

VOLIRO



Proven ROI Impact of Drone-Based Inspections



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How Advanced NDT Technology Deliver Rapid Payback



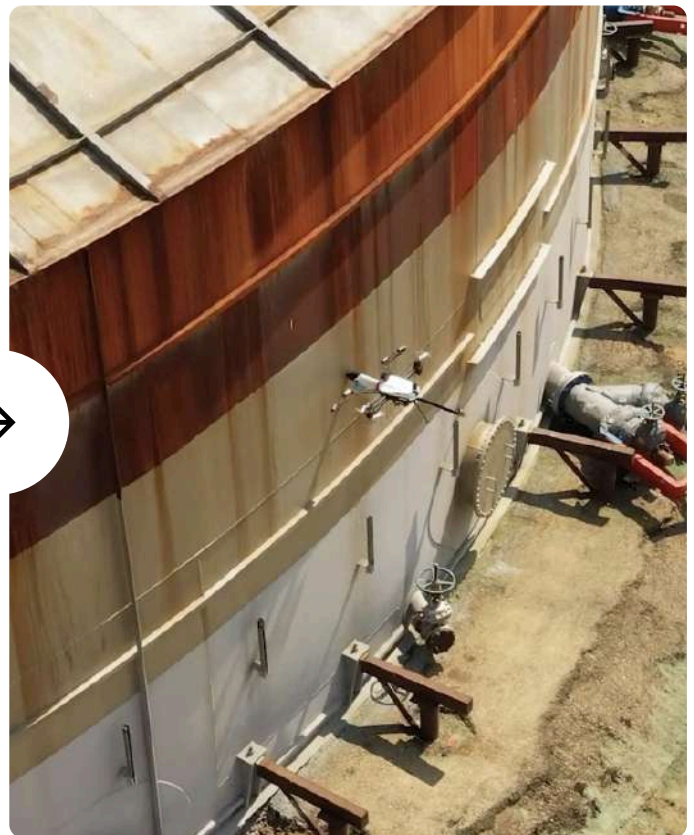
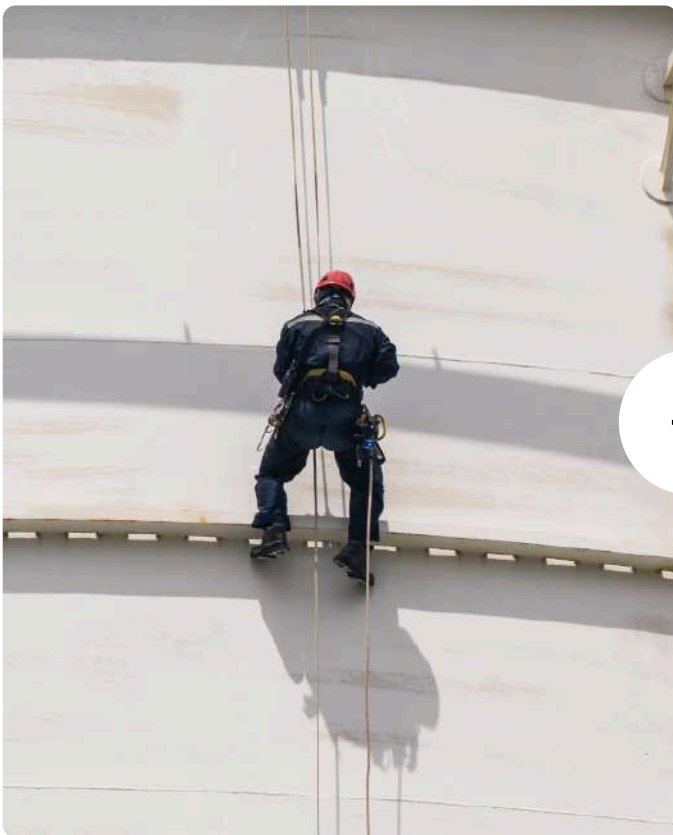
Evolving Demands Require More Efficient, Scalable Inspection Strategies

As infrastructure ages and operating conditions become more complex, inspection strategies must evolve. Traditional methods—while proven—often introduce unnecessary cost, delay, and risk. That's why forward-looking teams are turning to drone-enabled NDT.

By collecting inspection data more often and more efficiently, drone-based inspections reduce downtime, eliminate temporary access structures, and shrink crew requirements.

The result: safer operations, lower total cost of ownership, and significantly improved return on inspection investment.

Across industries, companies are reporting tens or even hundreds of thousands in savings per inspection. Over the course of a year, these gains can easily compound into millions in ROI.



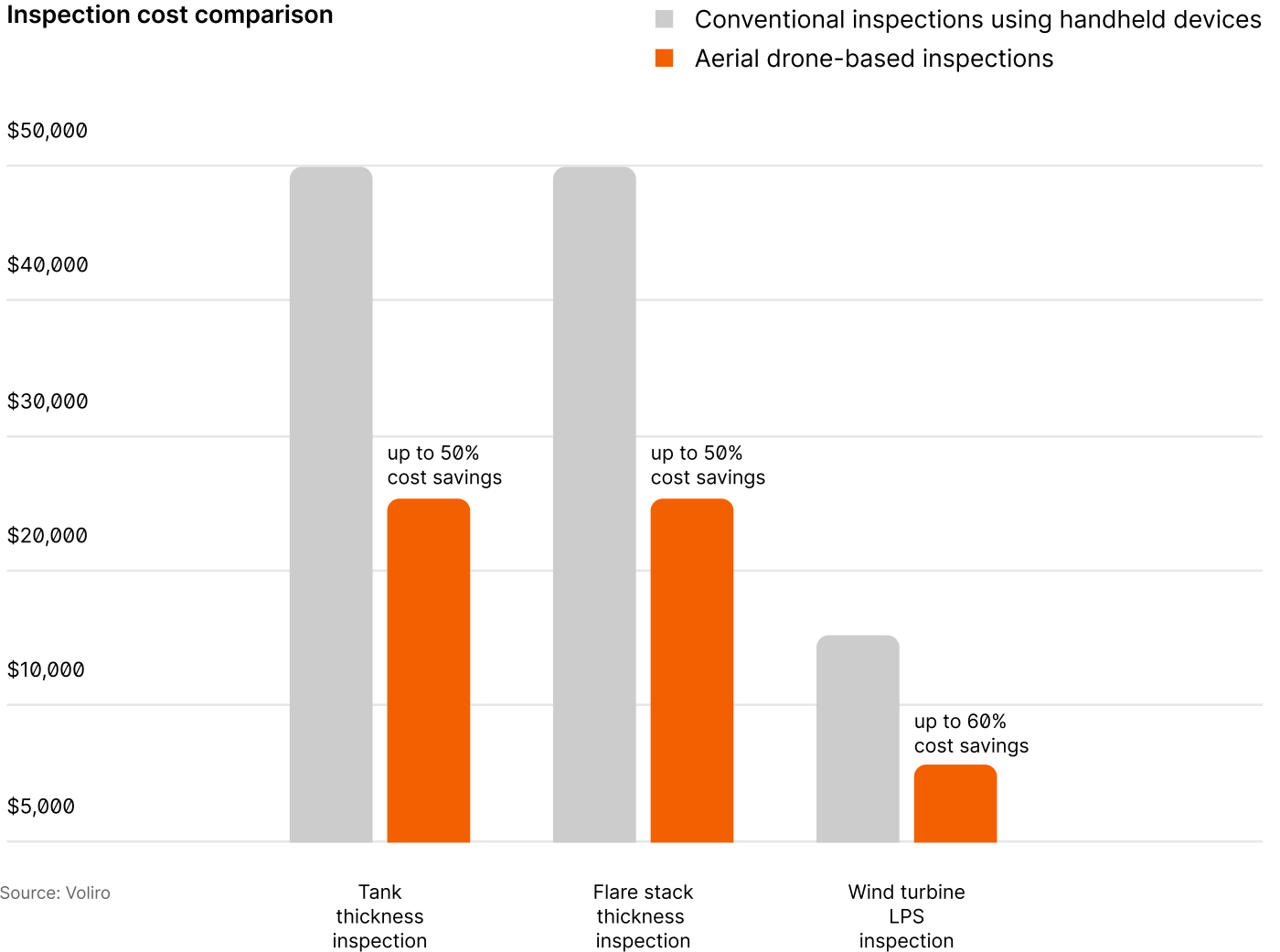
Conventional rope-access UT inspection vs. safe, efficient aerial inspection with Voliro T.

The Case for Investing in Advanced NDT Technology

Drone inspections not only cut inspection costs, they also allow you to do faster and more frequent inspections. That frequency allows you to detect issues earlier—before they escalate into failures that cause unplanned outages or major repairs.

The chart below illustrates the cost-saving benefits of aerial drone-based inspections compared to conventional handheld methods across various inspection types, highlighting the improved ROI potential of drone technology.

Inspection cost comparison



Source: Voliro

Cost estimates shown are based on typical industry averages and representative case studies. Actual costs may vary depending on asset size, site accessibility, regional labor rates, inspection scope, etc. Savings percentages are indicative and intended for illustrative purposes only.

02.

How Drone-Based Inspections Drive ROI



Quantified Efficiency Gains from Drone-Based Inspections

70%

less downtime on inspection-driven shutdowns

\$100K+

saved per inspection by eliminating scaffolding and lifts

50%+

reduction in labor costs by streamlining crew needs

5-10x

faster than traditional methods (inspection time cut by 90%)

Over

120

measurements per hour at peak performance, saving days over scaffolding or rope access

Inspect hot surfaces up to

260 °C / 500 °F

Efficient inspections without halting operations



Reducing Downtime

Every minute that production is down nearly always leads to revenue loss. So how can you reduce inspection downtime?

By using a drone to replace manual data collection methods, like scaffolding, rope access, or walking around an asset on foot.

Drones reduce inspection downtime by:

- **Avoiding shutdowns.** Advanced drone technology can collect NDT data while equipment remains operational, avoiding the need for an outage altogether—and resulting hundreds of thousands of dollars saved per inspection.
- **Faster inspections.** Speed in data collection is the biggest driver of reduced downtime. For inspections where downtime is required, drones can collect all the data needed in hours instead of days, helping companies get assets back online much faster.
- **Immediate comprehensive data.** Real-time and holistic data capture allows maintenance teams to act quickly, reducing decision lag and preventing small issues from escalating into unplanned outages.



Aerial UT thickness measurement on a stack using Voliro T while asset is still in operation

Real-World Examples of Drone-Based Inspections Reducing Downtime:

Oil & Gas

At a refinery, Voliro T was used to inspect 26 live stacks in 14 days, saving millions in downtime costs while delivering highly accurate, risk-based inspection (RBI) data.

[Read the case study](#)



Wind

In wind energy, turbine inspections were shortened from a full day to just 30 minutes, enabling 5× more inspections per shift.

[Read the case study](#)



Oil & Gas - Insulated Assets

A Voliro T Pulse Eddy Current (PEC) inspection to identify corrosion under insulation (CUI) on large insulated storage tanks. The result was a 90% reduction in inspection costs per location.

[Read the case study](#)



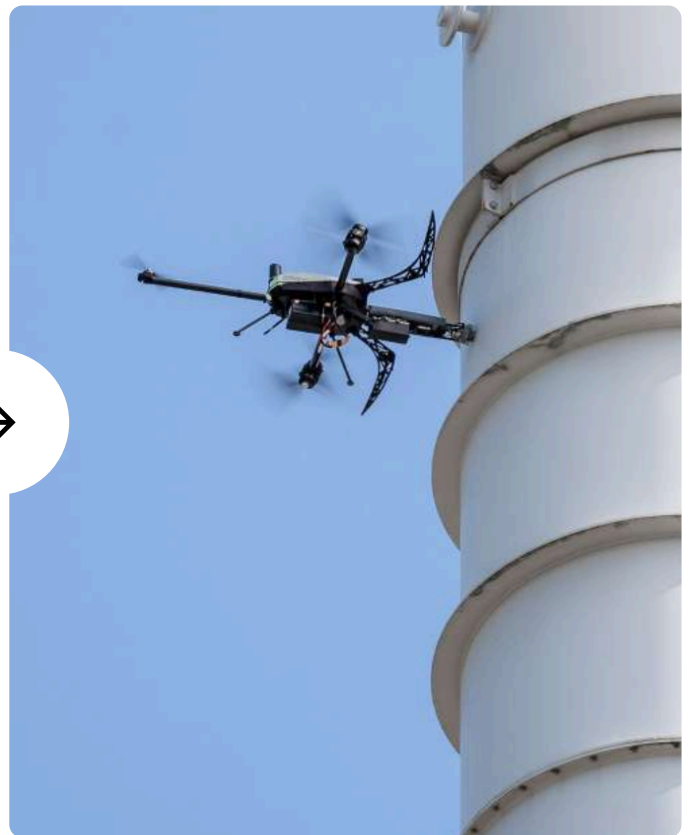
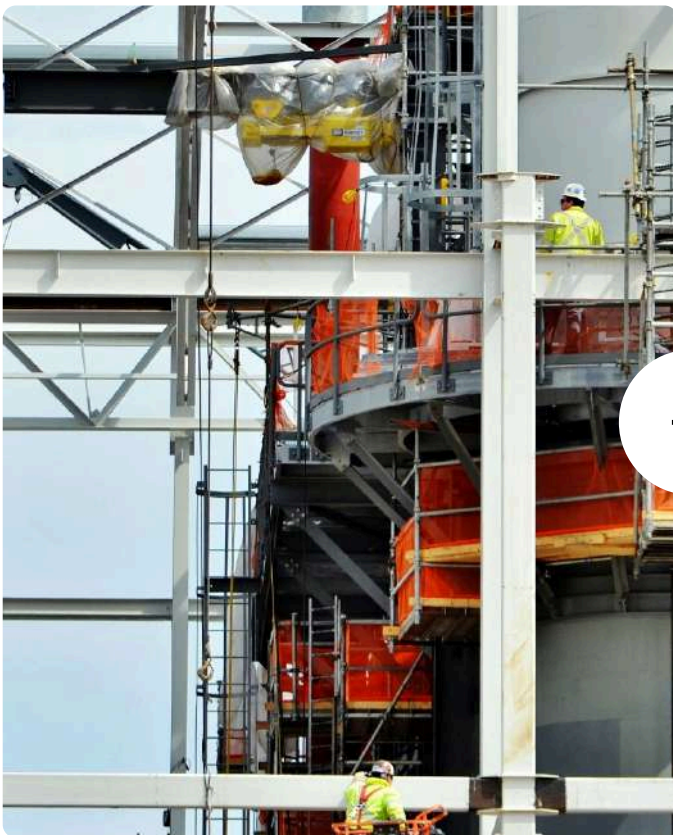
Eliminating Temporary Structures

Scaffolding, lifts, and cranes are often the most expensive part of inspection prep. Building and removing these access systems takes time, skilled labor, and adds safety risk.

Drone inspections remove this layer of complexity entirely. With no scaffolding to build, teams save days of work, tens of thousands in equipment costs, and reduce the total number of people exposed to height and confined space risks.

Drones eliminate the need for temporary structures by:

- **Avoiding scaffold builds.** Inspections can be performed without erecting access scaffolding, which often requires days of labor and major spend.
- **Reaching anywhere.** Drones access elevated or confined locations without lifts, cranes, or rope access systems.
- **Direct access.** Drones can fly straight to inspection locations—on stacks, towers, or vessels—without needing physical structures to reach them.



Conventional NDT inspection on scaffold vs. safer and more efficient aerial inspection with Voliro T

Real-World Examples of Drone-Based Inspections Eliminating Temporary Structures:

Oil & Gas

Bilfinger used Voliro to inspect a 400-foot stack with no scaffolding—saving over \$165,000 and cutting inspection time from 25 days to 1.5 days.

[Read the case study](#)



Wind

Traditional wind turbine inspections often require rope access or lifts. Voliro replaced this with fast drone inspections of wind turbine's LPS systems —improving safety and efficiency.

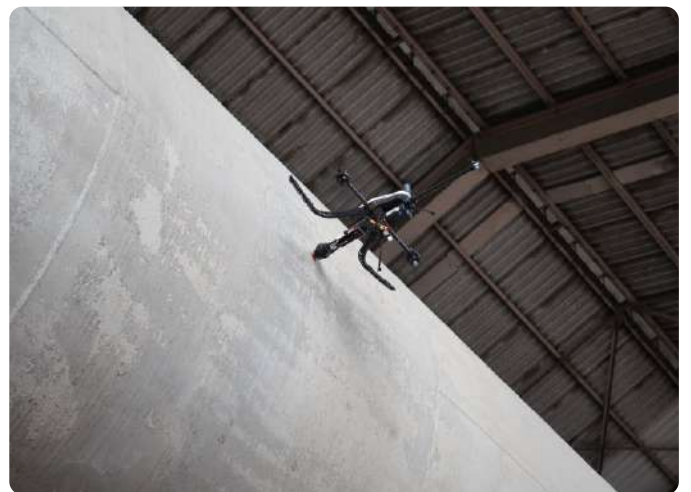
[Read the case study](#)



Cement & Aggregate

Voliro's drone enabled inspections of a 40 meters cement kiln with no surface preparation and no cherry picker required.

[Read the case study](#)



Lowering Labor Costs

Traditional inspections often require large, specialized teams: inspectors, access technicians, scaffolders, and safety personnel. With a drone, inspections can be performed by one or two-person team—without sacrificing data quality.

This slimmed-down team dramatically reduces labor hours and costs. And your skilled personnel can be freed up to do other important work, like data analysis or repair planning—not climbing towers or assembling scaffolding just to enable NDT data collection.

Drones lower labor costs by:

- **Shrinking crew sizes.** A traditional inspection might require 8–10 people; a drone-based one needs only 2.
- **Freeing up specialists.** Instead of spending hours on-site, inspectors can focus on reviewing and acting on high-quality data.
- **Cutting total labor hours.** Faster data collection means less time on task—and lower total labor spend across the project.



CUI inspection workflow with Voliro's drone-based Pulsed Eddy Current Sensor on insulated asset

Real-World Examples of Drone-Based Inspections Lowering Labor Costs:

Oil & Gas

At a refinery, Acuren used the Voliro T inspection drone to complete a stack inspection in just 2 hours instead of 3 days, saving \$150,000 in avoided downtime and equipment rental.

[Read the case study](#)



Wind

AssetTech's use of the Voliro T significantly reduced the number of personnel required on-site for wind turbine inspections at a wind farm, cutting labor costs by 50% compared to traditional inspection methods.

[Read the case study](#)



Mining

Osprey Integrity used the Voliro T drone to inspect an ore surge bin at a Canadian mining facility—a job that normally requires 10+ workers and two weeks with scaffolding. With the drone, just two operators completed the inspection in 40 minutes, contributing to \$1.2M CAD in cost savings.

[Read the case study](#)



03.

What to Look For in an Advanced NDT Platform



Not All Advanced Inspection Technologies Are Created Equal

Choosing the right toolset means aligning capabilities with inspection objectives, regulatory requirements, and future scalability. Whether you're evaluating in-house solutions or third-party providers, certain attributes should be non-negotiable.

Key considerations include:

- **Contact-based capabilities:** Advanced aerial inspection platforms should go beyond visual data capture and enable physical interaction with surfaces
- **Modularity:** Support multiple payloads to adapt to different inspection needs.
- **Data quality:** High-resolution and precise data capture capabilities.
- **Ease of deployment:** Look for technology that can be deployed quickly with minimal setup and no need for specialized infrastructure.
- **Compliance and data integrity:** Ensure outputs meet industry standards (API, ASME, ISO) and can be archived securely for audit or regulatory review. In aviation, this also includes flight operations compliance.
- **Scalability:** Whether inspecting one site or a global asset portfolio, tools should support consistent processes and data integration across locations.



The Voliro T PEC sensor takes measurements through insulation and aluminum jackets, eliminating the need to proactively remove insulation

04.

Could Your Organization Save Using Advanced NDT Technology?



Drone Inspections Don't Require a Complete Process Overhaul — Just the Right Triggers

Drone-based inspections don't require a complete process overhaul — just the right triggers.

Ask yourself:

- Do you experience inspection-related downtime greater than one day per month?
- Are you spending heavily on scaffolding or lifts just to collect inspection data?
- Could your team benefit from safer, more frequent inspections with fewer people on-site?

If you answered “yes” to any of these questions, your asset integrity program is ready for drone-based NDT.

20-Minute Technical Consultation

Discuss your current inspection workflows, equipment, or technical goals with a Voliro specialist.

[Schedule a meeting](#)



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