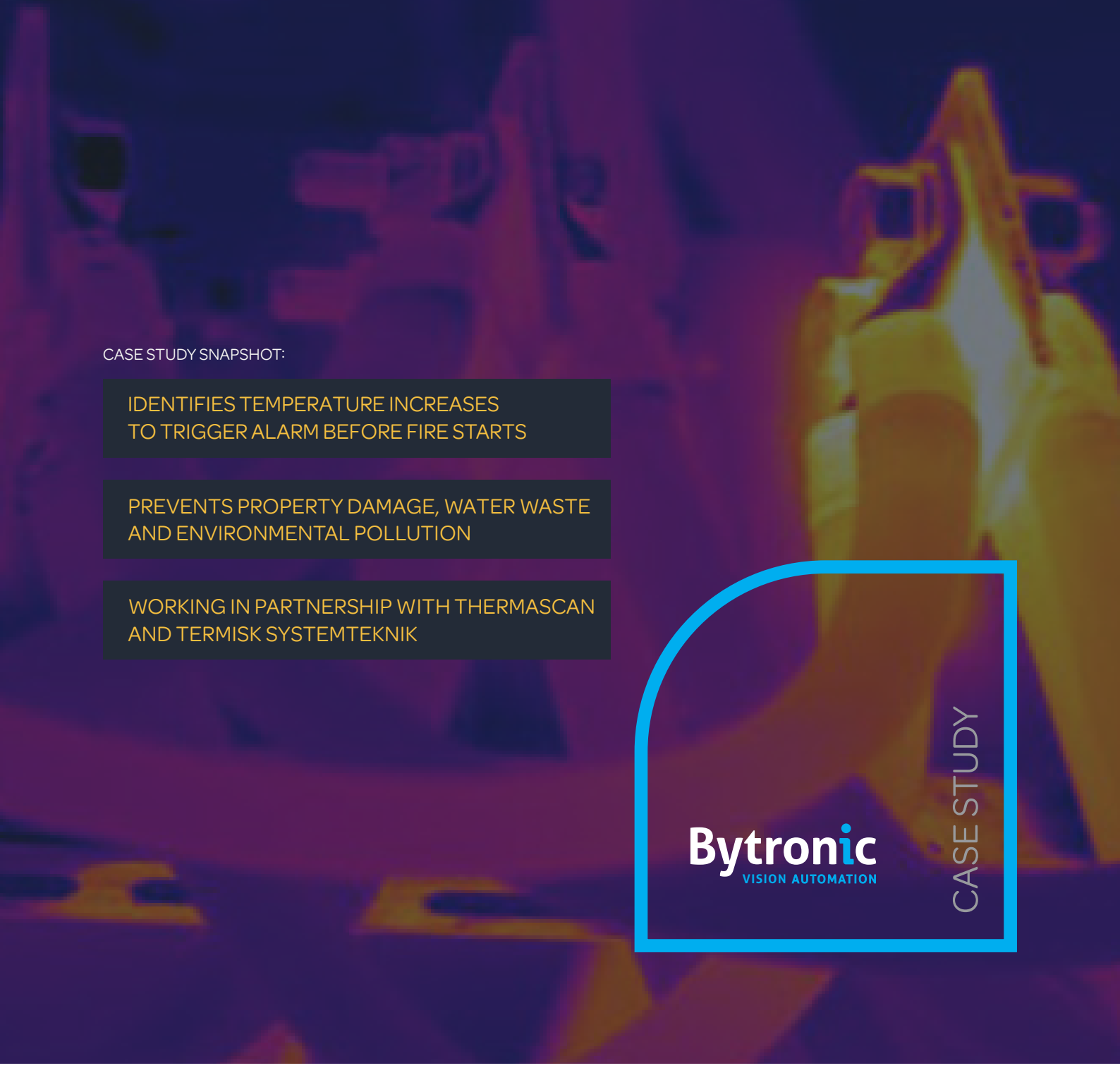


CASE STUDY SNAPSHOT:

IDENTIFIES TEMPERATURE INCREASES TO TRIGGER ALARM BEFORE FIRE STARTS

PREVENTS PROPERTY DAMAGE, WATER WASTE AND ENVIRONMENTAL POLLUTION

WORKING IN PARTNERSHIP WITH THERMASCAN AND TERMISK SYSTEMTEKNIK

Bytronic
VISION AUTOMATION

CASE STUDY

FULLY AUTOMATED FIRE SAFETY SYSTEM FOR THE UK'S SECOND LARGEST WASTE CONTRACTOR

PREVENTING HOT SPOTS AND FIRES AT HIGH-RISK SITES

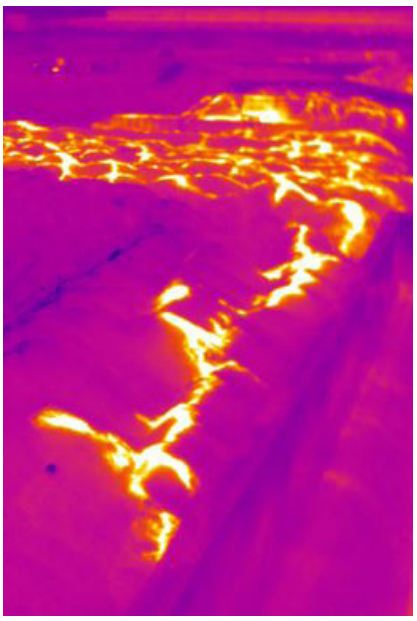
CHALLENGE:

Waste management sites are particularly vulnerable to fires, with hundreds reported in the UK every year. Fires can easily develop in a waste pile and quickly build into a significant blaze, posing a major threat to health and the environment, and causing millions of pounds in damage.

This makes it vital for sites to have effective fire detection and prevention measures in place to extinguish fires quickly should they develop.

London Energy is the UK's second largest waste contractor, providing sustainable energy and recycling for the capital's 8 million residents. Its waste management and recycling centres save 700,000 tonnes of waste from landfill every year, saving 300,000 tonnes of CO_2.

It needed an automated solution that would detect, prevent and control fires across its sites.



Thermal imaging that understands heat signatures before fires start

- Real-time monitoring
- Programmable detection regions
- Automatic elimination of moving heat sources
- Minimising false alarms
- Logging of temperature profiles
- Historical temperature reporting
- Alarm images are automatically saved
- Intelligent alarms: temperature thresholds & temperature change rate
- Automatic activation of water cannons with optional directional control

London Energy, a subsidiary of North London Waste Authority, provides sustainable energy, recycling and resource management for the capital. The company prides itself on its sustainable approach to waste management, diverting 698,000 tonnes of waste away from landfill each year through recycling and energy production to save nearly 300,000 tonnes of CO_2 every year.

SOLUTION:

'Hot spot' fires are often caused by hot or flammable materials, chemical waste or heat from the natural degradation of organic material.

Detecting these hot spots is usually done by manual inspection, gas detection or simple thermal monitoring, but these techniques can be time-consuming and unreliable. Very often, operators fail to detect hot spots before they develop into fires that are harder to control.

To help London Energy detect hot spots and quickly extinguish fires, Bytronic worked in conjunction with the leading fire prevention thermal imaging supplier Thermascan and Swedish firm Termisk Systemteknik to create a reliable and fully automated solution that would keep their site safe with rapid detection at temperature level.

The system we designed combines high-resolution thermal cameras supplied by FLIR with location monitoring software and automated water cannons to spot and extinguish hot spots in seconds. These thermal cameras constantly monitor temperatures across the waste storage site. They are highly sensitive to detect heat through rapid detection at temperature level.

They are programmed to recognise known heat sources from moving vehicle exhausts or engines, while identifying genuine fire hazards – elevated temperatures – at an early stage, triggering an alert to notify an operator.

Should the temperature rise enough to become a fire risk – typically 60 degrees centigrade or above – the system activates a pair of automated, oscillating water cannons which spray the affected area to reduce the temperature, or extinguish the fire.

These cannons are programmed to adjust water pressure and reach based on the location of the hot spot, before automatically deactivating once the temperature has cooled sufficiently.

Meanwhile, the cameras – which can detect fires even through thick smoke – monitor the progress of a fire beyond what's visible with the naked eye.

Helps operator meet health and safety obligations

RESULTS:

Like many sites, London Energy previously used manual inspection and a sprinkler system to extinguish fires. This may have been effective, but was overly sensitive and didn't target the affected area, taking more time and potentially causing water damage and pollution elsewhere.

Thanks to our new automated, thermal imaging solution, on-site fire prevention is now safer, more reliable and efficient. There are fewer false alarms and when hot spots occur, they are swiftly extinguished with pinpoint accuracy.

Our system helps to prevent property damage, water waste and environmental pollution, protecting operators and helping London Energy to meet its health and safety obligations.

Bytronic Automation's engineers design and implement machine vision, packaging inspection, fire prevention, robot guidance and production monitoring systems.

We specialise in integrating systems for major corporate customers and have built our excellent reputation on extensive knowledge and experience in the fields of machine vision, test and measurement, automation and process control.

Our extensive experience in systems integration projects across diverse industry sectors has enabled us to develop a range of partnerships that help manufacturers improve their processes and ultimately – increase their profitability.

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solutions with
vision

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