SOLAR SURVEYS LTD · 2026 EDITION

AN ENGINEERING COMPARISON BRIEF BY SOLAR SURVEYS LTD

# Drone vs *Walkover.*

*A side-by-side comparison of drone roof survey and walkover inspection for UK commercial property in 2026.*

| FORMAT | DIMENSIONS | AUDIENCE | DOMAIN |
| --- | --- | --- | --- |
| A4 Brief | 5 compared | UK Commercial | solarsurveys.co.uk |

IMPRINT

# About this brief.

**Publisher.** Solar Surveys Ltd, 24 Potterhill Road, Glasgow G53 5RR, United Kingdom. Registered in Scotland. Company No. SC827786.

**Authorship.** Written by the qualified structural engineering team at Solar Surveys Ltd. Reviewed against the firm's internal QA standard for engineer-signed reports.

**Scope.** The brief compares drone-led roof inspection and walkover inspection methodologies for UK commercial property. It covers routine condition assessment, periodic inspection of installed solar PV, and pre-PV feasibility scoping. The brief is methodology-agnostic on small residential roofs (different operational picture, different commercial logic).

**Editorial standard.** Engineering-grade language only. No marketing claims. No fluff. Where one methodology has the operational advantage, that is named explicitly. Where the other retains an edge case, that is named explicitly. The reader should be able to apply the decision matrix in Section 6 to any commercial roof inspection brief.

**Standards anchor.** Drone operations under UK CAA framework, BDF (British Drone Flyers) accreditation, BMFA (British Model Flying Association) accreditation. Working-at-height under the Work at Height Regulations 2005. Asbestos cement work under CAR 2012. Engineer-signed reporting under the firm's £5M Professional Indemnity cover.

**Citation.** Solar Surveys Ltd (2026). *Drone Roof Survey vs Walkover Inspection. An Engineering Comparison Brief*. Published online at solarsurveys.co.uk.

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# Contents.

SECTION 01

# Executive Summary. Drone-led has won for routine commercial roof inspection.

Drone roof surveys have largely displaced walkover inspections for UK commercial property in 2026. The drivers are operational: no scaffold required, no roof access, no working-at-height exposure for inspection staff, and high-resolution overhead imagery covering the full roof in 30 to 60 minutes per building. Walkover inspection retains a niche where physical sampling of materials is required (asbestos confirmation, core samples), but for routine condition assessment and pre-PV feasibility the drone has won.

The displacement was incremental between 2018 and 2024 and is now near-complete in the UK commercial inspection market. The four operational drivers below explain the shift:

1. **Resolution caught up.** Modern professional drone cameras capture at 10 to 50 cm per pixel from typical commercial roof altitude. That resolution exceeds what a walkover inspector can document with hand-held photography in most contexts.
2. **Coverage went up.** Drone capture covers the full roof in 30 to 60 minutes. Walkover inspectors cover what they can physically reach within working-at-height constraints, often partial on large flat roofs.
3. **Cost came down.** Drone mobilisation eliminates per-site scaffold cost. For portfolio programmes the cumulative saving is substantial.
4. **Safety case is decisive.** Working at height is the single largest occupational injury cause in UK construction. Removing inspection staff from the roof eliminates that exposure entirely.

> **Net effect.** For routine condition surveys, periodic inspection, and pre-PV feasibility, drone-led is the right product. Walkover retains advantage in three specific edge cases set out in Section 5. The decision matrix in Section 6 maps any inspection brief to the right methodology.

The rest of the brief works through the comparison dimension by dimension: deliverable, cost, speed, safety, accuracy. The closing decision matrix is one printable page.

SECTION 02

# Deliverable Comparison.

What you actually receive. The walkover deliverable and the drone-led deliverable side by side, with coverage, resolution, and engineering review compared.

## The walkover deliverable.

A walkover inspection produces close-quarters photography and a written condition report. The inspector sees the roof from a standing position, often working in pairs for safety, and produces imagery taken from chest height. The report is typically structured as a written narrative supported by photographic plates.

Coverage is typically partial on large commercial roofs. Walking the full perimeter and the central array bays of a large flat roof takes hours; large logistics warehouses and multi-bay manufacturing plants are difficult to walk in their entirety within a single visit. Inspectors prioritise areas of known concern (perimeter for drainage, plant kerbs for weather-tightness, panel rows where solar is already installed) and document representatively.

## The drone-led deliverable.

A drone survey produces high-resolution overhead imagery covering the full roof. The standard deliverable bundle is:

- **Annotated defect schedule** keyed to the imagery, with each defect numbered and located on the orthographic roof plan
- **Drainage performance review** based on visible flow patterns, ponding evidence, and drainage outlet condition
- **Fixings status review** covering visible fixings (clip locations, ridge fixings, cladding seams) and any signs of fastener failure
- **Panel condition assessment** where solar PV is installed (cell-level visible defects, soiling patterns, hot-spot indicators where thermal imagery is captured)
- **Orthographic roof plan** generated from the photogrammetric capture, suitable for reference in subsequent design or maintenance documentation

The deliverable is engineer-reviewed: the drone is the data-capture instrument, the report is signed by qualified structural engineering staff who interpret the imagery. This matters. Drone capture without engineering review is data, not insight. The engineering review converts the imagery into actionable documentation: what the structural implication of each defect is, which defects need immediate attention versus monitoring, and how the findings feed into pre-PV feasibility or insurance reporting.

## Side-by-side summary.

| DIMENSION | WALKOVER | DRONE-LED (ENGINEER-REVIEWED) |
|---|---|---|
| Coverage on large commercial roof | Partial; representative | Full roof, every area visible from above |
| Imagery vantage | Chest height; oblique | Overhead orthographic + oblique as needed |
| Resolution | Hand-held photography quality | 10–50 cm per pixel professional drone capture |
| Defect schedule | Narrative + photo plates | Annotated, numbered, keyed to imagery |
| Engineering review | Inspector-led; varies by firm | Qualified structural engineer signature |
| Orthographic roof plan | Not standard | Standard output from photogrammetric capture |

SECTION 03

# Cost and Speed Comparison.

Per-building cost, per-portfolio cost, lead time from instruction to engineer-signed report, and where each method's hidden cost sits.

## Cost.

Drone-led commercial roof inspections are quoted on application as scope varies significantly with roof count, building access and inspection depth. As a rough single-building benchmark, drone-only roof condition surveys start from £750 per building, with combined survey-plus-drone for pre-PV work shared on a single mobilisation from £600 per building.

Walkover inspections typically require scaffold or roof-walker hire, which adds material cost and lead time. For a single building, scaffold hire alone often equals or exceeds the entire drone-led inspection cost. For routine condition surveys without physical sampling, drone-led is consistently cheaper per building.

For portfolio programmes covering 10 sites or more, the cost differential widens further. Drone mobilisation can cover several buildings on a single regional visit, where walkover requires per-site scaffold provision. The cumulative scaffold cost across a 30-site portfolio annually can be a six-figure number; the equivalent drone programme runs at a fraction of that.

## Hidden costs.

Drone-led has two hidden cost categories worth flagging:

- **Weather-window scheduling.** Drone capture requires viable wind, visibility, and lighting conditions. UK winter weather can extend the elapsed time from instruction to capture. Best practice is to issue the instruction with 2-4 week capture flexibility and let the operator schedule against the weather window.
- **Engineer review depth.** The cost variation across drone providers is largely a function of engineering review depth. A drone capture with no engineering review is significantly cheaper than an engineer-signed deliverable, but the deliverable is not the same product. Buyers should verify the deliverable specification before comparing prices.

Walkover-led has two hidden cost categories of its own:

- **Scaffold lead time.** Scaffold mobilisation from instruction is typically 5 to 10 working days. On urgent inspection scope this can be the binding constraint on programme timing.
- **Re-attendance cost.** If the walkover inspection identifies a follow-up scope (e.g. additional structural assessment), re-attendance often requires fresh scaffold. Drone-led typically supports follow-up review against the original imagery without re-attendance.

## Speed.

Drone capture takes 30 to 60 minutes per typical commercial roof. The total elapsed time from instruction to engineer-signed report is 3 to 5 working days, with engineer review and report production within 48 hours of the flight. Solar Surveys' operational benchmark is 24-hour mobilisation target, 48-hour report delivery from capture.

Walkover inspection requires scaffold mobilisation (5 to 10 working days from instruction), site visit (half day to full day per building), and report production (typically 5 to 10 working days). Total elapsed time is 2 to 4 weeks, sometimes longer in saturated periods.

> **Portfolio maths.** For asset managers running periodic inspections across 30 to 100 commercial PV sites annually, the cumulative time saving of drone-led versus walkover is typically several weeks of inspection lead time across the year. The 48-hour report delivery benchmark holds at portfolio scale because drone capture is parallelisable on a single regional mobilisation and engineer review can run against captures from multiple sites simultaneously.

SECTION 04

# Safety Comparison.

Working-at-height risk is the headline safety case for drone-led inspection. Walkover requires inspection staff on the roof; drone-led does not.

## The walkover safety case.

Walkover inspection requires inspection staff on the roof, often near the perimeter for drainage assessment or near skylights and ventilation kerbs for weather-tightness review. The Work at Height Regulations 2005 govern the operational framework. Required provision typically includes:

- Fall-arrest provision (harness + anchor points, edge protection systems, or scaffold guardrail)
- Edge protection at any roof edge within 2 metres of where staff will be working
- Roof-walker systems on fragile substrates (asbestos cement, fibre cement, aged single-ply membrane)
- Suitable footwear, weather-appropriate clothing, two-person attendance for buddy safety
- RAMS (risk assessment and method statement) approved by site management before access

The provision is manageable in routine cases but represents an operational hazard the drone-led approach eliminates entirely.

## Why ballasted PV roofs amplify the safety case for drone.

For sites with installed PV, the safety case favours drone even more strongly. Walking between rows of ballasted modules near roof edges is slow and exposes inspection staff to fall risk over a working surface that is itself a hazard. Ballast pads, panel frames, wiring runs and inverter casings are trip hazards underfoot. The array footprint typically occupies most of the roof; the residual walking margin is narrow.

Drone capture from outside the roof footprint covers the full array in 30 to 60 minutes with zero working-at-height exposure. For periodic inspection of installed PV, this safety differential is the strongest single argument for the drone-led approach.

Operational summary.

Walkover inspection on a flat-roof ballasted system is operationally constrained. The array footprint occupies most of the roof; walking between rows is slow and exposes inspection staff to working-at-height risk. Drone capture from outside the roof footprint covers the same array in 30 to 60 minutes with zero working-at-height exposure.

## Drone operational risk.

The drone itself carries operational risk that should be managed and insured. Required minimums for UK commercial drone operations:

- **BDF (British Drone Flyers) accreditation** for the operator
- **BMFA (British Model Flying Association) accreditation** for the pilot
- **UK CAA framework compliance**: appropriate operator and flyer certifications for the airspace and operational class
- **£25M Drone Public Liability cover** as standard for commercial inspection work
- Site-specific risk assessment covering airspace, overflight of third parties, and fragile-roof considerations

Operating outside this framework is a separate operational risk the buyer should not accept.

SECTION 05

# Accuracy Comparison and the Three Walkover Edge Cases.

Drone capture exceeds walkover-grade documentation for most commercial inspection scope. Three edge cases are where walkover retains advantage.

## Drone resolution standards.

Professional commercial drone inspection captures at 10 to 50 cm per pixel from typical commercial roof altitude (typically 10-30 metres above the roof surface). Higher resolution is achievable at lower altitude or with specialist payloads (5 cm/px or better with a thermal-paired multispectral sensor) but is not required for routine condition assessment.

For the standard inspection scope of surface condition, fixings status, drainage performance, panel condition and ballast position, drone imagery at 10-50 cm/px provides higher information density than hand-held walkover photography taken at chest height with a typical mid-range camera.

## Where drone exceeds walkover.

- **Coverage.** Drone covers the full roof; walkover covers what can be physically reached within working-at-height constraints
- **Vantage.** Overhead orthographic capture documents the roof as a single plan view; walkover photography is oblique and partial
- **Resolution at the array.** For periodic inspection of installed PV, drone capture sees every panel; walkover sees only panels the inspector can physically reach
- **Roof plan.** Photogrammetric output gives a metrically accurate orthographic plan; walkover does not produce a comparable artefact
- **Time-series consistency.** Periodic drone re-captures at the same waypoints produce comparable imagery year-on-year; walkover varies by inspector

## The three walkover edge cases.

Walkover retains advantage in three specific situations:

### Edge case 1: Physical sampling required.

When the inspection scope includes physical sampling (asbestos cement confirmation per CAR 2012, core samples for substrate or insulation assessment, fixing pull-out testing per SPRA S15-19), the inspector has to physically reach the sample location. Drone capture cannot extract material samples. For asbestos cement roofs in particular, the structural assessment can proceed non-contact via drone, but a separate refurbishment-and-demolition asbestos survey by a UKAS-accredited surveyor is required before any installation work begins.

### Edge case 2: Internal soffit or rooflight inspection.

The drone reads external surface only. When the scope includes inspection of the internal soffit, the underside of rooflights, or other elements visible only from inside the building, an internal walk-through (which is not the same as a roof walkover but uses similar inspection techniques) is required. For pre-PV feasibility surveys, the structural engineer's internal inspection of the building (purlins, rafters, ridge beams) is standard scope and is conducted from inside the building, with drone capturing the external roof in the same visit.

### Edge case 3: Working-at-height clearance already mobilised.

When working-at-height clearance is already mobilised on site for an unrelated reason (e.g. ongoing maintenance, plant replacement, scaffold up for a separate trade), adding inspection scope is operationally cheap. The marginal cost of a walkover with existing access is significantly lower than the standalone walkover cost. In these scenarios the cost case can flip in walkover's favour, although the safety, coverage and deliverable advantages of drone-led typically still apply.

## Hybrid as the right answer for pre-PV feasibility.

For pre-PV feasibility work, the right answer is typically hybrid: drone capture of the external roof for surface condition, fixings status, drainage and panel condition; combined with internal structural inspection by a qualified structural engineer for primary structure assessment (rafters, portal frames, purlins, connections). This combined survey-plus-drone product is priced on application and is the standard pre-PV instruction for institutional buyers.

SECTION 06

# Decision Matrix and About the Authors.

A printable decision tree to apply to any commercial roof inspection brief. Plus author block and the single CTA for buyers who want to commission directly.

## Decision matrix.

Apply the four questions below to any commercial inspection brief:

1. **Does the scope include physical sampling?** (Asbestos cement confirmation, core samples, pull-out testing.) If YES, walkover (or hybrid). If NO, continue.
2. **Does the scope include inspection of internal soffit or underside of rooflights?** If YES, internal walk-through (or hybrid for pre-PV). If NO, continue.
3. **Is working-at-height clearance already mobilised on site for an unrelated reason?** If YES, walkover may flip favourable on marginal cost. If NO, continue.
4. **Default: drone-led with engineer review.** For routine condition assessment, periodic inspection of installed PV, and the external-roof component of pre-PV feasibility, drone-led is the right product.

> **For pre-PV feasibility on an institutional commercial property: hybrid is the standard.** Combined drone external capture plus internal structural survey by a qualified structural engineer in a single instruction. Solar Surveys' standard pre-PV instruction is this combined product, priced on application.

## About Solar Surveys Ltd.

Solar Surveys Ltd is a specialist UK engineering practice for commercial solar PV. Drone roof condition assessment runs alongside on-site structural surveys and Desktop Structural Roof Loading Reports as a single integrated capability.

## Operational standards.

- **Drone pilots.** BDF (British Drone Flyers) and BMFA (British Model Flying Association) accredited
- **Insurance.** £25M Drone Public Liability. £5M Professional Indemnity
- **Engineering review.** Every drone capture is reviewed and the report signed by qualified structural engineering staff
- **Delivery benchmark.** 24-hour mobilisation target. 48-hour report delivery from capture

- **Coverage.** United Kingdom, Northern Ireland, Republic of Ireland, and Europe for cross-border portfolio programmes

## Why this brief is published free.

Buyers commissioning commercial roof inspection in 2026 face a genuine methodology choice and the picture has shifted significantly since 2018. The brief codifies what the qualified structural engineering team at Solar Surveys has learned across the UK commercial inspection portfolio. Closing the methodology-understanding gap is in the long-term commercial interest of every credible drone-led structural firm in the sector.

There is no in-body sales pitch in this brief. The CTA below is opt-in only.

## For buyers who want to commission directly.

Solar Surveys is set up to deliver drone-led commercial roof inspection at single-site or portfolio scale. Volume capacity covers 30 to 100 site programmes annually with parallel capture and engineer review.

To commission, contact Solar Surveys at:

- **Phone.** +44 141 628 9009
- **Email.** contact@solarsurveys.co.uk
- **Web.** solarsurveys.co.uk/contact.html
- **Address.** 24 Potterhill Road, Glasgow G53 5RR, United Kingdom

## Reference pages.

- Drone Roof Condition Assessment · from £750 per building, BDF + BMFA accredited pilots
- Commercial Roof Inspection · drone-led with engineer review
- On-Site Structural Surveys · combined survey + drone for pre-PV feasibility
- Roof Survey UK · cross-product roof survey hub
- Desktop Structural Roof Loading Reports · remote structural assessment from £130 per report

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