ARPAS-UK
The UK Drone Association

End-user Stories of Drones In Action

November 2024

Introduction

“When applied, drones are faster, cheaper, safer and greener than other solutions for the same job. We want businesses, as well as the general public, to understand the immense benefits of drones and understand that there will be positive adoption over the coming years”

-Graham Brown (Chair of ARPAS-UK)

The purpose of this guide is to provide examples that demonstrate the range of benefits and financial savings that can be achieved by the safe adoption of Drones.

In the dynamic landscape of technological advancement, the safe adoption of drone technology stands as a testament to innovation, human ingenuity and its capacity to redefine and improve industrial operations. This report examines a collection of use cases across a spectrum of sectors, each showcasing the transformative impact of drones. From asset and building inspection to the precision agriculture fields to the complex infrastructures of oil and gas platforms, we explore how uncrewed aerial vehicles or drones are not just enhancing operational efficiency but also creating the path towards a safer, more sustainable future.

Innovation with drones reshapes industries, tackling **environmental**, **efficiency**, **cost**, and **safety** issues, paving the sustainable future path.

University of Exeter's Gutter Cleaning Tender

80% Cost savings
versus traditional methods*

AT A GLANCE
DETAILS

Organisation: University of Exeter
Operator: InView Asset
Location: United Kingdom
Industry: Asset Management
Activity Type: Inspection and surveying

HIGHLIGHTS

- 80% cost savings versus traditional methods
- Eliminates risk of falling from height
- Cost savings on new tender versus original tender

ISSUE

Writing tenders to get the cheapest contract is enhanced by having clear data regarding the job. Exeter University understood this when they set out to get their gutters cleaned. With over 300 buildings, estimating the total length of guttering to be cleaned was essential to get a good offer on their cleaning tender. Traditionally, the way to solve this is through inspections via scaffolding and cherry pickers.

SOLUTION

Using a drone to carry out the inspection saved up to 80% on inspection costs. Over 200GB of data in 17,000 separate files were securely delivered to the University on-time and on-budget. This method provided a cost-effective, quicker, and safer way of producing tender information compared to traditional mobile-access platforms and ground-based survey data. Cloud-based outputs were easily shared with different stakeholders, reducing the carbon footprint of visits, and enabled planning for future spending using an evidence-based approach. The new tender offer that the university got was much cheaper even when you factor in the cost of the drone services.

BENEFITS

Cost Savings

Up to 80% Cost Saving versus traditional manual survey costs by removing the expense of prolonged capture time, travel time, and repeated in-person site visits.

Improved Efficency

The drone inspection only took a few days, with the traditional ground/roof-based inspection taking months for large assets, saving weeks of personnel hours.

Safety and risk avoidance

De-risking Data Capture versus ground or rooftop inspections with ropes, scaffold, and towers, aerial capture tools are "zero-touch.", putting no one at height and at risk.

*According to Inview Assest's website

Special Building Inspections

Saved over 88 days of Inspection work*

AT A GLANCE

DETAILS

Organisations: St Luke's Church
Operator: Vantage UAV
Location: United Kingdom
Industry: Construction
Activity Type: Inspection and Surveying

HIGHLIGHTS

- More than 70% cost savings
- Elimiates risk of falling from height
- Months of work completed in days

"By spending less than £10,000 on drone inspections across three sites, we have saved on planned large-scale roof repairs, achieving these results within just 3.5 days of on-site work, with minimal disruption to residents"

*According to vantageUAV & CPC

ISSUE

Inspecting historical landmarks and churches is challenging due to their complex designs, heights, and fragile materials. Traditional methods like scaffolding or cherry pickers pose safety risks and may damage the buildings, especially in areas with surrounding structures like graveyards and memorials, which limit equipment use. These inspections are costly, with scaffolding consuming a significant portion of the budget, leaving less for repairs. Additionally, the process is time-consuming, often taking weeks or months and causing disruptions. High costs, safety concerns, and limited accessibility complicate maintenance efforts.

SOLUTION

Drone technology offers a cost-effective, safe, and non-intrusive solution for inspecting special buildings. Equipped with high-resolution cameras and thermal imaging, drones capture detailed data often missed by traditional methods. For example, at St Luke's church, a traditional roof inspection suggested a £350,000 replacement, but a drone inspection by Vantage UAV identified just £50,000 of necessary work, saving £300,000 and completing the assessment in 2 days.

BENEFITS

Cost Savings

Cost savings by avoiding the high expenses of traditional methods, such as scaffolding, which has shown 85%-70% in cost savings.

Improved Safety

Falls account for nearly 75% of fatalities in the roofing industry[1]. Drones eliminate this risk.

Efficiency

Time savings, completing assessments in just 2 days compared to the 3 to 6 months required by traditional methods, as demonstrated at St Luke's Church, where drone technology saved over 88 days of inspection time.

Vantage UAV Drone Services

ARPAS-UK The UK Drone Association

Building Inspection and Maintenance

£4.2 Million
Cost savings annually

AT A GLANCE

DETAILS

Company: Yorkshire housing, South Lakes Housing & Nottingham city homes
Location: United Kingdom
Industry: Construction
Activity Type: Inspection and surveying auditing

HIGHLIGHTS

- Drones saved up to 60% on inspection costs
- Completing inspections in hours rather than days
- Improving safety by avoiding dangerous heights.

"under £10K was spent on drone inspections, and early assessment by Yorkshire Housing has predicted a greater than ten-fold return on investment by substituting extensive roof repairs and replacements with well-informed targeted maintenance." - CPC

ISSUE

Traditional building inspections often involve scaffolding, cherry pickers, or other heavy machinery to access hard-to-reach areas such as roofs and upper surfaces. These methods are expensive, disruptive to residents, and pose safety risks to workers. In the example of South Lakes Housing, responsible for multiple estates, which includes complex structures such as riverside flats and five-story buildings, scaffolding would have been particularly cumbersome, time-consuming, and costly. Additionally, Yorkshire Housing, managing over 18,000 properties and Nottingham City Homes found that repeated inspections using scaffolding were unable to solve persistent issues.

SOLUTION

Drones offer a fast, efficient, and cost-effective solution. Vantage UAV completed full estate inspections at South Lakes Housing in 6 hours, with data processed within 24 hours. Yorkshire Housing also reduced inspection times and costs using drones, while a drone inspection in Nottingham identified roof damage, solving a damp issue in a terraced home.

BENEFITS

Cost Savings

Yorkshire Housing and South Lakes Housing saw up to 60% savings on inspection costs compared to traditional methods, while Nottingham City Homes realised a potential annual saving of **£4.2 million**.

Safety

Drones eliminate the need for workers to operate at dangerous heights, improving safety and reducing the risk of accidents.

Efficiency

Drone inspections dramatically reduced timeframes, with entire estates inspected within a few hours and data processed in less than 24 hours. Traditional inspections would have taken days or weeks.

Vantage UAV Drone Services · Nottingham City Homes · Yorkshire Housing · Southlakes Housing · ARPAS-UK The UK Drone Association

Decommissioning Nuclear Sites

Removes workers

from hazardous environment

while saving £5M p.a.

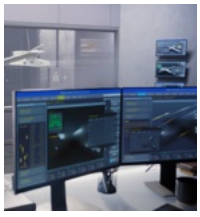
AT A GLANCE

DETAILS

Company: Sellafield Nuclear Site
Location: United Kingdom
Industry: Nuclear Management
Activity Type: Mapping

BENEFITS

- Using UAVs over traditional methods help save around **£5 million** per year.
- Over 200 flights conducted, removing the need to put workers at risk.



ISSUE

Taking apart the old nuclear site at Sellafield is tricky because traditional inspection methods pose significant risks to personnel. There was a critical need for a safer and more efficient way to conduct inspections and map areas, especially where there might be lots of harmful radiation, to ensure safety and accuracy without exposing workers to danger.

SOLUTION

Sellafield Ltd has embraced the future of safety and efficiency by deploying cutting-edge drone technology. Engineers plan routes, allowing the drone to zip around obstacles and gather high-resolution images, which are then transformed into precise 3D models. Equipped with radiation sensors, these drones detect hazardous hotspots, ensuring employees are deployed only when necessary, significantly reducing exposure to danger. This innovative approach saves time and money, streamlining inspections that traditionally required extensive preparations and higher costs. Each successful flight not only enhances safety but sets a new standard for efficiency in the industry, showcasing Sellafield's commitment to pioneering advancements in nuclear site management.

BENEFITS

Cost Savings

Using UAVs over traditional methods help save around £5 million per year.

Improved Efficency

Equipped with advanced sensors, drones provide high-resolution images and precise 3D models. This enables engineers to make informed decisions quickly, improving overall efficiency and setting a new standard for the industry.

Enhanced Safety

Drones navigate hazardous areas, capturing data without putting human lives at risk. This reduces the need for employees to enter dangerous environments, ensuring their safety.

*According to Sellafield representative Via Flyability.com

Sellafield Ltd

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Train Track Inspection

£1 Million
Network Rail savings annually*

AT A GLANCE

DETAILS

Company: Network Rail
Operator: Plowman Craven
Location: UK
Industry: Transport
Activity type: Inspection

BENEFITS

- £1 Million savings annually
- +/- 5mm accuracy
- Elimination of 6 week lead time
- Risk reduction with workers off the tracks

ISSUE

Regular inspection of train tracks in the UK is essential to identify potential compromises caused by factors such as vegetation growth and erosion. Traditional inspection methods disrupt services and pose safety risks.

SOLUTION

Plowman Craven provides a drone-based surveying solution that operates 20 meters above tracks with +/- 5mm accuracy, meeting Network Rail's accuracy requirements without interrupting train services or compromising safety.

Plowman Craven says:
“Safety is of paramount importance and is driven by Network Rail’s own “boots-off-ballast” approach. The Vogel R3D system virtually eliminates track access, but in doing so also provides a significant reduction in programme time. A typical 6-week lead time for track possession can be avoided, leading to faster project deployment and completion, with the associated reduction in risk and cost.”

BENEFITS

Cost Savings
Network rail estimate savings of £1 million annually, from the continued service to reduction in on site staff.

Time Savings
No need to interrupt train service for track inspection.

Safety improvement
On service lines that cannot afford closures, a team of engineers must walk the tracks alongside live tracks to carry out inspects. Replacing this hazard by removing the human factor is the best way to reduce the risk to life.

*According to PwC report “Skies without limits v2”

Plowman Craven

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Water Pipe inspection

70% accuracy
in water leak detection

AT A GLANCE

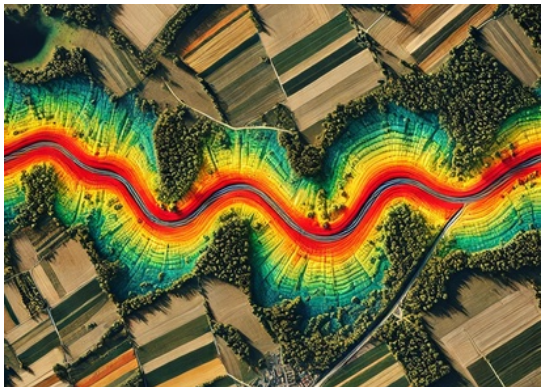
DETAILS

Company: Team UAV
Location: United Kingdom
Industry: Water Management
Activity Type: Drone Leak Detection & Environmental Monitoring

BENEFITS

- 75% Accuracy in Leak Detection
- Tenfold Increase in Efficiency
- Faster response times and more water saved.

"Our leak detection method using drones has a 75% accuracy rate and increases efficiency by a factor of ten. Drones have not only provided a new and innovative approach to leak detection, but they have increased safety of personnel compared to more traditional methods such as walking the route whilst searching for leaks."



*According to PwC report and Team UAV website

ISSUE

In the UK water industry, there's a significant challenge with water leaks, leading to the loss of nearly three billion litres daily. Traditional leak detection methods are inefficient and time-consuming, requiring extensive manual effort and posing safety risks to personnel. This results in considerable water wastage and increased operational costs.

SOLUTION

To address this, drone technology equipped with thermal and multispectral sensors is being deployed. These drones efficiently and accurately identify leak locations, significantly reducing manual search efforts and enhancing safety. This approach, pioneered by Team UAV, utilises advanced algorithms and aerial imaging to streamline leak detection, leading to increased operational efficiency and reduced environmental impact.

BENEFITS

Cost Savings
Streamlines the detection process, reducing the need for manual labor.

Improved Safety
Reduces risks to personnel by limiting the need for on-ground inspections.

Enhanced Efficency
Drones equipped with advanced sensors significantly improve the accuracy of leak detection, pinpointing exact locations and minimizing the time spent on searching for leaks.

Environmental Benefits
Lowers carbon emissions, saves more water and improves ecological footprint compared to traditional methods.

DRONE SERVICES TEAMUAV
RANKED GLOBAL TOP 10 DRONE SERVICE PROVIDERS

ARPAS-UK
The UK Drone Association

Live flare stack Offshore Inspections

£4 Million saved daily*

as the shutdown, traditionally required for rope access, wont be necessary

AT A GLANCE

DETAILS

Company: Flylogix and Innovair
Location: United Kingdom
Industry: Oil and Gas
Activity Type: Offshore Inspections

BENEFITS

- £4 Million saved daily
- Flare stack operations don't need to be paused during inspection
- 98% CO_2 emission reduction compared to traditional methods.
- Zero risk of personnel in danger from inspections due to full replacement through drones.

*According to PwC report

"Unmanned aviation has the potential to radically change how we operate in remote environments. By removing people from high-risk areas and operations it increases safety and efficiency. It can reduce carbon emissions by up to 100 times (compared to manned vehicles) and is much more cost-effective overall than the methods used to date for things such as offshore monitoring and maintenance. Every operation is piloted from the shore and monitored centrally, with real-time data and insight."

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ISSUE

Traditional inspection methods for live flare stacks on offshore platforms are both complex and risky. Typically, these structures are inspected by workers using rope access techniques, which means they have to physically climb high structures to carry out the inspection. This not only requires shutting down operations, which is incredibly costly, but also puts the workers at significant risk of accidents due to the height and the extreme heat of the flares. Furthermore, because these flare stacks are part of a system that continuously burns off flammable gas, any interruption to their operation, like the one necessary for rope inspections, can lead to a buildup of gas, posing additional safety risks and potential financial losses. In essence, traditional methods are slow, expensive due to the downtime required, and carry inherent risks to human safety.

SOLUTION

Drones are now being employed by companies for offshore inspections, enabling pilots to operate safely from shore while drones perform complex data collection tasks over the sea. Flylogix and Innovair are conducting BVLOS flights for methane monitoring over North Sea platforms

BENEFITS

Cost Savings

Drone inspections of live flare stacks save up to £4 million a day by avoiding operational shutdowns, reducing the financial burden of maintenance

Improved Safety

By using drones for inspections the need for human workers to engage in high-risk activities is significantly reduced.

Enhanced Efficency

Over 20 flights per platform in two weeks, reducing inspection times.

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Wind Turbine Inspections

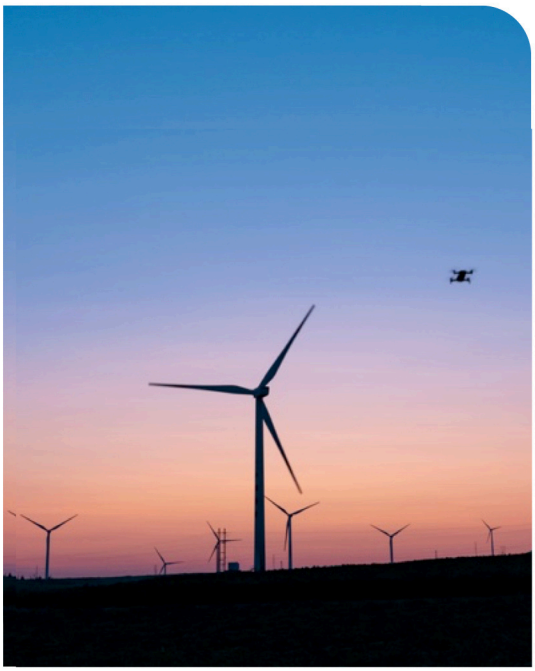
25% Cost savings
while also removes workers from working at height risk

AT A GLANCE
DETAILS

Company: Roavr group & Airborne Robotics
Location: United Kingdom, Scotland
Industry: Wind
Activity Type: Inspection and surveying, Offshore and inland

BENEFITS

- 25% Cost savings compared to traditional methods
- Zero risk of falling as inspectors stay on the ground
- More than triple effiency of turbines inspected per hour



ISSUE

Traditional wind turbine inspections involve technicians physically climbing turbines to check for damage, a method that is time-consuming, labour-intensive, and risky, particularly in harsh weather. This process typically covers only 2-5 turbines per day and may result in incomplete inspections due to limited access to certain blade areas.

SOLUTION

The deployment of drones for wind turbine inspections has significantly improved the efficiency and safety of the process. Companies like Roavr Group and Airborne Robotics have pioneered the use of sophisticated drones equipped with high-resolution cameras and sensors to autonomously inspect turbines. These drones can quickly and accurately capture detailed data from all parts of the turbine blades, even those that are hard to reach. They are capable of inspecting 10-12 turbines per day. This drastically reduces the time and cost involved in inspections, while also enhancing safety by keeping personnel on the ground.

BENEFITS

Cost Benefits

Pilot-operated drone inspections cost around $300-$500 per turbine, or about 20%-25% of the cost of manual inspections which are estimated to cost up to $3,000 per turbine.

Inspection Efficiency

Current drone inspections can cover 10-12 turbines per day, with each blade inspection taking just 4-9 minutes. This is much faster than manual inspections, which typically only cover 2-5 turbines per day. Autonomous drone operations could increase coverage to 15-20 turbines per day.

Safety

Automated drone inspections allow personnel to stay on the ground, which enhances safety, especially in adverse weather conditions.

ROAVR | GROUP

AIRBORNE ROBOTICS

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Emergency Response

86 Lives saved

From drone enhanced missions

AT A GLANCE

DETAILS

Company: Maritime and Coastguard Agency
Location: UK
Industry: Emergency Services
Activity type: Search and Rescue

BENEFITS

- 86 lives saved from drone enhanced missions
- More than £50 million savings annually

"To assist with the development of the regulation and airspace, the MCA has, and continues, to work closely with the CAA and has run several demonstrations and trials, utilising large persistent drones and smaller drones, to ascertain the potential value for operations as well as to assist in the development of the regulation. Manned unmanned teaming is critical to SAR operations and the MCA has been working with its current SAR helicopter provider, Bristow Helicopters Limited, to trial the use of a rotary wing drone in conjunction with the SAR helicopters. The MCA took advantage of this capability during summer 2021 to perform proactive beach patrols of North Wales"

*According to PwC report "Skies without limits v2"

ISSUE

The public and defence, health, and education sectors face challenges in efficiently conducting emergency services, infrastructure inspections, and search and rescue operations. Traditional methods are sometimes not fast, comprehensive, or safe enough. There is a particular need for enhanced aerial perspectives, especially in hard-to-reach and remote areas.

SOLUTION

Drones were introduced, offering aerial insights for tasks like search and rescue and flood assessments. With thermal sensors, they detect body heat, especially in low visibility. The Maritime and Coastguard Agency (MCA) also explored BVLOS and VLOS drones, complementing traditional helicopter operations.

BENEFITS

Societal Benefits

MCA have reported more than 86 lives saved with direct impact from drones.

Cost Savings

The Maritime and Coastguard Agency, an emergency service specialising in search and rescue, saves more than £50 million annually through operational enhancement using drones.

Advanced SAR Operations

An eye in the sky to quickly locate missing persons

Risk Reduction

Deploying drones in challengeing weather instead of teams on boats or helicopters

Maritime and Coastguard Agency

ARPAS-UK The UK Drone Association

Flood Management

Live feed streamed within 6 hours of incident starting

AT A GLANCE

DETAILS

Company: Environment Agency
Location: England
Industry: Environmental and emergency management
Activity type: Flood monitoring and response

BENEFITS

- 24/7 365 days drones response service
- £4.6 Billion estimated in averted damages

"24/7, 365 days per year drone response service, which aims to mobilise and stream a live video feed within six hours of an incident."

ISSUE

The UK faces significant flooding challenges, with notable damage in 2019/20 amounting to £333 million.

SOLUTION

The Environment Agency (EA) employs a 24/7 drone response service, with operations mainly outsourced to RUAS (Remote Unmanned Aircraft Systems).

BENEFITS

Enhanced Decision-Making

Drones provide real-time insights to decision-makers, improving the efficiency and effectiveness of flood response actions.

Improved Emergency Management

Live drone footage is critical for managing emergencies, such as monitoring temporary barriers at locations like Ironbridge, to ensure timely and appropriate responses.

Future Planning and Defence Optimisation

Drone data is valuable for shaping current and future flood defences, aiding in planning, modelling, and, when combined with AI, predictive models, IoT sensors, and big data, is expected to further optimize flood response strategies.

*According to PwC report “Skies without limits v2”

Fire and Rescue

Life Saved

Within first 6 weeks drone enhanced missions

AT A GLANCE

DETAILS

Company: Shropshire fire and Rescue services & London fire brigade
Location: United Kingdom
Industry: Emergency services
Activity Type: Aerial Reconnaissance, Search and Rescue, Hotspot Detection, Hazard Identification.

BENEFITS

- Reduce risk to personnel by utilising drones during operations where possible.
- Saving costs by enhanced data for more accurate decision making
- Better data feed during high stakes situation

ISSUE

Traditional firefighting and rescue operations pose significant challenges. Firefighters often enter hazardous areas with limited information, increasing risks. Resource deployment is inefficient without real-time data, and slow manual information gathering delays decision-making. Large-scale incidents further expose the shortcomings of traditional methods in providing adequate oversight and information.

SOLUTION

Drones significantly enhance firefighting by offering real-time aerial views that boost safety and decision-making. For Shropshire Fire and Rescue and the London Fire Brigade, they streamline hazard assessment and resource deployment, making responses to large-scale emergencies quicker and more effective.

“On its first day in action, the team was dispatched to a 15-pump fire at a leisure centre under renovation. Tasked with confirming the presence of cylinders on the roof, they deployed the drone, which quickly identified the objects as rolls of asphalt, not hazardous cylinders. This timely information enabled the Incident Commander to avoid declaring a false alarm, preventing unnecessary resource deployment and demonstrating the drone's immediate value.”

BENEFITS

Cost Savings

Utilising real-time data to strategically allocate and manage firefighting resources, reducing unnecessary expenses.

Enhanced Safety

Identifying heat sources within structures or wildfires to reduce risks and ensure more targeted, safer firefighting efforts.

Enhanced Situational Awareness

Drones offer real-time aerial views and thermal imaging, enabling commanders to assess fire scenes, detect hotspots, track fire spread, and locate individuals trapped in smoke or debris.

Shropshire Fire and Rescue Service

LFB LONDON FIRE BRIGADE

ARPAS-UK The UK Drone Association

Search and Rescue

1000+ people saved

From drone enhanced SAR operations globally*

AT A GLANCE

DETAILS

Company: Leicestershire Search and Rescue
Location: United Kingdom
Industry: SAR
Activity Type: Surveillance, Thermal Imaging

BENEFITS

- Faster response and rescue time
- Increased safety for volunteers by preventing them from entering unknown sights before surveying
- Cost savings and less volunteer dependent

"The organisation has been operational for over 10 years and has earned the Queen's Award for Voluntary Service, the highest honour for volunteer groups in the UK. This recognition reflects their exceptional commitment to serving the community."

ISSUE

Leicestershire Search and Rescue (Leicestershire SAR) is a volunteer group aiding Leicestershire Police across 965 square miles. In 2020, volunteers spent over 8,000 hours on 246 events. Traditional search methods were slow and risky, especially in tough conditions like darkness or dense terrain, often taking hours or days to find missing persons, increasing risks for both the missing and the rescue teams.

SOLUTION

Leicestershire SAR intergrated a drone to enhance search operations. With a high-resolution camera and thermal imaging, the drone quickly conducted aerial surveillance, detecting heat signatures in low visibility, like at night or through dense foliage. It provided real-time data, improving situational awareness and identifying hazards before teams entered, making it a crucial tool in diverse terrains and rescue missions.

BENEFITS

Cost Savings

The drone's effectiveness in quickly locating missing persons allowed the team to use fewer resources, making operations more efficient and enabling volunteers to be stood down more quickly.

Improved Safety

The drone provided a clear, real-time view of the terrain, identifying potential hazards and ensuring that rescue teams could approach dangerous areas with caution, thereby reducing the risk to team members.

Efficiency

The thermal imaging capability of the drone allowed for the detection of missing persons in challenging environments, such as at night or in areas with dense foliage, where traditional search methods would struggle.

*According to DJI

COPTRZ™

LEICESTERSHIRE SEARCH & RESCUE

ARPAS-UK The UK Drone Association

Farming Crop Pest Solutions

Double the Seeding Rate

Compared to traditional methods

AT A GLANCE

DETAILS

Company: Auto Spray Systems
Location: United Kingdom
Industry: Agriculture/Agri-tech
Activity Type: Seeding/Spraying

BENEFITS

- No tread or soil compaction.
- Double the seeding speed, from 6 to 12 hectare per hour.
- 100% reduction in scope 1 CO2 emissions.

ISSUE

A British farm faced a significant challenge with their oil seed rape crop, which had been heavily decimated by flea beetles. The crop had not grown sufficiently due to adverse weather conditions, including dryness and heat, resulting in poor plant density and a risk of severe yield loss.

SOLUTION

To tackle the yield loss, Autospray Systems used a drone to re-plant the affected areas. Re-planting helped fill in the gaps left by the damaged crops, ensuring a more uniform plant density and a healthier overall crop. This approach increased the chances of a successful harvest despite the initial damage caused by the flea beetles.

Using drones for re-planting provided a significant advantage over traditional methods. Unlike tractors, drones do not tread on the healthy parts of the crop, preventing further damage. The drones could navigate the fields without causing soil compaction or creating ruts, which often happen with heavy machinery. This allowed the new seeds to be sown efficiently and without harming the existing healthy plants.

BENEFITS

Cost Savings

Negating the disastrous consequences of the flea beetle attack helped the farmer avoid a hefty cost associated with harvesting a partial field.

Improved Efficency

Replanting using a drone completely eliminates tread damage, improves seeding spread consistency and improves work rates from around 4-8 hectares per hour (tractors) to 12 hectares per hour (drones).

CO2 Benefits

Fully electric drones have zero emissions (Scope 1) in comparison to traditional ICE engine tractors.

AUTOSPRAY SYSTEMS

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Peatland Restoration

Reduction of CO2 emissions

by 50 tonnes per hectare yearly

AT A GLANCE

DETAILS

Company: SEAD Artists
Location: UK
Industry: Agriculture
Activity Type: Seeding, Paludiculture

BENEFITS

- Restoring peatland prevents significant carbon emissions
- Restoring peatland also has significant flood risk reduction effects through improved water retention
- Commercial opportunities of crops which can grow on wet land

ISSUE

Peatland degradation has led to the release of vast amounts of carbon dioxide into the atmosphere. Restoring these ecosystems is essential for reducing greenhouse gas emissions and combating climate change. Traditional methods of rewetting and reseeding degraded peatlands are labor-intensive and challenging due to the often remote and waterlogged nature of the terrain. This limits the scalability and speed of restoration efforts.

SOLUTION

The "Drone Re-peat" project leverages drones to restore degraded peatlands by reseeding them with Typha latifolia, a plant well-suited to wet environments. In addition to ecological restoration, the project encourages the cultivation of commercially viable crops like soft berries and sphagnum moss on peat boglands, creating economic incentives for landowners and promoting sustainable land use.

BENEFITS

Commercial Viability

The introduction of crops such as Typha latifoliate, soft berries, and sphagnum moss provides sustainable agricultural opportunities, turning degraded blogland into productive areas. These crops can be harvested for commercial purposes, offering economic incentives to landowners and farmers.

Environmental Restoration

By rewetting and reseeding degraded peatlands, this project restores the peatland's ability to act as a carbon sink, helping to mitigate climate change.

Sustainability Goals

Peatland restoration is critical for the UK to meet its 2030 sustainability goals, particularly in carbon reduction and biodiversity preservation.

SEAD Artists

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Stockpile Auditing & Volume Estimating

50% faster
Than traditional quarry surveys

ISSUE

The main challenge in the auditing and accounting profession is adapting to technological advancements and stakeholder needs. Specifically, there's a need for auditors to accurately verify volumes reported by clients, for stockpile auditing (e.g., coal, biomass, aggregates).

SOLUTION

The solution is a tech-enabled auditing approach involving the use of drones. This method involves capturing an independent volumetric dataset via drone at the same time the client uses their counting methods. The auditor then compares the independently collected data with the client's reported volumes, ensuring accuracy and completeness.

AT A GLANCE

DETAILS

Company: PricewaterhouseCoopers
Location: Global
Industry: Professional Services
Activity Type: using drone technology for efficient stockpile auditing

BENEFITS

- Traditional quarry surveys can take a whole day whereas using a drone only takes 1/2 a day.
- Safer as the team needs to be in the field for less time

"PwC acknowledges the significant role of drone technology in aligning with International Auditing Standards and enhancing audit quality. Drones have been crucial in safely and accurately measuring inventory volumes, especially in challenging environments like mining sites. This technology is becoming an integral part of PwC's future inventory audit approaches."

BENEFITS

Continuous operations
Client operations remain uninterrupted as drones collect data from above

Improved Safety
Data collection from a safe distance reduces health risks.

Enhanced Efficency
Drones capture a vast number of data points, enhancing measurement precision.

Scale up benefits
Auditors can access accurate digital models remotely, facilitating global operations.

*According to PwC report

Site Security Management

3 times faster to patrol 13 acre site than traditional guards

AT A GLANCE

DETAILS

Company: Severn Trent Water, Dovecote Park
Location: UK
Industry: Site Management
Activity Type: Surveillance

BENEFITS

- Faster patrol times increasing security and efficiency
- Automated drone surveillance allows for lower costs on personnel
- Increased safety for personnel as surveillance is conducted remotely

ISSUE

The key challenge at Dovecote Park and Severn Trent Water was the inefficiency and safety risks associated with manual security patrols and inspections, particularly in high-risk areas. Additionally, there was a pressing need to enhance security coverage, reduce operational time, and lower the carbon footprint in site management activities.

SOLUTION

The solution was to integrate drone technology into site management. Drones automated security patrols and inspections, offering real-time surveillance with thermal cameras, reducing the need for manual inspections in dangerous areas, and significantly improving safety, security, and operational efficiency, while also lowering the carbon footprint.

BENEFITS

Environmental Benefits

For Severn Trent Water, the automation of site management activities contributed to a lower carbon footprint, aligning with their environmental responsibility goals.

Improved Security

Drones provided comprehensive and continuous site surveillance, ensuring that security threats were detected and addressed promptly.

Increased Efficiency

Both Dovecote Park and Severn Trent Water experienced a significant reduction in the time required for site inspections and security monitoring, leading to improved operational efficiency.

COPTRZ™ DOVECOTE PARK SEVERN TRENT ARPAS-UK The UK Drone Association

Security Audits

30% Cost reduction

of security audits compared to traditional methods

AT A GLANCE

DETAILS

Company: Doncombe Security Consultancy
Location: UK
Industry: Security
Activity Type: Auditing, Surveillance

HIGHLIGHTS

- Risk reduction by getting personnel out of harms way
- Faster audits allow for better resource allocation
- More efficient working allows for increased productivity

ISSUE

Traditionally, security audits require multiple personnel to conduct thorough perimeter checks, which are both time-consuming and labour-intensive. Inspections of buildings at height pose significant safety risks and often involved the use of expensive scaffolding. In addition, these audits require extensive risk assessments beforehand due to the dangerous nature of the environments. These challenges make the process slow, costly, and hazardous, with significant manpower and resources dedicated to each audit.

SOLUTION

The introduction of drones transformed Doncombe Security's operations, reducing audit times from hours to just 20-30 minutes. Drones eliminated the need for scaffolding and cut personnel requirements, with a single operator covering large areas. High-resolution imagery enabled detailed, safe inspections from a distance. This shift reduced safety risks and improved efficiency, with comprehensive training from Coptrz ensuring safe and effective drone use.

BENEFITS

Cost Savings

By reducing the need for multiple personnel and expensive equipment such as scaffolding, Doncombe Security cut audit costs by 30%, making operations more financially efficient.

Improved Safety

Drones allowed inspections to be conducted from a safe distance, eliminating the need for personnel to enter dangerous areas, which significantly reduced safety risks.

Increased Operational Efficiency

Drone technology cut audit times, enabling quicker completion of security checks and allowing the company to handle a larger volume of audits with fewer resources.

COPTRZ™

ARPAS-UK The UK Drone Association

Drone Delivery

Over 200,000

Successful Deliveries across USA, Finland and Ireland

AT A GLANCE

DETAILS

Company: Manna
Location: Ireland, Finland & USA
Industry: Food and Retail
Activity type: Last mile delivery

HIGHLIGHTS

- 200,000 flights
- 17,000 customers

"...The local merchants working with Manna can now provide the **45,000 residents** (13,000 homes) in our operating area with a better at-home delivery experience than the biggest logistics-focused online retailers on the planet. Better still, as most of our operations have a flight time of just **3 minutes** we have seen new customer behaviour around use cases like coffee delivery, and highly perishable products. All local, offline businesses become online with drone delivery. This increases overall demand, and therefore local businesses become more profitable, and jobs are created in the local economy. Already we have delivered to **40%** of the homes in our operating area, and have a significant customer cohort of over **50 deliveries** each – in only **12 months** of operation."

*According to PwC report "Skies without limits v2"

ISSUE

The convenience and restaurant businesses faced challenges in efficiently conducting last-mile deliveries within their locality. Traditional methods like cars, bikes, and motorbikes are commonly used for last-mile delivery, but these methods often have limitations in terms of speed, cost, carbon emissions, and safety.

SOLUTION

Manna, an Irish-based company, introduced an innovative solution by leveraging drone technology. Manna enables local businesses to integrate their 3rd party software into an app that receives and processes orders. These orders are then delivered using drones equipped with biodegradable tethers. The tether ensures safe lowering of packages, after which it detaches, and the drone returns to base. This system allows drones to operate at a distance, reducing potential risks and disturbances.

BENEFITS

Extensive Operational Reach

Completed over 200,000 flights, serving 17,000+ customers across three locations, covering around 30 miles of residential area.

Business Growth and Expansion

Enabled non-digital businesses to expand their customer reach and grow, utilising Manna's app.

Eco-Friendly Delivery Solution

Provides an emissions-free solution, benefiting both businesses and customers.

Innovative Delivery Technology

Revolutionises food and medicine delivery with innovative drone technology, offering sustainable, efficient last-mile deliveries while minimising carbon emissions and improving service quality.

MANNA

ARPAS-UK The UK Drone Association

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INFORM & INSPIRE DECISION MAKERS ACROSS END-USER INDUSTRIES