

A close-up photograph of a white drone with a green light, positioned to inspect a large, white-painted steel truss structure. The drone is suspended in the air, and its light illuminates the surrounding metal beams. The background is dark, suggesting an indoor industrial setting.

FACILITY INSPECTIONS

Are Drones Ready for the Challenge?

Can airborne robotic platforms truly pave the way for
streamlined facility management?

Facility Inspections Today - And the Drone Question

Planned or unplanned, downtime is a nightmare for facility management. If a defect is spotted, the investigative inspection might grind work to a halt until the assessment is complete - to say nothing of maintenance efforts.

Inspections are time-consuming, unpredictable, and under immense pressure to minimize disruption. Some require work at height, such as in the roofspace, or MEWPs to check on stacked assets in storage areas. Getting an overview of the situation may not be possible with work going on around it, stopping all nearby activity and driving up the costs while teams wait to go back to normal operations.

A modern facility should take advantage of new solutions to ease this burden on managers, inspectors, and site workers. Drones are being presented as that solution. Capable of visual inspections, 3D modeling, and even gathering Scan to BIM data, they're unleashing a new way to complete facility inspections and empower better building management. Drone manufacturers promise safer, more accurate data collection without compromising data quality or accuracy. They also claim drones will bring peace of mind to facility managers, balancing access, downtime, and the drive for digitization. This eBook dives into how that's possible and what it means for the future of facility management.



Drones used to be just tools for epic holiday photography. Today, they represent a multi-billion dollar industry with drone solutions rapidly being adopted by some of the biggest names in large facility management. Could drones truly emerge as the industry's next big break?

How do Drone Inspections Work?

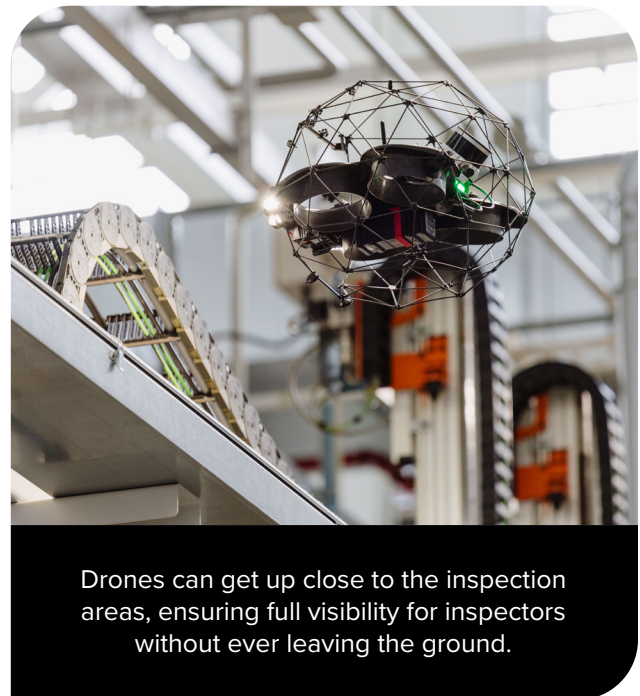
A drone inspection is the collection of various types of data with an unmanned aerial vehicle (UAV). Sometimes referred to as remote inspection technology, drones offer quick, easy access to areas at height and, with the right UAV, confined spaces.

10 years ago, drones were applauded if they achieved a few minutes of flight with semi-decent photography. Nowadays, specialized UAVs are transforming asset management across sectors from wastewater to transportation, offering quick, accurate data collection for critical decision-making. They've come a long way and adoption is only going to grow.

Here's an overview of what drone inspections offer:

- ✓ **Unparalleled Access** → Drones can be deployed underground to assess basements, into confined spaces like roofs, and to areas at height that can't easily be reached by people.
- ✓ **Guaranteed Quality Data** → 4K video, centimeter-accurate LiDAR scans, thermal scans, and even ultrasonic thickness measurements can now all be gathered with drones. Multiple forms of data can be captured in the same flight, saving time while doubling the data available.
- ✓ **Limited Downtime** → Industrial inspection drones are quick to deploy and provide qualitative results in a fraction of the time taken by traditional methods. The flexibility of the technology makes it possible to use them for a variety of facility inspections, from warehouses to construction projects.

Drones are varied too - different models offer different capabilities. Some have docking systems or tether power units for unlimited flight time, whereas others are rolling out autonomy features and AI to augment the drone's self-piloting and defect recognition capabilities. Whether you're inspecting a roof or flying inside a chimney, there's a drone that can make the job easier and safer for your team.



Drones can get up close to the inspection areas, ensuring full visibility for inspectors without ever leaving the ground.

The benefits of drone inspections for infrastructure are widely recognized and building/facility management is just the latest area of adoption. In fact, drones are already winning awards related to infrastructure and construction on the global stage. So, how does it work for facility and building inspections?



NEWS ARTICLE

Drone Wins Construction Safety Award in Hong Kong

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Where Do Drones Fit in Building Inspections?

Between enhanced access, accurate data, and improvements to overall efficiency, drones offer substantial advances in infrastructure management technology.

The 3 biggest challenges facing facility inspectors today would be **safety, accuracy, and downtime**. Here's an explanation of each issue - and how drones can help!

Safety

Facility inspections can be in a variety of locations, from ventilation systems to fire escapes. In some cases, access requires confined space or work at height. These environments present risks to inspectors that have to be carefully assessed - and in certain examples, limited access requires demolition work or extremely expensive, cumbersome equipment.

How can drones help?

1. Drones can be flown at height to provide quick access to roofspaces, chimneys, and between large assets.
2. Drones are small and nimble, fitting into different types of spaces and offering flexibility to pilots. This means they can be used multiple times, rather than as a one-off solution and providing a viable solution with proven ROI.
3. Drones can fly in poor visibility, hazardous gases, and highly dusty environments without risk to the equipment. Where previous access required custom PPE, drones can be deployed without risks to people.

Accuracy

In many facilities, inspections are only completed once every few years and rely on photos, descriptions, and diagrams. This is prone to human error and can make communication between teams difficult. This in turn slows down decision making and maintenance efforts, contributing to prolonged downtime.

How can drones help?

1. Modern drones create 3D models of their environments, providing a digital twin of the asset that gives inspectors the full picture of an inspection area, rather than a snapshot.
2. Drones offer multiple types of data collection, including LiDAR, videos, photos, thermal imagery, and even ultrasonic thickness measurements. This empowers inspectors with more information - all collected simultaneously.
3. Digital data can be stored and revisited at anytime, leading the way to accurately tracking the condition of roofspaces, racking, and industrial equipment. This feeds asset life cycle predictions and streamlines the deployment of maintenance work on a preventive basis, rather than reactive - a practice that can reduce maintenance costs by as much as 30%.

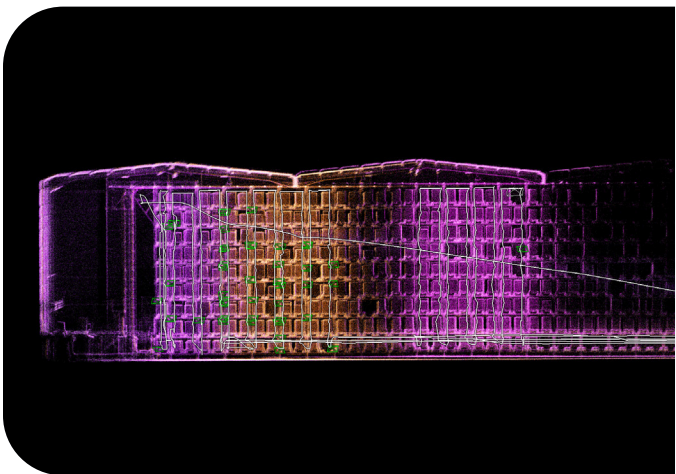


Downtime

From cement factories to sewers to warehouses, prolonged downtime is a disaster. It puts pressure on teams across departments and adds stress to inspections. For this reasons, many facilities and infrastructure managers turn to as-needed inspections that have to be painstakingly planned without any room for error. It requires surge teams to support inspectors, quickly respond to issues, and drives costs with any delays. Many assets must be inactive during both data collection and maintenance, making the entire process even more costly and time-consuming.

How can drones help?

1. Where downtime is painfully slow, drones can streamline inspections. Quick to deploy, with no preparation like scaffolding or MEWPs, drones can be airborne in minutes and collect large quantities of data quickly. This speeds up inspections and brings inspectors to the analysis stage more quickly.
2. Thanks to the ease of access, accuracy, and dynamic nature of drone flights, it's possible to complete inspections more frequently. The result for inspectors is the power to gather more data with minimal disruption, giving better oversight and awareness of a facility's condition and close tracking of suspected defects.
3. Drones cause minimal disruption to surrounding operations - in fact, drone inspections can often be completed without any asset shutdown or reduced nearby work. This again reduces the overall complexity of inspections while still providing all of the necessary data - a clear saving for both time and money.



CASE STUDY

Drone Inspects 9,200 Joints in a Warehouse In 5 Days

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The Rise of Drones for Facility Management

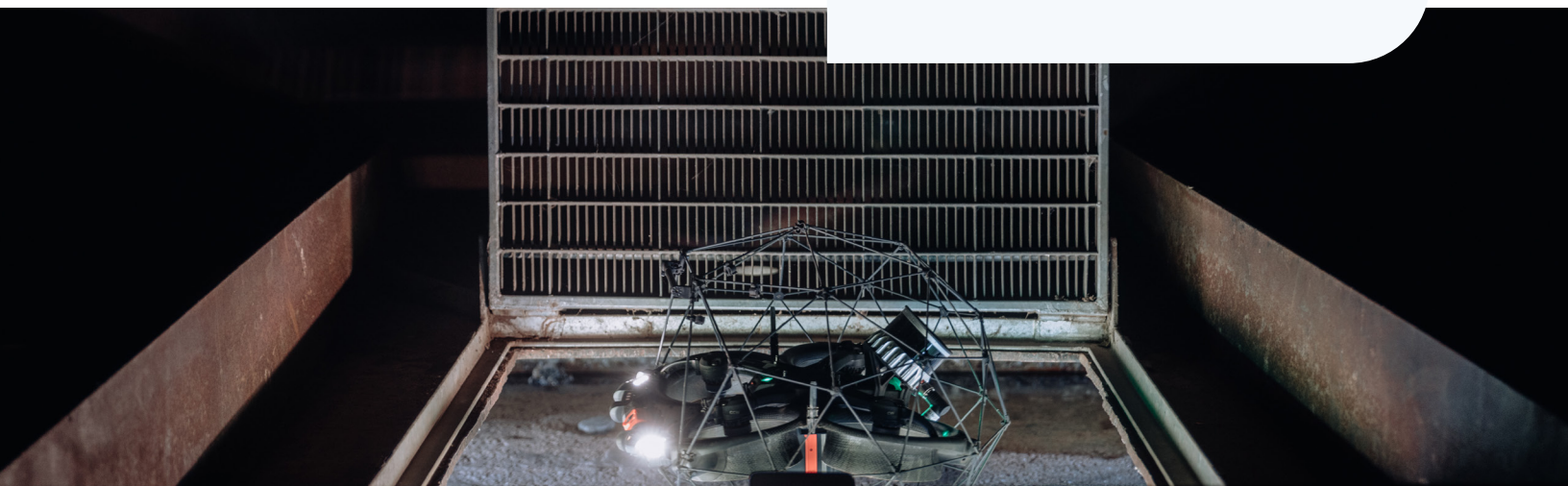
Drones are constantly evolving - and with the development of AI and drone automation features, it is now possible to do more than ever with remote technology.

For Facility Management, drones are now offering longer flight times, varied data collection, and unique solutions, like drone-in-a-box, that empower safe, remote inspections. The variety of drones on the market provides inspectors with ample opportunities to choose the right drone for their site. Whether it's to inspect confined spaces, capture steel thickness measurements, or 3D scan an entire site for Scan to BIM, drones are here to help.

Drones for complex inspections are not a fad or buzzword that will fade after a few years - with industry giants already adopting this technology, it's clear that UAVs will be part of bringing facility inspections and building management into the digital age. Will you join the movement, or fall behind?



Learn more about drones for facility inspections on our website!



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