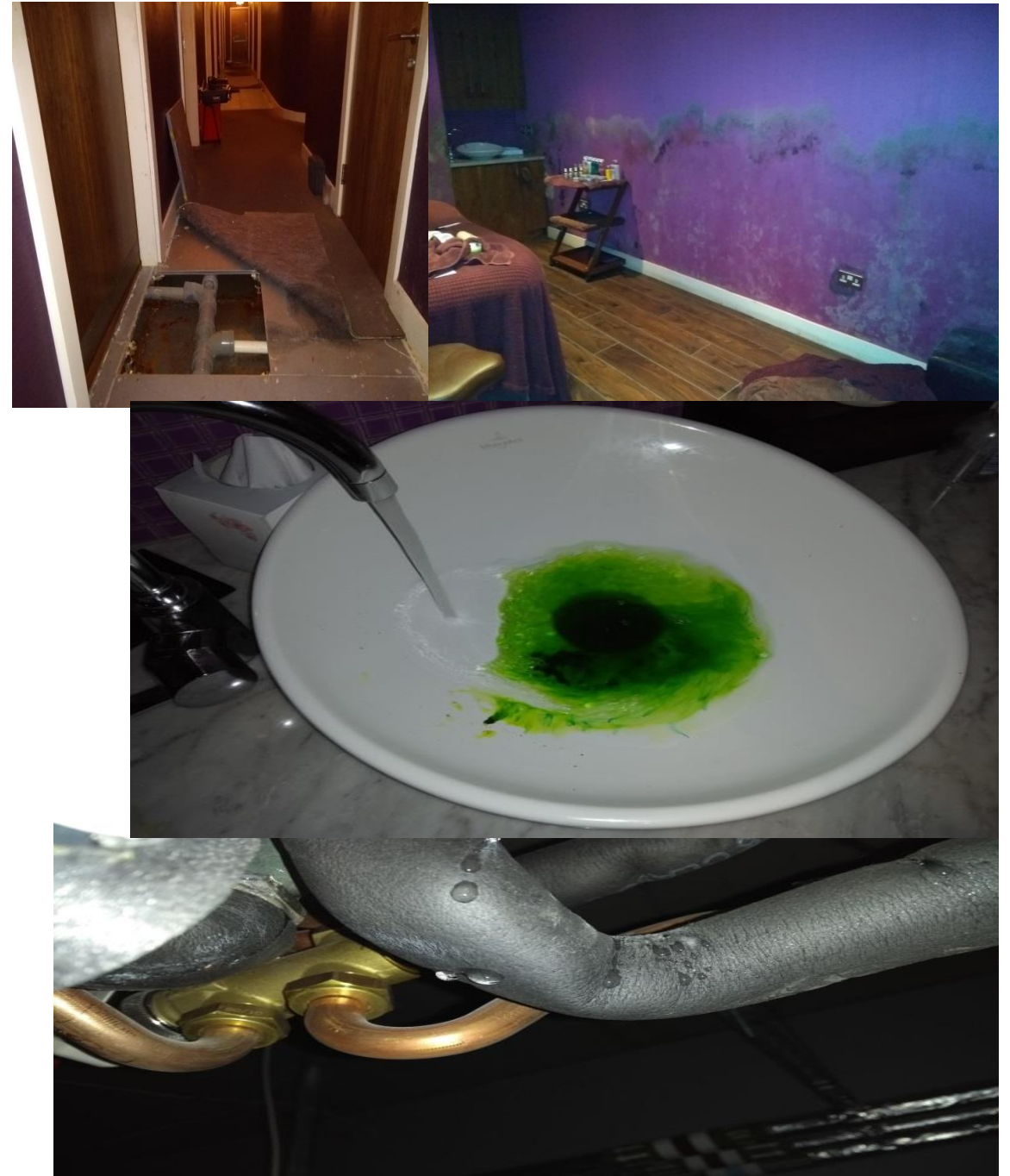
## The Cube Spa Birmingham

### Solution

- Polygon conducted moisture profiling along with dye testing and video endoscopes to identify areas of interest
- Waste pipes capped and isolated to carry out further testing
- 1 treatment room isolated and further inspections to the floor void conducted

### Result

- Leak to the waste pipe identified and second leak to the air conditioning unit within the ceiling void identified.
- PolygonVatro to implement drying programme



# Any Questions?

Before you make  
that first hole ...



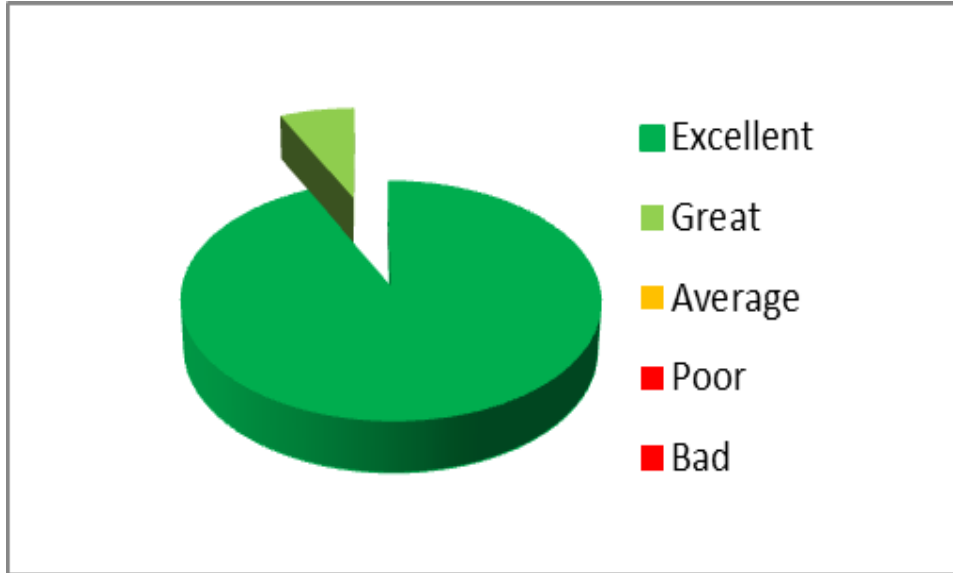


# What our customers say about us.....

Trust Score 9.3 out of 10

93% excellent

7% Great



**POLYGON** 5 star Rating

- 158 visits to our profile
- 102 Reviews
- 89% invited reviews
- 11% Organic Reviews
- Personal response with all reviews

**This company is simply amazing.**

**They turned up on time found the underground leak, fixed it, cleaned up and left! I would recommend them to anyone 10/10. Thanks for saving our Christmas – Matthew in Birmingham**





# Polygon Trace & Access – Contacts...

## **Polygon Trace & Access technical helpdesk**

0330 3322958

**Polygon T&A website** [www.polygonleakdetection.com](http://www.polygonleakdetection.com)

## **For instructions:**

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