



## USING A DIGITAL APPROACH TO COMPILE UTILITY PLANS

### BACKGROUND

Traditionally, sourcing, collecting, compiling and interpreting utility plans is a slow but safety-vital and legally mandated process. Seeking a modern, digital approach to compiling packs, Morrison Water Services looked to research and develop a robotic process automation (RPA) system and Artificial Intelligence (AI) software, which could quickly and accurately provide our expert operatives with a digital pack via a user-friendly, intuitive, and feature-rich application.

### PROJECT OBJECTIVES

The project aimed to seek out how RPA and AI can support a digital approach to compiling utility plans quickly and accurately. The objectives were to source how a digital approach could potentially reduce time from a largely manual process, ensuring accuracy and improving productivity. The data driven approach aimed to offer the infrastructure and engineering sectors an innovative use of AI technology, which improves efficiency and safety on site. The project looked to source a technology to eliminate the need for operatives to juggle multiple paper maps, reducing not just our carbon footprint, but the likelihood of human error.

### DETAIL

We sought to identify potential solutions for using machine learning to interpret complex map data. We already had success with Robotic Process Automation (RPA) for scanning site documents and recognised the potential. The bespoke software, Safe Dig AI, has learned to interpret widely different map data sets and make its own decisions (following six months of reinforced learning) to create safe dig packs showing underlying assets present at a specific location, covering gas and water pipes, electric and telecom cabling, in one dataset.

By using cutting edge technology, Safe Dig AI interprets all existing map data from utility companies, combining and interpreting completely different and disparate maps from many sources into one geo-referenced intelligence model (in as little as 30 minutes, compared with several hours needed previously). The solution then provides our expert operatives with digital packs via a user-friendly, intuitive, and feature-rich application.

This AI interprets its database of maps to highlight potential high-risk assets in the vicinity of the works. Over time, the AI software learns to provide even greater insight through reasoned extrapolation, improving safety. On site, we always carry out Cat and Genny scans to validate the results provided, but Safe Dig AI's accuracy, speed and consistency has been impressive. This cutting-edge AI process significantly reduces the risk of hitting cables and other assets. Inadvertent strikes can cause significant disruption to local communities, delay work on site and risk personal injury. This radical technology is transforming our processes by helping us to eliminate these dangers.

#### CLIENT

THAMES WATER

#### DATE OF ISSUE

July 2023

#### COST OF DELIVERY

Up to 75% cheaper than traditional human based services

#### BENEFITS

- Speed – 85% faster than the current process.
- Accuracy – 100% elimination of any human error element.
- Simplicity – Simplicity for field engineer operational use. 66% increased user satisfaction.
- Scalability – The platform allows for instant scalability.
- Improved profitability – Up to 20% higher field force productivity.

**“Safe Dig AI ensures our people are well informed about the environment they are working in. It helps operatives carry out their work safely and reduces the risk of hitting cables and other assets hidden below ground. A strike can cause significant disruption to local communities, delay work on site and increase the chances of personal injury and Safe Dig AI is here to prevent these incidents.”**

**Andy Carter**

Business Services Director  
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