HOVER
AERIAL IMAGING



CAPABILITY STATEMENT · OCTOBER 2026

Survey-grade drone data for engineering teams.

RTK photogrammetry, LOD 400 digital twins, close visual inspection and AI defect detection for infrastructure across Brisbane and South East Queensland, with scheduled travel to regional Queensland and Northern NSW and nationwide mobilisation on major projects. One CASA-certified operator, from flight plan to signed deliverable.

CASA REOC #9398 | $28M PUBLIC LIABILITY | ABN 24 352 655 977 | JSA · SITE-READY | CONTROLLED AIRSPACE APPROVALS

HOVER AERIAL IMAGING
BRISBANE · QUEENSLAND · AUSTRALIA

HARRY BILLING — OWNER & CHIEF REMOTE PILOT
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WHO YOU ARE ENGAGING

The operator behind the data

Hover Aerial Imaging is a specialist drone surveying and inspection practice based in Brisbane. It is a single-operator business: the pilot who plans your capture is the one who flies it, processes it and signs the deliverable.

The business was founded in Brisbane in 2024 to give infrastructure teams capture data built to survey discipline rather than drone photos with coordinates attached. Harry Billing is the Chief Remote Pilot on CASA ReOC #9398 and has flown commercially since 2022.

Deliverables are specified in your language — formats, accuracy class, control evidence — and agreed in writing before anyone flies. Your engineers receive data they can verify and sign off, in the software they already run. If a job is better served by a ground crew or a registered surveyor, you hear that at quoting.

Core capabilities

- Photogrammetry and LOD 400 digital twins — point clouds, textured meshes, BIM-ready models
- Close visual inspection of bridges, towers, dams, wharves, roofs and facades, and of internal roof steel inside operating buildings — with no rope access, scaffold or EWP
- AI defect detection — cracking detected from 0.2 mm, spalling and corrosion staining, each finding geolocated on the model and verified by hand
- RTK topographic site surveys — contours, DTM/DEM, orthomosaics, CAD-ready surfaces
- Volumetric and stockpile surveys measured against a documented base surface
- 4K progress photography and video from fixed, repeatable waypoints, plus view-height 360° panoramas for visualisation work



ENTITY DETAILS

TRADING NAME	Hover Aerial Imaging
ABN	24 352 655 977
ESTABLISHED	2024, Brisbane
STRUCTURE	Owner-operated, single pilot
PRINCIPAL	Harry Billing — Owner & Chief Remote Pilot
BASE	Brisbane, QLD, Australia
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Up to 1 cm
HORIZONTAL ACCURACY, + 1 PPM · RTK, GROUND-CONTROL VALIDATED

0.2 mm
CRACK DETECTION THRESHOLD · ESTABLISHED IN A CONTROLLED TRIAL

1 day
WRITTEN FIXED QUOTE, WITHIN ONE BUSINESS DAY

2–3
BUSINESS DAYS TO PROCESSED DELIVERABLES, STANDARD SCOPES

WHO SIGNS OFF ON THIS DATA

Civil & structural engineers

LOD 400 digital twins and validated point clouds for design verification, clearance checks and condition assessment.

.RCP › REVIT · .LAS › OPENROADS

Contractors & project managers

Volumes for claims, progress documentation from fixed waypoints, and dilapidation baselines before works start.

SURFACES › CIVIL 3D / 12D

Asset owners & managers

Itemised defect registers and repeatable inspection datasets that make condition trends measurable year on year.

REGISTER › CSV / GIS

CAPABILITY 01 — FLAGSHIP

Photogrammetry & LOD 400 digital twins

Measurable, fully textured 3D models of your asset, built from RTK-positioned imagery and tested against check points withheld from the bundle adjustment.

Each model carries the asset's true surface — texture, colour, stains, coating condition — fused with survey-accurate geometry, so one capture is both a measurement dataset and a visual record. Survey work ships with a Survey Quality Report, so your engineers can check the residuals for themselves.

Horizontal	UP TO 1 CM + 1 PPM
Vertical	UP TO 1.5 CM + 1 PPM
Relative (structures)	UP TO 3–5 MM
Textured mesh	.OBJ / .FBX
Point cloud	.LAS / .RCP
Ortho / surfaces	GEOTIFF · DTM / DEM
Validation	SURVEY QUALITY REPORT


PHOTOGRAMMETRIC POINT CLOUD — STEEL TRUSS BRIDGE


SITE PHOTO


DIGITAL TWIN — MESH

CAPABILITY 02 — PROVEN IN SERVICE

Close visual inspection, without the ropes

Every face of a structure recorded from a safe standoff, with detail frames at sub-millimetre ground sample distance and nobody working at height.

A conventional close inspection is mostly a problem of access: rope crews, scaffold, EWP hire, traffic control and permits. Flown from standoff, the same information arrives without the exposure, with full coverage of the soffits, bearings and upper members that a ground-based pass can only sample.

Findings are read by a person — live over video while the aircraft is up, or afterwards with your inspector or a third-party witness. A close visual inspection builds no 3D model and runs no automated detection; those come with AI defect detection, overleaf.

Replaces	ROPE ACCESS · SCAFFOLD · EWP HIRE
Coverage	EVERY FACE, INCL. SOFFITS + UPPER MEMBERS
Capture	PAIRED WIDE + 168 MM TELE, ONE HOVER
Positioning	LASER RANGEFINDER, EVERY DETAIL FRAME
Deliverable	ITEMISED DEFECT REGISTER, EVERY INSPECTION


WIDE — CONTEXT


TELE — SAME INSPECTION PASS

What every register item carries

An ID, the element it sits on, a plain-language description of what is visible, and its location on the structure. Behind each item sits a wide context frame and a tele detail frame from the same hover position, plus a laser-ranged position for the defect surface, so it can be found again and re-shot on a later cycle. Descriptions stay descriptive: never condition ratings or statements of structural adequacy. Those remain the responsible engineer's call.

CAPABILITY 03 — 06

Four more ways we capture your asset

The two capabilities on the previous page carry most programs. The four below are added where condition, quantities or a documented record matter.



DETECTION CROP — CRACK TRACED ON CONCRETE

SRV / AI · DIFFERENTIATOR

AI defect detection

Every image from a photogrammetry capture is analysed for cracking, spalling and corrosion staining, with cracks detected from 0.2 mm. Automated detection runs on the TWINSPECT platform by Twinsity, and every flagged feature is reviewed by hand before issue, because automated vision over-reports by design. Each confirmed finding is projected onto the reconstructed model, so it carries coordinates, a member and a chainage, and comes back as a geolocated PDF alongside the 3D model and a CSV/GIS register. The 0.2 mm figure was established in a controlled capability trial on a concrete culvert under the M1 at Tingalpa (page 8).

0.2 MM CRACKING · GEOLOCATED PDF + MODEL + CSV



CONTOUR DELIVERABLE — DEMONSTRATION SITE

SRV / TOPO · TOPOGRAPHIC

RTK site surveys

One flight yields the full stack: a current-condition orthomosaic, a classified point cloud, DTM and DEM surfaces, and contours cut to whatever interval your design standard calls for. Everything lands CAD-ready, so 12d and Civil 3D take the surfaces directly and the ortho drops under your design as a georeferenced base. Hover does not fly directly over anyone outside the operation, so your site team keeps working through the survey.

CONTOURS · DTM / DEM · ORTHOMOSAIC · .LAS



VOLUMETRIC — MEASURED PILE HIGHLIGHTED

SRV / VOL · VOLUMETRIC

Volumetric mapping

Stockpile and cut-and-fill volumes measured from the air at survey grade, with no site shutdown. Each pile is measured against a documented base surface rather than an assumed plane. The base is recorded in the report and reused on every visit, so month-on-month movement reflects material moved, and the figures stand up in reconciliation and claims.

VOLUME REPORT + SURFACES · AUDITABLE CYCLES



PROGRESS FRAME — HOLTS HILL RESERVOIR SITE

SRV / MEDIA · DOCUMENTATION

Photography & videography

Progress capture runs on saved waypoints: identical positions, headings and focal lengths every visit, so the series shows the project moving with no re-framing. 4K/60 video and RAW stills for stakeholder reporting, tenders and marketing. Night and dusk work is covered by a CASA night VLOS approval. For visualisation studios, view-height 360° panoramas are captured at nominated levels and delivered as 16-bit TIFF.

4K/60 · RAW STILLS · 360° PANORAMAS · NIGHT VLOS

Choosing between the two inspection services

A close visual inspection is the more cost-effective choice when an inspector reading an itemised register is enough: condition checks, verification jobs, routine cycles. Step up to AI defect detection when findings have to be detected automatically across the whole capture and pinned to a measurable 3D model — condition baselines, deterioration tracking, and large surface areas where reviewing every frame by eye is not practical.

HOW THE WORK RUNS

Method, control and the accuracy gate

Accuracy is not a property of the aircraft. It comes from how a capture is controlled and how the result is tested against the tolerance the job is scoped to, which is why that tolerance is settled before anyone flies.

Step 01

Scope & approvals

Deliverables, accuracy class and tolerances are agreed in writing before anything is booked. Airspace approvals, site permits, JSA and insurances are arranged and supplied ahead of mobilisation, with a SWMS where the site requires one.

Step 02

Control & capture

Capture runs on a DJI Matrice 4 Enterprise RTK platform against a base station on known control, with ground targets laid and independently measured where an accuracy class applies. Inspection flights run at fixed standoff and resolution on programmed waypoints.

Step 03

Processing & validation

Where an accuracy class applies, the model is tested against check points withheld from the bundle adjustment and the residuals measured against the agreed tolerance: the accuracy gate. Captures without one are checked for coverage and resolution instead.

Step 04

Delivery & sign-off

Validated models, surfaces and registers are issued in your formats. Where an accuracy class applies, a Survey Quality Report goes with them, stating the residuals against the agreed tolerance.

The accuracy gate, and the re-fly commitment

Where a capture is delivered to a stated accuracy class, ground control is laid to suit the site: a minimum of three control points and two independent check points, and more where size or layout calls for it. The check points are held out of the bundle adjustment, so they test the survey instead of helping to produce it. Not every job needs that — a close visual inspection or a progress capture carries no accuracy class, and the scope says so plainly.

If a survey misses its gate, ground control is re-marked and the aerotriangulation re-run. If it still falls short, the site is re-flown at no cost to you. Residuals are reported in the Survey Quality Report issued with the data.

What we do not do — stated up front

- **Photogrammetry only.** Hover does not operate LiDAR. Where a project needs it — bare-earth terrain under dense canopy — we say so at quoting.
- **Not a registered surveying practice.** Cadastral and boundary matters are legal survey work under the Queensland Surveyors Act 2003 and are referred to registered surveyors.
- **No engineering judgement.** Hover captures and documents condition; severity classification, assessment and sign-off stay with your responsible engineer.
- **Daylight only** for survey, mapping and inspection. The night VLOS approval covers photography and video.



ORTHOMOSAIC OVERLAY — DEMONSTRATION SITE

DELIVERY & DATA HANDLING

Quote turnaround	1 BUSINESS DAY
Processed deliverables	2–3 BUSINESS DAYS
Large / complex models	UP TO 5 BUSINESS DAYS
Ground control	SCOPED PER SITE · MIN. 3 CONTROL + 2 CHECK
Raw imagery & RTK logs	RETAINED 3 YEARS MIN.
Audit access	ANY TIME IN RETENTION

Why cycles compare

Because capture waypoints repeat exactly, cycle-on-cycle comparison is like with like: the same face, the same standoff, a year apart. What shows up between cycles is change in the asset: a new defect, or a change at an item already on the register.

THE PAPERWORK YOUR SITE TEAM WILL ASK FOR

Certification, insurance and site documentation

Compliance documentation is supplied ahead of mobilisation as standard. Ask for the compliance pack with your quote.

CERTIFICATION

- CASA Remotely Piloted Aircraft Operator's Certificate — ReOC #9398
- Remote Pilot Licence (RePL)
- Aeronautical Radio Operator Certificate
- Certificate III in Aviation (Remote Pilot)
- Night VLOS approval, for photography and video
- Controlled-airspace approvals arranged per job, including the Brisbane CBD

INSURANCE

$28,000,000

Public liability (aviation liability) covering RPAS operations. Certificate of currency supplied before mobilisation.

STANDARDS & PROCEDURES REFERENCED

CASA Part 101 Manual of Standards · AS 5100 (bridge design and assessment, where inspection supports it) · asset-owner corridor procedures including Queensland Rail · client SWMS / JSA documentation · Queensland Surveyors Act 2003 (referral boundary for cadastral work).

SITE DOCUMENTATION & PROCEDURES

- JSA and site-specific flight documentation issued for every mobilisation; SWMS where the site requires one.
- Preliminary Site Assessment filed before mobilisation.
- Specific Flight Assessment filed within 24 hours of capture, covering weather, NOTAMs and the final go/no-go decision.
- Airspace approvals, council permits and rail-corridor flight requests arranged ahead of arrival; landholder and asset-owner permissions confirmed with you at scoping.
- RPAS risk register and pre-task planning records maintained under a documented Operations Manual, with the Chief Remote Pilot as named risk owner.
- No operations over unprotected personnel; separation maintained from anyone not part of the operation.



WIDE — COLUMN AND GIRTS



DETAIL — BRACING CLEAT, GPS-DENIED

WORKING IN CONSTRAINED ENVIRONMENTS

Live rail corridors

Track-possession work inside a rail corridor, with permits and access protocols cleared as part of planning and flying sequenced around the crews already there.

CBD controlled airspace

CASA-approved operations over the Brisbane River and CBD, including under-deck inspection of the Story Bridge with works live on the structure.

Inside operating plant

GPS-denied flight between overhead cranes and steel laid down on the floor, inspecting roof structure and internal steelwork inside an operating workshop.

Alongside live works

Capture planned around remediation, scaffold and footpath crews so the asset stays in service, and sequenced so no one outside the operation is overflown.

OPERATING AREA

Brisbane & SEQ

Rapid mobilisation across greater Brisbane, Logan, Ipswich, Moreton Bay, Redlands, the Gold Coast and Sunshine Coast, including CASA-approved operations in controlled airspace.

Regional QLD & Northern NSW

Scheduled travel jobs, quoted as a single fixed price with travel built in and full site documentation supplied ahead of arrival.

Major projects, nationwide

Multi-site and interstate programs, sequenced around each site's access window, with every site quoted as a single fixed price.

PROJECT EXPERIENCE

Recent capture programs

Real assets and the method behind each capture, with clients described by sector.



INDOOROOPILLY RAIL BRIDGE, BRISBANE

CASE STUDY 01 · RAIL ASSET OPERATOR, QUEENSLAND RAIL CORRIDOR

Time-critical asset remediation inspection — Indooroopilly Rail Bridge

CLOSE VISUAL INSPECTION + LIVE RELAY | ONE WEEKEND TRACK POSSESSION | AS 5100 · CASA PART 101 MOS

The asset operator had one weekend possession to complete repainting and remediation, and needed the structure inspected inside that same window. Hover flew programmed patterns around the truss, deck, piers and bearing surfaces concurrently with the repair crews, relaying high-definition capture to the remediation supervisors in real time so paint crews could be sent straight to anomalies as they were identified. Inspectors never climbed the bridge, EWPs stayed on repair work, and the possession delivered its full repair program with the inspection alongside it. Deliverables: live HD relay to Queensland Rail and third-party inspectors, defect photographs, before-and-after imagery and a video record.



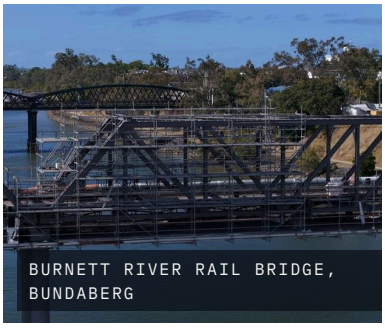
STORY BRIDGE UNDER-DECK NETTING

CASE STUDY 02 · SPECIALIST SCAFFOLD CONTRACTOR

Under-deck netting verification — Story Bridge, Brisbane

CLOSE VISUAL INSPECTION | POST-RIVERFIRE 2025 | CBD CONTROLLED AIRSPACE

The under-deck debris containment netting had to be confirmed intact after Riverfire 2025, with the bridge's own under-deck platforms out of action and a manual traverse meaning real labour and time for a visual question. Hover flew a close visual inspection of the netting run from a safe standoff, working around live footpath remediation and scaffold crews on the same structure. The contractor reviewed the run live over video as the flight progressed, so the question was answered during the flight: netting intact, no defects found, no access equipment remobilised and no stand-down of the works below. When an inspection finds damage, each finding goes into the itemised register; here the live review was the record.



BURNETT RIVER RAIL BRIDGE, BUNDABERG

CASE STUDY 03 · REMEDIATION CONTRACTOR

Defects liability period inspection — Burnett River rail bridge, Bundaberg

CLOSE VISUAL INSPECTION | REGIONAL MOBILISATION | LINE CLOSED FOR THE FLIGHTS

Hover had already worked on this bridge, filming and running a live inspection of the painting works across three days of a scheduled track closure. With the steelwork repainted, the contractor needed a defects liability period record of the repainted steelwork. Hover mobilised to Bundaberg for a same-day capture inside the client's window, with the council drone permit and Queensland Rail flight request arranged beforehand and the line closed for the flights. Every mark was captured as a wide context frame and a tele detail frame and located by span and side; the contractor kept the items that warranted action and had its own notes carried on each one.



INTERNAL STEELWORK, OPERATING WORKSHOP

CASE STUDY 04 · STRUCTURAL ENGINEERING CONSULTANCY

Internal roof-steel inspection — industrial workshop, north of Brisbane

CLOSE VISUAL INSPECTION | GPS-DENIED, INDOORS | OPERATING PLANT

The engineers needed to know how many locations of deterioration the roof steel carried, and whether they formed a pattern, before planning their own site visit. The structure sits inside an operating workshop with two overhead cranes and steel laid down on the floor, so the inspection was flown indoors, GPS-denied, from a safe standoff. Footage was indexed to the engineer's own roof-steel drawing, so each captured member can be found by frame number and grid letter, and the marks register is referenced to the same grid, with paired wide and tele frames.

CAPABILITY TRIALS AND DEMONSTRATIONS — NOT CLIENT ENGAGEMENTS

Tested on real structures first

The three captures below are Hover's own work, flown to prove a method before it was offered to clients, and are labelled as such wherever they appear.

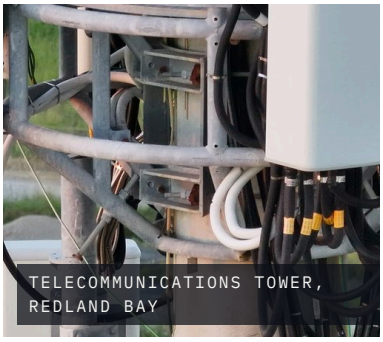


POINT CLOUD — M1 CULVERT, TINGALPA

CAPABILITY TRIAL

Crack-detection trial — M1 culvert, Tingalpa

A concrete culvert under the M1 was captured at fine GSD to establish how fine a crack the imagery would pick up. Cracks were detected from 0.2 mm, and that detection threshold is the one quoted for AI defect detection.



TELECOMMUNICATIONS TOWER, REDLAND BAY

DEMONSTRATION CAPTURE

Telecommunications tower — Redland Bay

Demonstration condition record of a telecommunications tower, captured from standoff with no climb crew, rope access or EWP.



ROOF AND SOLAR ARRAY, SEQ

DEMONSTRATION CAPTURE

Residential roof — South East Queensland

Each item of note captured as a wide-context and tele-detail pair from one hover, every detail frame positioned by laser rangefinder: the method behind the roof and facade service.

EQUIPMENT & SOFTWARE

AIRCRAFT	DJI Matrice 4 Enterprise with RTK module — wide and 168 mm tele cameras with onboard laser rangefinder, for survey, inspection and detection capture. DJI Air 3 for photography, video and 360° panoramas.
POSITIONING	DJI D-RTK 3 base station set up on known control; ground targets laid and independently measured where an accuracy class applies.
PROCESSING	DJI Terra photogrammetry for point clouds, meshes, orthomosaics and surfaces. TWINSPECT (Twinsity) for automated defect detection, with every detection reviewed by hand before issue.
OPERATIONS	CASR Part 101 Operations Manual, RPAS risk register and pre-task planning records, with flight records and authorisations held in Fly Freely.

ASSETS THE METHOD COVERS

River and rail bridges · highway structures and culverts · telecommunications towers · dams, weirs and spillways · water treatment infrastructure · wharves · commercial and industrial roofs and facades · rooftop solar · silos and process plant · roof steel inside operating buildings · development sites, quarries and earthworks.

WHO THIS IS BUILT FOR

- Structural and civil engineering consultancies that need verifiable data behind an assessment
- Remediation, coatings, scaffold and access contractors working inside possessions and closures
- Rail, road and water asset owners and their facility managers
- Builders, developers and civil contractors with sites, stockpiles and progress to document
- Architectural visualisation studios needing view-height backplates and 360° panoramas at nominated levels

ENGAGEMENT & PRICING

How jobs are scoped and priced

There is no fixed price list. Scope drives cost, so each job is scoped first and quoted in writing.

A quote sets out a defined scope, the deliverables named in the formats your software reads, the accuracy class the work will be held to, approvals and documentation included, and a fixed price and turnaround settled before anyone mobilises. The written quote comes back within one business day.

The ranges opposite are indicative Australian market figures for 2026, exclusive of GST, offered as a guide for budgeting. Five things move the number: asset size and complexity, site access and airspace, the deliverable and its accuracy class, travel and mobilisation, and how fast you need it back.

DELIVERABLE FORMATS

.LAS classified point cloud · .RCP ReCap project · .OBJ / .FBX textured mesh · GeoTIFF orthomosaic · DTM / DEM surfaces · contours to your interval · itemised defect register (PDF) · geolocated PDF defect report + CSV / GIS register with AI detection · Survey Quality Report (PDF) · 4K/60 video and RAW stills · 16-bit TIFF panoramas.

DROPS STRAIGHT INTO

Autodesk Civil 3D · 12d Model · Revit · Bentley OpenRoads · Trimble Business Center · QGIS and other GIS platforms, without conversion. Formats and accuracy class are named at quoting, so nothing needs reworking on arrival.

INDICATIVE RANGE — 2026, AUD EX GST

Single-asset visual / roof inspection	from a few hundred
Commercial / industrial roof inspection	$600 – $1,500
Telecommunications tower inspection	$800 – $2,500
Building / facade inspection	$1,000 – $3,000
Bridge & major-structure inspection	from $2,000
Topographic site survey (small–mid)	$800 – $3,500
Volumetric / stockpile (per visit)	$500 – $2,000
LOD 400 digital twin (single structure)	from $1,000
AI defect detection (single structure)	low four figures
Aerial photography / video (single shoot)	from a few hundred

Send the asset and the deliverable you need.

Back comes a scoped method, a deliverable list, the accuracy class it will be held to, and a fixed price. The compliance pack — insurances, JSA and operating certificates, with a SWMS where the site requires one — is supplied ahead of mobilisation; ask for it with your quote.

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Harry Billing

OWNER & CHIEF REMOTE PILOT

Replies come from Harry directly. The person who quotes the job is the person who flies it.

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