

Drone Inspection Planning Checklist

Everything you need to scope, schedule, and execute a professional drone inspection

- ✓ Pre-inspection planning checklist (25+ items)
- ✓ Sensor selection guide by asset type
- ✓ Scope-of-work template for accurate quotes
- ✓ Day-of-flight coordination and post-inspection deliverables

Pre-Inspection Planning Checklist

Scope Definition

- ☐ List all assets / structures requiring inspection (quantity, type, address)
- ☐ Define the inspection objective (condition assessment, defect detection, thermal survey, progress monitoring)
- ☐ Specify required sensor(s) (RGB, thermal, LiDAR, multispectral, gas detection)
- ☐ Define deliverable requirements (annotated report, orthomosaic, 3D model, raw imagery)
- ☐ Determine accuracy requirements (general overview vs. survey-grade GCPs)
- ☐ Establish timeline (standard 7–10 day reporting vs. rush 24–48 hr)
- ☐ Identify any regulatory or client-specific reporting standards

Airspace & Regulatory Compliance

- ☐ Check FAA airspace classification at [faa.gov/uas](https://www.faa.gov/uas) — is the site in controlled airspace?
- ☐ Determine LAANC availability (instant authorization in most controlled airspace)
- ☐ Check for Temporary Flight Restrictions (TFRs) at [tfr.faa.gov](https://www.faa.gov/tfr)
- ☐ Check for NOTAMs affecting the area
- ☐ Determine if special waivers are needed (night, BVLOS, over people, above 400 ft)
- ☐ Note: FAA waivers can take 90+ days — identify this requirement early

Site Assessment

- ☐ Confirm site address and GPS coordinates
- ☐ Survey for obstacles near the flight path (power lines, antennas, cranes, trees, guy wires)
- ☐ Identify electromagnetic interference sources (cell towers, high-voltage lines, transformers)

- ☐ Assess landing/takeoff zones (flat, open, 10x10 ft minimum, clear of overhead wires)
- ☐ Determine if adjacent property overflight permission is needed
- ☐ Identify wildlife restrictions (bird nesting season, protected habitat buffers)

Logistics & Coordination

- ☐ Arrange site access (gate codes, security clearance, escort requirements)
- ☐ Notify building occupants / tenants of drone operations (date, time, areas affected)
- ☐ Coordinate with facility operations (active construction, moving equipment, personnel safety)
- ☐ Identify restricted or no-fly zones within the site (hazmat areas, active work zones)
- ☐ Arrange operator parking and staging area
- ☐ Confirm power availability for battery charging (multi-battery operations)

Critical

Check airspace classification BEFORE contracting. If your site is near a major airport (Class B/C), LAANC provides near-instant authorization — but some locations require formal FAA waivers that take 90+ days. Discover this during planning, not the week of the inspection.

Sensor Selection Guide

Which Sensor Do You Need?

Your Goal	Recommended Sensor	Why	Timing Requirements
Roof moisture mapping	Thermal (LWIR)	Trapped moisture retains heat — visible as thermal anomalies	2-4 hours after sunset (clear day) for IR moisture scan
Solar panel defect detection	Thermal (LWIR)	Hotspots indicate cell failures, string faults, diode issues	Peak irradiance (midday sun, clear sky)
General roof/facade condition	RGB (visual)	High-res imagery of cracks, deterioration, missing material	Overcast preferred (no harsh shadows)
Building energy audit	Thermal (LWIR)	Temperature differentials reveal insulation gaps, air leaks	Heating season; min 10°C (18°F) indoor/outdoor differential
Volumetric survey (stockpiles, cut/fill)	LiDAR or photogrammetry	3D measurement with centimeter-level accuracy	Any time; GCPs for survey-grade accuracy
Power line clearance	LiDAR	Precise distance measurement to vegetation and structures	Any time; calm winds preferred
Gas / methane leak detection	OGI camera or gas sniffer	Detects invisible gas emissions	Calm winds; process operating normally
Vegetation health / environmental	Multispectral (NDVI)	Plant stress detection before visible symptoms	Active growing season; consistent lighting
Structural detail (cracks, hardware)	High-res zoom (200mm+)	Close-up of hairline cracks, bolt condition, connections	Good visibility; low wind
Construction progress	RGB + optional LiDAR	Orthomosaic overlay, 3D surface comparison	Consistent time of day across flights for comparison

Thermal timing is everything.

A roof moisture survey flown at the wrong time of day produces meaningless data regardless of camera quality. Solar panel scans must be done under peak sun load. Building energy audits require cold weather with heating systems running. Confirm optimal timing with your operator during the planning phase.

Scope of Work Template

Drone Inspection Scope of Work — Customize This Template

Fill in and send to 2-3 drone operators for accurate, comparable quotes.

Project Information

- Project name: _____
- Site address: _____
- GPS coordinates: _____
- Inspection date (primary): _____ Backup date: _____
- Contact name & phone: _____

Asset Inventory

#	Asset Description	Qty	Approx Size	Sensor Required	Deliverable Needed
1	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____

Site Conditions

- Airspace: [] Class G (uncontrolled) [] Class B/C/D/E (controlled — LAANC req.) [] Near restricted area
- Known obstacles: _____
- Active operations on-site: [] Yes — describe: _____ [] No
- Security clearance required: [] Yes [] No
- Adjacent property overflight: [] Yes — permission status: _____ [] No

Deliverable Requirements

- ☐ Annotated inspection report (PDF) with findings and recommendations

☐ Thermal analysis with annotated anomalies (if thermal)

☐ Orthomosaic map (GeoTIFF or equivalent)

☐ 3D point cloud or mesh model

☐ Executive summary (1-page) for stakeholders

☐ Raw imagery organized by asset/location

☐ Delivery format: ☐ Cloud portal ☐ USB drive ☐ Email

• Report turnaround: ☐ Standard (7-10 days) ☐ Rush (24-48 hrs) ☐ Other: _____

Operator Requirements

☐ FAA Part 107 certified (current)

☐ Thermographer certification: ☐ Level I minimum ☐ Level II ☐ Not required

☐ Aviation liability insurance: \$_____ M minimum

☐ E&O / Professional liability: ☐ Required ☐ Not required

☐ COI naming us as additionally insured: ☐ Required

☐ Site safety training: ☐ OSHA 10/30 ☐ Other: _____

Day-of-Flight Coordination

Before Operator Arrives

- ☐ Confirm weather is within limits (wind < 15 mph, no precipitation, visibility > 3 statute miles)
- ☐ Confirm site access is arranged (gates open, security notified)
- ☐ Notify occupants / tenants that drone operations are scheduled
- ☐ Clear the launch/recovery zone of vehicles, equipment, and personnel
- ☐ Post drone-operation notices per facility policy (if required)

Pre-Flight Verification

- ☐ Operator presents valid Part 107 certificate and current COI
- ☐ Operator performs aircraft pre-flight inspection (propellers, motors, gimbal, batteries, sensors)
- ☐ Operator verifies LAANC authorization or waiver status for this site
- ☐ Operator checks for active TFRs and NOTAMs
- ☐ Operator performs compass and GPS calibration
- ☐ Operator confirms Remote ID is broadcasting
- ☐ Operator briefs the flight plan (areas, altitude, duration, sensor settings)

During Flight

- ☐ Visual observer maintains line of sight to aircraft (unless BVLOS waiver active)
- ☐ Monitor for manned aircraft — operator must yield right of way immediately
- ☐ Track battery levels (operator should enforce minimum return threshold)
- ☐ Monitor weather changes (wind gusts, approaching fronts, precipitation)
- ☐ Keep non-essential personnel clear of the operational area

Post-Flight

- ☐ Confirm all planned assets / areas were covered
- ☐ Review sample imagery on-site for quality (focus, exposure, coverage, thermal data capture)
- ☐ Confirm data transfer and backup was completed
- ☐ Agree on deliverable timeline and format
- ☐ Document any areas that could not be inspected (with reason: access, weather, airspace)

Post-Inspection Deliverables Checklist

What You Should Receive After a Drone Inspection

Minimum deliverable package

- ☐ **Annotated Findings Report (PDF):** Professional document with numbered findings, severity ratings (critical / major / minor / monitor), annotated imagery showing exact defect locations, and specific repair recommendations
- ☐ **Thermal Analysis (if applicable):** Calibrated thermal images with temperature scales, emissivity settings noted, anomalies highlighted and correlated with RGB imagery
- ☐ **Orthomosaic / Map (if applicable):** Georeferenced stitched aerial map in GeoTIFF or equivalent format
- ☐ **3D Model / Point Cloud (if applicable):** Delivered in standard format (LAS, OBJ, or project-specific) with measurement capability
- ☐ **Executive Summary:** 1-page overview of key findings and recommended actions, suitable for sharing with leadership or insurers
- ☐ **Flight Documentation:** Date, time, aircraft used, pilot name, weather conditions, altitude, flight duration, airspace authorization reference
- ☐ **Raw Imagery Archive:** Full-resolution originals organized by asset/location with GPS metadata intact

Report Quality Standards

Element	Professional Report	Red Flag
Findings	Numbered, located on map, severity-classified	Vague descriptions, no location references
Imagery	Annotated with arrows, labels, measurements	Unlabeled raw photos in a folder
Thermal data	Color-scaled with temps, emissivity noted, anomalies explained	Uncalibrated rainbow images without context
Recommendations	Specific actions with priority and timeline	"Monitor and maintain"

Element	Professional Report	Red Flag
Format	PDF report + organized digital package	Dropbox link with unsorted files

Common Mistakes & How to Avoid Them

Two-column layout: Mistake -> Prevention

Common Mistake	How to Avoid It
Not checking airspace before scheduling	Verify FAA airspace at faa.gov/uas during scoping. LAANC is instant; waivers take 90+ days.
Scheduling thermal at the wrong time of day	Confirm timing with operator: post-sunset for roofs, midday for solar, heating season for energy audits.
Accepting raw photos as "inspection results"	Define deliverables in your scope of work. An annotated report with findings is the minimum — not a photo gallery.
Hiring based on lowest flight price	Compare all-in quotes (flight + processing + report). The cheapest flight often excludes the most expensive part: analysis.
No weather backup plan	Always identify 2-3 backup dates. Weather cancellations are inevitable — don't let them blow your project timeline.
Skipping insurance verification	Demand COI before the drone leaves the ground. No insurance = your organization absorbs the risk.
Not archiving inspection data	Drone inspections become exponentially more valuable over time. Comparing 3 years of thermal data reveals degradation trends. Store everything.
Poorly defined scope causing cost overruns	Use the scope-of-work template on Page 4. Specify assets, sensors, deliverables, and accuracy requirements in writing.

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1. ****Printability matters.**** Facility managers and construction PMs print these. Avoid large solid color areas on interior pages (waste ink). Reserve full-bleed backgrounds for cover and back cover only.
2. ****Tables are the star.**** These guides live or die on their reference tables. Make tables scannable, well-spaced, and easy to read at 100% zoom on screen AND when printed on letter paper.
3. ****C**

Find inspectors at aeriscout.com